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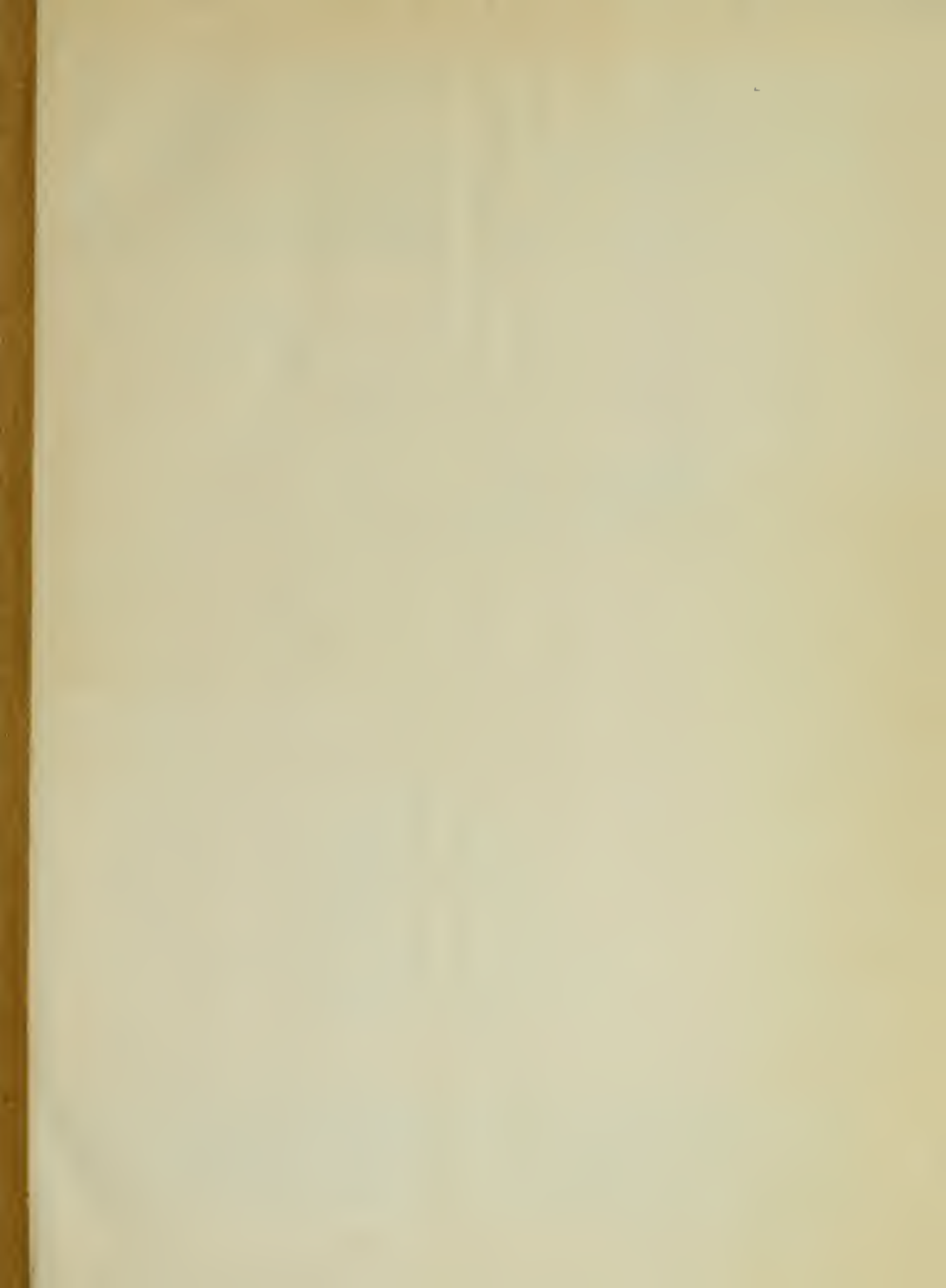
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# THE SOUTHERN PLANTER



DEVOTED To  
AGRICULTURE  
HORTICULTURE  
TRUCKING  
LIVE STOCK  
AND THE  
FIRE-SIDE

JANUARY  
1902

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# The Southern Planter.

DEVOTED TO

PRACTICAL AND PROGRESSIVE AGRICULTURE, HORTICULTURE,  
TRUCKING, LIVE STOCK AND THE FIRESIDE.

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Agriculture is the nursing mother of the Arts.--XENOPHON.

Tillage and pasturage are the two breasts of the State.--SULLY.

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63d Year.

Richmond, January, 1902.

No. 1.

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## 1902.

The first year of the twentieth century has run its course and a new era has opened for Southern farmers. This era has in it more promise for the future than any which has preceded it since the country was first settled. The South, in the near future, is to become not merely the producer of raw staple crops as in the past, but the manufacturer of these raw staples into finished products in the shape of cotton cloth, beef, mutton, hog meat, milk, butter, and the high-priced luxuries of the table in the shape of fruits and vegetables. We shall have at home a market for a large part of these products, and we shall also have manufactured at home and largely from home-produced materials, the mills, machinery and means for the making and transport of our surplus products. To the farmer, this development of our resources means a call for a higher degree of intelligence, a more perfect understanding of the laws governing the successful production of crops, and the profitable conversion of those crops into the finished products; and above all, it means the conversion of the farmer into a successful business man. It means the utilization of all the products of the soil in the most economical manner, so that that which is produced with labor, which means cost, shall return its cost back to the pocket of the producer with the largest profit capable of being realized. To accomplish these results, it will be necessary for the farmer to understand much more thoroughly the laws governing the growing of crops and the feeding of the same, so that they may be made to yield maximum returns; and it will also require that the science of live stock husbandry shall be better understood than ever in the past. The farmer of the South, in order to meet the demands which this development

of her manufacturing industries is going to entail, will require to understand how to breed and feed the thousands of fat cattle, sheep and hogs, which the workers in her mines and factories are going to consume, and how to secure from the cows the milk and butter which the households of these workers are going to demand. In the past, the North and the West have largely supplied even the requirements of the farmers themselves in these respects, and have met practically the whole demands of the cities. The result is seen in the wasted character of most of our lands and the constant complaint of thousands of farmers that "farming does not pay." If Southern farmers fail to measure up in these requirements of the future, they may rest assured that Northern and Western men are going to meet them, and to them will go the profit rightly belonging to the men of the South. They will meet them handicapped with conditions infinitely more onerous than those confronting the Southern farmer, and yet will be successful. It is most unpleasant to us to have to make this confession, but truth compels it. They have done it; they are doing it to day. The secret is that these men, as a body, bring to their work a higher trained intelligence, a more concentrated devotion to the mastery of the problems involved, than our Southern people do. To a large extent, natural laws have brought this about. The shorter crop seasons, the less prodigal gifts of nature, the more essential has it been for man to exercise his brains and skilled intelligence to secure from the soil a living and a competence. What was in the first instance the result of necessity, has in the end become second nature. If to the bounteous gifts of nature in climatic and natural resources, the Southern farmer will only add the exercise of skilled intelligence, book learning and persistent application,

he can achieve much more than his Northern and Western competitors have done. In the past, the *Planter* has endeavored to bring to the knowledge of Southern farmers the information necessary to enable him successfully to compete with the North and West, but we regret to say, with only a small measure of success. This has not been the fault of the journal, but of the farmers themselves. Up to within the past five years not a tithe of the farmers of the South read any agricultural journal at all, and though this has now been greatly changed, even yet the proportion of reading farmers is small compared to the whole number. Until every farmer becomes a constant reader of the best agricultural literature adapted to his particular section, he will not, he cannot, become as successful as he might be. We claim for the *Planter* that it is the best agricultural journal that a Southern farmer can read and study, because it is written by practical, scientific men, with the object always before them of adapting its teachings to the conditions affecting particularly the South Atlantic States. As in the past, so in the future, this will be our aim and object. During the year just closed, we have given to each of our subscribers a volume of 722 pages, and we claim, and that without fear of contradiction, that there is not one of those pages which does not contain some fact, some information, or some suggestion which is not of value to one or more Southern farmer. Surely if this be so, then, at the price of 50 cents per year, the *Planter* should be in the hands of every farmer in the South. When the Southern farmer realizes his duty towards himself and his family, this will be so. In the coming year, we propose to continue in each issue our series of talks on "Work for the Month," our "Enquirers Column"—through which information can be asked and had on all subjects affecting the farm—and our Live Stock and Poultry Yard Departments. We have the assistance of a large corps of contributors, numbering amongst them some of the ablest and most successful men in the country, and are in daily communication with many of the more than 10,000 constant readers of the journal. In this way we are in touch with all the elements necessary to keep us informed as to the needs of Southern farmers, and our own long practical experience on the farm and scientific training enables us to deal, we hope, intelligently and understandingly with every problem. In this issue we have prominently brought before our readers the importance of live stock as an adjunct to Southern farming. With beef selling at \$7.35 per hundred and hogs selling at \$6.30 per hundred in Chicago, and the probability that prices like these are likely to rule for some years to come, and with butter and milk selling at high prices, we do not think any farmer can doubt but that he should en-

deavor to get into such a system of farming as will make cattle, sheep and hogs a more important element on the farm than in the past. Articles by the Hon. James Wilson, Secretary of Agriculture; Major Alvord, the Chief of the Dairy Division of the Department of Agriculture; Dr. William C. Stubbs, Director of the Louisiana Experiment Station and also a Virginia farmer, and Professor Soule, of the Tennessee Experiment Station, bearing on live stock husbandry, will be found in the following pages, and will well repay careful reading and thought.

#### THE PRODUCTION OF A PEOPLE IS IN PROPORTION TO THEIR EDUCATION.

One chief characteristic of the last century was the extension of the benefits of education to the masses of the people. Its chief lesson was that education increases the wealth-producing power of a people in direct proportion to its distribution and thoroughness. The relations between education and productivity are so well understood now that you can measure the wealth producing power of a people by the school privileges which they have enjoyed. Statistics show, for example, that the power of the people of the different States to earn money is in direct proportion to the length of the period that the average citizen of each State has attended school.

To illustrate: the average school period in 1898-1899 of each inhabitant of the United States was 4.4 years; of Massachusetts, 7 years; of Tennessee, a little less than three years. The annual production per capita of the people of the United States in the year 1800 was less than \$30 a year or 10 cents a day, counting 306 working days in the year, for each man, woman and child; by 1850, the production had increased to nearly \$92 a year or 30 cents a day; and in 1899 it was about \$170 a year or 65 cents a day. The production of Massachusetts in 1899 was \$260 for each man, woman and child, or 85 cents a day. The most favorable figures make the total annual production of the people of Tennessee in 1899 less than \$116 a year, or 38 cents a day for each inhabitant, or what the average of the country was in 1860.

Another way to express it is to say that the average family of five in Tennessee must live on \$500 a year, counting everything produced on the farm and in the home, as well as sales and money wages; while the same family in Massachusetts has \$1,300 a year to spend, and the average family in the United States has \$850.

Put these facts together, and we at once see their tremendous significance. The proportion between the school period in Massachusetts, the school period in the whole United States, and the school period in Tennessee, is expressed by the figures 14, 8.8 and 6. The proportion between the productive capacity of each person in Massachusetts, in the whole United States, and in Tennessee, is expressed by the figures 13, 8.5 and 5.8. This is a practically constant ratio.

Education is as 14 in Massachusetts to 8.8 in United States to 6 in Tennessee.

Production is as 13 in Massachusetts to 8.8 in United States to 5.8 in Tennessee.

*Univ. of Tennessee.*

CHAS. W. DABNEY.





## THE HON. JAMES WILSON, SECRETARY OF AGRICULTURE.

We have much pleasure in presenting in connection with a Message to Southern Farmers from Mr. Wilson, a portrait of that gentleman, who is undoubtedly the most practical and popular Secretary of Agriculture who has ever presided over that department of the National Government. Mr. Wilson was born in Ayrshire, Scotland, 16th August, 1835, of Scotch parents. At the age of seventeen years, he came to this country with his parents, living three years in Connecticut. With his family he then moved to Tama county, Iowa, his present home, where, in 1861, he engaged in farming on his own account, and where he still owns and runs a most successful farm. Mr. Wilson has been a close student of scientific methods of agriculture, and his management of a farm of 1,200 acres resulted in marked capacity for his present duties as Secretary of Agriculture. After serving in the Iowa Legislature for three years, Mr. Wilson was elected to Congress in 1872, and served three terms—being a member of the Agricultural Committee and largely instrumental in having the Department of Agriculture made an executive department. After leaving Congress, Mr. Wilson devoted himself to the management of his farm until 1893, when he was elected Professor of Agriculture in the Iowa State Agricultural College, and Director of the Experiment Station there. He was filling this position when selected and appointed Secretary of Agriculture. Mr. Wilson is one of those who have faith in farming as a business, and he proves his faith by his work and by the fact that he has trained and made his sons into farmers, in which calling they are making the like success their father made. Southern farmers, when reading what Mr. Wilson says in his message, can rest assured that they are reading the advice of a man who knows whereof he writes, and the following of whose advice cannot fail to result in profit to them.

## A MESSAGE TO SOUTHERN FARMERS FROM THE SECRETARY OF AGRICULTURE.

*Editor Southern Planter:*

DEPARTMENT OF AGRICULTURE,  
OFFICE OF THE SECRETARY,  
WASHINGTON, D. C., Nov. 15, 1901.

Your favor of the 11th instant, asking me to contribute to your New Year edition of *The Planter*, is received. I have not time to write a formal article; I am so busy here that I have been compelled to decline nearly all such work, but the interest I feel in the prosperity of the Southern people impels me to say this to you:

The first consideration of the Southern farmer should

be the maintenance of the fertility of his soil. There are certain means towards that end that should be observed by all farmers. Everything which comes out of the ground that can be fed to domestic animals should be returned to the soil through that instrumentality. I have long deplored the waste of the best food material with which farmers are acquainted—that is, your cotton seed. There is nothing equal to it within reach, and yet much of it is used for fertilizing purposes without first discharging its greatest office to the farm, the feeding of domestic animals. The sale of cotton and cotton-seed oil can go on without injuring Southern soils, as both products come from the atmosphere, but the seed of the cotton plant contains the nitrogenous and other elements which, if taken from the soil, will reduce it to sterility unless replaced by some method. There is no method so ready as the feeding of the cake or by product that should come from the mills where the cotton crop is worked up—the oil mills, etc. If the fullest possible use were made of this great feeding material the South could prepare many more domestic animals for the home and foreign markets. It would not require all of your cotton seed to furnish every fat steer sent across the Atlantic. The feeding of cotton seed to domestic animals would bring to you a profit to which you of the South certainly have the prior right.

The next step would contemplate the introduction of more domestic animals on the farms of the South, and there are many things along this line that can be done in the South quite as well as anywhere else. There is great demand just now for horses, just such horses as the Southern people know so well how to produce and train. The world cannot get as many of them as it wants. There is no reason why the South should not supply early spring lambs for Northern markets, and the dairy cow should also have a place on many more farms than she now has. Your people are famed for their fine hams, and the bacon hog should also be raised more extensively than it is among you.

Now, all this means more grazing conditions on Southern farms, and grazing conditions are precisely what are wanted down there. The humus is taken out of the soil by perpetual cropping, the organic matter is exhausted, and the soil becomes incapable of retaining moisture, so that drouths are more destructive. With a suitable per cent. of the farm in grazing condition and the observation of a system of rotation, much finer crops can be expected from the Southern farms. We are looking the world over for forage crops suitable to your conditions, and we have at the present time a great many such on trial, with a view to finding those proper for various localities and sending them out accordingly.

These thoughts occur to me hastily, and if they are worth using in *The Planter*, you are welcome to them.

JAMES WILSON, *Secretary.*

## Farm Management.

### WORK FOR THE MONTH.

Twelve months ago, when writing our article on "Work for the Month," we remarked that "the prospects for the whole of the people of this country appeared better than ever before in its history. The laboring people were all fully employed and the demand for the products of their labor was world wide and at good prices, and that we saw no reason to doubt but that this general higher range of values was likely to continue during the year." To day we are able again to say the same thing, with the addition that not only has the higher range of values of products then referred to continued, but has made still greater progress than in the year preceding. Beef and pork has mounted to prices not touched for years, corn is bringing more money than at any time during the last decade, wheat is fast mounting to the dollar-mark, whilst oats are selling for twice the price they sold for a few years ago. Whilst labor continues to be as well employed as is the case at the present time, there is not likely to be any fall in prices of staple products, and corn, from its scarcity, is likely to go still higher. Cotton has recently taken an upward bound, and as the crop appears likely to be a much shorter one than was at one time expected, we shall not be surprised to see a still better price for the staple. Tobacco, both light and dark, is selling for much higher prices than a year ago, and is likely, we believe, to sell well through the season, as the demand is good and the crop short. All this is most encouraging for farmers, who for so many years have seen the products of their labors selling for barely the cost of production. There would appear to be every reason why farmers should in the year now opening seek to enlarge the products of their farms. There is not likely to be any surplus at the end of the crop year to weigh down prices; and even if large crops be made, they will come upon practically bare markets. The great deficiency in the corn crop this year, and the heavy demand for wheat by Europe (which has already in ten months taken over 77,000,000 bushels more than the year previous), will certainly find these two staples in demand, however large be the crop made this year. Those who make live stock breeding and feeding a leading feature in their work (and we hope to see very many more Southern farmers engaged in this branch of husbandry, because only through this means can we ever hope to see our lands restored to pristine fertility at a cost within the competency of the average farmer), may pursue their way with confidence, as the enforced selling of young and half fat stock in the West, on account of

the corn crop failure, coupled with the brisk demand of the markets to meet the calls of a well-employed people, will ensure good markets for some years to come. We realize quite fully that this advice to make larger crops is going to be attended with some difficulty on account of the scarcity and high price of labor, but this difficulty must be sought to be overcome by the production of larger crops on smaller areas, and by the use of labor-saving machinery. There is a large margin of cost to be saved when lands are so cultivated and manured and fertilized as to produce maximum yields instead of our present miserably small returns; and these maximum yields can be made and handled with very little more labor than is now employed when made on smaller areas. A crop of 40 bushels of wheat or 75 bushels of corn, or 1,200 lbs. of tobacco or a bale of cotton to the acre, can be made and saved with about the same number of hands as now suffices to produce half these yields, especially if supplemented with the labor-saving implements now so cheaply to be had. All the yields we have mentioned are being made on lands not better situated, and naturally, not better than the lands of the South; indeed, we have reports of much higher yields than even these. We want to see an end made of the system of working large areas of land simply for the purpose of getting back only the cost of working them, whilst at the same time still further reducing their fertility and making it harder for the next generation to make a living. A time of high prices like the present is the one to start a reform in this matter, and we trust that our readers will make a resolve not longer to defer it. It means much greater prosperity and comfort for all when prices again fall, as they undoubtedly must, sooner or later.

It may be of interest to many in connection with our foregoing remarks as to the rise in value of all staple products of the farm to quote the latest Chicago figures at hand (those of December 4), as compared with those of December, 1896. Wheat, it may be mentioned, is now (December 12) much higher than on December 4, and Richmond prices are higher than those quoted.

	1896. Dec.	1901. Dec.	Market.
Wheat, per bus.	76 cts.	74 cts.,	Chicago.
Corn, per bus.,	22 cts.	63 cts.,	Chicago.
Oats,	16 cts.	43 cts.,	Chicago.
Rye, per bus.	37 cts.	60 cts.,	Chicago.
Hay No. 1,	\$8 per ton,	\$12.50,	Chicago.
Irish potatoes	{ Dec., 1898.		
	{ \$1.25 per 180 lbs.,	\$2.50,	New York.

Wool, per lb.,	17 cts.	26 cts.,	Chicago.
Live hogs	\$2.90	per 100 lbs.,	\$4.20, Chicago.
Butter,	21 cts.	per lb.,	25 cts., New York.
Eggs,	19 cts	per doz.,	26 cts., New York.

The extent to which any work may be done on the land during this month largely depends on the weather and the labor. Up to this writing, with the exception of two or three days, the month has been mild and dry, and plowing and clearing up land could have been continued all the time. In this respect Southern farmers have a great advantage over their Northern and Western brethren. There the land is frozen hard and covered with snow, and teams are standing idle in the stables. Whilst it is advisable to utilize all the opportunities given for expediting work in the spring, by plowing and cleaning up land intended to be cropped, it should be borne in mind that the labor of the farm is never to be relied on after the middle of this month, and rarely takes again to steady work until the middle of January. This means that the care of the live stock will largely devolve on the owner himself for this period, and it behooves him to see that he has abundant supplies of feed of all kinds placed as conveniently as possible for feeding before the hands quit work. Also that the wood pile be replenished. This work had better take precedence of all other until completed.

We refer our readers to what we said in our last month's issue as to cleaning up land. Do what is done thoroughly, and make a clean sweep of all stumps, stones, briars and trash. They only hinder work in the future, and harbor insects and disease spores.

See that fields to be cropped are enclosed with good, straight fences, with gates hung at convenient points. These will soon save more than their cost by protecting the crops from depredation and in the saving of time and labor. Where old fences are in need of repairs do not perpetuate the old crooked lines so common on most farms, nor the old worm fences. Pull down the crooked places and run the fence straight from point to point. Where even half the rails are sound a good, straight fence may be made out of the old worn one by setting posts the length of the rails apart and using four rails for each panel; these four rails, to be fastened to the posts by a length of plain fence wire, running from the bottom to the top of the post and stapled to the post, so as to hold the rails at equal distances apart. This makes a very good, durable fence at little cost and saves rails.

Haul out manure and top dress wheat, oats and grass land whenever the land is dry enough to haul on. The manure will be doing much more good on the

land than wasting in the barnyard. When it is not dry enough to haul on the land, see that the manure from the stables and pens is compactly packed in the yard where it will not receive the water from the roofs of the buildings and where the leachings will not escape away from the heaps. By mixing the manure from the different animals as made there will be no overheating in the pile, and it will be kept in good condition until the weather permits of its being hauled out.

Draining and ditching required in the different fields should be attended to. Good crops can never be produced on land that is filled with stagnant water. Be careful to allow plenty of fall in the drains and a clear outlet for the water. It is no use putting down drains unless they are so laid as to carry off the water from the subsoil. It is this water which causes the damage to the crop and not that which falls on the surface. Lay the drains in the direction of the fall of the land, not across it. Laid this way, they will draw water from both sides, whilst if laid across they will only draw from the upper side.

Fill the ice house at the first opportunity. If you miss this you may not have another in the South. Use plenty of sawdust as packing around the sides of the house. In the November issue will be found information as to building an ice house.

It will pay to give the question of the rations to be fed to the stock careful consideration. Corn is too valuable this year to be fed in the usual careless wasteful manner. Better results can be had by a mixture of feeds and at less cost. Corn is in itself an unbalanced feed. It is rich in the carbohydrates, which go to make fat and heat, but wanting in protein, which makes muscle, flesh and growth, and which is an invaluable requisite in the production of milk and butter. Better sell some of the corn and with part of the money buy some cotton seed meal. Two pounds of cotton seed meal per day may profitably take the place of four or five pounds of corn in feeding cattle. In the same way good, sweet oat and wheat straw may be used in the place of some of the hay. A variety of food will produce better results than the constant feeding of corn and corn fodder alone, even though some of the food substituted is not in itself richer in the requirements of a feed ration.

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## SOIL AND SOIL TREATMENT.

*Editor Southern Planter :*

The earth was made for the purpose of growing plants. And it is well and wisely made. The soil is perfectly adapted to growing vegetation. It neither grows weary nor worn out in the work.

Plants were created to grow in the soil. So perfect is their adaptation to this business that instead of exhausting the soil they leave it better by growing in it. The larger the growth upon any given area this year the larger still is the possible growth next year upon the same soil. Such is the mutual relationship between the powers of the soil and the work of the plants in growing, dying, and decaying that it is possible to grow crops continuously upon the same soil, with ever-increasing capacity for growing more and larger crops, on the part of the soil.

*How, then, do soils get poor :* It is the result of bad management, and not of the demands made upon the soil by the growing crops. Vegetation, upon an average, is seventy-five per cent. water, twenty two per cent. air, and only three per cent. soil.

Good farming returns to the soil so much of this organized air that it more than compensates for the three per cent. taken from the soil. Hence it is a mistake to say that the soil is exhausted or made poorer by the small part it furnishes the crop. Then, you ask, why do we find fields and farms, after years of cultivation, become poor or non-productive? The causes are many. Mainly bad management in plowing when the soil is wet, and in plowing so shallow that the soluble plant food is washed away or leached out by the rain water. Continuous clean culture and burning the waste vegetable matter helps to hasten this condition.

*Mechanical condition of the soil :* The power of any soil to produce depends largely upon the mechanical condition of the soil. Hard, compact soils will not turn loose their elements of plant food in sufficient quantities to make large crops. A good soil must be a finely pulverized soil.

Shallow soils with hardpan under them will not yield large crops. They do not permit sufficient root-growth. The tender rootlets cannot pierce this hardpan in search for food. Again, they do not furnish sufficient water for rapid and full growth. Plants require very large supplies of water to furnish their food in solution and keep up healthy circulation. About three hundred pounds of water must pass through most plants to leave one pound of dry matter. This would require about two thousand pounds to pass through a corn stalk to make one pound of corn, and the same to pass through a cotton stalk to leave one pound of lint.

The soil must be fine and deep and pulverized, not made into mud or mortar. It must also contain rotting vegetable matter to furnish the humus without which plants cannot grow.

*Rich soil :* Soil in this condition will be rich. It will produce large crops. It matters not if it be red or grey, sandy or clay.

So much of our land has been put in bad mechanical condition that but few farms will produce large crops. Hence the necessity of using commercial fertilizers. These contain phosphoric acid and potash readily soluble and available. They greatly increase the yield because of this fact. They feed the growing plant. The more vigorous the plant the more they help. Just as it pays to give extra food to a thriving steer. So we see that even the helpfulness of fertilizers is dependent upon the mechanical texture of the soil.

The farmer's constant study should be "How can I improve the mechanical condition of my soil? Upon his intelligence in answering this question will depend largely his success a farmer. Your bottom land is richer than your upland because its mechanical condition is better. Your garden is richer than your farm because its mechanical condition is better.

These are not new discoveries, but so few farmers are acting upon them that they need to be restated.

Where the farmers use two, four, and six-horse plows their soil is deep and fine and productive. Any soil may be made so by proper treatment.

Your soil is largely a thing of your own making or unmaking.

The success or failure of your crops for the next year will depend very largely upon the condition of your soil when you begin to plant.

Atlanta, Ga.

JAMES B. HUNNICUTT.

#### WHEN CAN MANURE BE PROFITABLY USED AS A TOP-DRESSING?

*Editor Southern Planter :*

The question whether top dressing with manure does not give just as good results as turning it under has often been discussed in the agricultural papers. Generally, it does not. If the manure is plowed under, it decomposes in the soil; this increases its water holding power; it is a source of ammonia and carbonic acid, which is taken up by the soil moisture, and helps to make plant food available. If strawy manure is turned under on heavy soils, each decaying straw leaves a fine channel behind, making the soil loose and porous. These advantages are lost if the manure is used as a top dressing, and partly lost if it is exposed for some time to the decomposing influences of the air.

The observation has often been made that if manure is hauled out to a field in winter, and is left spread on

the surface, the soil is in a first-class physical condition when it is plowed in spring. But this generally does not last long. As soon as the soil is exposed to the air, it forms a hard, tough crust, and is during the summer not nearly in the good condition of that exposed in winter to the freezing and thawing influences of the air. It is also well known that if manure is hauled out in winter on the grass, and plowed under in spring, it will make a better corn crop than if applied in spring, provided, of course, the soil can be kept free of weeds. But whether the better corn crop grown at the expense of the following crops, is a compensation for the less good returns from the following crops depends upon the importance of the corn crop as a farm asset.

Whilst more benefit is undoubtedly derived from a given quantity of manure if it is immediately turned under, there are instances where top-dressing deserves the preference. If, for instance, a farmer sows rye or oats on a poor soil, and has only a small quantity of manure to apply, and is without means to buy fertilizers, he will get a better crop if he plows the soil only shallow and uses the manure as a top-dressing instead of mixing a small quantity of manure with a large quantity of unproductive soil. In the shallow plowed soil, the roots remain near the surface and are in easy reach of the soluble plant food washed from the manure into the soil. The soil will not be so much benefitted, for little or no plant food will be left for the next crop, but the good growth of the rye or oats as a fundamental crop for the further improvement of the soil, more than compensates for this loss. Again, if clover shows a poor stand in winter, and it is doubtful if it will make a good crop, it is advisable to top dress it, not only because of the great importance of the clover as a fodder crop, but also because of the improvement effected in the physical conditions of the soil, through the better development of the clover roots. The manure also acts as a mulch, keeps the soil moist, and will thus help to make plowing easier, especially of stiff soils. In this case, the manure can be hauled with advantage from the barn to the field, the clover showing plainly where it should be applied. On rolling land, it often happens that some of the soluble parts contained in the manure are washed from the higher and poorer onto the lower and richer places, but the improvement of the physical condition of the soil, especially that of heavy soils, is so important that it should receive first consideration even at a sacrifice of a part of the soluble plant food.

H. WINKELMAN.

District of Columbia.

Mention the *Planter* to your friends.

## LIMING LAND.

We want to say just another word as to liming land ere it is too late. Lime to do the most good should be applied in the fall or early winter before the frosts have taken hold of the land. It should be applied on the top after the land has been plowed, and should be lightly harrowed in so as to become slightly mixed with the top soil. In this position the action of the frosts will cause it to become active in breaking down the mechanical and ameliorating the physical condition of the soil. It will also be in that position where it can exert one of the greatest of its beneficial actions, that of correcting the acidity of the soil so that it can be possible for the soil bacteria to work freely. These bacteria, upon which largely depends the fertility of the land, cannot work in an acid soil. For their best work it should be slightly alkaline rather than either acid or neutral. The lime should be applied freshly water slacked and not air slacked. It is best put on just as it comes from the kiln in small heaps—say, of half a bushel or less. Half a pailful of water thrown on the heap will cause it to slack in a few moments, and it should then be spread with a shovel at once. Whilst lime is not usually classed as a fertilizer yet from our own experience and from the results obtained in many experiments, we are satisfied that from its use in moderate quantities—say, from 25 to 50 bushels to the acre every third or fourth year on our lands—we, with a proper rotation of crops, can obtain, on the average, better results than from the application of 300 or 400 lbs. to the acre of commercial fertilizer. The results obtained when used for the purpose of securing a stand of clover or other leguminous crop have been marked. Where heavy dressings of farm yard manure have failed to bring clover lime has succeeded. This is largely because of its action in permitting the soil bacteria to work freely and obtain from the atmosphere the nitrogen which is stored in nodules on the roots of these crops. In this way not only is the clover crop made a success but fertility is added to the soil for the succeeding crop. Give lime a trial. Its action is beneficial almost invariably, whether the soil be light or heavy. It renders available the potash and phosphoric acid locked fast in the soil, and recent experiments made would seem to justify the conclusion that it largely tends to make more available the phosphoric acid in applied fertilizer.

Your journal is simply invaluable, and I heartily wish that every farmer in the country could have the benefit of reading its pages.—William Beasley, Lynchburg, Va., December 14, 1901.

## ENQUIRER'S COLUMN.

\* Enquiries should be sent to the office of *The Southern Planter*, Richmond, Va., not later than the 15th of the month, for replies to appear in the next month's issue of the *Planter*.

## Peanuts for Seed—Dwarf Essex Rape.

1. I have a lot of peanuts shelled last winter and spring for seed. Will they do to plant in 1902? They are perfectly sound, apparently.

2. I will give my experience with dwarf Essex rape. It may help some of your readers.

I saw so much about planting it on poor land, in corn, etc., that I tried it that way. Did not cultivate or manure it. Result—a total failure. Then I prepared a good piece of ground thoroughly, and fertilized it and cultivated it. Result—a good crop. I treated it just as I would turnips. Sowed latter part of August.

3. You advise breaking land now for next season's crop. Do you mean break it if no cover crop of rye, etc., is sown?

Warren Co., N. C.

J. F. HUNTER.

We think it very doubtful whether the nuts will germinate after being kept so long unshelled. Certainly they will not do so as to ensure a good and regular stand, nor will the plants from such as do germinate be strong or vigorous. Most growers make a point of shelling the nuts as near to time of planting as possible.

Thanks for experience with rape. Whilst we have never advised it as a crop to grow on poor land without fertilizer or manure, it will certainly grow and make more feed on medium land seeded after a grain crop than most other forage crops.

Yes. We prefer to break early enough to seed at least with rye, which may be sown up to December, but if unable to do this, would plow deeply and leave rough and bare. The frost and weather will help it, though there may be some slight loss of nitrogenous fertility. Neither phosphoric acid nor potash will leach away.—ED.

## Strawberry Growing—Quantity of Lime to Apply—Trees in Strawberry Patches.

1. What is your experience on growing strawberries and grapes on drained bottom land? Is the yield in proportion to the dense foliage that swamp land makes? I'm not expecting to fertilize any.

2. Give amount of lime to sprinkle on swamp land.

3. Does it pay to let poplar trees stand in the strawberry plot for the bee food that they make? Or should the lumber value be taken into the account?

Macon Co., Ala.

F. A. CARDOZO.

1. We would not advise the setting out of strawberries or grapes on such bottom land, as the production of wood and leaf will be excessive and at the expense of fruitage. Better to use the land for the production of corn or forage crops for a year or two until the excessive supply of nitrogenous matter is reduced, and

then, with the application of 200 or 300 pounds to the acre of acid phosphate and 50 pounds of muriate of potash, a good crop of fruit may be expected; indeed, it is quite likely that a good crop could be made for one or two years without any fertilizer.

2. We would apply 50 bushels to the acre.

3. It rarely pays to allow trees of any kind to stand upon land which is to be cropped. Their roots will absorb all the moisture and much of the fertility from the land for a large area around the tree, and besides this disadvantage, there are few crops that will flourish in the shade of trees or properly ripen their fruit.—ED.

## Tobacco Specking.

Please tell me through your valuable journal if there is any remedy for keeping tobacco from specking.

Dinwiddie Co., Va.

JAS. M. BEAMES.

We require more information as to the time when this specking happens—that is to say, whether it occurs in the fall or after the tobacco is cut and in the process of curing, before we can answer this query satisfactorily. There is a disease which attacks the plants on the hill which gives the leaf a speckled or blotched appearance, and there are also sometimes conditions affecting the leaf in the curing process which produce this appearance.—ED.

## Syracuse Harrow.

In our last issue we published an enquiry as to the harrow. A correspondent sends us the following information:

The Syracuse Plow Co. make a spring tooth harrow with wheels and levers. I tried one, but the bars soon bent and twisted so that the teeth did not run a uniform depth. It might do for sandy land, if not run too deep, but is worthless for heavy land. I think wheels on harrows a nuisance, as the weeds and trash wrap around them and are very difficult to remove.

Orange Co., Va.

A. R. LOCKHART.

## Ration for Cow.

For the cow, feeding corn stover and pea hay as roughage, what quantity of cotton-seed meal, bran and corn-meal would you advise as the concentrate to balance the ration?

Haliifax Co., Va.

FARMER.

Assuming the weight of the cow to be 1,000 pounds, and that she is milking 3 gallons per day, we would feed a grain ration of 10 pounds per day, made up of 4 pounds of corn meal, 4 pounds of bran and 2 pounds of cotton seed meal. It would be well to give only 1 pound of cotton seed meal per day to begin with, in order to see its effect. Some cattle cannot stand heavy rations of this highly concentrated feed. If the cow be less weight than 1,000 pounds, reduce the ration by one pound for each 100 pounds of weight less than 1,000 pounds.—ED.

# Trucking, Garden and Orchard.

## WORK FOR THE MONTH.

It is too early in the year for much work of any kind to be done in the truck fields or gardens, except in the Gulf States, where English peas and Irish potatoes may be planted near the coast, if the weather is mild and the land in good working condition. Early salad crops may there also be planted under similar conditions. In Virginia and North Carolina, if the end of the month be mild and the land in good working order, a small area of English peas and Irish potatoes may be set out in the Tidewater sections; but it is not well to plant the fall crop of these vegetables until later, as the weather in February is often too severe to permit of growth and there is danger of rotting. If peas are planted they should be put in deep so as to have a cover of four or six inches of soil. A field which was manured and grew a crop last year is the best for peas, as fresh manure is apt to cause too great a growth of vine. Acid phosphate and potash, at the rate of 400 lbs. to the acre, 300 phosphate and 100 muriate of potash, will make a suitable fertilizer for peas; and if the land is not rich, 200 lbs. to the acre of cotton-seed meal may be added, or 100 lbs. to the acre of nitrate of soda may be applied after the peas have commenced to grow as a top dressing, to be applied when the plants are dry. In mild weather, and in a sheltered situation, lettuce plants may be set out and radishes be sown.

The work of preparing the land for the crops should receive attention whenever the land is dry enough to work freely, but do not attempt to do anything in it when wet.

The turning, mixing and preparing of compost heaps for application to the land previous to or at the time of setting out crops should be attended to. Acid phosphate and potash may be mixed in the compost with advantage when turning same. They will thus become more readily available for the crops than if applied at the time of planting.

Pruning and cleaning up vineyards, orchards and small fruit plantations should be continued.

If the people of the South would compete in production with those of other States and of the world—and they must do so whether they will or not—they must educate all their children, not only their white children, but their black; and they must educate them all, not poorly for a few months in the year and a few years in their lives, but thoroughly through a long series of years.

## VIRGINIA HORTICULTURE.

The list of awards to individual exhibitors in the exhibit made by the Virginia State Horticultural Society at the Pan-American Exposition, Buffalo, are as follows:

Diploma of Gold Medal: Virginia State Horticultural Society, general exhibit of Virginia fruits; Hon. G. E. Murrell, Bedford county—display of apples and pears.

Diploma of Silver Medal: Virginia State Horticultural Society—display of fruits; Samuel B. Woods, Charlottesville, Albemarle county—display of apples; Dinwiddie Brothers, Greenwood, Albemarle county—display of apples and pears; J. J. Boaz, Coveseville, Albemarle county—display of apples.

Diploma of Bronze Medal: A. Wayland, Crozet, Albemarle county—display of winesap apples; Walter Whateley, Crozet, Albemarle county—display of winesap apples; J. G. Martin and Brother, Coveseville—display of apples; L. T. Pace, Crozet, Albemarle county—display of winesap apples; Haden Brothers, Crozet, Albemarle county—display of apples; J. M. Ellison, Crozet, Albemarle county—display of winesap apples; W. M. Lafferty, Crozet, Albemarle county—display of winesap apples; Mrs. M. L. Stout, Crozet, Albemarle county—display of winesap apples; J. W. Porter, Charlottesville, Albemarle county—display of apples; W. B. Harrison, Greenwood, Albemarle county—display of green apples; T. H. Coleman, Covington, Alleghany county—display of fruits; James Dickie, Massie's Mills, Nelson county—display of winesap apples; G. A. Copp, Fishers' Hill, Shenandoah county—display of apples; W. F. Dudley, Staunton, Augusta county—display of Baldwin and winesap apples; Dr. W. B. Dodge, Stuarts Draft, Augusta county—display of fruits; G. W. Donaldson, Cherrystone, Alexandria county—display of pears and cherries; Dr. J. R. Guerrant, Algoma, Franklin county—display of apples; J. Coles Terry, Bent Mountain, Roanoke county—display of Newtown apples; C. B. Wood, Washington, Rappahannock county—display of apples; Bedford County Horticultural Society, Matilda—collection of winter apples; W. J. Hudson, Roseland, Nelson county—display of winesap apples and Keiffer pears.

Diploma of Honorable Mention: Robert Holberton, Crozet, Albemarle county—display of Heath Cling peaches.

Wayland Bros., Crozet, Albemarle county—display of peaches.

C. H. Birch, Coveseville, Albemarle county—display of apples.

W. L. Carpenter, Red Hill, Albemarle county—display of winesap and Ben Davis apples.

Eugene C. Massie, Charlottesville, Albemarle county—display of apples.

James Dickie, Massie's Mills, Nelson county—collection of apples.

Winfield Scott, Floyd, Floyd county—collection of pears.

Mrs. V. H. Rucker, Harris' Creek, Amherst county—display of winesap apples.

Oscar Clinghorn, Pulaski, Pulaski county—display of Heath Cling peaches.

J. J. Jennings, Ofley, Hanover county—display of winesap apples.

Caroline Simmons, Daloney—display of Wolf River apples.

The above list shows that all the silver medal awards, and 10 out of 21 of the bronze medal awards and 5 out of 12 diplomas of "Honorable Mention," making a total of 18 out of 36 awards in all, have been gained by fruit growers in Albemarle county. This should go far to prove the high esteem in which Albemarle fruits are held. It will be observed that the county of Nelson comes second in the list with three awards, two of them being to the same gentleman.

### THE VIRGINIA STATE HORTICULTURAL SOCIETY.

The annual meeting of the Virginia State Horticultural Society will be held in the Chamber of Commerce Hall, Richmond, Va., on January 7 and 8, 1902, with an interesting programme.

To any one interested in the development of the fruit industry of the State, a cordial invitation is extended to attend, admission being free to all comers. A special rate of about 1½ single fare for the round trip has been offered, by all the railroads in the State, tickets on sale from January 5 with limit to 10, and special rates have been promised by the leading Richmond hotels.

This society has been steadily growing, and is using earnest endeavors to advance the already important and growing fruit industry. Virginia apples shown by this society took six awards and one gold medal at the Paris Exposition last year, and the society's exhibit at the Pan-American Exposition this year has also been awarded the gold medal, with further awards to individual exhibitors. The pomologist in charge there told the secretary that its apples were the highest in flavor, and best keepers in cold storage from all the States.

Fruit grower's meetings are invariably marked by enthusiasm, good fellowship, and practical information. The discussions are so valuable that the fruit grower who stays away would never do so if he realized what he missed. The enthusiasm is by no means unprofitable, and the good fellowship is best of all. Men with a large experience of agricultural gatherings will always testify that the horticultural meetings are the most energetic, practical, and enjoyable of all. The general farmer is apt to think horticulture is a mere side show, and while it may be so on his farm, still it has great possibilities even there. Observations and statistics both show that horticultural industries always improve the agriculture of any farm or any neighborhood where they take hold.

Fruit farming, or trucking, is almost necessarily good farming, and a good example must cause the spirit of emulation in any section. The secretary of the society is Mr. Walter Whately, of Crozet, who will take pleasure in giving any further information as to arrangements for the meeting. Any one proposing to attend, who may have to travel over the Chesapeake and Ohio Railway, should apply to him for a card

order to obtain the special rate. The other roads sell tickets on application.

WALTER WHATELY, *Secretary.*

### APPLE HYBRIDS.

Hybrids among apples are very rare. The principal reason is that while we have thousands of different varieties of apples we have only one species in general cultivation, and the hybrid, as commonly understood, is a cross between two species. The one species, to which our common apples all belong, is known to the scientists as *Pyrus malus*. Other species are *Pyrus baccata*, the Siberian crab, *Pyrus caronaria*, the wild flowering crab, *Pyrus ioensis*, the western crab, etc. This western crab has been thought to hybridize naturally with the common cultivated apples, and the results give some promise of producing some day a fruit worthy of cultivation. The Siberian crab hybridizes with the common apple sometimes, though usually not without human interference, and always with greater difficulty than might be expected. Dr. Saunders, of Ottawa, Canada, has made several of these hybrids, and thinks he has got the beginning of a race of useful fruits. The chief claim made for these hybrids is that they are hardier, or are expected to be hardier, than the common apples, and can be grown farther North. On that point, it may be pertinent to say the horticultural world seems to be losing interest. At the present time, many pomologists believe that the extension of fruit growing northward depends more on the improvement of methods of cultivation than it does on the discovery of new and ironclad varieties.—*Country Gentleman.*

### THE APPLE MARKET

Continues to be strong, taking everything that is offered at good prices, and sometimes at very handsome prices.

A friendly grower has just reported to us concerning certain sales recently made, in which he got \$4.50 and \$5 a barrel for his Greenings, *seconds*. But then this man's seconds are better than the firsts packed by some other men. His first grade fruit, of which only a little has yet been marketed, brought \$7, \$8 and \$9 a barrel. Most growers, of course, have been getting less than this, and yet nearly everybody is satisfied.

A word as to the application of manure, for which there can be no better time than the present month, according to my experience. I, of course, would not recommend the use of coarse straw manure for a garden fertilizer, but if I were unable to secure a well decayed compost, such as is most desirable for this purpose, if it can be provided, I should not hesitate to make a generous application of fresh stable manure at this time. If at the time this fertilizer is applied the ground is not frozen, or is in a condition for doing so, it would no doubt be better that it should be plowed or spaded under; but even if this is not done, the storms of winter in combination with the action of the frost will prepare it for giving best results when planting time has come.—E. E. Roxford, *Country Gentleman.*

## Live Stock and Dairy.

### STOCK-RAISING IN THE SOUTH.

*Editor Southern Planter :*

Can the South grow horses, cattle, sheep and hogs for market and compete with the North and West in quality and in profits? This section must be most carefully examined and its material resources and climatic conditions thoroughly studied before pronouncing an affirmative opinion. Climatic conditions are acknowledged by all to be favorable and no discussion of this point needed in this article. Let us briefly examine the natural resources, which may be considered, for convenience, under three heads—soils, crops and water, factors generally admitted essential to successful stock growing.

#### SOILS.

Starting in West Virginia where the Appalachian range on its Northern and Western flanks gives birth to the Ohio River and its tributaries, following the "La Belle Riviere" until it empties its volumes into the Father of Waters, cross over this river and take in the States of Missouri, Arkansas, and Texas, and the Territories of Oklahoma, Indian, New Mexico and Arizona, and you have an empire of territory and a complete museum of soils. Every geological age is here represented. Granite, gneiss, hornblende and feldspar have furnished "*in situ*" the soils of the mountains and the foot hills. The numerous anticlinal valleys penetrating this section, from the fertile and historic valley of the Shenandoah in Virginia to the no less fertile and scarcely less historic Tennessee valley in North Alabama, are but disintegrated outcrops of the Silurian, Devonian and Carboniferous ages. Paralleling the Piedmont section from Virginia to Georgia is a narrow belt of cretaceous clays, which in the latter State broadens out and extends westerly across the middle of the State of Alabama. At Columbus, Miss., this belt turns Northwestward and enters the State of Tennessee, where it is intersected by the great Tennessee River in its onward flow to join the Ohio.

South and East of this belt occur the Tertiary soils of different ages and variable compositions, extending down nearly to the coast, which in turn are supplanted by the Coastal Plain, the Bluff, the Prairie, and the Alluvial formation. From Wheeling, West Virginia, to Key West, Florida, and from the Atlantic Ocean to El Paso, Texas, soils of every character and chemical composition can be found.

The hornblendic red soils and the gray shales of the Piedmont section are excellently adapted to small grains. The various limestone valleys are pre-eminently the home of blue and other grasses. The warm,

sandy loams of the Atlantic coast are easily responsive to good tilth and proper fertilization, and can be made to grow most any crop.

The Bluff, Prairie and Alluvial lands are already known everywhere for their fertility; and their capacity to grow other crops, besides cotton, sugar and rice is well known. Here is such a diversity of soil that even an agricultural Sybarite can be easily supplied. Are they cultivated? Statistics will show that by far the lesser part is under cultivation. In fact, in many of the extreme Southern States much the greater part yet remains in forest, which the saw mills are to day rapidly converting into lumber. Another large part has been cultivated, worn out, gullied and permitted to grow up in pines and other forest growth. A goodly part of the area now under cultivation is worn and tired from continuous culture of *one* crop.

The lands now used for pasture are those which have been abandoned as too poor for profitable culture. Can grasses be grown on such lands in quality and quantity for the support of a profitable live stock industry? An answer will be found later on.

#### CROPS.

Will these soils produce crops which can be profitably utilized in the growing and fattening of live stock? Let us see. To supply the demands of animal nutrition there must be in the food albuminoids, carbohydrates and fat. These ingredients must be present in certain definite proportions to meet the requirements of the animals fed. A growing animal, a milk cow, a beef, a working animal, or an animal at maintenance, each requires a different combination. Albuminoids and fats are comparatively scarce and commercially high, while carbohydrates are abundant and cheap. To grow and fatten cattle successfully upon any soil resolves itself into the successful and economical production of albuminoids. Can the South do this? Abundantly, as will presently be shown.

#### GRASSES.

Grasses are rich in carbohydrates, but comparatively poor in albuminoids and fats. Some grasses, of course, are superior to others, but all are inferior when used alone for producing maximum results. Supplemented with concentrates rich in the other ingredients, they will give results eminently satisfactory. The South is peculiarly fortunate in the abundance and quality of the uncultivated grasses. Bermuda (*Cynodon dactylon*), called wire grass in Virginia and Maryland, thrives everywhere, and will perhaps sustain more stock to the acre than any known cultivated or uncultivated variety. Crab grass (*Panicum sanguinale*) comes up in summer on

all cultivated lands, giving good grazing and frequently affording excellent hay.

The numerous varieties of Paspalums, known under the names of "Bull grass," "Gazen," "Wire grass," "Louisiana grass," "Carpet grass," etc., found on nearly all the damp soils of the South, furnish excellent grazing and, at rare intervals, hay. One variety (*Paspalum dilatatum*) remains green all the winter in the extreme South, furnishing a good winter pasture. Resene (*Bromus Schraderi*) and Italian Rye (*Lolium italicum*) can be sown anywhere in the South, in early fall, and on good land will afford excellent grazing throughout the winter. If permitted to seed before harvesting, the former will readily reseed itself, coming up the next fall. Blue grass (*Poa pratensis*) is grown extensively in the limestone valleys above mentioned. Other grasses, *s. g.*, Orchard (*Dactylis glomerata*), Fescue (*F. pratensis*), Timothy (*Phleum pratense*), etc., may be and are grown successfully in some parts of the South. It should be remembered, too, that the large grasses, wheats, oats, barley and rye will furnish excellent pasturage throughout the winter, if sown early.

But three points are worthy of note in connection with grass growing.

First. They require an abundance of moisture, and therefore thrive best upon clay soils, whose texture permits of large water carrying capacity.

Second. Nitrogen is the predominant ingredient, and therefore grasses will not grow upon soils deficient in this element. Poor lands must be made rich to grow grasses successfully.

Third. While requiring a great deal of nitrogen for their growth, all of which must be supplied by the soil, neither the green grass nor the matured hay contains enough of this ingredient to meet the full demands of a milch cow or beef steer. The example set us by our English cousins of scattering oil cake (rich in nitrogen) over the pastures in summer is worthy of imitation. Over one half, perhaps three fourths of the cottonseed meal of the South is exported for such purposes. Grass fed cattle are never properly fattened and never bring the highest prices.

#### LEGUMES.

The South is pre-eminently fortunate in being able to grow a great variety of leguminous crops of decided excellence and of large yields. These crops, unlike the grasses, improve the soil on which they grow. They are nitrogen gatherers from the atmosphere, and no better method of recuperating worn soils is known than the growing of leguminous crops, feeding them judiciously to stock and returning carefully the manure.

The cow pea (*Vigna catiang*) among leguminous crops is in the South, like the Bermuda among grasses,

"*Princeps facilis*." Numerous varieties and adaptability to all kinds of soils, high quality of the food and great palatability, all combine to make it the "*sine qua non*" of successful Southern agriculture. The Soja bean (*Glycine hispida*), a great success in the Atlantic States; the Peanut (*Arachis hypogea*), especially the Spanish variety, now used so largely as a hay crop upon the sandy lands of the extreme South; *Lespedeza striata*, found growing wild most everywhere, but cultivated with great success upon the bluff lands of the Mississippi River; Velvet Beans (*Mucuna utilis*), that wonderful nitrogen gatherer, recently brought into field culture, but rapidly spreading and worthy of extensive trial, on account of its adaptability to all kinds of soils, and the large quantity of nutritious food which it furnishes, growing continuously from spring until frost; all are valuable summer annuals, and will, if properly harvested and cured, furnish an abundance of nitrogen in palatable and digestible form for the growing and fattening of live stock. Nor are these summer annuals the only leguminous crops we can grow. By seeding in the fall excellent crops of Red (*Trifolium pratense*) and Crimson (*Trifolium incarnatum*) clover and Alfalfa (*Medicago sativa*) may be obtained upon good soil. Seeding these in small grain has not been successful at all in the extreme South, and it is of doubtful expediency to sow them anywhere together. Hairy Vetch (*Vicia villosa*) sown with turf oats early in the fall, afford excellent winter and spring pastures, and will give a cutting of superior hay, valuable on account of the balanced ration of the mixture. Alfalfa is the prince of all leguminous crops. Making the land rich by abundant use of stable manure; following a crop of cow peas (sown broadcast to smother the native grasses and weeds), which has been removed, sowing 20 lbs. to the acre of seed, and inoculating the soil if necessary, Alfalfa can be made to grow upon any well drained soil in the South.

By cutting when just beginning to bloom and removing the crop when out to prevent killing buds on the root, the crop will last for several years, giving from three to eight cuttings per year. Well cured Alfalfa hay is extremely rich in albuminoids and very palatable to all animals.

#### FORAGE CROPS.

Besides grasses and legumes, other forage crops of great value can be grown. Kaffir corn, Mello maize, Dhoura, African millet, Jerusalem corn, Egyptian wheat, all belonging to the non-saccharine sorghums, thrive everywhere over the South. The saccharine sorghums are preferred, however, by animals. Early Amber, Orange, Link's Hybrid, Colman, Collier, Honduras, are varieties varying in time of maturity, yield per acre and sugar content. By planting a selection

of the above, green fodder may be had throughout the summer. Two crops, and in the extreme South, three crops may be cut during the season from one planting. Teosinte (*Euchloea luxurians*) and Pearl millet (*Pennisetum spicatum*) are also cultivated as soiling crops. All of the above, when cured into hay should be shredded before fed. But the greatest forage crop is our maize or Indian corn. At present, through much of the South, only the ears and blades are utilized for feed. Experiments have shown that the stalks have a feeding value of at least 40 per cent. of the entire plant. These stalks with adherent fodder and shucks when properly cured and shredded, have a value but little inferior to Timothy hay. Every twenty or thirty bushels of corn will yield a ton of shredded fodder. How many thousands, yea millions, of cattle could be wintered upon the stalks now annually left in the field, and in many instances burnt to get rid of them? Pulling fodder is expensive, is injurious to the growing crop, and condemned by all the agricultural leaders of modern thought, and yet the custom continues.

It is useless to speak of silos and ensilage until the value of stalks as food is appreciated and utilized. Both will come when stock raising becomes a practical money making business throughout the South.

It should be mentioned here that rape (*Brassica napus*) grown for winter pasture, especially for sheep and hogs, has been eminently successful wherever tried in the South.

In the extreme South, Cassava (*Manihot aipi*), especially upon sandy lands, is grown profitably and has proven a good stock food.

Sweet potatoes, mangel-wurtzels, turnips, beets, artichokes, chufas, etc., can be grown successfully everywhere, and when properly compounded make excellent feeds. The above crops, supplemented with the grain and straw of wheat, oats, barley, rye and rice; with the highly nitrogenous cotton seed meal, not a pound of which should leave the South, and all should first be fed before using as manure, not to speak of the wheat bran and shorts, rice polish and bran and the centrifugal molasses of the lower gulf States, constitute nearly the entire catalogue of crops now used throughout the world for stock growing.

There is, therefore, no want of variety, no need of importation of any crops necessary to grow any kind of stock.

#### WATER.

Nowhere on earth is there such an abundance of running water as in the Southern States. The Appalachian chain above referred to, precipitates its rainfall on the East into the Atlantic Ocean, and on the West and South into the Gulf of Mexico, through many streams. Springs abound in many sections, and creeks and brooks permeate nearly every farm. In

default of running streams, water from sipe or artesian wells may be had, and at a price within the reach of all. The water factor for stock raising in the South may be pronounced almost perfect. The three natural conditions of soil, crops and water, may therefore be pronounced extremely favorable to stock growing.

#### WHAT ARE THE OTHER FACTORS?

They may be embraced under what is often called the "personal equation," and involve a knowledge how to do it. It rests largely with the individual. Stock raising is to day a highly complicated science. It has been said that "it requires more brains to successfully and economically feed a pig, than to be a Supreme Court Judge." If time permitted a discussion of all the subjects required to be known in the successful feeding of a pig, I think the truth of the remark could be demonstrated. But the personal equation is the largest factor in stock raising. He must select and improve his soil. He must select such crops as can be grown cheaply and abundantly, and which will at the same time give, when properly combined, a ration suitable for the animals on hand. He must select the breeds of animals best suited to his aims and purposes, and from these breeds select and breed individuals of high excellence. He must study the value of feeds and how to compound them to accomplish largest results in the shortest time. He must buy in the cheapest, and sell always in the highest market. In short, he must be a student of all the sciences which underlie agriculture and familiar with the best practices of other people. As Governor Brown, of Georgia, used to say "he must also be a man of good Judgment." Can the South go at once into stock raising? Yes, but slowly; learn first how it is done elsewhere, begin with the advanced practices of others, and don't rely upon your present knowledge. Neither your soil, your stock, nor yourself in the present condition can compete successfully with those who have had years of experience—years of improvement.

The scrub animals of the South can be improved by crossing upon them thoroughbred males of improved breeds, but the progression will be slow, and you must not be disappointed at the receipts of sales of your first crosses. The fine beeves and hogs which fetch six and eight cents in the Chicago and Toronto markets, are the results of many years breeding and feeding.

The writer has, during the past summer, spent some time studying the methods of stock raising prevailing in Ontario, and in the West, Illinois and Iowa. Entirely different methods prevail in these sections. In Ontario, the soiling system is nearly altogether practiced. Canada peas, clovers, roots, etc., with corn only for ensilage purposes, are the main crops

grown. These are raised upon small areas made intensely fertile, and when harvested are fed to the stock. It would be difficult to find finer, larger and better stock than that exhibited at the Canadian Exposition at Toronto last summer.

In Iowa and Illinois, the stock run on blue grass pastures, and are fattened mainly with corn. Oats and oil cake are used by some, but the great majority feed only corn. In visiting Mr. Kerrick's fine Aberdeen Angus Stock Farm, near Bloomington, Ill., we found him feeding for the great stock shows of Chicago and Pittsburg. The animals were fat, and would be a revelation and an object lesson to those accustomed to grass-fed animals. He was feeding the following daily to each car load (15 head): 7 bushels corn, 1 bushel oats, 30 lbs. bran, 22 lbs. oil meal. They averaged about 1,600 lbs. a piece. Besides the above, they had the run of a fine blue grass pasture, and timothy hay *ad libitum*. This feed, costing 30 cents per head per day, was giving the finishing touches to animals already too fat to locomote easily. Extravagant, you may say; yes, but he took the prize last year at Chicago, and got 15½ cents per pound for his car load of fat heaves.

Another feeder told us that it required fifty bushels of corn and its accompanying stover, to put 500 lbs. of increase in six months upon well selected yearling steers. He fed whole corn, and therefore carried one pig to each steer, which weighed, at the end of six months, 250 lbs. These men have well selected animals from highly improved breeds of beef cattle, and feed all these animals will eat, and prepare them for market at two years old weighing 1,500 lbs. or more.

Stock raising will pay in the South when highly improved breeds are introduced, and these are pushed from birth to block with all they will eat of a properly compounded ration, grown upon improved lands and in large quantities. Whether the animals shall gather the crop, or whether the crop shall be harvested and fed to the stock, and the manure saved and returned to the soil, is a question to be decided by the farmer. I believe, ultimately, the latter plan will be universally practiced, since it is susceptible of demonstration that a good acre of land when properly cultivated will produce crops sufficient to feed at least two head of cattle and sometimes more, whilst it is very rare to find a pasture that will carry throughout the summer an animal on two acres.

Soiling is practiced almost exclusively in Canada, and is a great success, while in the West pastures are mainly relied on, only corn and hay being harvested. To the young man with moderate capital just starting into stock raising in the South, there is a decidedly good prospect. He should select first the breeds best suited to his purpose. He should grow such crops as

will furnish him with an abundance of albuminoids. He should improve as rapidly as possible his lands, and the growing of leguminous crops will accomplish this, as well as furnish albuminoids for his stock. He should study economy in producing his crops, in compounding them to suit the requirements of his animal, and in providing for the physical wants of the animal in such a manner as to preclude extra feed; or, to speak plainly, he should protect them from the heat of the sun in summer and the cold of the winter. Of course, he should study the nature and dispositions of his animals, as well as the local diseases that might attack them.

This suggests the prevalence of Texas fever in the South, and the embargo laid upon Southern cattle going to the Northern States, except during the months of January and February. The prevalence of this disease has practically prohibited the importation of Northern cattle in the past. Now, however, the Experiment Stations of each State are inoculating all improved cattle at or before importation, giving them a mild case of the fever and curing them before putting them on the pastures with our home-raised cattle. Thus the cattle are rendered immune. It is now well known that the Cattle Tick is the vehicle by which this disease is propagated, and, even after the inoculation, these cattle should be kept free from ticks, if possible.

It may also be remarked that our native cattle suffer intensely from a heavy infestation of ticks, and should be relieved of them.

Again, flies in certain sections, particularly the horn fly, are very oppressive to cattle, and some emulsion should be used periodically to repel them.

Sheep should be imported from the North with great care. Stomach worms, particularly the ones causing "knotty guts," have been introduced into many localities in the South, and have permanently infected the pastures. These worms are common in the North, and every importer of improved sheep in the South should have for the animals purchased a guarantee of freedom from these deadly parasites.

I have said nothing of stock-raising as an adjunct to cotton farming. When the cotton planter permanently adopts a rational system of rotation, involving say, a three field system, viz., 1st, fall oats, followed by cow-peas; 2nd, cotton; 3rd, corn and cow peas, besides a permanent Bermuda pasture, then will stock-raising become a necessity to him, to consume the increased supply of corn, pea vine hay, and oats, which the fertility of the soil, produced by the rotation, will give. Then can the full value of cotton seed be obtained by converting it, or its meal, in conjunction with his other crops, into first-class beef and mutton.

The South can grow live stock profitably, and the younger farmers are beginning to demonstrate it.

W. C. STUBBS, Director.  
Experiment Station, Baton Rouge, La.

## DAIRYING IN THE SOUTH.

*Editor Southern Planter :*

The branch of dairying which offers the most immediate and surest profit, in the Southern States, is undoubtedly that of producing milk for the supply of nearby cities and towns. Although almost every locality has some sort of a milk supply already, the business is, as a rule, very unsystematically and insufficiently done. There are in the South hundreds of places, if not thousands, where the supply is unsatisfactory in quality and uncertain and irregular in quantity. The whole service is susceptible of very great improvement and it is morally certain that a rich reward awaits the man or men who will intelligently and energetically occupy this field and really satisfy the wants of the community.

The greatest profit will accrue to those who go at once to the top and aim to secure the cream of the trade by adopting the most approved methods and offering consumers, at fair prices, better milk than they have previously been able to procure, uniform in its high quality, safe because pure, delivered in attractive form and in condition to ensure good keeping properties. The large cities and towns offer the best opportunities, the very best being towns of industrial activity, which give promise of healthy growth and the steady increase of a population obliged to buy its food supply and with money to pay for it. A man who will locate within easy reach of such a town and make market milk, prepare it and sell it, according to the best of modern methods, is about as sure of success as in any line of agricultural effort anywhere in this country.

There are besides, many places both large and small, where by very moderate effort and without any radical change of system, the local milk supply can be vastly improved and consumption greatly increased, by simply making this business a specialty, offering good, clean milk, regularly and well delivered.

It is essential to the success of the market milk business that it be followed as a specialty. It is not necessary that milk be the only product of the farm for sale, but it should be the primary consideration, the one money crop depended upon. Nothing else should be undertaken, or allowed, on the same farm, which interferes with the main object of milk production.

Secondary considerations should be collateral or related, and in harmony—such as rearing and selling pure bred cattle. On large market milk farms, pigs and poultry fit in very well. Orchardng can often be conducted so as to be a satisfactory supplement, but small fruits and market gardening cannot usually be annexed to advantage.

Much depends upon the judicious selection of the

farm for this business. In many cases it is possible to do a good wholesale business, producing milk to be sent by wagon or by rail and sold to a dealer in the town who finds the consumers for it. But the greater profit unquestionably attends the delivery to consumers direct from the producing farm. "Running a milk route," is quite a different thing from producing milk for sale, and if added to the latter, it adds greatly to the labor, responsibility and risk. For the retail trade a location within easy access of the market town is highly important and so is the matter of the intervening highway. Over the main road to the town, one or more farm vehicles must pass at least twice every day in the year. Here the good road is of the greatest consequence to the farmer; if it be a bad road, the lost time of men and teams, and the extra wear and tear of animals, vehicles and harness, although difficult to measure in money, are sure to be a heavier tax than the traffic will bear. Good grass land is a decided advantage, unless the land is too valuable. But upon high priced acres little pasturage can be afforded and the solling system becomes an economy and tends to constantly increasing products of land and cattle. In many parts of the South, where long summer droughts are usual, pasturage must be supplemented or entirely replaced by a well arranged succession of forage crops to be fed green to cows in the stable.

Buildings upon a market milk farm, which are well suited to the work, can be provided easily and without great expense. Big barns and basement stables are no longer approved. The cow-house should be a simple building, little more than a shelter in most of the Southern States, roomy, airy and light, with no manure pit under (or near) the animals and no storage above. In many places there can be no floor as good for the cows to stand upon as the earth, properly drained, shaped and packed. Forage can be stacked or stored under other roofs but not too distant. The detailed arrangements for fastening the animals, feeding and watering, bedding, cleaning and removing manure, may well be studied and carefully planned, with a view to the greatest economy of labor consistent with the comfort of the herd. An abundant supply of the purest water, under convenient control, is an essential adjunct to any good dairy farm. A special room, or better, a special building, must be provided for handling the milk, straining, cooling, preparing for market and such holding over as may be necessary. Such a dairy or milk-house need not be an expensive structure but it should be properly located, well built and adapted to its purpose. If provisions are desired for pasteurizing, for mechanical separating for a cream trade, or any such specialty, additional accommodations, fixtures and appliances will be correspondingly required.

Cattle for the production of market milk must be carefully selected and well managed. Pure bred cows or those which are commonly called "registered," are not to be recommended in most cases, although some of the largest and most successful milk-making farms in the country, have herds of exclusively pure bred, registered cattle, of one breed or another. Good blood is, however, true economy. Few dairy herds of mongrel, mixed or "scrub" cows are profitable in the long run, however cheap at the start. The cows must be adapted to their purpose, those chosen because well bred, of races and families of proved dairy excellence, are the ones which will pay the best. Every animal should be the offspring of a pure-bred sire, himself a fine individual and the son of a fine cow. Under such conditions, high grade cows are often quite as good milk producers as those pure bred. Some milk making farmers find it best suited to their conditions to buy all their cows, selling off those which become unprofitable as milkers and purchasing to fill their places. This is risky business. As a rule, people do not sell their best cows and it requires uncommon judgment to select good and persistent milkers. There is always danger of introducing disease by bringing in strange cows and perhaps thereby destroying the whole herd. Besides, there is a vast deal of satisfaction to the stock owner in breeding, rearing his own animals and striving to make every generation better than their dams. A dairy farmer is not doing justice to himself or his business, unless there is a constant improvement, sure although slow, in the product of his herd as well as in the product of his land.

The writer has no sympathy with market milk farmers who want to keep big cows and feed so as to be making flesh at the same time as milk and then sell to the butcher when nearly dry. Such men are really deceiving themselves and cheating their own pockets, as has been abundantly proved—very rare cases excepted. One might as well buy race horses by the ton, so as to sell them well for draft purposes at the end of the racing season. The truly profitable cow for making milk, is the dairy cow—the result of generations of judicious breeding with a special purpose in view. Breeding and the fixed dairy habit are therefore of the utmost importance in making up a dairy herd. Then the surest and best way to maintain and improve it, is to keep a first class bull, always pure bred, registered, and raise the heifer calves of the best cows. With such a plan, it is a very satisfactory addition to keep a few, perhaps only one or two, registered females of the breed chosen, so as to have some pure bred calves every year, to rear or to sell.

All over the country there is marked progress in the demand by consumers for milk of better quality or richer. Those who are making the best milk and

finding appreciative buyers for it, are making the most money at the business. It is hoped that the time is near when in every market, buyers will discriminate and be willing to pay for milk according to its quality, as is done for other foods. Enterprising dairy farmers are alive to this prospect and weeding out and grading up their herds so as to produce better milk, and more of it. It is now so easy to procure really good and profitable dairy cows, that it is truly astonishing that owners are still willing to feed and milk so many which do not pay for their keeping. The only sensible and practicable course is to closely observe and study every cow, keep an accurate account of her product as to quantity and quality and promptly dispose of any animal which fails to come up to the standard fixed by the owner.

The cow is of paramount consequence in the business of making market milk. The dairyman should determine the character or quality of milk he proposes to produce and sell, and the minimum quantity of milk of this kind which he will demand from every cow he owns, during the 365 days in every year which he is obliged to feed and care for her. The known yearly product is the true measure of the value of a cow, although cost of keeping must also be considered. In selecting cows to reach the required standard, the right breeding and "the dairy habit" must be sought. A naturally poor cow can never be brought to a profitable yield by any course of feeding or care. The very latest book upon this general subject, by one of the highest authorities\* on feeding and animal nutrition, contains the following: "The weight of testimony bears out the statement that the quality of milk cannot be changed at will by the farmer but is largely determined by causes not under his control, such as breed and individuality, although feeding and treatment, especially the latter, have more or less influence upon the character of the milk secreted. \* \* \* The verdict (of many experiments carefully conducted for periods long and short) has been that no consistent relation appears to exist between the quantity or character of the ration and the composition of the milk. \* \* \* A popular notion has prevailed that it is possible to 'feed fats into milk.' \* \* As a matter of fact, after years of investigation and intelligent observation, we are not able to affirm that the proportion of fat to other milk solids is in any way related to the feeding of the cow."

The treatment of the cow is mentioned above as influencing her product. Nowhere is cheap and inefficient "help," more expensive and disastrous. A good cow deserves and gives a good return for proper care and treatment. On the other hand, neglect and abuse, and even rough and indifferent conduct, have imme-

\* The Feeding of Animals, by Director W. H. Jordan.

diate unfavorable effects, costly to the owner. For profitable results the dairyman must secure fairly intelligent helpers, steady, regular and reliable, clean in their persons and habits, quiet and kind in their treatment of animals. Discriminating feeders and competent, efficient milkers (both comparatively scarce) will earn extra wages and prove by far the cheapest at rates above the average.

It is impossible to here discuss the many details incident to the successful conduct of the market milk business. But if the conditions indicated above are observed in the main, the market favorable, the farm well located, the buildings suitable, the cows adapted to their work, properly fed and cared for by efficient employees, and if, above all, the owner is an intelligent observer, interested and attentive in his work, enterprising and ambitious, the business will surely succeed. All necessary instructions as to the work can be summed up in very few words. For the cows, care and cleanliness in every respect and all the time. For the milk, from cow to consumer, in every detail and without a break, cleanliness and cold.

It may be well to add, although hardly necessary, that milk farming should be undertaken only by those willing to work and work hard, with brains as well as hands. It requires persistent, close application, with constant thought and study, with no "let up" during the year, except as the good manager is able to arrange matters so as to move along without him, for brief periods. On the other hand, it is a high order of farming, intellectually stimulating and self satisfying, and to one who does it well, it pays handsomely for the time and brains applied.

HENRY E. ALVORD,

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## FEEDING BEEF CATTLE IN THE MIDDLE SOUTH.

*Editor Southern Planter :*

It must be admitted that the winter feeding of beef cattle on an extensive scale in the Middle South is comparatively a new industry, and so our people have to learn much about a business which requires the closest attention in order to make it a success. Being a new industry to the major portion of our farmers, and having often been engaged in under great disadvantages by those who have not had sufficient training in the handling of stock, it is not surprising that the results have often been disappointing. Remembering the handicap which the inferior nature of our stock places on the farmer and the fact that he has not studied carefully the utility and the specific effects of the various foodstuffs which are at his command, it is not surprising that the first attempts at fattening cat-

tle should so often have proved disheartening. Our farmers should not be deceived by these results, for in every other section the first attempts to establish the stock feeding business have, as a rule, been unsatisfactory, and it is only by perseverance and attaining the experience which practice alone supplies that our farmers can hope to make the most out of the splendid environment which nature has provided in the Middle South for the development of stock husbandry.

### NEED OF IMPROVED STOCK.

The following reference to the slaughter tests of steers fed at the Tennessee Experiment Station shows how essential is the need of improving our beef cattle. It appears from these results that the animals only dressed about 55½ per cent. of valuable meat to the carcass, whereas animals of better breeding and quality should ordinarily dress between 62 and 65 per cent., and in the highest quality of stock they have been known to dress as high as 69 and 70 per cent. It thus appears that the native cattle of the Middle South are about 10 per cent. below the standard for dressed carcasses. Examining the weights of two and a half and three year-old steers, it is seen that they average on foot, when fed four to five months, about 950 to 1,100 pounds; whereas, cattle possessed of high quality and requiring no more food ordinarily, make in the same time between 1,300 and 1,500 pounds, so that our native cattle are about 33 per cent. below the standard of weight for a given age. It is not at all necessary for the cattle to be pure bred in order to attain the standard suggested. They will do this if they are high class grades derived from the crossing of a first-class beef sire on our native stock.

While it is true that some of the best of our native cattle will make practically the same gain per day as cattle of better blood and breeding, they do not make the same disposal of the food as those of better quality. The slaughter tests referred to showed that a large amount of intestinal and loose fat was found in the carcasses of the experimental animals; the animals not having been bred to utilize the food by building it into the tissues of the body. The meat was consequently lean and fibrous, and as the fat was not well intermixed with the bundles of muscular fibres, it was neither so tender, juicy nor valuable as the meat from animals of better quality. Animals that have been bred exclusively for beef for a long time have been trained to build the fat into the tissues of the body, and so there is not so much waste when they are slaughtered and the quality of the meat is superior.

Finally, animals of quality, the result of judicious crossing on our native stocks, will have the low, square and blocky conformation of the beef sire. A good beef animal should be especially broad at the loin, long

in the hind quarter, deep through the flank, and full through the twist down to the hock. The frame should be well balanced—that is, the fore and hind quarters equally developed, the barrel short and compact, and the back broad, level and well covered. In the type under discussion, the hind quarter is highly developed, and the most valuable meat being situated there, a much better sale price is obtained than for native cattle which are generally coarse in the fore quarter and light and cathammed in the hind quarter. Thus, if a native animal would show a profit of \$3.00 to \$5.00, one of the proper quality would show a profit of from \$12.00 to \$25.00, because a larger per cent. of valuable meat would be obtained in the regions from which the choicest cuts are derived.

#### IMPROVED SIRES A NECESSITY.

From the foregoing it appears that the first requisite of stock husbandry in the Middle South is the introduction of improved sires that will give uniformity of type and color, impart quality and render our stock capable of taking a high finish. It costs no more to feed this class of cattle at treble the profit now obtained. A first-class beef sire can be purchased at the present time for from \$300.00 to \$500.00. Cheap sires are undesirable at any price, and in fact their use has been a curse to stockmen of the Middle South. If one man in a community is not able to purchase a sire, there is no legitimate reason why several farmers should not club together and purchase one on the cooperative plan. It is as essential that a community of interest be established on the farm as in the case of the most powerful trusts. The principle of co-operation has never developed on the American farm as it should, and its latent possibilities, as indicated by the following example, show that it is an important matter and one worthy of earnest consideration. A good mature sire should get 100 calves in a season, which at from four to six months old will sell at the present time for \$25 and up each. One hundred calves gotten by native sires in which Jersey blood predominates would not be worth more than \$5.00 each, but we will say \$10.00, at the age suggested. Taking out the cost of the sire, which we will say is \$500.00, we have on the one hand 100 calves worth \$2,000, and on the other hand 100 calves worth \$1,000, or a net profit from the use of an improved sire of \$1,000. As the sire will be useful for several years if properly cared for, the profit on a \$500.00 investment for a sire to a community interested in beef production is simply enormous. The example is not exaggerated, as in many sections where practical results have been obtained, they are quite as gratifying as those here suggested. Under the circumstances the farmer cannot afford to be without an improved sire. It may be urged that it is not safe to

introduce improved sires into the South owing to the cattle tick. Breeding stock can now be immunized at such slight cost and with so little difficulty that this objection no longer holds.

#### WHY NOT PRODUCE BETTER STOCK AND FEED THEM AT HOME?

The great need of the South to-day is vegetable matter to restore her wornout and washed hillsides to something like their virgin fertility. The use of abundant supplies of barn-yard manure made possible through the medium of stock husbandry, affords the most rapid and economical solution of this difficult problem. Stock husbandry is destined to be the salvation of the Southern farmer. At the present time, most of the stock grown in the Middle South are sold as stockers to be fed in the States further north, as Maryland and Pennsylvania. While these cattle are inferior, as already indicated, they have sufficient merit to make them highly appreciated by the feeders of the States mentioned. They prefer to get their feeders from East Tennessee and Virginia. These farmers further north have no greater variety of foods for the production of beef than our farmers possess. Then why not feed these cattle ourselves and utilize our cotton seed products to the best advantage and save the enormous fertilizer bills that are accumulating from year to year?

#### TESTS WITH NATIVE STOCK AT THE TENNESSEE STATION.

In experiments conducted for two years at the Tennessee Station with native stock, it has been possible to make from \$6 to \$8 profit per head for a feeding period of four months, depending on the nature of the ration consumed. If it is possible, under good management, with the indigenous food-stuffs of the Middle South to get good results, how much greater would the returns be with a better class of stock? If it is possible to make this profit with our native stock, why should we not feed these cattle at home? The farmer says there is no money in it, but the figures are against him. There seems to be an idea in the minds of many farmers that unless they can make a good deal more than \$6 to \$8 per head, that it will not pay them to feed cattle. This is all a mistake. By feeding they would utilize a vast amount of roughness that now goes to waste. They would save their fertilizer bills, which now amount to several millions of dollars, and they would manufacture their raw products on the farm and save the expense of marketing them. These items, taken together, figure up a very considerable profit, and if the farmer could get absolutely nothing from his feeding but the manure, it would pay him well to feed for this alone.

#### UTILIZE THE CORN STOVER.

It has been said that cheap roughness and concentrates were not sufficiently available to make beef feeding profitable in the South. Corn stover will yield on an average one and a half tons of feed per acre. This can be shredded and put in a very palatable form at a cost of about \$3 to \$3.50 per ton. It is equal to timothy hay in feeding for beef, and if the shredded stover were cut and utilized instead of being allowed to decay and waste in the fields, the saving on this item alone would aggregate several million dollars. The feeding value of shredded stover is not appreciated. The farmer believes that the nutriment of the corn plant is chiefly in the grain and in the leaves; whereas, about 40 per cent. is in the stalk, including the butt. The idea that a fair quality of hay can be made from shredded stover does not find favor in the minds of the average farmer, because he has not ascertained its value from practical experience; and having timothy in mind as a plant for hay, he falsely conceives that nothing else can be used as a substitute for it. The idea that one hay only exists is a mistake, and an old prejudice that should be lived down.

#### ENSILAGE CAN BE CHEAPLY MADE.

Ensilage can be made very cheaply in the South. On areas of land approximating 10 to 20 acres, the cost need not exceed \$1.25 to \$1.50 a ton, where 10 tons can be obtained to the acre. This can be done on average land. The ensilage made in the South is superior to that made in the North by reason of the fact that cow-peas can be combined with corn and also with sorghum. Owing to the length of the summer season, the ensilage crop can be allowed to more nearly mature and thus form a highly palatable and nutritious food. The failures in feeding ensilage to cattle can only be attributed to ignorance, as the balance of proof is against those who have failed. Watery ensilage will sour and become unsuitable for food, but this is not the fault of the ensilage, but the fault of the man who put it up before it was ready to go in the silo. If the ensilage crop is allowed to become too old, it will dry out and fire fang, and the ensilage will become mouldy, but this again is the fault of the man and not the product. One of the chief causes of so many failures with ensilage in the South is due to poorly constructed silos.

#### ADVANTAGES POSSESSED BY THE SOUTHERN FARMER

The Southern farmer has some manifest advantages in the production of cheap grain and cheap roughness for feeding cattle. It has been demonstrated at the Tennessee Station that two crops a year can be grown on average land. For example, a ton and a half of oat and vetch hay followed by a crop of peas, yielding

two and a half tons of hay of the highest feeding value, has been obtained from an acre of land in a single season. Forty bushels of rye have been threshed to the acre and ten tons of sorghum and peas harvested for ensilage. In an ordinary season, it is possible to obtain as high as 15 to 18 tons of ensilage made from a legume and a cereal, thus furnishing an enormous amount of highly nutritious food. As corn thrives well in the South, and the acreage can be materially increased, there is no reason why an abundance of grain should not be had. The cheapest gains on beef reported to date have been made on a mixture of ensilage, corn and cotton-seed meal with pea-vine hay or hulls as roughness.

#### COTTON SEED PRODUCTS.

It is rather remarkable that cotton seed products are not more utilized as cattle food in the Middle South. A pound of cotton-seed meal is equal to 1.50 to 1.75 pounds of corn, while cotton seed equals corn, pound for pound, in feeding for beef. As a matter of fact, the Middle South exports about one half of the cotton-seed meal it produces at an average price of \$17 per ton. It is worth \$21 per ton for fertilizer and \$35 for feeding to beef cattle, as compared with 60 cent corn. Instead of using barn-yard manure, the farmers of eight States in the Middle South are spending \$20,000,000 a year for fertilizer, and are probably feeding 100,000 head of cattle, where they could as easily feed on corn and cotton products about 1,000,000 head. It is said that corn is too high to feed to beef cattle in the South, but it is not essential to feed corn. Cotton-seed meal and pea-vine hay together with ensilage will produce beef very cheaply, and the combination furnishes both a highly nutritious and palatable ration. It has been suggested that pea hay has such a high market value that it is not possible to feed it profitably. This is rather a doubtful statement, as from two to three tons can be produced per acre at an annual cost of probably \$3 to \$5 a ton.

#### NEED OF MORE GRASS.

It is said that we need more grass before we can succeed in stock husbandry, but there is no reason why we should not have more grass. There are mixtures of grass well adapted to the soils of the Middle South that are not being utilized, and, where grass cannot be grown, it is easily possible to get two crops from the soil a year, one to be used for pasture and one for hay, or for the silo as deemed best. By improving our native stock, as already suggested, and by feeding these cattle at home, the Southern farmer can save his fertilizer bills. He can utilize his cotton and corn products to the best advantage, and he can make a handsome profit as well on feeding the cattle.

Surely this matter is worthy of more careful consid-

eration in the future than it has received in the past. At the present time, there is a great deal of agitation about the so called corn-stalk disease. While this disease is not well understood, it has been shown that where the corn is cut, shredded and fed, the trouble has never appeared. If this corn stover were utilized in this way, a much larger number of cattle could be maintained and the ground made to produce a higher revenue. Surely the time has come when the Southern farmer should give the question of stock husbandry his earnest and careful consideration.

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## DOES IT PAY TO GRIND GRAIN FOR HOGS?

Editor Southern Planter:

Some person may say it is easy to find out by trial, if not known already; but it is not quite so easy to decide the question as might be supposed. A careful experiment was made at the Iowa Station of feeding ten pigs, four months old, average weight when put up, 76.3 lbs. each. First fed on ear corn forty-five days, and the ten gained 515 lbs.—an average of 171 lbs. in every fifteen days, although the gain the first fifteen days was 219 lbs. and the next fifteen days but 140 lbs.

The same pigs were then fed fifteen days on soaked oats, and at the expiration of sixty days from the time the experiment was commenced, they were fed corn meal, and the gain for the first fifteen days was 198 lbs. and the next fifteen days 114 lbs., when the experiment ended. When fed on ear corn, the gain the first thirty days was 359 lbs. When fed on corn meal, the gain the first thirty days was 312 lbs.

This experiment would seem to settle the matter in favor of feeding the corn whole, but it must be remembered that animals fatten fastest when they are young, and will make more gain on the same amount of feed than older ones; also that hogs of any age, will fatten faster the first fifteen days than afterwards, as known to all observant feeders, and as this experiment shows. The pigs, when fed whole corn, gained 219 lbs. the first fifteen days, and the next fifteen days gained only 140 lbs. These same pigs when sixty days older, gained 198 lbs. in fifteen days.

The United States Commissioner of Agriculture remarks on the result of this experiment as follows: "It should be borne in mind, other things being equal, the greatest proportionate gain in weight is to be expected during the earliest period of feeding; also, that the younger the animal, the greater the gain in weight for each pound of food properly administered."

This experiment is often cited by those who, because it is less trouble to feed whole grain than ground, try to persuade themselves that it is more profitable. At the Maine Agricultural College, four Chester white hogs were experimented with from November 15th to January 15th, and it was found that the feeding value of corn meal was, weight for weight, 19 $\frac{1}{4}$  per cent. greater than whole corn.

In the Report of the Department of Agriculture for 1871, it is stated that an Iowa farmer fed twenty hogs, one year old, with the following result: Fed on whole corn, one bushel, made 10 lbs. of pork; fed on meal, ground fine, one bushel, made 13 $\frac{1}{2}$  lbs. of pork.

In the Report of the Department for 1870, it is stated that the result of many experiments made in feeding hogs by Joseph Sullivant, proved that corn ground into meal increases in value 33 per cent. over that fed in the ear.

S. H. Clay, of Kentucky, made experiments. Result as follows:

One bushel of dry corn made 5 lbs. 10 oz. of pork; one bushel of ground corn boiled, made at one trial, 14 lbs. 7 oz. of pork; at another trial, 16 lbs., and at another, nearly 18 lbs.

Mr. A. Sellie, a successful hog feeder at Megnon, Wis., says: "On account of rapid digestion, hogs cannot assimilate as large a proportion of the dry food or whole grain, and it should therefore be prepared in such a manner as to make the loss as small as possible. I would prefer all grain ground fine. Only for a change, I give it whole, but well soaked."

Prof. Henry says: "So far as we have gone at our Station, we saved 8 per cent. by grinding our corn; and when corn is worth twenty-five or thirty cents per bushel, that saving does not pay for the trouble of grinding. If the corn was worth fifty cents per bushel, it would pay for grinding." Millers in Pennsylvania charge 10 per cent. for grinding, but farmers can grind it for less than 8 per cent., and many of them do. Prof. Henry adds: "Hard corn often injures the hog's mouths, and they do not eat a whole ration. In that case, there must be as much as 25 or 30 per cent. of loss." Not only their mouths get sore, but their jaws get tired.

Dr. Lehman, of Saxony, Germany, analyzed the dung of hogs fed on whole grain, and found that 50 per cent. was undigested and had not been a particle of value to the animal, and says "that food should be reduced to a condition more or less fine before given to such animals."

At a meeting of the Swine Breeder Association of Illinois, it was the unanimous opinion that when the grinding can be cheaply done, it may be a source of profit.

C. D. Beeman, an Iowa feeder, says: "Three bushels of ground corn will make as much pork as four bushels fed whole."  
J. W. INGHAM.

### ABERDEEN-ANGUS ON TOP.

*Editor Southern Planter :*

I beg to call your attention to the following records in prizes and prices at the late stock show at Pittsburg. Five championship prizes were offered, and all were won by the Angus, except one, as follows: The car load championship was awarded to Chas. Escher on a load of Angus cattle in competition with Short-horns and Herefords. The load, averaging 1,550 lbs., was sold to the Pittsburg Provision Company for \$21.50 per 100 lbs.; the second prize going to the Herefords.

Individual Steers—To A. A. Armstrong, first on Angus; second, to Chas. Escher on Angus; third to A. D. Bassell, Angus Hereford cross. This last steer was raised in West Virginia, weighed 2,190 lbs., and was sold to J. W. Harrison, of Pittsburg, for \$2 per lb. Which sold him the Angus or the Hereford blood? Consult the prize-winning list.

Bulls—First, to H. O. Hudson, on Angus.

Car Lot of Yearlings—To Walker, on Herefords.

The Hotel Cup for the best individual steer not shown in any other class, to Escher's Red Angus.

It looks like poor policy to give so many premiums to the Angus cattle, but evidently it could not be helped.

An oddly bred bunch of little cattle was marketed in Chicago recently. The little things averaged 635 lbs., were eleven and one half months old, and were got by an Angus bull out of Jersey cows, and brought \$5 per cwt. They hailed from Glenville, Minn. It is related that they topped the day's selling at the weight.

The *Breeders' Gazette* gives the photographs of a car load of Angus cattle averaging 1,401 lbs. sold on the regular Chicago market on November 14th, by H. C. Hall, of Iowa, for \$7.25 per cwt.—the highest price of the year to that date. C. E. JONES.

*Fluvanna Co., Va.*

[What a lesson is conveyed to our farmers by the load of Angus Jersey calves. Had these calves been got by a Jersey or a scrub bull of the kind so largely kept by Southern farmers, it is not probable that at eleven months old they would have weighed more than 250 lbs. each at the outside, and would have been difficult to sell at even three cents a pound. The Angus blood in them overcame the Jersey tendency inherited from their dams and made them into beef animals, capable of gaining nearly 60 lbs. of weight per month from the time of their being calved to date of sale, or about 2 lbs. per day for every day they had lived. Who will dare to say that it will not pay to breed to a pure bred bull of the best beef type? Such a bull is cheap at almost any price.—Ed.]

### HEREFORDS AS BEEF CATTLE.

*Editor Southern Planter :*

I regret I have been too busy to prepare an article for your January issue. I received the appointment from Gov. Tyler of delegate to the International Live Stock Exposition, and have but recently returned from Chicago.

The *Breeders' Gazette* will give you a very good description of that greatest live stock show ever held, and I hope you will devote considerable space to same. I watch the growing interest in live stock in Virginia, and congratulate you on keeping so ably abreast of the times.

The Herefords are the champions over all breeds, winning the grand championship for best car-load of grades—15 head averaging 1,497 pounds—owned and fed by D. W. Black, Lyndon, Ohio. Bred by Mrs. Adair, Paloduro, Texas. Richard Walsh, Manager. Sold December 5th, by Charles D. Robinson (of Clay, Robinson & Co.), to Schwartzchild & Sulzberger at \$12 per 100 pounds.

The Herefords also won the grand championship over all breeds for best bullock, under the eye of the expert English judge, Mr. Peters, "Wood's Principal," bred by Geo. P. Henry, Goodenow, Ill. John Letham, Manager.

This steer weighed 1,645 pounds at 25 months old, and sold for \$50 per cwt.

The sale of 100 registered Herefords brought an average of over \$450.

I secured two cows, the equal of which I can safely say have never been seen in Virginia. They are Groves' Pretty Maid, 89613 for \$500. Calved March 21, 1898. Weight, 1700 pounds. Bred by Walter B. Waddell, Lexington, Mo. A granddaughter of Ancient Briton, 55749, the sweepstakes Hereford bull at the World's Fair, and in 1894 a winner at the Iowa, Nebraska, Wisconsin and Illinois State Fairs. This cow is bred to Hesiod 56th, 86487, a son of Hesiod 2nd, 40679, a sweepstakes winner and a son of Hesiod, 11975, rated among the very foremost of the great Hereford breed, bred by R. Turner, Pembridge, England.

Bright Face 2nd, 126998, for \$825. Calved April 9, 1898. Weight, 1550 pounds. Bred by T. Morris, Leominster, England. Owned and sold by F. A. Nave, Attica, Ind. Sired by Boxwood, 12,700, by Grove Wilton 2nd, 75816. Dam Bright Face, 126996, by Conquest 127,004. Bright Face 2nd is closely related to the great English prize winners, Lord Wilton, Sir Bartle Frere and Horace, and is bred to Protector, 117 878, one of the present recognized leaders of the breed.

These two cows have arrived safely, and are now installed as part of the Castalia herd.

*Albemarle Co., Va.*

MURRAY BOOCOCK.

Mention the *Planter* to your friends.

### THE DUAL PURPOSE COW AND HER MANAGEMENT.

Address delivered by THOMAS SHAW at the National Live Stock Convention, held at Chicago, December 3-6, 1901.

[Dual purpose means two purposes, hence a dual purpose cow is a cow kept for two purposes—that is to say, for giving milk and making beef. All cows are, in a sense, two purpose, for the block is the ultimate end of all dairy cows; but dairy cows are not dual in the sense that the kind of cows are of which this paper treats. The meat from a straight dairy cow is not an important factor, either in herself or in her progeny, but in the dual purpose cow it is so important a factor that it may in some instances, at least, be difficult to determine whether the milk production or the meat production of the cow is the more valuable.

Cows, as classified by the writer, are of three kinds—that is to say, the straight dairy, the straight beef, and the dual purpose. The straight dairy cow is kept for milk production only. Her place is in the dairy where no particular value is put upon the meat obtained from her or from her progeny. Because of this, the practice has become common among dairymen to knock in the head the calves produced, as soon as they are born, unless they are wanted to replenish the herd. Especially is this true of the progeny of grade females. The place for this cow is in dairies where the food is purchased, or largely so, and the milk sold, as then the necessity does not exist to maintain animals which will consume much food grown upon the farm that is not well suited to milk production. She may, however, in numerous instances be also kept with profit on the farm, where the food production is of a certain kind. The straight beef cow is kept solely for producing meat in herself and in her progeny. Only milk enough is wanted from her to feed her calf sufficiently. Note that word, sufficiently. Some beef cows do not give enough milk to raise their calves in good form, and when they do not, they ought to be discarded, however profitable they may be for meat, unless when the progeny may be wanted for certain lines of exhibiting. Some regard, therefore, must be had to milk production, even in the beef cow. Her place is on the range and on large pastoral farms, where land is not high priced, but it may be also on the arable farm where meat of a high quality is to be grown for special markets. The dual purpose cow is a mean between these extremes. She is a cow that will give a goodly supply of milk when she is alive, and that will fatten in good form and sell for a good price when she is sent to the shambles. She will also, when properly bred, produce calves that will grow up into animals that will make meat with more or less of profit, according to the times. Observe, it is not claimed for this cow that she will on an average give as much milk or pro-

duce as much butter as the straight dairy cow, nor is it claimed that she or her progeny will produce so high a type of beef as the straight beef cow, but, that when properly chosen and bred, her performance in both respects will be creditable and profitable. The place for this cow is on the arable farm which grows in good form a variety of foods, and where the farmer wants to turn these foods into both meat and milk.

The strong argument for this cow is, that on the arable farm, where she is kept, all the produce reared upon the farm may be profitably fed upon the same. For instance, much of the roughage that is unsuitable for feeding dairy cows to produce milk may be well adapted for growing young cattle that are intended for meat. Especially is this true where corn is a staple food product. The excess of carbohydrates in it for milk production is just what is wanted for finishing for beef. Where the cows on the arable farm suckle their own calves, the profits are doubtless much less than when the cows are milked, and the calves hand reared, unless when a very high quality of meat is to be produced. The surplus of skim milk thus obtained comes in nicely for feeding young swine. Hence it is, that dual purpose cows keep things in a happy equilibrium on the farm as no other cows can. It is this probably more than anything else that has caused the farmer to cling to this type of cow, in the face of no end of denunciation and ridicule.

The dual purpose breeds now found in the United States and Canada are: the Shorthorn, Polled Durham, Brown Swiss, Red Poll and Devon. The Shorthorn and Polled Durham are sometimes classed among the beef breeds, as in many instances they have been bred only for beef, but when bred for this dual quality they have given a satisfactory response. The Brown Swiss have for centuries responded satisfactorily to the dual requirement, except that they are a little too strong in the bone to meet the highest requirements of the block in best form. The Red Polls are the most distinctly dual in form and function of all the breeds named, as they, more than any other breed probably, have been kept from swinging, first, to beef production, and again to milk production. The little Devons, as bred in the Central West, have swung to beef rather than milk. From Ohio eastward the breeders of Devons have some fine Devon dairy herds, both in the pure and graded form, but so persistent has been the silence of the apparently self satisfied well-meaning men who breed them that it requires the most diligent search to find out where they are.

But it is in the graded form that the dual type is at present most numerously found. And in the grades of Shorthorns it would probably be correct to say that more of these cows are found than in the grades of all the other breeds named. This arises from the far

greater extent to which Shorthorns have been used as sires upon cows of mixed or native blood than the other breeds named. Notice, however, that the grade dual cow is more a creature of form as she exists at present than of certain blood elements possessed with any degree of cast-iron fixedness. She may have in her certain percentages of dairy blood and of any of the dairy breeds, providing these percentages are not so high that they will swing her away too far from the good size and the meat-making function that the dual cow ought to have.

Of all the breeds of straight dairy cattle in America, viz., the Holstein, Dutch Belted, Guernsey, Jersey, Ayrshire, French Canadian and Kerry, the Holstein comes the nearest to the requirements of the dual type. She has good size and great capacity to grow rapidly, but after the steers of this breed have got beyond the age of 15 or 16 months, there is so much of tendency to swing toward the dairy form that dealers have almost invariably discriminated in the price paid for the meat, a discrimination that has probably been too pronounced and severe.

But what is a dual purpose cow? How shall we know her when we see her? In answering this question, I quote from my book, "The Study of Breeds:" The more important indications, important perhaps, in the order named, are: 1. Medium to large size for the breed or grade; 2. Good length and depth in the coupling, especially in the females; 3. Good development of udder and milk veins; 4. Good constitution as indicated by good width through the heart; 5. Head and neck inclining to long and fine; and 6. Ribs of medium spring, open spaced and covered with a good handling skin. Contrasted with beef cattle, dual purpose cattle are: 1. In general outline less massive, not so even in their proportions and not so smooth; 2. In size they are about the same, but do not weigh quite so well; 3. They are a little longer in the head, neck, limbs and barrel; 4. They are not so wide at the withers, are a little less full in the breast, shoulders, hips and twist, and are not quite so rounded or close spaced in the ribs; and 5. The development of udder and milk veins is much more marked. Contrasted with dairy cattle, dual purpose cows are: 1. In general outline, much larger and heavier as a rule, the fore and hind quarters are more evenly balanced, the angular points are not so persistent, and the form is not so spare; 2. The withers are wider, the spinal column less prominent, and the back straighter; 3. The breast is more strongly developed, the spring of rib rounder, the hips and thighs heavier, and the bone somewhat larger; and 4. In general development of head, neck, body, udder and milk veins, the difference is not greatly marked.

The above is the type of cow that, through the per-

sistent advocacy of certain dairy writers has been stigmatized as "a myth, a delusion and a snare." They have denied her the right to live. For a time they succeeded so far in neutralizing the dual quality by the use of dairy sires by that section of the farmers who listened to their much fair speech that this magnificent type of animal was threatened with annihilation. It will take long years to undo the mischief. The advocates of annihilation as the highest end of the dual purpose cow were doubtless sincere in the line of advocacy which they thrust upon the farmers with a persistency worthy of a better cause, hence, charity bids us try and cover up their mistake lest the generations yet unborn point the finger at their want of good judgment from an evolving future. Some of those advocates were otherwise magnificent men. But this makes their mistake all the more unexplainable.

But there is another class of men who have decried the dual purpose cow who are not thus honest. They have, it is to be feared, deliberately seated themselves in the chair of willful misrepresentation. They are continually poring over records that give the average production of cows over a State or a portion of the same. They then look up the dairy performance of some crack dairy herds. They assume that all cows not included in such are dual purpose cows. They draw comparisons accordingly, which, to the undiscerning, appear exceedingly favorable to the straight dairy cow and as unfavorable to the dual purpose cow. Who constituted those wise ones the judges as to what is a dual purpose cow? Is it not true that many of those cows are scrub cows of the most scrubby type? They are neither one thing nor another. As a Scotchman would say: "They are nae good for naething." How different those no purpose cows are from the dual purpose cow as outlined above. Do not such comparisons savor strongly of deliberate misrepresentation, tricksterism of the Mollusk type, one-horse littleness of infinitesimal minuteness. Another class who deery the dual purpose cow are found in very different surroundings. They have crept into some of our Experiment Stations, and have instituted comparisons between the production of these no purpose cattle and the highest types of dairy cattle. Such comparisons are peculiarly harmful. If made innocently, what about the competency of the men who make them? If made intentionally, what about their honesty? But dual purpose truth, like liberty, cannot be laid away in the grave of oblivious forgetfulness. Neither grave stone nor armored soldier can prevent the final resurrection of either.

Those men should not forget that in making these experiments they are putting themselves on record for the ages, and that posterity will sit in judgment on their finds. Every conclusion they reach will be weighed in the balances of honest investigation, and the exact worth of each determined.

(To be Continued.)

## THE GREAT INTERNATIONAL STOCK SHOW AT CHICAGO.

We quote the following notes on the exhibits at this show from the *Breeder's Gazette*. The show brought together the grandest exhibits of live stock ever seen, either in this country or elsewhere, and was attended by the most complete success:

Last year it was the "blacks." This year the Herefords. In 1900 the Aberdeen Angus carried off both the individual and the ear lot championships at Chicago's Christmas show. Last week the "white-faces" did the same trick. Thus does the "whirligig of time" bring in its revenges. By December, 1902, the Short-horn contingent may have aroused their sleeping forces and administer a drubbing to their adversaries just to show that the g. o. b. is not fallen into desuetude in steer production.

It is highly significant of the vast change that has come over the Western cattle trade since the holding of the first fat-stock show to note that the champion car-load of fat bullocks were branded, dehorned steers produced upon a Texas ranch. From long horns to no horns; from thin flesh to rich carcasses. That epitomizes the situation. There is a dash of Short-horn blood back on the dam's side in these 1901 champions running straight to Goodnight cows, but the brockle-faces do not seriously detract from the honor that is claimed for the Hereford bulls. English blood, Texas grass and Ohio corn combined to furnish the International with one of the best loads of Christmas cattle produced this year.

Certainly no complaint can be voiced concerning the results of the auction sales of breeding cattle. New records in averages were made for such events. A Short-horn cow sold for \$6,000, a Hereford cow for \$4,500 and a Galloway bull for \$2,000, and things went swimmingly. At the same time the fact was again made plain that such combination sales afford the best of opportunities for shrewd buyers to pick up bargains. Not a few animals sold below their palpable worth, as excited crowds frequently fail to estimate them adequately. The man who keeps his brain working quietly at such public offerings can always pay his expenses and usually make a fine profit on his outing.

Among other records "smashed" at the International show was the establishment of a still higher price for Scotch-bred Short-horn cows—the great sum of \$6,000 being paid by W. C. Edwards & Co., of Rockland, Ont., for Mr. Marr's Missie 153d, an own sister to the Edward's herd bull Marquis of Zenda. The year has been a memorable one in the Short-horn trade, and closes with a rosy outlook for 1902.

All honor to Mr. John Letham, who, with the champion calf of a year ago, The Woods Principal, by proper handling and feeding, brought forward the grand champion of the show—a pure bred Hereford at twenty-five months, showing a weight of 1,645 pounds in such form and finish as are rarely seen in the show yard, and a steer that promises to make a show carcass of beef, a carcass of flesh and fat in such quantity and of such quality that should entitle it to favorable recognition in the carcass competition.

The grand champion competition brought together the champion two-year-old of the show in the Dysart heifer (Aberdeen-Angus) Empress Damask, showing 1,450 pounds at thirty-one months; the Hereford yearling The Woods Principal, showing 1,645 pounds at twenty-five months, and the Angus calf Tip Top, showing 925 pounds at eleven months. Mr. Peter made The Woods Principal champion and Empress Damask reserve. In commenting on this contest Mr. Peter said: "These three animals are among the very best I ever had the honor of standing over. I have made my decision on the decisive uniformity, weight and wealth of flesh, the champion being six months younger than the reserve animal and 215 pounds heavier. It is unfortunate that three such magnificent animals should be required to compete for one ribbon."

The Aberdeen-Angus made a pretty clean sweep of it on the block, gaining the championship and four out of the five awards on two-year-old carcasses. The Short horns win the yearling prize and fourth place in both two year olds and yearlings. The Herefords are third in the yearling class—the only representation gained by that breed on the list. The Galloways are second and fifth among the yearlings.

The following figures show the average prices made at the auction sales of breeding stock:

### SHORT HORNS.

52 females sold for \$33,675; an average of ..... \$647.60  
17 bulls sold for... 10,085; an average of... 593.25  
69 head sold for... 43,760; an average of..... 634.20

### HEREFORDS.

69 females sold for \$27,310; an average of..... \$395.50  
27 bulls sold for.. 9,215; an average of..... 341.00  
96 head sold for... 36,525; an average of..... 380.00

### ABERDEEN-ANGUS.

72 females sold for \$25,770; an average of..... \$357.80  
24 bulls sold for... 7,285; an average of..... 303.60  
96 head sold for... 33,055; an average of..... 344.00

## The Poultry Yard.

### "RED ALBUMEN."

A paragraph has been going the rounds of the press, and we regret to say has appeared in one of our local papers, advising the feeding of "Red Albumen" to hens as a sure producer of eggs. This is a gross fake. There is no such thing as red albumen. The white of an egg is nearly pure albumen, and there is nothing red about that. Some fakir has made up a compound which he calls "red albumen," most probably out of some cheap drug and a little meal, and to sell this rubbish has gulled the papers into inserting his reading notice. It is like the butter producer which we exposed about a year ago—a fake, and nothing more. When will editors learn to keep their weather eyes open for these fakirs?

### CLOVER AS AN EGG-PRODUCER.

In traveling around over the country I find that corn is the chief diet fed to poultry. Corn is considered by many as being the cheapest and the best all-around food for poultry. I believe that corn is king of cereals, but corn alone fed to poultry is not the best thing for egg production. Corn usually costs only about half as much as wheat, but this season corn is high priced, and it would be well for us to figure on something cheaper that will take the place of corn this fall and winter. I have found clover hay to be a fine substitute for corn and much cheaper, and I believe the following facts in regard to clover hay as food for poultry, written by Mr. Dobell, is worthy of repeating:

"The use of clover hay as a food product is becoming more popular every day, and to those who have never adopted its use I pen this article. Clover hay in the past few years has been used by many enterprising poultrymen, some using it as an experiment, while with others it has passed the experimental stage. Experiments have proven that fowls fed clover hay, properly cured and prepared, will lay much better than those fed only on a grain diet. Science has ascertained the constituent parts of clover and the egg. The same elements are found in both, but in different forms, both digestible. One is vegetable; the other animal substance. To begin with, we find an abundance of lime in clover hay for the formation of the egg shell.

"Comparing the amount of lime in different products of the soil, we find by the following table the largest percentage of this element in clover. In the following table, 1,000 pounds of the products is taken as the basis of calculation:

White clover.....	38.48
Red clover.....	27.80
Beans.....	1.65
Rye.....	1.22
Barley.....	1.06
Corn.....	.98
Wheat.....	.96
Peas.....	.58

"By the above table it is easily seen that grains

contain only about one pound of lime to the thousand. Therefore hens fed entirely on a grain diet would produce a large percentage of soft shelled eggs, which would be unprofitable to the poultry farmer. Many would say feed oyster shells. They are good in their place as a grit, but as a lime producer they are useless. They are insoluble, indigestible, and cannot be assimilated. There is sufficient lime in 100 lbs. of clover to cover 200 eggs of average size with a substantial shell.

"As a flesh producer, clover contains only 10 per cent. This gives clover the preference as a flesh builder. Besides being composed of lime phosphates, sulphur, magnesia and soda, it abounds in dry matter. As the principal ingredients of an egg are nitrogen, water and mineral matter, foods containing these same products should always be fed to attain the largest per cent. of profits from egg production. Nitrogen is an element of the air, composing about four fifths of it, in vegetable matter it exists in the form of albumen, gelatine and protein. These are the elements which form flesh. The white and yolk of the egg are formed of these, and are all called albuminoids. All these substances are found in clover hay. This same commodity of the soil, when scalded and mixed with other ground cereals, is easily digested, and sufficient quantities will be consumed by the hen to produce egg and flesh forming material. There are few commodities that will take the place of clover as a food product. Being bulky, it prevents the hens from consuming too much concentrated grain food. It assists digestion, rendering the small amount of grain foods consumed more valuable, thus lessening the feed bill considerably. It also prevents hens from becoming too fat, makes an agreeable green food, and regulates the bowels, keeping the hens healthy. This means plenty of eggs."

My experience of twenty five years in breeding poultry has taught me some valuable lessons. I have for several years been a friend to clover as a poultry food, but since reading the above article some two or three years ago, I have made it a special point to keep clover hay in abundance for feed during the winter months. Too much grain fed to poultry is not healthful, and as one of the main points to keep in view is the health and vigor of our flocks, we cannot afford to neglect this matter. There are two kinds of weakened stock, one is caused by improper mating and inbreeding; the other on account of being improperly fed and kept. The first will require years of careful mating and crossing to build up a healthy strain. When fowls have been weakened by improper feeding, it does not require so much time to bring them back to health and vigor again if properly fed and looked after. More fowls are injured and made worthless as egg producers, by over-feeding with corn and lack of exercise than all other causes.—O. P. Greer, in *Fanciers' Gazette*.

[If you have no clover hay, cow-pea hay or peanut hay will make a good substitute for it. As a grain feed cow peas will also be found most valuable. A gentleman told us some time ago that his hens fed largely on cow-peas were laying better than he ever knew them to do.—ED.]

## The Horse.

### NOTES.

Robert Bradley, owner of Greenway Farm, which is an estate of over 1,200 acres near Wilcox Wharf, on the James river, in Charles City county, passed through here recently, en route for the Hot Springs, Arkansas, where he will spend several months for the benefit of his health, his trouble being due to nervous dyspepsia, with which he suffers tortures. A distinctive character in every sense of the term, unique in speech and manner, the tall, broad-shouldered Virginian is one of the most widely known turfmen in the country. At Greenway Farm he has over one hundred head of thoroughbred horses, including, of course, stallions, brood mares and youngsters. That crack race-horse of other days, Aloha, the son of imp. St. Mungo, that sired the great Robert Waddell, heads the stud, while among other stallions in use are Ray S., Wild Lucien and Blitzen, "The Iron Horse." Blitzen is now at H. C. & R. M. Beattie's Woodlawn Farm, near this city, but some mares will be bred to him. The season of 1901 was quite a good one for Mr. Bradley, as with Robert Waddell alone he won a nice little fortune when the son of Aloha and Virgie annexed the American Derby and other rich stakes at Chicago. From the latter place the stable was shipped home in November, and the horses placed in winter quarters at Greenway, where Robert Waddell, Boney Boy, Hampshire, Miracle II. and other members of the Bradley racing string are recuperating. Mr. Bradley has never figured as an extensive buyer of yearlings, or, indeed, of older horses, preferring to take chances with those of his own breeding, with an occasional outside purchase. Yet, during the past decade, he has brought out such performers of note as Blitzen, Traverser, Boney Boy and Robert Waddell, the last named being a product of Greenway Farm, where his sire, Aloha, and dam, Virgie, the daughter of King Bolt, are still owned.

Among the broodmares at Walton Farm, Fall's Mills, Va., are Maggie Carroll, 2:18½, by Jack Dawson, 2:16½, dam Lucy S., the dam of three in the list, by Young Jim, second dam Lucy, granddam of Direction, 2:08½; Lutie Dawson, 2:30, full sister to Maggie Carroll, and Ella Leo, 2:21½, by Red Leo and also out of Lucy S. In addition to these well bred matrons, there are others, such as Nannie Sudduth, the full sister to Ella Leo; Kentucky Kate, the full sister to Wilbrooka, 2:19½, by Wilkes Boy from Kate, by Allen Book; Kate Rene, by King Rene from Kate; Princess Rene, the dam of Queen Bird; Tea Rose, by Mecca from Moss Rose, and Young Gossip, by William C. P. from Gossip, dam of Don Wilkes, 2:24½, and granddam of Baron Rogers, 2:09½, by Taller, second dam far famed Jessie Pepper, by Mambrino Chief. Red Leo, 2:26½, son of Red Wilkes, heads the Walton Farm, which is owned by Mr. Samuel Walton, the largest of Virginia trotting horse breeders, and the senior member of several big railroad contracting firms.

Hon. William R. McKenney, of Petersburg, Va.,

owner of the well known chestnut pacing mare, Princess Enlalie, 2:17½, by Prince Belmont, has recently sold from Spottswood Farm a grand old estate of over 1,300 acres in Brunswick county, more than eight million feet of lumber, to Northern dealers. Spottswood Farm has a frontage of nearly three miles on the Nottoway river, and is near McKenney station on the Seaboard Air Line Railway. The output of eleven saw-mills are shipped from McKenney station, which bears the name of its founder.

H. B. Bowie's bay gelding Death, 7, by imp. Charaxus, dam The Alarm Bell, by Alarm, figured among the winners at the fall meeting of the Washington Jockey Club in November. He won at six furlongs in 1:10, and defeated Jerry Hunt, Curtsy and fourteen others. The Alarm Bell was bred and owned by Mr. Bowie's father, the late ex Governor Bowie, of the Fairview Stud, near Baltimore. She was sent to the Etherslie Stud, Charlottesville, Va., and bred during several seasons, producing, in addition to Death, the chestnut mare Warning. With the exception of that good race horse and frequent winner Charentus, whose dam, Contenta, was by John Happy, I do not recall another winner than Death, that was gotten by Charaxus out of other than an Eolus mare, which, however, is most likely due to the fact that the son of Distin has rarely been bred to other than daughters of Eolus.

Kelly, 2:27, full brother to the great campaigner Expressive, 3, 2:12½, by Electioneer from Esther, thoroughbred daughter of Express, who heads the Belgravia Stud of James Cox, Mt. Jackson, Va., will appear in the new Year Book as the sire of the bay pacing gelding McChesney, 2:16½. McChesney has figured as a very consistent winner for several seasons and reduced his record from 2:19½ to 2:16½ in 1901. His dam is Molly D., dam of Tom Martin, 2:14½. Kelly is a horse of very high form and finish, inheriting much of the beauty and blood like appearance of his thoroughbred dam, Esther, who ranks among the famous brood mares. Kelly could show as much speed as any of her produce, but went wrong and was retired to the stud. While owned jointly by Mr. Cox and John E. Madden, of the Hamburg Place, Lexington, Ky., more than one offer of ten thousand dollars was refused for the bay stallion.

The former Virginian, Mr. A. B. Gwathmey, now of the Cotton Exchange, New York, is driving his recent purchase, Tudor Chimes, 2:13, to pole with Tiverton, 2:23½, and these two blood-like, handsome bay geldings are looked upon as the fastest pair to be seen on the famous Harlem River Speedway. Tudor Chimes has been timed in 2:08½ in a race. He was got by Chimes, sire of The Abbott, 2:03½, while Tiverton is a son of Galileo Rex, 2:12, and Folly, by Arragon. Mr. Gwathmey's fine private stable also shelters that great mare, Louise Mac, 2:09½, who can show a half close to one minute, and Salient, a daughter of Wickliffe, regarded as probably the fastest green trotter in New York.

BROAD ROCK.

## Miscellaneous.

### THE VIRGINIA AGRICULTURAL AND MECHANICAL COLLEGE AND POLYTECHNIC INSTITUTE.

#### Its Growth Since the Reorganization—Its Present Condition and Prospects.

*Editor Southern Planter:*

The visitor to Blacksburg to day finds perched upon the crest of Virginia's beautiful mountains an institution of learning which offers a marked contrast to the school which existed here prior to 1891.

The period from 1872, when the doors of the College were first thrown open to students, till 1891 was not one of great progress and prosperity. The unsettled condition of affairs brought about by frequent changes in the Board and Faculty—due oftentimes to political causes—contributed to retrogression rather than to advancement. The time for a change was ripe, and with the approach of the nineties the fortunes of the College were to be turned in a different direction.

The year 1891 ushered in the *new era*—one that has been characterized by rapid growth and continuous development. The most sweeping and thorough reorganization in the history of the College was then effected by the Board of Visitors.

On May 7, 1891, the Board elected as President of the College and Director of the Experiment Station, Dr. John M. McBryde, a native of South Carolina and recent President of the University of that State. In June Dr. McBryde made an able report to the Board, reviewing the situation and setting forth his ideas as to the needs of the College, and in July he assumed full charge of his duties as President.

When in the fall the session of 1891-92 opened, the outlook was anything but promising. The number of students in actual attendance was hardly more than eighty; the buildings were few in number, and these very inadequately equipped; the standing of the school was unsatisfactory; its fortunes, in fact, were at a low ebb.

The year of reorganization was a pivotal point in the history of the College. During the nine years of the present administration a complete transformation has been effected. To Dr. McBryde's superior executive skill and ability; to his wisdom, foresight, untiring efforts, and sincere devotion to the interests of education is due the honor and praise of having lifted the College from a plane of mediocre standing to a position of pre-eminence among the Technical schools of the South.

No sooner had Dr. McBryde accepted the presidency than he began to push forward vigorously the work of increasing the efficiency and power of the institution. Such a work demanded constant attention and unrelenting effort.

The result may be seen to day in the vast expansion of the several departments, in the numerous well developed college activities, and in the multiplied potential forces that are making for the upward and outward growth of the College. The era of expansion has manifested itself in manifold ways.

In regard to material growth, abundant strides have been made. The new buildings, which are of stone,

brick or wood, number 12 large, 17 medium, and 18 small, making a total of 47. Many small out houses are excepted from this list. Many of the older buildings have undergone repairs, and in some cases have been completely remodeled. The cellars of the two Academic buildings have been deepened and floored, and converted into lecture rooms and laboratories. The Library has been ceiled and painted and otherwise added to. The Pavilion and Old shop, two buildings virtually abandoned, have been floored and ceiled and converted, the former into a gymnasium, the latter into a steam laundry.

From time to time much valuable landed property has been acquired—Painter's spring, with one acre of ground; also four houses and lots (those of Efinger, Starkey, Willis, and Cowper), including about 70 acres of ground. In addition, the splendid grazing farm, known as Smithfield, containing about 700 acres, has been leased for a term of five years, beginning October 1, 1901.

One cannot fail to note and be impressed by the marked improvements and additions made within the last few years.

Two new and well furnished Dormitories (with 115 rooms) have been made necessary by the increased number of students from year to year. The spacious dining hall is abundantly supplied with chairs, tables, ranges, boiler, engine, china, cutlery, linen, etc., for 450 students. The large chapel, or public hall, with its beautiful ceiling, and with a seating capacity of 800, is admirably fitted up with handsome seats made in the college shops.

The infirmary is equipped for 30 patients. Plans are being formulated now for an enlarged and improved modern infirmary building.

Very marked progress has been made in regard to the water works. Water was formerly pumped into a small tank in the laboratories from an adjoining cistern by means of a hand pump. Water for the engine supply was even hauled in barrels. The present system of water works supplies from a spring (about one mile from College), with a daily flow of about 200,000 gallons, as much as 50,000 gallons of water to a distributing steel tower 150 feet high. The water is pumped by electricity and distributed in 6-inch pipes over the buildings and grounds. Eight fire-plugs exist for the protection of the buildings. There are also 7,700 feet of sewer. Sixteen bath-tubs and twelve shower baths are provided for students. Laboratories exist in eighteen buildings. Many of the buildings are thoroughly equipped with all modern conveniences. Twenty seven buildings, for instance, are lighted by electricity, twenty-six are heated by steam or furnace, thirty-four supplied with water. Telephones exist in every important building. It might be added in this connection that twenty-eight of the buildings are insured.

The Steam laundry, which is under the management of the College, is equipped with necessary machinery for washing for 450 persons.

The Central steam-heating and power plant is one of the most important of all recent improvements.

The Dormitories, Administration building, Science

hall, Y. M. C. A. hall, are heated by exhaust steam from this station. Length of steam pipes is 4,200 feet.

The Creamery is well fitted up with apparatus and machinery for handling milk from 500 cows. Butter and cheese in large quantities are made daily.

The cannery is equipped for canning vegetables and fruits of all kinds on a very large scale.

The Jelly factory is supplied with hydraulic machinery for manufacturing cider, vinegar, jellies, jams, etc. Student labor is largely employed in these two buildings.

The Cold storage and ice plant is arranged for storing eight to ten beeves, 2,500 turkeys, fish, butter, etc. A ton of ice can be made daily.

The large modern barn is a considerable addition on the farm. The following comparison will be found interesting. In 1891, the herd and flocks consisted of 8 unregistered Shorthorn cattle, 5 unregistered Jerseys, 7 unregistered Holstein Friesians, 3 steers, 4 Dorset sheep, 2 mules and 5 horses—a total of 23 head of cattle, 4 of sheep and 7 of horses and mules. In 1901, herds and flocks consisted of 5 Hereford cattle, 5 Aberdeen Angus, 11 Shorthorn, 36 Jersey, 16 Holstein Friesian, and 8 Guernsey cattle—all of which are registered animals. In addition are to be noted 45 grade cows (largely of Shorthorn blood), 7 grade calves, 34 steers, 40 fattened heifers, 9 mules, 2 horses, 2 colts, 20 Berkshire hogs, 5 Poland China hogs, 30 grade hogs, 16 Dorset sheep—a total of 207 head of cattle, 16 of sheep, 55 of hogs, and 13 of horses and mules.

There have been added also a corn mill, silage cutter, husker, gasoline engine, hay press, fence machine, blacksmith and woodshop tools, while of the ordinary farm implements might be mentioned three mowers, a reaper, two wheat drills, two rollers, several harrows, three farm and two express wagons, besides the many common necessary articles.

A Uniform Department has been established in connection with the College, and fitted up with sewing machines, cutting rooms, etc., for making uniforms for 450 students.

The Book Department is amply supplied with a large stock of books sufficient to meet the demands of every student.

In one of the College buildings, 3 bed rooms have been beautifully fitted up for the Board of Visitors. The handsome furniture in these rooms is all the work of students in the College shops.

Fifteen lecture rooms have been supplied with new seats, tables and blackboards; the 12 Laboratories are fitted up with desks, apparatus, water, gas, etc., and 14 offices are equipped with desks, type writers, cases, etc.

The Campus of the Institute has been within recent years greatly enlarged. The grounds have been improved and beautified, and not only this, but 9,500 feet of roads and drives and 7,500 feet of walks have been provided.

In regard to new equipment, the following additions are to be noted: 6 large boilers, 8 engines, 3 dynamos, 8 pumps, 1 stack 67 feet high, another 100 feet high. The various shops are equipped with tools and machinery—the wood shop for 126 students, the machine shop for 80, the foundry for 40, and the forge for 40.

Several organizations for mutual pleasure, help and instruction exist among the students, the more impor-

tant of these being the Band, Orchestra, Glee Club, Agricultural and Engineering Club.

A very unique and characteristic feature of the Institute is its policy of aiding needy students by giving them outside work. There are this year, for instance, 21 waiters, 5 clerks, 4 firemen, 3 electricians, 2 messengers, 5 milkers, 2 helpers in the laboratories, 15 assistants, and 20 employed at job work.

A thorough democratic spirit prevails among the student body. Of the students so employed, many are socially the most popular in College, and attain the highest academic grades.

The Scientific Society, recently organized, meets bi-weekly for scientific lectures, discussions, etc. The system of monthly public lectures and sermons by men of prominence and distinction is one of the new features inaugurated by the Faculty. These lectures are a fruitful source of pleasure, instruction and culture to all.

The religious interests of the student body are sedulously attended to. The authorities of the Institute use every means to inculcate in the students principles of gentlemanly conduct and right living, and to advance their mental, moral and spiritual interests. The village churches, the Y. M. C. A., the numerous Sunday school and Bible classes, many of which are conducted by members of the Faculty, surround the students with an influence of refinement and culture, and an atmosphere of morality and Christian activity.

Turning now to the Faculty and officers and student attendance, some interesting facts are to be observed. Remarkable growth is to be noted. In 1891, there were only 20 officers, while in 1901 the number reached 42.

In point of student attendance, there has been a remarkable increase from year to year. In 1891-'92 the total number of students registered was 116, though, as already pointed out, not more than 80 were in actual attendance at any one time. There were only 4 seniors that session. The matriculation books of the present session show up to date (December) an enrollment of 452—the largest attendance upon any school or college in Virginia excepting the University. The present senior class numbers 67.

Another interesting comparison is in reference to the graduates. During the period from 1872 to 1891 (19 years), 149 graduates were sent out from the Institution, while from 1891 to 1901 (only 10 years), the number reached 185.

Before concluding this brief sketch of the Institute for the decade now closing, attention must be directed to the position the College occupies in the preparation and equipment of our youth for their life-work. Nothing so well shows the splendid opportunities for technical education to be obtained here, and attests the thoroughness and efficiency of the work, as the remarkable success of the graduates, who command remunerative and responsible positions all over our country as instructors in colleges and universities, as mechanics, agriculturists and engineers in the United States Revenue Cutter Service, etc. Of the graduates since 1891, although of so recent date, 8 have become professors and 19 instructors in Colleges; 23 are successful electrical engineers, 16 civil engineers, and 24 mechanical engineers. Nineteen (19) have become successful chemists, 5 superintendents of manufacto-

ries, 5 experts in the United States Executive Departments, 5 engineers in the United States Revenue Cutter Service, and 5 scientific experts employed by States. During last session, 11 out of the 15 attending post-graduates received lucrative positions in New York, Pennsylvania, Washington and other States.

Instances of students attaining the highest positions of honor and note are not rare. A graduate of 1893 for instance, is now a successful State biologist of great prominence. Another, of 1896, is a State entomologist of high scientific standing. A graduate of 1895 enjoys the distinction of being consulting mechanical engineer for the Rand Mines Limited and H. Eckstein & Co. in South Africa, receiving a salary of \$10,000 per annum.

These worthy men, sent out from the Institute, merit their reward for their distinguished services, and reflect credit and honor upon themselves and their *Alma Mater*.

Such is the record of the growth and development of the Virginia Agricultural and Mechanical College and Polytechnic Institute since its complete reorganization in 1891. The first year of the new century has opened auspiciously. The outlook is bright, and a great harvest is augured for the future. With a large student attendance, which promises to increase from year to year, with high standing and due recognition of the golden advantages here offered, who will fail to point with pride to this growing Institution, and rejoice in her unmeasured possibilities? The complete isolation of the College, inviting quiet study and studious and exemplary habits, the careful and thorough work done in each department, the eminent success of her students, all combine to render the Virginia Polytechnic Institute a College of great power and influence, commanding the love, respect and warm support of the State and the admiration of the entire South.

Gov. Tyler speaks these words of praise for the Institute: "Its retiring and beautiful location commends it as a home for students, and its ample equipment under its able management is fast placing it in the forefront of America's Technical schools."

R. H. HUDNALL.

Blacksburg, Va., December 12, 1901.

## PLANTING TREES IN WASTE PLACES.

*Editor Southern Planter:*

On nearly every farm in the Eastern, Middle and Southern States, there is usually to be found a piece of land which is so hilly, rocky, rough, sandy or gravelly, that it is difficult to cultivate, and if cultivated at all, does not produce much, makes a poor pasture field, and never should have been cleared, but was cleared when woods were looked upon with great disfavor, and now perhaps is growing up in worthless briars and brush, or something that never will be valuable for timber. If, by chance, a hickory, chestnut, oak or maple should spring up, it would probably be destroyed by the cattle. Such bare land is also almost always washed and gullied by the heavy rains, wastes valuable water needed to be con-

served, and is a cause of much flooding of the lowlands which might and ought to be avoided. In view of the growing scarcity of timber for building purposes, fencing and railroad construction, would it not be well for farmers who own such waste lands to plant them strictly with valuable timber trees, nut trees or sugar maples, and keep the cattle from destroying them and the fire out, thereby substituting an object of beauty in place of an eyesore? Another great object served would be the conservation of water and the prevention of washing and gullying and the flooding of low lands. If they did not live to see the trees grow to maturity and return a money recompense for their labor, as well as affording them a pleasant view, their children or grandchildren, or somebody else, would surely live to enjoy the benefit, and meanwhile much advantage would accrue to adjacent lowlands by the securing of a more equable flow of water. Patriotism and benevolence should prompt us to do good deeds for the benefit of future generations. We should feel in duty bound to do it, and leave the world in as good condition, or better, than we found it. Few people are so selfish and regardless of posterity, that they would not plant a tree because they could not expect to live long enough to partake of its fruits, or obtain profit from the sale of timber. They only need to have the subject brought to their attention, and its importance urged upon them by the press, to induce them to act.

The traveller who journeys along the Wyalusing creek will not fail to notice near Stevensville, in a wide rocky ravine, a fine grove of maple trees of considerable size. At first, he may think they grew there naturally, but when he further observes that they stand in straight rows at equal distances apart, he will know they were planted there by the hand of man.

Deacon Aden Stevens, when considerably past middle age, came to the conclusion that in clearing that unsightly gulch, he had made a mistake, and set about to rectify it by planting it full of maple trees, and thus changed a repulsive feature on his farm and near his house to an object of beauty, and soon to become a thing of value.

When setting them out, he said: "I do not expect to live long enough to get any benefit from these trees myself, but somebody will." He lived to a great age, in the full possession of his mental and physical powers, and, contrary to his expectations, had the pleasure of eating maple sugar and syrup made from these very trees he had planted in the gulch.

Mr. George H. Wells, of Wyalusing, has a fine grove of yellow locust trees which he planted, and which are large enough for fence posts. The land they are growing on lies along the river, and was so sandy

that it would not produce paying crops of grain or grass. It was subject to frequent overflows, with a strong current, and when plowed was liable to wash away. These trees, by breaking the force of the current, have improved the land they stand on, and the flats below, by causing a deposit of sediment, chiefly composed of mud. The trees have grown well, and perhaps chestnut trees would have grown equally well. If lumber was desirable, there is no doubt pines—especially the pitch or maritime pines, which are usually planted in Europe in sandy waste, or desert places—would have flourished still better. The sugar maple is a native of the Eastern, Middle, and some of the Southern and Western States; grows well on any kind of soil, and seems to flourish as well in rough and rocky regions as anywhere. It may be that maple orchards planted on the abandoned farms in New England, and on the worn out fields in the South, and waste places in all the States where they flourish, would be more valuable to grow than timber trees, as their products of sugar and syrup would be an annual source of revenue with but a small outlay for labor. The sap from maple produces sugar and syrup of a delicious flavor peculiar to itself, and which is neither possessed nor approached by the sugar, or syrup made from cane, sorghum, beets, or any other saccharine tree, plant, or vegetable now known. Until some sweet product more delightful to the taste is discovered, maple sugar and syrup will be profitable to make, and will bring more than the sugar and syrup produced from any other source. Maples grow quickly, are long lived (even when tapped every year), and make valuable lumber for furniture. Land covered with sugar maples, if ever so rough and rocky, would always be valuable. The sugar camps in Ohio, New York, and Vermont, are generally believed to be more valuable, acre per acre, than any other part of the farm on which they are situated. There is no outlay for fertilizer, fences, agricultural implements, or seeds, and the cost of evaporators, buckets and fuel is not large. There is no plowing, sowing or cultivation, and the work and harvest come early in the spring before the frost is out of the ground, when farmers have the most leisure to attend to it.

According to the census of 1890, the amount of maple sugar produced in the United States was 32,952,927 pounds. The quantity of maple syrup made was 2,258,376 gallons. Vermont led the column with 14,123,921 pounds of sugar—about 42 per cent. of all made in the United States—and 218,252 gallons of syrup.

New York comes next with 10,485,633 pounds of sugar, and 1,457,658 gallons of syrup.

All the New England States (except Rhode Island)

produce maple syrup and sugar, and also the following States produced more or less, showing their capabilities for production, if the trees were planted: Maryland, Virginia, West Virginia, North Carolina, Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, Kentucky and Tennessee.

Virginia produced 26,991 pounds of maple sugar and 3,467 gallons of syrup, Highland and Rockingham counties being the principal producers.

West Virginia produced 177,724 pounds of sugar 19,032 gallons of syrup.

The time has come when the farmers of this country who are land owners and regard their own interests and the welfare of posterity must take care of the woods they have by keeping the fire out of them, and planting enough trees to supply the places of those they cut for fuel or timber. The railroads are the cause of most of the forest fires, and should be compelled by law to watch the woods through which they pass, and extinguish the fires as soon as started.

J. W. INGHAM.

#### HEAR BOTH SIDES.

*Editor Southern Planter :*

I used to scribble occasionally for the *Planter*, and other agricultural papers, but I am now on the shady side of seventy and don't know quite as much as I did fifty or twenty five years ago, and in the light of modern scientific farming, I am inclined to be a little chary with advice; still I derive a good deal of information and more amusement from my reading. In the controversies between your correspondents, I am reminded of the old story of the shield; each is strenuous for his own opinion regardless of circumstances or standpoint. As an example, I instance the different views of your Mississippi and District of Columbia correspondents as to renovating worn-out lands. Being familiar with the clay subsoil of this locality, I side with the D. C. man. I suspect the Mississippi sub strata is of a different character. Some fifty-five or more years ago, there was organized in New York city a Tribune Farmers' Club. The members were largely practical men. In the discussion on deep versus shallow plowing, the sentiment of the Club was unanimously in favor of deep culture. A gentleman by the name of Whitall living near Salem, New Jersey, wrote that he raised one hundred bushels of corn to the acre and did not plow over three inches deep. Discussion was red hot for a while, and the fur flew. The advocates of deep plowing were invited to send a delegation to see for themselves and draw their own conclusions. The result was they had to give in. They found a porous sandy soil that had been brought to a high state of cultivation by the judicious use of green marl to ob-

tain a clover catch, followed by the use of lime, not only raising large crops of corn, but remunerative crops of hay.

I was inclined to have a little fun over that triangular spar between the Editor of the *Planter*, the Swiss chemist and Prof. Massey a few years ago, but that is past and gone, and but few of your readers would see the point. The Professor was bound to have the last word, but the Editor had the best of the argument. We have got to have the humus in some form.

*Fairfax Co., Va.*

E. E. MASON.

### BILTMORE FARM SALES.

When the Biltmore Farms first announced their intention, over a year ago, of holding public sales, they stated that their object was to bring their stock more prominently before the public, and to make these sales, as it were, a meeting place for the breeders from all over the United States, in which the different experiences as feeders and handlers of improved stock could be discussed. As a further inducement, they secured a rate of one and one third fare for the round trip from all the railroads in the United States, and to all parties who purchased as much as \$125 worth of stock in any or all of the departments on that day the railroad fare was deducted from their bill.

Realizing the fact that this liberal proposition would call together the best breeders and the best judges in the country, they have been extremely careful in their selections of stock, and no animal has been placed in the sale that has not been strictly first-class. That these sales have been appreciated by the public and by the breeders is fully evidenced by the fact that liberal prices have been paid, and that the stock has gone to the best breeders in this country. These sales have been held sufficiently long for returns to come to the parties who have been liberal customers in the past, and without exception we can state that not a customer of the Berkshire Department of the Biltmore Farms but has made good money on his investment. As a further evidence of this fact will state that the highest priced sow at the recent Chicago sale was one of a litter of five purchased in dam from these Farms, and who sold for more than double what her dam cost, bringing the price of \$260. The next highest priced animal being one of the progeny of Lustre's Batchelor, a pig imported by these Farms, and sold to head the herd of the Messrs. Barker, of Indiana.

They write us that their forthcoming sale will not only be up to the former standard, but that the animals selected for it are the very *cream* of the Berkshire world. The majority of the forty (40) brood sows are imported, and are matured sows, which have proven themselves producers of large and uniform litters; in

fact, the records in their office show that no animals have been included in the sale, as matured sows, whose produce have ever sold for less than \$25 per head at weaning time, and some of them for over \$100.

The blood of the noted prize winners of both sides of the continent are represented—daughters of Highclere Topper, Columbia's Duke, out of imported sows and also out of American sows; imported Loyal Mason and the leading sires in use in Great Britain. In addition, a great many of the sows are safe in pig to the imported boar Dorset Lad, the winner at England's greatest show this year; Loyal Lee, of Biltmore, the boar who for two years has been undefeated in class, and whom we are willing to back as being the best boar in the United States to day; imported Loyal Mason, the son of the great Loyal Berks, the sire of more prize-winners than any other boar living or dead in all England; Duke's Star, of Biltmore, a son of Columbia's Duke, and the imported sow Star of Stall Pitts, she also by Loyal Berks, out of Northfield Star, a granddaughter of the great Baron Sparsholt; Lustre's Topper 111, a son of the great Highclere Topper, out of the great and only Lustre, a full brother to the boar selling for \$250 at our last February sale; Bob Toombs, the winner of the first prize at the Pan-American and Syracuse, N. Y., the past season. A greater collection of boars of better individuality, combined with better breeding, and backed up with a greater list of prize winnings, both individually and in their ancestry, we do not think can be found in the world.

Every animal is *guaranteed to be exactly as represented in every particular, or to be returned at seller's expense and purchase price refunded.*

They have made arrangements by which the well-known breeder and showman, Mr. Caldwell Norton, of Louisville, Ky., will handle bids for all the parties who find it impossible to attend, and we wish to state emphatically that any bids intrusted to his care, and any selections that he may make, will be fully backed up in any way by the reputation and financial standing of these Farms, as they consider Mr. Norton a competent judge and honest gentleman in every respect.

A rate of one and one-third fare for the round trip has been secured from the railroads from all points in the United States, full particulars of which will be found in catalogue, and the Farms guarantee to refund this amount to all purchases who attend in person, upon a purchase of \$125 worth or more, from any or all the departments on that day. Visitors are cordially invited to come a few days before the sale, and if the Farms are notified will be met at trains. Some of the most prominent breeders of Berkshires in the United States will be present to deliver addresses upon their ways and methods of feeding and

handling swine, for the greatest possible development, and in fact, upon all the topics of the swine husbandry.

Col. R. R. Bailey, of Gibson City, Ill., the well-known auctioneer, who has so successfully cried previous sales, will be present to wield the hammer on this occasion.

The Farms advertisement in this issue gives full particulars of the sale.

### WHY AM I A FARMER ?

Essay Read by C. M. Solenberger at the Mutual Farmers' Club of Frederick Co., Va., Nov. 30th, 1901.

I arrived home from my three week's vacation November the 11th. My pressed trousers, my chin supporters, and my patent leathers separated for the time being. I had just completed my toilet, or rather was through strapping on a pair of 50 cent overalls, when I was handed a strip of paper one by six, which read thus: "Why am I a farmer?" Why, that was just what I was debating. It did seem that some member of the Farmers' Club was guilty of a little rubbing. A moment's reflection. I had it. I love sunshine, freedom, and coming in contact with nature, which only farm life can give. Being still under the parental roof, I am only a wheel-horse, and not the leader.

It is easy for the person who suffers in loss to talk gain. Now, perhaps you think I am a farmer because my father farmed. It may be true to an extent. When I was eighteen years old, I was undersized, and looked anything but substantial enough for a farmer. So father conceived the idea that town was just the place for me. After my school days ended, to town I went. I enlisted as clerk in my brother's store, and remained there for three years. While there I learned that the great efforts displayed by my fellow-merchants generally were all for that farm they were going to own. This caused me to reflect. Why should I desire to learn what others were so anxious to reject?

I became weary of playing the part of a caged bird, and, like the prodigal son, returned to the farm. I can assure you there was no fatted calf killed at my return, but the lean side of a thin one was well presented.

I am a farmer because I delight in looking out upon acres of sunshine, acres of green meadows, foliage and trees, dotted here and there with acres of fruit provided for man. Here we can eat from the palm of nature's hand. On the farm you can breathe pure air, uncontaminated with the smoke or dirt of the city. Fresh air is not a thing to be taken in little doses once a day, but a thing to live on.

In farming, I employ something that every man strives to own. In farming, I can co-operate and form a partnership with nature. I can build a little kingdom of my own, and I the monarch. I prefer elbowing with nature in preference to man for dollars and cents. The costly monuments and immense buildings grow monotonous to those penned within their walls, while, on the contrary, nature is continually changing her views on the farm, which makes it inviting to the eye. Though the city folks may live in higher style, they may feel less happy and contented. As a rule, their business is more of a chance than anything else, but do not think all is gold that glitters. It only requires the study of expression to note how the country boy is envied, with his favorite horse, on a pretty afternoon, by his city friend. Our city cousin who calls us seedy pays from two to three dollars on a business afternoon just to breathe the fragrant odor which drifts from nature's trimming.

Why am I a farmer? Because I have greater advantages on a cheaper scale. I am not hampered. I prefer seclusion, and would not be pleased to live in full glare of public inspection. The day is past for the necessity of driving to town for the latest news. Contrary to the days of yore, it is brought to the farmer's door—either by wire or by free rural delivery—which is fast spreading over our country. Live like a farmer, and you live like a prince. We eat nature's offering as it is, not as it is packed. To find the depths of poverty, you must visit the city—you will never find it in the country. Our country poor are aristocrats, compared with the poor in the city slums. I think the average person born and raised in the country is 50 per cent. better off than the average person born and raised in the city.

### MUTUAL FARMERS' CLUB OF FREDERICK COUNTY, VA.

The Mutual Farmers' Club met at the residence of D. W. Branson & Son Saturday, November 30, 1901.

President Clevenger called the meeting to order at 11:05. Three members were absent at roll-call, but satisfactory excuses were given for them.

The minutes of last meeting were read and approved. The criticism upon Dr. Brown's place was read and commented upon.

J. L. Rees, L. M. Boyer and E. W. Lupton were appointed to select and refer questions for next meeting.

The "Club Advertiser" was next read by the editor, L. M. Boyer. The editor asked whether it pays the farmer to buy bran at present prices to mix with corn for feed. A lively discussion followed. As usual, the opinion was divided—some thinking the

manurial value of bran quite a consideration, aside from its feeding value. Others thought it better to feed corn and cobmeal and omit the bran.

N. W. Solenberger answered the question on Smuts, Rusts and Blights. Mr. Solenberger thought these diseases largely due to atmospheric conditions. He said there were two kinds of rust—red and black. The red did no special harm, but the black was more injurious. He thought the black rust could be checked by sowing early-ripening varieties of wheat. He compared blight to paralysis in man and beast, and knew of no preventive. Mr. S. had heard of a number of preventives for smut, but was not sure that they would be effectual.

Mr. Lewis Pidgeon stated that he had used hot water very effectually for this purpose.

C. M. Solenberger answered the question, Why am I a Farmer? On motion of Club, the paper was ordered to be sent for publication.

What is Success from a Farmer's Standpoint? was answered by J. L. Bond. Mr. Bond thought that success along this line consisted in tilling the soil so that it produced fair returns and constantly increased in fertility.

The Club adjourned for dinner.

Upon resuming business, the subject of The Farmers' Institute was taken up and occupied most of the afternoon session.

A motion was carried that it was the opinion of this Club that it would be best to have a small admission fee at the Farmers' Institute.

The committee appointed to select and refer questions submitted the following for next meeting:

(1) Give your idea of the best way to cultivate and breed corn. Referred to D. W. Branson.

(2) What is the best literature for the rural home? Referred to J. H. Doing.

(3) What can be done to protect young fruit trees from the attacks of the locust? Referred to S. L. Pidgeon.

Under miscellaneous business, Mr. D. W. Branson showed some specimens of Manles Early rough bred potatoes.

An invitation was accepted to meet at the residence of D. T. Wood—the date to be decided later.

C. C. CLEVENGER, W. M. E. BRANSON,  
President. Secretary.

### OUR EXPANDING TOBACCO TRADE.

The report of the Commissioner of Internal Revenue, just issued, contains much of interest concerning our rapidly expanding tobacco trade. The revenue derived from taxes imposed on manufactured tobacco products of domestic and foreign manufacture during the fiscal year ending June 30, 1901, was \$62,182,000, as follows: From smoking and chewing tobacco \$35,292,206, snuff \$2,003,000, large cigars \$20 775 363, small cigars \$684,500, cigarettes \$3,407,434, large cigarettes \$19,610.

The receipts were \$3,160,000, \$10,909,000, \$25,962,000 and \$31,472,000 more than during the four respective preceding years. It is estimated that the past year 320,019,500 pounds of tobacco were used in manufactured tobacco and snuff products, or 14,750,000 pounds more than during the preceding year; of cigars, 5,736,471,000 were produced, which is 453,000,000 more than for the preceding year. Of little cigars, 655,969,000 were made and of cigarettes 2,533,615 000. The output of tobacco products the past ten years has been as follows:

#### THE MANUFACTURED TOBACCO OUTPUT.

	Mfg. Tobacco.	Snuff.	Cigars.	Cigarettes.
1900,	284,901,878	13,805,311	6,176,596,421	3,258,714,305
1899,	279,911,822	14,723,392	5,531,885,085	3,744,975,403
1898,	261,523,298	13,607,631	4,915,663,350	4,385,783,897
1897,	283,308,857	13,768,455	4,431,050,569	4,631,820,620
1896,	248,708,581	12,708,919	4,048,463,306	4,967,144,232
1895,	263,404,840	10,887,709	4,099,137,855	4,237,754,453
1894,	257,050,444	11,582,828	4,163,641,377	3,620,666,804
1893,	238,587,702	11,952,736	4,341,240,931	3,660,755,959
1892,	264,412,767	11,426,927	4,674,708,260	3,282,001,283
1891,	258,855,085	10,674,241	4,422,024,212	3,137,318,566

During the year 102,561,375 pounds of tobacco were used in the production of large cigars, 2 833 800 in small cigars, 13 084,000 in cigarettes and 260,685,000 in chewing and smoking tobacco and snuff. This is a total of 379,162,884 pounds. The average quantity of leaf tobacco used to make 1,000 large cigars was 18.4 pounds, 1,000 small cigars 4 6, 1,000 large cigarettes 7.3, 1,000 small cigarettes 4.

The foregoing report would indicate that the so-called American Tobacco Trust has not killed the market for tobacco. More is called for every year, and the crop this year being a small one, the prospect for continued good prices would seem to be good.—ED.

### THE FREE NEGRO.

#### A Parody on Poe's Raven.

At the request of a subscriber we re publish the following poem, written by our old friend, Mr. Wesson, which appeared in *The Planter* some years ago. Mr. Wesson was before the War one of the largest and wealthiest planters in South Carolina. He lost his means in the War, and died in this city some years ago in very reduced circumstances. He was a fine type of the old Southern gentleman to the last, and the poem is an evidence of his intellectual ability.

Once upon an evening dreary, from my fields I'd come in weary,  
And sat pondering life's dark problem as I'd often done before.  
While I sat engag'd in thinking—the present, past and future  
linking,  
Thro' the twilight I saw blinking a dusty figure at my door—  
A figure huge and dark and dusky, black as Deademon's Moor,  
Peering in my chamber door.

Tho' the twilight dim, uncertain, hanging like Plutonian curtain  
I threw no trace nor shadow of his form upon my floor,  
I could see the looming figure, like a giant's, only bigger,  
Of a dark and dusky nigger, whom I'd often seen before—  
Seen in times, when hat in hand, Sir, the nigger stood without  
the door—

Times now gone for evermore.

Now with greedy eyes he's standing stark within my doorstep  
 landing  
 All forgetful of his manners—his cover'd head within the door,  
 One eye I saw at me leering, the other on my viands peering,  
 While my anger nothing fearing, his greed intent upon my  
 store—  
 Intent to beg or steal his rations from my very scanty store—  
 This his purpose, I was sure.

Then upon my hearth-plate spying, where my ham and eggs  
 were frying,  
 I beheld a poker lying, by my hearth upon the floor,  
 And with most determined vigor, prone I hurl'd it at that nigger;  
 But he bent his supple figure and it fell upon the floor—  
 Miss'd the head at which I aim'd it and fell harmless on the  
 floor—  
 Bark'd his shin and nothing more.

But with hungry eyes still looking where my ham and eggs  
 were cooking,  
 He with step determined walking, stalk'd across my chamber  
 floor.  
 Never made the slightest bow, Sir; then I saw there'd be a  
 row, Sir,  
 For I made a solemn vow, Sir, I'd kick that nigger from my door  
 All despite the Freedman's Bureau, kick him from my cham-  
 ber door,  
 Independence in him I'd cure.

Having done so I relented, and of my hasty act repented,  
 For I could not think of turning a hungry creature from my door.  
 So, said I, tho' you're a freedman you seem run so much to  
 seed, man,  
 I'll give you now a hearty feed, man, as you look so very poor,  
 Only split a turn of lightwood lying there without the door,  
 Quoth the nigger, nevermore!

Much I marvel'd this ungainly nigger should refuse so plainly  
 On such terms to sate his hunger—hunger that must press him  
 sore,  
 For he cannot help agreeing, that no living human being  
 Should refuse to labor, seeing hunger pressing on him sore—  
 Should refuse to earn the dinner he sees cooking from my door,  
 Tho' he eats one nevermore.

Some time I sat engaged in musing, what he meant by thus  
 refusing;  
 "Doubtless," said I, "that huge creature once consumed enough  
 for four,  
 When upon a rice plantation he out-ate the whole creation  
 And never made a calculation what his rations cost, I'm sure.  
 Free-rations then old master furnished in the good old days of  
 yore—  
 Days now gone forever more.

Now unless that nigger 's crazy, however much he may be lazy,  
 I'll shame to a sense of reason before he quits my chamber door!  
 "Sir," said I, "have you no feeling? Do you mean to live by  
 stealing  
 Or by work and honest dealing? Tell me, tell me, I implore,  
 Will you ever work for wages as mankind have done before?—  
 Quoth the nigger, nevermore.

"Be that our ever sign of parting," I in anger cried upstarting,  
 "Get you back into the marshes! Let me see your face no  
 more—  
 Get ye gone, you ugly demon—nigger still if slave or freedman!  
 Join the army! Go to Texas—never come back here to beg us—  
 N'er return again to vex us! Let me see your face no more!"  
 But he stood there as before.

And that darky still is standing in my entry on the landing—  
 Standing listless on the landing with his back against the door;  
 And his eyes are ever spying where my ham and eggs are frying,  
 But my poker still is lying near at hand upon the floor,  
 And so long as I can lift it from its place upon the floor  
 I'll feed that nigger, nevermore!

[W. H. WESSON,

## HOME OF THE ALBEMARLE PIPPIN.

*Editor Southern Planter :*

It was my pleasure to visit some sections in Albe-  
 marle county where the pippins were growing last Sep-  
 tember. Whilst there have been handsome profits  
 made in growing the pippins, and also whilst I do not  
 wish to discourage any one in the least from going  
 into the business, still I must say a wise and conserva-  
 tive man would investigate all the conditions before  
 going into the business. I saw where many mistakes  
 were made, which growers themselves admitted. Many  
 are changing views in regard to pippin growing and  
 suitable pippin land. In some sections there is no  
 doubt but that pippins have been planted on land  
 which is not "pippin land." True "pippin  
 land" seems to be much more limited than is usually  
 supposed. The heads of rich hollows or valleys, reach-  
 ing well up against the mountain sides, seem to be  
 the true pippin land, so far as I was able to investi-  
 gate in the short time at my disposal. In going  
 through a sixteen-year-old ninety acre pippin orchard,  
 planted on new land which had been cleared before  
 planting, I noticed that in the low hollows of this orchard  
 the trees were not only much larger and more heavily  
 loaded with fruit, but the bitter rot was much less se-  
 rious. In fact, the fruit crop on the ridges was almost  
 entirely ruined by bitter rot. Of course, last season  
 was somewhat abnormal and the bitter rot was much  
 more serious than usual, at the same time I saw  
 orchards that had been sprayed with Bordeaux mix-  
 ture and nearly the entire fruit crop had been saved  
 from the bitter rot. In my opinion, spraying has be-  
 come almost a necessity in successful pippin growing.  
 In this same orchard the land had been considerably  
 exhausted by growing a number of heavy crops of  
 corn, which I considered a mistake. I believe that  
 such low growing and quick maturing crops, as Irish  
 potatoes and tomatoes, could usually be grown on the  
 orchard soil while the trees were small, without much  
 injury to the trees, but heavy crops of corn are decid-  
 edly injurious.

I saw magnificent crops of winesaps maturing on  
 low lands that had a red clay subsoil. In some in-  
 stances, I was told that the crops had been contracted  
 for the previous June. In many instances, the wine-  
 sap trees were breaking down with the heavy loads of  
 fruit. This should not be allowed.

If many of the trees had borne only half the number  
 of apples, doubtless there would have been the same  
 number of bushels of fruit and of much finer quality.  
 Hence, I believe that thinning the apple crop would  
 usually pay handsomely. Not only would finer speci-  
 mens of fruit be grown, but the trees, not being so  
 much exhausted by over-bearing one year, would be  
 more likely to bear good crops each year. This thin-  
 ning out could be done after the June drop, or it  
 could be done by pruning back the long angling limbs  
 which, in many instances, are drooping down near the  
 ground.

As a prospective buyer of orchard land, the follow-  
 ing facts forced themselves upon my mind: More in-  
 formation was needed as to best orchard lands, spray-  
 ing was necessary, and thinning the fruit was advisa-  
 ble.

R. H. PRICE,

College Station, Texas.

Professor of Horticulture.

THE

# Southern Planter

PUBLISHED BY

THE SOUTHERN PLANTER PUBLISHING CO'Y.,

RICHMOND, VA.

ISSUED ON 1ST OF EACH MONTH.

J. F. JACKSON,  
Editor and General Manager.

B. MORGAN SHEPHERD,  
BUSINESS MANAGER.

**TERMS FOR ADVERTISING.**

Rate card furnished on application.

**TERMS OF SUBSCRIPTION.**

The *Southern Planter* is mailed to subscribers in the United States and Canada at 50c. per annum; all foreign countries and the City of Richmond, 75c.

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Subscribers failing to receive their paper promptly and regularly, will confer a favor by reporting the fact at once.

We invite Farmers to write us on any agricultural topic. We are always pleased to receive practical articles. Criticism of Articles, Suggestions How to Improve THE PLANTER, Descriptions of New Grains, Roots, or Vegetables not generally known, Particulars of Experiments Tried, or Improved Methods of Cultivation are each and all welcome. Contributions sent us must not be furnished other papers until after they have appeared in our columns. Rejected matter will be returned on receipt of postage.

No anonymous communications or enquiries will receive attention.

Address— THE SOUTHERN PLANTER,  
RICHMOND, VA.

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**PUBLISHER'S NOTES.**

We ask the forbearance of many contributors whose communications we are compelled to hold over until next month. Notwithstanding the fact that we have enlarged the number, we still find ourselves short of space. We trust and believe, however, that the matter contained therein will be found so full of interest and instruction that both contributors and others will be more than satisfied. In our next issue we will endeavor to find space for all matter held over, and for such further contributions as may reach us in time.

**A Notable Fact.**

This number commences the 63d annual volume of the *Southern Planter*. This is a long life for a journal in any country, and the longest lived of any agricultural journal in this country under one title and without consolidation with other journals, and whose continuous place of publication has always been in one city. And yet, notwithstanding these facts, we have this week had a letter from a subscriber who says that he has taken the *Southern Planter* ever since it was published. This is a high compliment to the journal, and one which we much appreciate. May he and the *Planter* be spared yet for many years.

We can say truthfully that the *Planter* has to-day more subscribers on its list than ever before in its long life, and we believe that it is to-day more popular and doing a greater work for the advancement of Southern agriculture than ever before. And yet there is still room for great expansion. The more than 10,000 regular readers of the *Planter* are but a small fraction of the farmers of the South. We recognize and believe that they are the most intelligent and prosperous fraction of Southern farmers, and it is because we know this to be true that

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we are anxious to largely increase their number. We are offering the journal now at such a small price that none can say they cannot afford it. We have scores—possibly hundreds—of letters from subscribers saying that one single number has been worth to them many times the amount of a year's subscription. May we not, then, with confidence ask each subscriber to at least send us in the name of one new subscriber, along with his own subscription or renewal. To those sending more than one new subscriber, with their own renewal, at the regular price of 50 cents, we will extend the sender's subscription one year free.

**Read the Advertisements.**

We ask the careful attention of our readers to the advertisements contained in this issue. We believe that they will be found representative of the best breeders, manufacturers and merchants in the country, and we know that they are all reliable and stand ready to carry out the offers they make. None but this class of men can find entrance into our columns at any price, if we know it. If, unfortunately, at any time any untrustworthy or dodging person should, notwithstanding our care, be found amongst our advertisers, on learning the fact we will promptly suppress the advertisement, and do

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Toledo, O.

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to meet those who work for us. Our keepralms have many a cow that has made large profits. Easy work. We furnish capital, send 10 cents for full line of samples and catalogues.  
**BRAPER PUBLISHING CO., Chicago, Ills.**

what in us lies to secure redress for any one injured, and prevent any further wrong being done by exposing the party. We aim always to keep all fakers and improper advertisements out of our columns, and to have the journal so clean that it may be put into the hands of any lady or child without fear of contamination. We turn down every year hundreds of dollars' worth of advertising rather than have our columns fouled.

### Whose Money?

On December 12th we received a remittance of 50 cents in coin in one of our self-addressed envelopes, post marked Farmville, Va., the sender having omitted to sign his name. We shall be pleased to credit to the proper person, provided he will claim it.

### ONE IN A HUNDRED.

The first year of the new century is gone; there are ninety-nine years left for improvement. Messrs. N. W. Ayer & Son, the Philadelphia promoters of advertising, have begun early in their efforts to make the second year better than the first. Their Twentieth Century Calendar, issued about this time last year, it was thought, approached near the limits of the art preservative and the demands of utility—but the 1902 calendar is better. As usual, the background and main sheet of this calendar is an art work, enhanced in beauty by the tasteful colors of the printer. The twelve sheets containing the dates of the months have a restful dark green background, the large figures in white catching the eye at a great distance. In each sheet are epigrammatic sentences bearing on the possibilities of business during the year. Though this calendar marks the passing of one year in a hundred, it is in itself one calendar in a thousand for artistic beauty and real usefulness. The demand is always great, and whoever would have a copy should send 25 cents before the edition runs low. This is a merely nominal price to cover the cost of printing, handling and postage. Address N. W. Ayer & Son, Chestnut and Eighth streets, Philadelphia.

The McCormick Harvesting Machine Company send us a very elaborately got up and finely illustrated booklet, called "The World Center." It treats fully of the different machines made by the Company, with illustrations of the same, and of the different parts, and is of great interest to any one wanting a Mower, Reaper, Binder, Corn Harvester or Shucker and Shredder. The Company last year built and sent out 362,000 machines, and this year expects to exceed that number. This speaks volumes for what the farmers think of McCormick machines.

# ONCE IN A LIFE TIME

is often enough to do some things, it is often enough to buy a wagon if you buy the right kind. The



## ELECTRIC HARDY WAGON

lasts that long under ordinary conditions. First the life of a wagon depends upon the wheels. This one is equipped with our Electric Steel Wheels, with straight or stagger spokes and wide tires. Wheels, 37 height from 21 to 60 in. It lasts because tires can't get loose, no re-setting, hubs can't crack or spokes become loose, felloes can't rot, swell or dry out. Angle steel throughout.

**THOUSANDS NOW IN DAILY USE.** Don't buy a wagon until you get our free book, "Farm Savings." **ELECTRIC WHEEL CO., Box 146, Quincy, Ills.**

### WE'LL PAY THE FRIGHT

and send 4 Buggy Wheels, steel tire on, \$7.25; with axles, \$9.85; Rubber Tired Wheels, \$18.75. 1 mfg. wheels, \$2 to 4 in. tread. Top Buggies, \$30.25. Buggy Tops, \$3.65; Harness, \$3.00; Buggy Shafts, \$1.50; Repair Grade Wheels, \$5.50. Write at once for catalog, instructions for ordering, and learn how to buy direct at wholesale prices. Wagon Umbrella free with first order.  
**W. V. BOOB, 420 E. 7th St., Cincinnati, O.**

## Corn Planting

must be well and carefully done, as the future crop depends upon it. For all purposes, in any soil, on all kinds of ground nothing equals the



### SPANGLER CORN PLANTER.

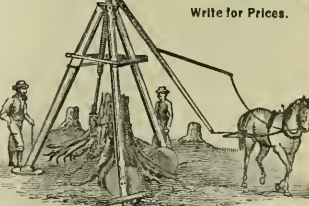
It saves time, labor, money and increases the crop. You know when it is working; you can see the corn on its way to the ground. Made with or without fertilizer attachment. New device for sowing peas, beans, radishes, corn, etc. We also make the famous Spangler Low Down Grain and Fertilizer Drill. Write for catalogue and circular.  
**SPANGLER MANUFACTURING CO., 501 Queen St., York, Pa.**

## HERCULES STUMP PULLER



Clears an acre of heavy timber land each day. Clears all stumps in a circle of 150 ft. without moving or changing machine. Strongest, most rapid working and best made.  
**Hercules Mfg. Co., 413 17th St., Centerville, Iowa.**

## THE IMPROVED SCREW STUMP PULLER



Write for Prices.

**Chamberlin Mfg. Co., Olean, N. Y., U. S. A.**

## KENTUCKY ALUMINUM STOCK LABEL

The best, lightest, most secure, easiest put on and the cheapest. For description and samples, address **F. H. Jackson Co., Winchester, Ky.**

TIDEWATER (VA.) NOTES.

Editor Southern Planter :

November beat the record, and was the coldest November but one in thirty-one years, according to the records of the Weather Bureau in our city. November, 1872, averaged a temperature of 46 degrees. November, 1801, averaged 46 degrees. The average for November for 31 years is 51 degrees.

December is also trying to break the record, and is very likely to succeed unless the clerk of the weather is able to call a halt. The coldest to date is one day at 16 above, one at 20, and from that on up to 32. December is decidedly cooler than usual.

But a careful study of the daily weather charts issued by the government shows a peculiar condition of things. During the past ten days, or during our cold snap in December, Norfolk and Hatteras have been the two warmest points on the coast until Jacksonville, Fla., was reached. Norfolk has been from 6 to 10 degrees warmer each day than Mobile, Ala., and Mobile is hundreds of miles south of Norfolk and located on the Gulf of Mexico.

The cause of this greater degree of warmth at Norfolk is found in the "Gulf Stream," which, on its way north, strikes the stormy cape of Hatteras, and some of its tropical heat is liberated to warm up the coast from Hatteras to Cape Henry.

The "Gulf Stream" originates away down near the equator. The tropical heat is stored up in the equatorial waters, and obeying some law not fully understood as yet by man, the warm current starts from the equator northward, passing through the Caribbean Sea, through the channel of Yucatan, through the Gulf of Mexico, through the Florida Straits, and on up the coast to Hatteras, where it meets its first real obstacle.

More of its tropical warmth is liberated at Hatteras than at any other point on its course. So Hatteras and Cape Henry and Norfolk get the benefits of a milder temperature, even in midwinter, than points far, far to the south of said points.

We have observed the matter carefully during the past thirty days, and there have been but very few days when Norfolk and Hatteras have not had a higher temperature than any other points on the coast, until one went below Jacksonville, Florida.

No damage is done here by cold weather as yet. Transplanting cabbages has been delayed somewhat, it is true; but that work will go on at every warm spell until the great crop is transplanted.

Kale and spinach now moving freely to Northern markets. A. JEFFERS, Norfolk, Va., Dec. 21, 1901.

A Chicago man who often had to stand up in crowded street-cars decided to make a protest. He called at the office one day and expressed his sentiments in vigorous terms. "Who are you, that you come here and talk to us like that?" asked one of the officers of the corporation. "Are you one of the stockholders?" "No, sir!" he thundered, "I'm one of the strap-holders!"

After Being on the Market TEN YEARS,

The ACME Engine Still Leads



For Churning, Cutting & Grinding Feed, Filling Silos, Saws, Sawing Wood, Elevating Water, and all Farm and General Uses where Small Power is required. Fuel, Kerosene Oil. No Skilled Engineer required.

ROCHESTER MACHINE TOOL WORKS, No. 17 Frank St. Rochester, N. Y.

HENCH & DROMGOLD'S



SAWMILL AND ENGINES

A wonderful improvement in Friction Feeds and Gie-Backs. Back motion of Carriage 3 times as fast as any other in the market. Friction Clutch Feed, causing all the feed gearing to stand still while backing; great saving in power and wear. Catalogue and prices free. Also Spring Harrows, Cultivators, Corn Planters, Shellers, etc. Mention this paper. HENCH & DROMGOLD, Mfrs., York, Pa.

"Rich Soil"

can be had more quickly, cheaply and surely by using

THE SPANGLER

Single Row FERTILIZER DISTRIBUTOR, than with any means known. It distributes the kind of fertilizer into the open furrow after the ground is prepared for Potatoes, Cotton, Tobacco, Corn, Beans, peas, etc. It saves fertilizer by putting it on the right spot. Sows 150 to 200 lbs per acre. We also make the SPANGLER CORN PLANTER with and without fertilizer attachment. The best and most Perfect Core Planting Machine ever put into a field. Send for catalogue and dealers. THE SPANGLER MFG. CO., 501 Queen St., York, Pa.



PAGE WE DON'T SAY

that the PAGE is the best fence, but we would like to see another as good. Did you ever PAGE WOVEN WIRE FENCE CO., ADRIAN, MICH.

FENCE! STRONGEST MADE!

Ball-Strong, Chicken-tight. Sold to the Farmer at Wholesale Prices. Fully Warranted. Catalogue Free. COLD SPRING FENCE CO., Box 52 Winchester, Indiana, U. S. A.

Krauser's Liquid Extract of Smoke

Smokes meat perfectly in a few hours. Made from hickory wood, delicious flavor. Cleaner, cheaper. No smokehouse needed. Send for circular. E. KRAUSER & BROS., Milton, Pa.

**SALZER'S SEEDS**

**Beardless Barley**  
Is peculiarly prolific yielding in 1901 for Mr. Wells, Otsego Co., New York, 100 bushels per acre. Does well everywhere. That pays.

**20th Century Oats.**  
The best market, producing from 200 to 300 bu. per acre. Salzer's Oats are warranted to produce great yields. The U. S. Ag. Dept. calls them "the very best!" That pays.

**Three Eared Corn.**  
200 to 250 bu. per acre, is extremely prolific at present prices of corn. Salzer's seeds produce every wheat.

**Marvel Wheat**  
Yielded in 30 States last year over 40 bu. per acre. We also have thousands of bushels of **round wheat**, which yielded on our farm 65 bu. per acre. That pays.

**Speltz.**  
Greatest cereal food on earth—80 bu. grain and 4 tons manure per acre. That pays.

**Victoria Rape**  
makes it possible to grow hogs, sheep and cattle at a cost of but a few cents. Prolific, does well everywhere. That pays.

**Bromus Inermis.**  
Most wonderful grass of the century. Produces 6000 lbs of hay and loss and loss of pastureage treated per acre. Grows wherever soil is found. Salzer's seed is warranted. That pays.

**\$10.00 for 10c.**  
We wish you to try our great farm seeds. Please order to send to farm seed samples containing thousands of Beardless Kale, Frost-free Apples, Alfalfa, Speltz, etc. fully worth \$10.00; get a start! together with our great catalogue for the postage.

**John A. Salzer Seed Co., Chicago, Wis.**

**BAILEY'S HYDRAULIC RAM**  
Runs 24 hours a day and 365 days a year. 40 years experience. Water for HOUSE; water for STOCK; Water for IRRIGATION. One started costs but ONE CENT per month. As simple as a wheelbarrow and as efficient as a Corliss Engine. For catalogue and instruction in plain terms. Prices on ram or complete outfit by return mail. Address: PRYCE W. BAILEY, Expert, Seneca Falls, N. Y.

**The MIETZ & WEISS Kerosene Engines.**  
Cheapest and Safest Power Known. For pumping and electric lighting, grinding corn, separating cream, sawing wood, and all power purposes. Send for catalogue.

A. MIETZ, 128 Mott Street, New York.

**DEHORNER Every Dehorner Guaranteed THOUSANDS IN USE.**  
Ask your hardware dealer for them or write to H. H. BROWN MFG. CO., DECATUR, ILL.

**Agents and Dealers Wanted**  
to sell Rippley's B and S Gallen Corn processor. All Rippley's are in the market. We have the best, and sell them under a guarantee. A card will bring catalogue and terms. Rippley Hardware Co., Box 235 Grifone, Illinois.

**POTATOES**

Among all the varieties of potatoes for early Southern planting nothing equals

**Red Bliss Triumph**

Very early, first grower, good field-ers and handsome red tubers of excellent quality. Very hardy and free from scab, rot, etc. This is improved Red Bermuda of the early season's market. Can be grown on heaviest manured land, without danger of rot.

**Plant it This Season.**



**The New Early Fortune CUCUMBER**

In the judgment of ourselves and our customers this is the earliest and best White spine Cucumber ever offered. It is extremely productive, perfect in shape, attractive deep green color. Specially adapted to market uses. Every grower of cucumbers should try it this season. Every trial we have made with this cucumber has exceeded our expectations. Amount of seed limited and controlled exclusively by ourselves.



**The Oldest Seed House In The South....**

Situated at Baltimore, the lowest reliable market and best location for Southern business. All of our seeds are grown from selected stock, and when we say selected, we mean selected by men who know. Our seeds are

**Northern Grown,** and are peculiarly early, hardy and productive. Write to us about any seed you may happen to want, and we assure you that we will answer your letter at once; in short, we are always ready to look out for your interest.

In ordering by mail from us be assured that you will receive absolutely fair treatment. We are ready to back this up with our eighty-five years reputation for square, honest dealings. We have a specially fine lot **Virginia Grown, Second Crop Seed Potatoes**, which we are selling at low prices. Write for our large new catalogue, telling all about our special offers. The book is free. Won't you write for it.

**J. Bolgiano & Son,**  
Dept. P-10, Baltimore, Md.

**Our New White Wonder CABBAGE**

will mature and head out with greater regularity than any cabbage on the market. This makes it the most desirable sort for general crop-headers are exceptionally large, solid, fine flavored and perfect keeping. Growers will find this

**BOLGIANO'S New White Wonder**


the best and most profitable kind that grows. There can be no other stock of cabbage seed than our

**New White Wonder.**



**New Century TOMATO.**

You will never know what a really fine flavored tomato is until you try this one. It is early, hardy, free from blight, will not crack nor rot. Remarkably solid, full fleshed and free from seeds. It is of most desirable market size, handsome color, large yielder and a good shipper and keeper. Has yielded 800 bu. per acre; 36 made a bu. We control all the seed. Every grower of tomatoes, for either market or home consumption should try the New Century this season.



Pedigrees traced and tabulated. Catalogues compiled and circulars prepared. Special attention given registration matters pertaining to thoroughbred and trotting horses

..BY..

**W. J. CARTER** (Broad Rock,)

P. O. Box 929, RICHMOND, VA.

Correspondent of  
**RICHMOND TIMES**, Richmond, Va.  
**SOUTHERN PLANTER**, Richmond, Va.  
**SPIRIT OF THE TIMES**, New York.  
**KENTUCKY STOCK FARM**, Lexington, Ky.  
**REFERENCES**—Mr. A. B. Gwathmey, Cotton Exchange, New York; Mr. W. N. Wimer, of Wiltmer & Canfield, Lawyers, 49 Wall St., New York; Col. K. M. Murchison, Banker, Wilmington, N. C.; Mr. L. Banks Holt, Proprietor Onedia Cotton Mills and Alamance Farm, Graham, N. C.; Col. B. Cameron, Proprietor Faircloth Stud Farm, Stagville, N. C.; Maj. F. P. Johnson, President National Trotting Association, Lexington, Ky.; Mr. Thos. N. Carter, President Metropolitan Bank, Richmond, Va.; Mr. Jas. Cox, Belgrave Stock Farm, Mt. Jackson, Va.; Capt. John L. Roper, Foxhall Stock Farm, Norfolk, Va.; Capt. R. J. Hancock, Ellerslie Stud Farm, Charlottesville, Va.; Sam'l Walton, Walton Farm, Falls Mills, Va.

1902. - IN THE STUD. - 1902.  
**WHALEBONE, 7872.**

Winner of Stallion Stakes at Suffolk, Va., Oct. 20th, 1891, defeating W. A., Modoc, Magnetizer and Dynamite.

W. A. won the first heat, Modoc the second and third, and Whalebone the fourth, fifth and sixth heats and race.

Standard, Registered in Vol. XV., A. T. R.

Sired by Abdallah Wilkes, son of George Wilkes, 2:22. Dam Maggie O., by Abdallah, 15, sire of Goldsmith Maid, 2:14; second dam Viley Filly, by Pilot, Jr., sire of dam of Maud S., 2:08 1/2.

NOTE.—Whalebone is a richly colored bay horse of fine size, handsome and well formed. His disposition is perfect. He has sire and dam, 2:26 1/2, and other winners.

**FEE, \$15, with usual return privilege.**

Address **W. J. CARTER, OWNER,**  
 P. O. Box 929, RICHMOND, VA.

E. B. Evans, Pres. C. E. Krusen, Gen'l Mgr.

**HORSES and MULES**

Of all grades and sizes FOR SALE at  
**GEO. D. BENNETT'S STABLES,**  
 1917 East Franklin Street, RICHMOND, VIRGINIA.

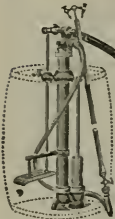
Matched Pairs, Fine Drivers, Saddle, Draft and Business Horses. Mules ranging from the largest size down to the small cotton mule. Stock purchased by Mr. Bennett in person on the Western markets and shipped direct. Branch stables at Raleigh, N. C., and Goldsboro, N. C. Correspondence solicited.

N. B.—Mr. Bennett's Western address is  
**NATIONAL STOCK YARDS, ILL.**

**Union Stock Yard Co.**  
 OF NORFOLK, VIRGINIA,  
**Largest HORSE, MULE and CATTLE Market**  
 IN THE SOUTH.

Invites correspondence with Live Stock Dealers desiring to do business in the South. Direct communication with C & O., N. & W., Southern, S. A. L., N. Y. P. & N., A. C. L., Norfolk and Southern R. R. Facilities unsurpassed. Auction sales of HORSES and MULES on Tuesdays, Wednesdays, Thursdays and Fridays.

## PROFIT or LOSS?



That's the question  
**THE ECLIPSE  
SPRAY PUMP**

Will settle that in  
your orchard. With  
it you CAN make a profit,  
without it what do you  
get? SEND FOR CATALOGUE

**MORRILL & MORLEY,  
BENTON HARBOR, MICHIGAN.**

## BOSTROM'S IMPROVED FARM LEVEL.



Is not a MAKESHIFT, but  
the best one made for Ter-  
racing, Ditching and Drain-  
age. Price \$5.00, including  
Tripod and Sliding Target  
Rod. Send for descriptive  
circular and Illustrated  
Treatise on Terracing, free.

**J. M. ALEXANDER & CO.,  
6 and 8 S. Pryor St., Atlanta, Ga.**



## THE RANNEY

Incubator get strong chicks  
and lots of them; it's the  
way it is ventilated, and  
because the chicks are not  
drowned by supplied moist-  
ure. Catalog tells about it.

The Ranney Incubator Works, Bellefontaine, Ohio.

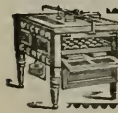


**A Combination  
of brains, experience and high  
grade material has made the  
RELIABLE Incubator**

known throughout the civilized  
world. If you are after results represented in dollars  
and cents, you want one of our popular 20th Cen-  
tury Fowlry Boxes. Bright, instructive and worth  
ten times the price asked. Sent for 10c. As full of meat as an egg.  
Reliable Incubator & Brooder Co., Box 111 Quincy, Ills.

## INCUBATORS on 30 DAYS TRIAL

The only perfect business ma-  
chines in the world. Our large  
handsome Illustrated catalogue  
explains it all. Send for a copy.  
It is absolutely free and worth a  
dollar to any one interested in artificial in-  
cubation. Address Standard F. C. Inc Co.,  
Mention this paper. Rochester, N. Y.



## VICTOR INCUBATORS

The simplest, most durable, cheap-  
est Oval-class hatchery. Money back  
if not as represented. Circular  
free. Catalogue 6c. We pay the  
freight. 6739, BERTHOLO, Dallas, Tex.

*Smithdeals*

Is the oldest and only business college in Va. owning  
its building—a grand new one. No vacations.  
Ladies & gentlemen. Bookkeeping, Shorthand  
Typewriting, Penmanship, Telegraphy, &c.  
Leading business college south of the Potomac  
river.—*Phila Stenographer*. Address,  
G. M. Smithdeal, President, Richmond, Va.

## BLATCHFORD'S CALF MEAL.

"Please send me 500 lbs. of BLATCHFORD'S  
CALF MEAL, as we find nothing like it to  
raise thrifty Jersey calves."—ASA B. GARD-  
NER, JR., Glenoco, Md. Address

THE BARWELL MILLS, Waukegan, Ill.

## BOWMONT FARMS.

Note the change in the advertisement  
of Bowmont Farms in this issue of *The  
Planter*. It is a fact well known that for  
several years the owner of Bowmont  
Farms has been engaged in getting to-  
gether what is now claimed to be the  
best collection of St. Lambert Jerseys  
that are to be found upon one farm either  
in the United States or Canada. Persons  
in need of fine bulls to head their herds  
or to improve the dairy quality of their  
stock should not fail to avail themselves  
of this opportunity to secure them.

They also advertise Indian Game and  
White Wyandotte fowls, which are two  
of the most popular breeds in existence.  
Remember that Bowmont Farms keep in  
the front rank and breed nothing but the  
best in quality of the varieties which they  
keep.

The Bateman Manufacturing Company,  
Glenloch, N. J., sends us a beautifully  
got up pamphlet, containing illustrations  
and descriptions of the well known "Iron  
Age" implements for cultivating and  
planting the soil. We have so often ad-  
vised the use of these implements by the  
trucker and farmer that we are at a loss  
to know what more we can say in their  
favor than we have already done. We  
have personally used them, and always  
with the greatest satisfaction. They do  
well what they are advertised to do, and  
this means almost everything in the way  
of fitting the soil for the seed and the  
planting and fertilizing of the same. The  
Bateman Company are the sole manufac-  
turers of "Iron Age Implements," and all  
their implements are branded "Iron Age"  
in full.

## PROFIT IN FEEDING STOCK.

The National Starch Co., of New York,  
send us a pamphlet with this title. It  
is especially devoted to the subjects of "King  
Gluten Meal" and "Queen-Gluten Feed,"  
but incidentally contains much useful  
and valuable information on the general  
subject of feeding stock and the nutrient  
values of different feeds, which it is so  
essential that the farmer and stockman  
should know. The value of gluten feed  
has been amply demonstrated, and the  
sale of it is constantly increasing. It is  
a by-product incidental to starch-making,  
and therefore has to be handled by such  
firms as the National Starch Co. Send  
for a copy of the pamphlet, and say you  
saw this notice in *The Planter*, when it  
will be sent you free.

## THORBURN'S SEED CATALOGUE.

The 101st Annual Seed Catalogue of  
Messrs. J. M. Thorburn & Co., of New  
York, is now ready for distribution  
among their customers, past and prospec-  
tive. We invite our readers to send for  
it. This well known horse has been in  
business for more than 100 years, and cer-  
tainly needs no recommendation nor in-  
troduction from us. Look up their ad-  
vertisement elsewhere in this issue.

To make cows pay, use Sharples Cream Separators.  
Book "Business Dairying" & Cat. 50c free. W.  
Chester, Pa.

## "YOURS WITH GRATITUDE."

So Writes a Virginia Young Lady to a  
Baltimore Firm—Tells a Won-  
derful Experience.

To every man or woman who has ever  
known the suffering that indigestion  
causes, the following letter must appeal  
with especial force. It is written from  
Somerton, Va., under recent date, and  
says:

Messrs. Gilbert Bros. & Co.,  
Baltimore, Md.:

I could not feel satisfied were I not to  
speak a word in praise of your medicine,  
"YAGER'S SARSAPARILLA WITH  
CELERY." I have been a sufferer for  
two years with attacks of indigestion;  
not any appetite scarcely, and what I did  
eat would cramp me, and then a swelling  
in my stomach would follow. The doc-  
tors would give me medicine to relieve  
me for a while, but about one month  
ago I felt the attack coming on me again,  
and while talking to the lady with whom  
I board about my complaint, I picked up  
a little book which told about your medi-  
cine. After reading it I told the lady  
that I thought I would try it. She ad-  
vised me to do so, so I sent and got a  
bottle, and before I had had it a week  
I felt a good effect. Now I have been  
using it nearly a month, and am glad to  
say that I feel all right. I have a good  
appetite—something I never have in the  
spring—and don't suffer with that weak  
tired feeling that I generally have. Yet  
I fear I am not entirely well and shall  
get another bottle soon.

I am yours with gratitude,  
Miss OTELIA ISHELL.

YAGER'S SARSAPARILLA WITH  
CELERY is sold by all druggists, 50c. a  
large bottle. It cures Rheumatism, Ner-  
vousness, Indigestion, Dyspepsia, Head-  
aches, Neuralgia, Loss of Energy, that  
Tired, Languid Feeling, and every other  
disease resulting from impurities of the  
blood and derangement of nerves. Made  
by Gilbert Bros. & Co., Baltimore, Md.

## IF YOU ARE NOT FEEDING GLEASON'S HORSE AND CATTLE POWDER.

To your STOCK, you are making a mistake  
There is no Powder on the market that  
will take its place. If of one of the very few  
Stock Powders that actually possess merit  
as a medicinal concentration. No owner  
of livestock can afford to be without it. It  
can be had of any merchant. Prepared by  
GILBERT BROS. & CO., Baltimore, Md.

GO FOR THAT BOTTLE OF  
**HONEY-TOLU**  
Your Dealer Has It. 25c.

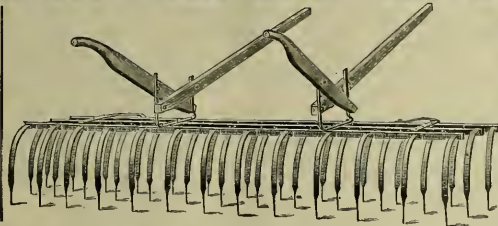
# DOLLARS OR DIMES

The **NEW WAY**—the modern method of making a crop—tilling the soil will make **Dollars**, where the **OLD WAY** makes **Dimes**.

Of course if you are satisfied with **Dimes**, you will keep on the **Old Way**; but if you prefer **DOLLARS**, just write us and we will tell you how

## HALLOCK'S "SUCCESS" ANTI-CLOG WEEDER

WILL MAKE THEM  
FOR YOU.....



HALLOCK WEEDER CO.  
YORK, PA.

## ...SEASONABLE GOODS

WE HAVE RECEIVED A LARGE CONSIGNMENT OF

### TORNADO ENSILAGE CUTTERS,

All sizes, hand or power. This is the very best machine of the kind on the market for cutting or shredding all kinds of forage. Send for circulars.



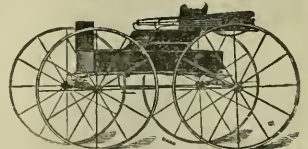
### The Celebrated MILBURN Hollow Steel Axle WAGON

Leads all competitors for a cheap and durable wagon. Get our prices

WE HAVE A LARGE STOCK OF

### BUGGIES, CARRIAGES, RUNABOUTS, Etc.

Send for Special  
Catalogue.



WE ARE HEADQUARTERS FOR ALL KINDS OF FARM IMPLEMENTS,

Including PLOWS, ROLLERS, HAY PRESSES, DISC PLOWS, BARB WIRE, WIRE FENCING, PETALUMA INCUBATOR, MANN'S BONE CUTTER, in fact, every implement in season.

CORRESPONDENCE SOLICITED.

CATALOGUES FREE.

**FARMERS SUPPLY COMPANY, 1433 E. Main St., Richmond, Va.**



## DON'T SQUINT

But use CHROAZURA Lenses;  
they give rest for tired eyes.

CHROAZURA Lenses will cure Sun-Blinde-ness  
Snow-Blindness, Watery Eyes, Red Eyes, In-  
flammation, etc. Colored and smoke glasses  
injure the Retina of the eye.

## CHROAZURA

Produces a soft, cooling, easy sensation, and  
when the eye gets better can be laid aside,  
their work is done. Chroazura spectacles and  
eye-glasses are a new discovery from the re-  
searches of an eye specialist of over 15 years  
practical experience in eye trouble. They are  
made in all styles. Send us one dollar, and we  
will send you by mail a pair of Chroazura  
lenses mounted in aluminum frames, or gold-  
filled, \$2.50. Rimless kinds, 50c. extra. Give  
distance between centre of pupils, a description  
of your nose, if high or low, large or small,  
long or short eye lashes.

Dr. W. H. McDOUGAL, Eye Specialist,  
Originator and Manufacturer,  
Booklet free. Charleston, W. Va.

## Good Farm For Sale

...AT A SACRIFICE.

On account of death in family will sell at an  
extremely low figure a fine farm of 351 acres.  
Only 10 1/2 miles from Richmond, right at a  
R. R. Station. Splendid orchard and water.  
House, 7 rooms and kitchen; numerous out-  
buildings; stock, implements, feed, etc. Will  
sell at a genuine bargain to Northern and  
Western farmers, as title to correspond.

R. W. HAW, Jr., Roblox, Va.

## FARM WANTED

In Southwestern Virginia or North Carolina.  
150 to 200 acres clean, fertile land  
Good large house, barn, etc. Elevated  
situation; plenty water; orchard; timber.  
Must not be more than 4 or 5 miles  
from town and R. R. Station.

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## Wanted to Lease a Farm

For six years with option to buy. Must  
have good dwelling, barn and well watered.  
Not larger than 200 acres; not farther than 20  
miles from Richmond. Apply to

OTTAKAR KUCERA,  
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## ..Magnificent Estate..

Known as the Hampstead Farm, situated on  
the Pamunkey river, for sale. Contains  
nearly 1600 acres, 800 of which is river bottom  
land, the remainder being upland and timber.  
Large deposits of green sand marl; brick barn  
with wood stable situated; also houses for  
sheep, etc. Splendid dwelling said to have  
cost \$30,000. Properly now owned by stock  
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For further particulars, address  
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In sight of Richmond, Va. Fine large house  
with modern improvements; fine large barn  
and other improvements; large orchard; so-  
ciety the best. Will be sold cheap with stock  
and crops. Would make a fine dairy farm.  
Address OAK SHADE, care Southern Planter

## EDUCATION FOR SOUTHERN FARM BOYS.

The courses in agriculture, horticulture  
and dairying at the University of Tennessee,  
Knoxville, open on January 3d and  
continue until March 22d. The course  
proper closes on March 14th, but does  
not include the annual trip to the Bilt-  
more Farms and the Charleston Ex-  
position. The course includes 450 lectures  
and exercises in the following subjects:  
Agriculture 20 hours, horticulture 60  
hours, dairying 150 hours, animal hus-  
bandry 40 hours, stock judging 90 hours,  
veterinary science 60 hours, agricultural  
chemistry 20 hours, and mechanic arts  
40 h. hrs.

Think of such an eminently practical  
course of instruction given at a season of  
the year when the farmer can be away  
from home, at the small cost of \$50.00,  
exclusive of railroad fare. There is no  
reason why every farmer boy should not  
enjoy its benefits. What better invest-  
ment can the farmer make for his boy?

The university has provided a fine  
equipment for the purpose of agricultural  
education, and maintains an able and  
efficient corps of instructors. The work  
is intensely practical, and will not educate  
the boys away from the farm, as those  
who have previously taken it will testify.  
The fear of the course being too theo-  
retical is not well founded. The idea  
that book-learning is not closely related  
to the farm received its death blow at  
the recent International Live Stock Ex-  
position, where the college-fed and bred  
cattle won both in the open classes  
and in the carcass tests. The successful  
farmer of to-day harmonizes theory and  
good practice and combines book-learning  
and experience.

Why not give the boy a chance to se-  
cure information that will be worth thou-  
sands of dollars to him in the course of  
a few years, instead of letting him learn,  
in the bitter school of experience, during  
the next twenty or thirty years what he  
ought to have acquired in a short course  
of ten weeks in the State University.

ANDREW M. SOUTE,  
Professor of Agriculture,  
University of Tennessee.

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of Brompton Stock Farm, Fredericks-  
burg, Va., will advertise in our columns  
another year. Thousands of our readers  
are familiar with the products of "Bromp-  
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that good stock and liberal treatment  
will be always had in dealing there. See  
the offerings in this issue.

"Teacher says that 'boom' can't be  
compared," said the little one. "Can it?"  
asked her mother. "Why, of course,"  
was the reply. "Positive, boom; com-  
parative, boomer; superlative, boome-  
rang."

Sharpe: On his birthday before their  
marriage he gave him a book entitled  
"A Perfect Gentleman." Wheaton: Any  
change after a year of married life?  
Sharpe: Yes; on his last birthday she  
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FREE my successful plan. W. W. OSTREANER,  
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\$3 PER ACRE AND UPWARDS.  
EASY PAYMENTS. CATALOGUE FREE.  
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Best climate and water in the U. S. Near  
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About 512 acres. Over a thousand dollars  
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In the condition. Farm, a good pair of mules,  
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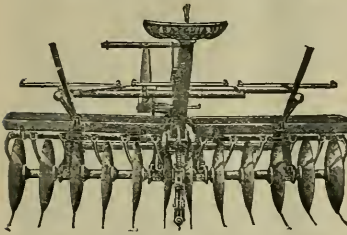
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Its wearing qualities are unsurpassed, ac-  
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FOR SALE BY ALL DEALERS.

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**The Continental Disc Harrow,**  
All sizes Solid steel weight boxes.  
Roller bearings and centre-cut attachment.

**Buckeye Grain and Fertilizer Drill**  
With hoes or discs. Drills grain of all kinds, corn, peas, grass seed and fertilizers.

**Our Five-Hoe Drill**  
For seeding between rows of standing corn is a great success.

**All-Steel Lever Harrows.**  
Changed to straight or plating tooth without stopping team.;

**The Combined Feed Mill and Horse Power**

Is indispensable to every farmer. Grinds corn, shelled or on cob, grain of all kinds, and is a first-class HORSE-POWER for any purpose. Three machines in one.

**The Union Feed and Ensilage Cutter.**  
Crushes the stalk after it leaves the knives—far superior to shredding.

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For cord wood, poles, etc.

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For hand or power, separating corn from cob. All sizes.

**The Buckeye Rocker Churn.**  
Unequaled for cheapness and simplicity, strength durability and perfect work.

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Turned rollers, steel shafts, brass boxes, enclosed gearing. Made of special iron of great strength.

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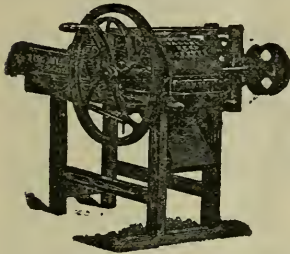
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The Munch Hand-Power has no equal as a portable hand press.

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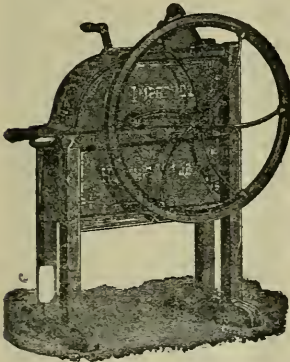
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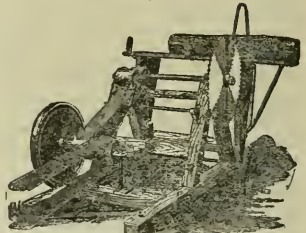
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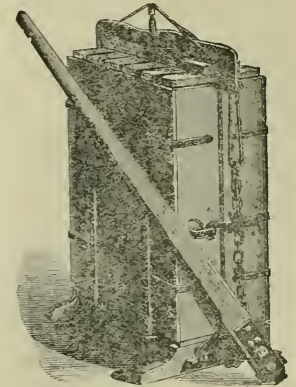
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will pay \$125 for a twine binder or a corn binder, machines that can only be used a few days in the entire year, and think nothing of it.



**THE KEMP  
Manure  
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costs much less than that, and can be used successfully every day in the year. It will earn the interest on the money every day it is used. Spreads all kinds of fine and coarse manure, wood ashes, lime, salt, etc. Spreads broadcast or drills in the row. Splendid new catalogue FREE. Tells all about it.



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**STRAWBERRY PLANTS** Our plant beds never went into winter quarters in a finer condition than last fall, and we never had finer plants. We have the largest stock we ever had to offer. Our first aim has always been to furnish the very best quality of plants, true to name. We have also Raspberry and Blackberry plants and Asparagus roots. Our Second-crop Seed Potatoes was never finer than this season. Send for free catalogue.

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Jones' Dewberry and Strawberry Plants.

The price way below most nurserymen too. Send for catalogue to-day and save money. 35 varieties. J. W. JONES & SON, Allen, Md.

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I have used Newton's Cure in a great many cases, both at the Ketcham Farm and at my stables in the city, and I am pleased to testify to the efficiency of same. I have effected several permanent cures of heaves and chronic cough with it, and for distemper in colts it has no equal. Respectfully,

Geo. H. KETCHAM.

NOTE.—The Ketcham Farm bred, raised and owns Crescens.



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100 bbls of White or Jerusalem Artichokes at only \$2.00 per bbl. The cheapest Hog Feed known. I raised five hundred bushels on an acre of only fair land. Also offer 25 Pure Bred BARRED P. ROCK Cockerels at \$1.00 each.

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We are still serving out our LOW PRICE-LIST, though prices are advancing on most kinds of Nursery Stock. Don't delay, but send in orders for spring at once. Address

EMPORIA NURSERIES, Emporia, Va.



KILL THE CHICKEN THIEF! SKIN HIM AND SHIP HIS SKIN AND ALL FURS, PELTS, DEERSKINS, GINSENG & GOLDEN SEAL TO THE BEST ESTABLISHED SHIPMENT HEAD M'ILLIAN FUR & WOOL Co. MINNEAPOLIS, MINN. THERE'S MONEY IN IT Write for Price Circulars

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### Good's Caustic Potash Whale Oil Soap, No. 3.

It also prevents Cur Leaf. Endorsed by entomologists. This soap is a fertilizer as well as insecticide. 50 lb. kegs, \$2.50; 100 lb. kegs, \$4.50. Half barrels, 270 lbs., at 35c. per lb.; barrels, 425 lbs., at 35c. Large quantities, special rates. Send for circular.

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Position wanted by a first-class man in farming, dairying, cattle, sheep, swine, and poultry, etc.

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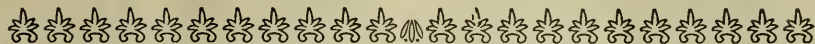
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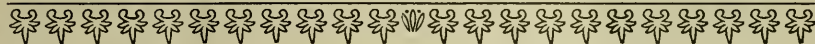
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**Cows bred to my herd bulls, Aged Bulls,  
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NO FANCY PRICES, but true values. They are bred right, and sold right at CASTALIA.

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is inactive or your DIGESTION out of order, use **MONA LIVER TONIC** which is the best preparation known for producing a healthful and continuous secretion from the liver and other organs. It is an absolute cure and preventive of torpid or inactive liver, thus preventing costiveness, or curing this condition if it already exists. Of course the consequent troubles of obstinate costiveness, such as sick or nervous headache, restlessness, sour stomach, colic, heartburn, and kindred diseases, are relieved by this most excellent remedy. Blisters, pimples or rough skin, caused by indigestion or costiveness, will be relieved in a few days by the use of **MONA LIVER TONIC**, thus producing a beautiful complexion. It will cure JAUNDICE in a few days.

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## REPORTS.

U. S. Department of Agriculture, Washington, D. C. Report of the Secretary of Agriculture, 1901. This report is considerably longer than in former years, reflecting the great growth and development which has attended this Department during his administration.

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Bulletin 198. Inspection of Feeding Stuffs.

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Bulletin 114. Manufactures. Iowa.  
Bulletin 115. Manufactures. Kansas.  
Bulletin 116. Manufactures. Salt.  
Bulletin 117. Manufactures. Alabama.  
Bulletin 118. Manufactures. Georgia.


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An extra fine lot of **JACKS JENNETS** and **MULES**. Some prize winners. All stock guaranteed and delivered f. o. b. at City of Indianapolis, Ind. Street cars run every hour to within a mile and a half of farm. Address



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High bred Jacks a specialty.  
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**HACKNEY STALLION FOR SALE**  
3 years old. A first-class animal and prize-winner. Address  
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Apply to **R. E. CREE, CROZET, VA.**

**FOR SALE—Mammoth Bronze Turkeys & Pekin Ducks**  
Will sell cheap for thirty days. Address  
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We have this season the finest lot of cockerels that we have ever offered for sale. Price, \$1.00. Order one and improve your flock.

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**S. C. WHITE LEGHORNS.**  
Prize Winners and Heavy Layers.  
My fowls won First Cockerel and First and Second Pullets at Fanciers' Show, Richmond, Va., Oct. 7-12, 1901. Cockerels that will improve your stock, for utility purposes and standard show-room points. Cockerels, \$2.00 to \$3.00. Eggs, 15 for \$1.50. **C. M. FINN,**  
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..EXCLUSIVELY..

Young stock now ready. Cockerels from \$1.00. Trios not akin. Price according to points. Eggs \$1.00 per sitting.  
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**Choice Breeding Stock of Genuine TOULOUSE GESE, M. B. TURKEYS, B. P. ROCK CHICKENS, GUINEAS, PEAFOWLs For Sale.**

Eggs in season from all seasons. Also one INCUBATOR and two **PAIRIE STATE BROTHERS**, almost new and work well. Also, very cheap, four grade heifer calves. Father Registered thoroughbred **Holstein-Friesian**; mother pure Devon. Satisfaction guaranteed.

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ELMWOOD STAR OF BILTMORE, winner of almost one hundred (100) prizes, and just in his prime, will be sold to prevent inbreeding.

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ONLY GOOD ANIMALS SOLD.

Have a fine lot of LAMBS. Order now and secure one of my choice ram lambs or rams. Did not have enough to go around last year.

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60 acres good land; young orchards. Buildings, modern and convenient in every way. Capacity, 1000 hens; brooding capacity, 5000 chicks. Have never had disease. Price for quick sale, \$5000.

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6 selected males, vigorous and healthy, 5 months old at the small price of \$10.

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## MAGAZINES.

The Century for January (New Year's number) is not less interesting than its two predecessors. In the "Year of American Humor" there is a group of contributions. "The Gentlemen of the Plush Rocker," by Mrs. Ruth McEnery Stuart, is a unique study of the negro; Ellis Parker Butler, author of "The Reformation of Uncle Billy," succeeds in playing a new tune on an old string in "Eliph Hewitt's Castaway," a story of a book-agent; James Whitcomb Riley contributes half a dozen character poems, entitled "A Few Neighbor Children"; and the series of "Policeman Flynn's Adventures," by Elliot Flower, is brought to an end. Charles Battell Loomis writes of "New Year's Day Twenty Years Ago," and there are humorous contributions in the department called "In Lighter Vein."

Though not directly included in the above group, General James Grant Wilson's paper on "Thackeray in the United States" (second visit) presents a number of the novelist's drawings which are owned in this country, and shows Thackeray in his most delightful vein both as writer and draftsman. The frontpiece is a drawing by Remington, printed in tint, of a Western stage coach in the moonlight one of the illustrations of Emerson Hough's concluding paper on "The Settlement of the West," in which the author considers the movement of emigration "across the waters"—that is, by means of caravan and railway. This series, while of special interest to Western readers, is a prose epic of great attractiveness to the whole country.

An interesting feature is made by the grouping in this number of the three prize winners in The Century's last college competition—"Poppies in the Wheat," a story; "Huxley as a Literary Man," an essay, and "Actæon," a poem, the last being decorated and illustrated by Kenyon Cox. In accordance with its announcement of groups of poems by new writers, the magazine introduces this month John Charles McNeill, of North Carolina, several of whose poems are presented; and there are also two poems by Elith Thomas, with illustrations by Sarah S. Stilwell. Charlotte Harding, the artist, and Lillie Hamilton French have co-operated in an article entitled "Some of our Wise Virgins," dealing with the useful or benevolent work of young women in so-called New York society. This is by way of supplement to the November article, "Our Foolish Virgins," by Eliot Gregory. Isaac N. Ford, London correspondent of the New York Tribune, contributes a timely paper on "Electric Transit in London and Paris,"; Cyrus Townsend Brady's romantic sketch, "Barbarossa," and Anne Douglas Sedgwick's "The Rescue" are continued; and a new writer, Arthur Ruhl, contributes an odd story of Chinese life in New York, entitled "Their Native Correspondent."

The January Forum opens with an article by Rear-Admiral G. W. Melville on "The Military Duty of the Engineering Institutions." The writer suggests the formulation of a plan to enable the civil scientific colleges to supplement the work

# SHORTHORNS

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One Pure Scotch Bull 5 yrs. old, for sale.

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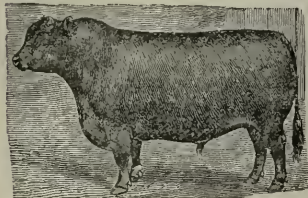
Having sold my farm, I offer at a bargain:

- 2 **REG BULLS**, one 2 yrs. old Sept. 4, 1901 the other will be May 28, 1902.  
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All in good condition, and most of them crossed on shorthorn cows, and with calf by my registered bull. The registered cattle are good strain of breeding, and good individually. For prices and further particulars, address

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Ayrshire cows and calves of both sexes for sale. Also extra fine Berkshire swine. Description and price of stock given on application.

ENOS. H. HESS, Casanova, Va.

of West Point and Annapolis. Prof. Paul S. Reinsch describes the opportunities afforded by "A New Era in Mexico." Two educational subjects are then discussed: "The Place of Geography in the Elementary Schools," by Dr. W. T. Harris, the Commissioner of Education, and "Problems of Our Educational System," by President Hyde, of Bowdoin. The list of contents includes papers on several subjects which will shortly be receiving attention in Congress. Among these are a plea for "Reciprocity with Canada," by Hon. John Charlton, a member of the Anglo-American Joint High Commission; a free trade argument, by Jacob Schoenfl, under the title of "The Rake's Progress in Tariff Legislation;" an examination, by Congressman John F. Shafer, of the connection between "The Philippines and Our Military Power," an article by Marion Wilcox on "Our Honor and Cuba's Need;" an account by Sunyow Pang, an Americanized Chinaman, of "The Chinese in America," with special reference to the Chinese Exclusion Act; and a discussion, by Prof. Elwood Mead, of "Problems of Irrigation Legislation." Earl Mayo contributes an estimate of the extent to which "The Americanization of England" has already proceeded. The closing paper is by Prof. Brander Matthews, who writes on "Mr. Howells as a critic," with particular notice of his recent book on the "Heroines of Fiction."

If Emerson, whose advice was, "Hitch your wagon to a star," had said, instead, "Hitch your clock-work to a star," he would have prophesied just what is done all over the country now-a-days. In several large observatories correct time is kept by the transit of a particular star across the meridian, and transmitted automatically by telegraph to points hundreds of miles distant. Many interesting facts in this connection about the "Master Clock" at Washington, time-balls, etc., are given in an article by W. S. Harwood in St. Nicholas for January, entitled "How We Set Our Watches by a Star," with illustrations showing how the work is done.

The long story this month is, "The Wyndham Girls," by Marion Ames Taggart. Girls especially will enjoy the account of these three young heroines who, suddenly brought to face a trying situation, show themselves brave, cheery, and capable despite lack of preparation; but boy-readers, too, will be sure to vote the "Wyndham Girls" delightful friends. A touch of romance adds a pleasant flavor. Other fiction is to be found in "Uncle John, Mind Reader," by Ethel D. Puffer; "Frank Benson's Automobile," by Frank S. Ballard, and the current instalment of John Bennett's "Story of Barnaby Lee."

Nothing seems lacking in the New Year number of The Ladies Home Journal to make it the most complete issue of that periodical yet published. In every way it is singularly attractive. Cardinal Gibbons and Rudyard Kipling lead the list of contributors, the one with a strong arraignment of the "new woman"; the other with the true story of how he brought up a baby lion on a bottle! We are told "How Uncle Sam Guards His Millions," and how to have a comforta-



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Send for pedigrees and descriptive circular.

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**SILVER LACE WYANDOTTE.** Price, \$1.50 per setting.

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Prices include packing and delivery to express office here.

On orders placed previous to February 1st, we supply 15 eggs to the setting; after that time, 13 to the setting. Place your orders now so as to be sure of getting eggs when you want them. The demand for our stock last year was more than we could supply.

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The Times, " " " " " "	.....	3 00	3 00
The Post, Washington, D. C.	.....	6 00	6 00
SEMI-WEEKLIES.			
The Dispatch, Richmond, Va.	.....	1 00	1 25
The World (thrice-a-week), N. Y.	.....	1 00	1 25
WEEKLIES.			
Harper's Weekly	.....	4 00	4 00
" Bazaar	.....	1 00	1 40
Montgomery Advertiser	.....	1 00	1 00
The Baltimore Sun	.....	1 00	1 35
Breeder's Gazette	.....	2 00	1 75
Hoar's Dairyman	.....	1 00	1 35
Country Gentleman	.....	1 50	1 75
The Times, Richmond, Va.	.....	50	85
Religious Herald, Richmond, Va.	.....	2 00	2 25
Central Presbyterian, " " "	.....	2 00	2 25
Christian Advocate, " " "	.....	1 50	1 75
Turf Field and Farm	.....	4 00	4 00
Spirit of the Times	.....	4 00	4 00
Horseman	.....	8 00	8 00

MONTHLIES.			
North American Review	.....	5 00	5 00
The Century Magazine	.....	4 00	4 25
St. Nicholas	.....	3 00	3 25
Lippincott's	.....	2 50	2 50
Harper's	.....	4 00	4 00
Forum	.....	3 00	3 25
Scribner's	.....	3 00	3 25
Frank Leslie's	.....	1 00	1 35
Cosmopolitan	.....	1 00	1 35
Everybody's	.....	1 00	1 35
Mansey	.....	1 00	1 35
Strand	.....	1 25	1 65
McClure's	.....	1 00	1 35
Puritan	.....	1 00	1 35
Review of Reviews	.....	2 50	2 75

We furnish no sample copies of other periodicals.

## 65 PURE BRED

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# Red Polled Cattle.

FOR SALE; also RIDING AND DRIVING HORSES AND SHEP-LAND PONIES.

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ble home and a garden for \$6,000. There is a wealth of good fiction. "The Wisdom of the Dove," a clever story by Lillian Brooks; the second part of "The Ransells in Chicago," and the concluding chapters of both "A Gentleman of the Blue Grass" and "Christine," are all in this number. Mr Bok presents an absolutely unanswerable editorial against the "cranning" system in the education of children which is as unique as it is convincing. Will Bradley shows the dining-room of "his house," there is a page of brief stories, anecdotes and poems, and many receipts for home-made candies add a sweet touch. All of the regular editorial departments are unusually interesting, especially that of fashions, which is enlarged to eight pages under the editorship of Virginia Louis Ralston. The illustrations are superb. The cover is by Blendon R. Campbell, a new artist; there are two pages of beautiful photographic views "Along COUNTRY Roads," and the second part of The Journal's picture story of "What a Girl Does at College," showing the athletic side. By The Curtis Publishing Company, Philadelphia. One dollar a year; ten cents a copy.

You are all aware that the catalogue houses are here to stay, and why not? You can take the catalogue of a firm, say like Marvin Smith Co., of Chicago, and in a few days after ordering, have the goods at your door, and you will find that you have not only saved money, but have gotten just what you ordered.

## FEED MILLS AND FEED CUTTERS.

The Cash Supply and Manufacturing Co., Kalamazoo, Mich., has an advertisement in this issue of a splendid Feed Mill. Look it up and send for full description and price before purchasing elsewhere. This company can supply almost anything in the implement line, and our readers are invited to correspond with them when in need. Catalogue No. C-81 will be sent to all inquirers. Write for it to-day.

## THE HANDSOMEST CALENDAR

of the season (in ten colors), six beautiful heads (on six sheets, 10x12 inches), reproductions of paintings by Moran, issued by General Passenger Department, Milwaukee and St. Paul Railway, will be sent on receipt of twenty-five cents. Address F. A. Miller, General Passenger Agent, Chicago.

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The Jersey Bulletin, of Indianapolis, Ind. (the only weekly publication devoted exclusively to Jersey cattle and purely dairy interests), has reduced its subscription price as it grew older and better and increased in size and influence. Steadily the price has fallen, from \$2.50 in 1883 (then a sixteen-page semi-monthly) to \$2.00 in 1886 (when it had become a weekly); in 1898 to \$1.50 (by this time running twenty to twenty-four pages each week).

The dollar rate for The Jersey Bulletin goes into effect January 1, 1902.

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It would be a pity indeed if all of the vast quantity of material, usually the very best kind as to quality were to lose its intrinsic value after it had completed but a short period of usefulness. We are all more or less interested in an exposition during its life, and it might not be amiss to give a few minutes thought as to what becomes of an exposition after the lights have gone and the glory has departed.

The features of the Pan-American Exposition will live in the memory of all who were fortunate enough to see it. The highest skill in science and art had been employed in making an exposition fully worthy of this era of progress and invention.

The illumination was unquestionably the finest ever before seen. It was as grand a sight as mortal eye had ever beheld. The color effects of the buildings and the beauty of the architecture were the result of more than ten years of careful thought and study. It was in fact in every way such an institution as we were all proud of. The tensing people of Buffalo and the state of New York had spared no expense in making an exposition fully worthy of the great commonwealth that it represented.

To give you an idea as to the enormous quantity of material necessary in the construction of such an exposition we briefly mention the fact that there were 33,000,000 feet of lumber used in the construction, 125,000 sq. feet of windows, 40,000 sq. feet of doors, 2,000,000 lbs. of iron pipe, 20,000 lbs. structural iron, 300,000 incandescent lights, 600,000 sq. feet roofing tile, millions of brick, 9,000 flag poles, 15,000 flags, 1,500 sculptural groups and countless of other items were used in building the exposition.

As November 1st drew near the question of disposing of the material and of restoring the grounds to their former condition was naturally the all important proposition of the directors of the exposition. What to do with the material and who could successfully undertake the gigantic task? As a matter of fact there were but few contractors in position to undertake the job.

The Chicago House Wrecking Co. was practically the only bidder and the contract was awarded to them. It is understood that something like \$133,000 was the purchase price.

At the company's extensive plant in Chicago there is a scene of hustle and bustle. Buildings are being cleared that they may receive the enormous contents. The yards are swept of heaped up goods and the tracks that run through their yards are being strengthened to take care of this enormous traffic. A thousand freight cars will be needed in moving the material.

This is the same company that purchased the World's Fair of 1893. They are also the purchasers of the Trans Mississippi Exposition of Omaha, Neb., 1899, and dismantled the Chicago Postoffice and Sub-Treasury Building. They are the only concern of their kind on earth who make a scientific study of the material and who wreckers in the ordinary sense of the word, because they preserve and do not destroy. The gruff material that comes into their possession is carefully gone over, and wherever possible restored to its original condition.

At the time of the purchase of the material's Fair the question of what to do with the material was a very important one to this company. Chicago, however large, was too limited a field in which to dispose of all of the material. A systematic and complete catalogue was issued containing carefully detailed description of the material and was mailed broad-cast throughout the country. The reception accorded it was a very encouraging one to its promoters, and it showed there was an enormous demand for building material at low prices. It is now a regular business with the company to issue such catalogues. The material that it acquires in the dismantling of institutions and exhibitions is scattered over the face of the earth. The statues are used as object lessons in colleges and art institutes. They are of great value when properly taken care of, and the company knows it.

The lumber is carefully removed from the buildings and the nails are drawn, and it is so arranged that for practical purpose it can be used as well as new material. The pipe is rejuvenated, the steel roofing is preserved. This same also applies to the various other items that enter into the construction of buildings.

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3 FEEDS FOR ONE CENT

### SALES AT BACON HALL FARM.

Mr. E. M. Gillet, proprietor of Bacon Hall Farm, Verona, Md., reports trade good, and that his Herefords, Berkshires and Dorsets are moving out rapidly. Among recent shipments are the following:

**Herefords.**—D. B. Doty, of Pennsylvania, takes 3 heifers and 1 bull; D. W. C. Sharp of Virginia, 1 bull and 2 Berkshire sows; R. G. Hazen, of South Carolina, gets 1 bull.

**Dorsets.**—L. P. Nelson, Jr., 3 rams; J. L. Squires, 4 ewes; Tranquility Farm, 5 ewes; F. P. Shields, of North Carolina, 2 rams; H. D. Anderson, of Virginia, 2 ewes and 1 ram; Dr. J. E. Orrison, 1 ram; Crinkley Bros., of North Carolina, 7 ewes and 1 ram; D. E. Hale, 1 ram; T. W. McLeMore, of Tennessee, 1 ram; Wm. Holmede, 1 ram; W. N. Lelock, 5 ewes; W. M. Watkins & Sons, 10 ewes; C. L. Bowie, 3 rams.

**Berkshires.**—Jos. Hughes, 1 boar; Chas. S. Embert, 1 boar; Dr. Merrick, 2 pigs; C. H. Hartman, 1 sow; J. E. Dorsey, bred sow and 4 pigs; Mrs. Glasscock, 1 boar; Colored Reformatory of Maryland, 1 boar.

Toulouse geese to Mrs. W. F. Jackson and Dr. Sprinklin.

Muscovy ducks, F. S. Farish and J. E. Wing.

**Totals.**—Herefords, 5 head, Pennsylvania, South Carolina and Virginia.

Dorsets, 35 head, to Virginia, West Virginia, Tennessee, North Carolina and Maryland.

Berkshires, 12 head, to Maryland, Virginia and Delaware.

All of the above sales, with one or two exceptions, are the results of Mr. Gillet's advertisement in the *Southern Planter*.

The Southern Pacific Railroad sends us a pamphlet made up of 200 receipts for preparing and cooking rice. This will be found a very useful book for every housekeeper. It will be sent on application to E. F. B. Moore, Assistant Passenger Traffic Manager, Houston, Texas. Price 50 cents.

Old Lady (to district visitor): It's my 'ead that's been troublin' me so, Miss, but the doctor he says, "Ye take these 'ere pills and ye ou'll soon shake it off.—*Punch.*

## Hill Top Stock Farm OFFERS FOR SALE

### SOUTHDOWN and SHROPSHIRE SHEEP.

10 large, strong, yearling bucks (6 Shropshires and 4 Southdowns.)

### A GRAND LOT OF BERKSHIRE HOGS.

Young sows bred to elegant boars, and young boars ready for service.

Come and see our stock, or write for description and prices to

**H. A. S. HAMILTON & CO., Staunton, Va.**

Parties will be met at train with conveyance, if we are notified in time. We are always glad to show our stock.

## M. B. ROWE & COMPANY,

### FREDERICKSBURG, VIRGINIA.

YOUNG JERSEYS, male and female; several young GUERNSEY BULLS, and a small herd of DEVONS ready this month.

Also a fine lot of BERKSHIRE PIGS. Can send pairs and trios not akin.

A few BRONZE TURKEYS, LIGHT BRAHMA and PLYMOUTH ROCK FOWLS.

Several handsome SHEPHERD PUPPIES now ready.

# ST. LAMBERT BULLS

We have for sale a number of YOUNG BULLS from cows with butter tests ranging from 16 to 24 lbs. per week, and yielding from 5 to 6 gallons of milk per day.

We have more high testing ST. LAMBERT COWS than can be found in any herd in the United States or Canada.

## INDIAN GAME FOWLS

We have also for sale a choice lot of INDIAN GAME CHICKENS—male and female. Also some choice WHITE WYANDOTTE COCKERELS. The Indian Game and White Wyandottes are the best general purpose fowls.

**BOWMONT FARMS, SALEM, VA.**

## HOW TO PLANT AND CULTIVATE CELERY.

### MONTGOMERY FARMERS' CLUB.

There being no regular subject, I will talk a little on what I consider one of the most delightful things raised in the garden—namely, celery. I place my celery second only to corn in the garden. It is not only very healthy, but is almost necessary now a days to complete a good dinner of oysters and turkey.

I have been raising celery for over thirty years, almost constantly. In fact, I do not remember ever failing to raise a crop, and I have gradually changed my plans or ways of setting out, not only as to time, but also manner and quantity. The old way was to allow your plants to get good size, set them out in July, and then the carrying of water, and what a fight it was to keep alive and get it started ready for the fall rains. I have gradually been planting earlier, until the last two years I have planted my entire crop in May, and the first planted was the best. The plants were small, and I cut the tops off and plant not over three inches apart. My plants were not over four or five inches high, and I cut from one and a half to two inches of the tops off.

I do not trench, but open a deep furrow and put the plants on the side of the furrow—not in the bottom, as a heavy rain will often wash out or over the small plants if put in the bottom of row. I much prefer to plant close in the single row to making a double row, as some advise. By planting very close in row (three inches) I get an immense amount of stuff in a small space. In a 100 foot row I have over 300 large stalks of celery. I leave plenty of room on each side, planting nothing in the regular row on each side of the celery row. By planting early, a few of the plants will go to seed—one in about twenty-five—but this I do not object to, as the ladies like the seed for seasoning.

I commence to hill up at once, keeping the dirt from the heart of the celery. Hill when the ground is as damp as it will work without baking, and hill as often as you can.

I have tried many varieties, but have gone back to my first love—the Giant Pascal. Do not like the self-bleaching varieties; they are small and not crisp.

About the easiest and best way to keep from freezing what you want for family use, I think, is to haul strawy manure and cover ten or twelve inches deep on the top of row.

By planting so early my celery is ready for use thirty days earlier than the old way, and we always try to see how much we can eat up before the hard freezing weather comes. So I do not cover over more than one fourth of it. The manure not only keeps the celery from injury, but you can dig in the coldest weather. Any old straw or weeds will answer just as well.

For the benefit of the ladies I will state that cooked celery is a very delightful dish, and you can use for that purpose the outside portions of the celery that are not so well bleached.

WM. F. TALLANT.

## A NEW YEAR RESOLUTION FOR GOOD DAIRYMEN

With the protection of honest butter from fraudulent competition seemingly in sight through the proposed national law now before Congress, 1902 should prove a most successful and prosperous year in dairying where conducted in up-to-date business like manner

The dairy farmer who is skimming his own milk at home from any reason can't possibly make a better New Year resolution than that he will purchase a DE LAVAL separator within the next three months. It will save its cost within the year. Its use means a better product and more of it, the saving of much of the drudgery of dairying to wife and daughter and improvement in every way. In fact a De Laval machine and dairying prosperity have come to go hand-in-hand, whether in factory or home separation.

A De Laval catalogue may be had for the asking. It is well worth reading whether you want a separator or not.

### THE DE LAVAL SEPARATOR CO.

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Boars in Use: COUNTRY GENTLEMAN  
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PIGS from such noted sows as Miss Leewood,  
Queen Quality, Grove's Queen, &c.

Registered Holstein-Friesian Cattle of  
Netherlands, Pieterjes and Clothilde families,  
All rich, heavy milkers and grand individuals.

English Beagle Hounds, Brown Leghorn and Plymouth Rock Chickens  
for sale.

N. B.—In the stud, the imported Hackney stallion, "The Duke" (registered in E. H. S. B. and A. H. S. B.); fee, \$10.00. Hackney mare in foal to "The Duke."

Address T. O. SANDY, Burkeville, Va.  
Norfolk & Western and Southern Railways.

## WALLERSTEIN PRODUCE CO.

10 and 12 South 13th Street, RICHMOND, VA.

NET CASH BUYERS OF SOUTHERN PRODUCE.

HIGHEST PRICES paid for PEAS, BEANS, DRIED FRUIT, WOOL, FEATHERS,  
FUR SKINS, HIDES, &c. We can save you expense.

ORDERS for BLACK, CLAY and other AGRICULTURAL PEAS, and SEED  
POTATOES solicited.

THE OUTLOOK FOR VIRGINIA LITERATURE.

BY MARY WASHINGTON.

While we have reason to feel encouraged and gratified by the development of Virginia's material resources since the War, we have still more cause to take pride and pleasure in her intellectual development as evidenced in the large amount of fine literary productions that have emanated from her sons and daughters of late years. Indeed, there has always been a nucleus of literary talent in the State. In the first half of the nineteenth century, there was glorious Edgar Poe, the adopted son of Virginia, sufficient in himself to shed lustre on any age or country. Then not long prior to the Civil War, we had some other literati less eminent, but still possessing true merit. There was John R. Thompson, a fine scholar and a poet decidedly above the average. "Marian Harland," too, acquired a good literary standing, in antebellum days, as a novelist, to which she has since added, especially by her powerful and life-like tale, entitled "Judith," and she still wields an able and graceful pen, holding her own very well, amidst the great crowd of competitors that have sprung up of recent years. Amongst valuable works of Virginia authorship, that appeared before the War, I may also mention "Sketches and Recollections of Lynchburg," by Mrs. Clifford Cabell, a lady who was a native of that town, and who also wrote many fugitive stories and sketches of a high order, some of which appeared in "The Southern Literary Messenger," whilst that journal was edited by Edgar Poe. Lynchburg likewise produced a poetess who would have made some stir in the world if she had had more self-confidence and "push." I refer to Mrs. Cornelia M. Jordan. Early in the century, a young man in Lynchburg wrote an exquisite poem destined to live permanently, I doubt not—

"I'd offer thee this hand of mine,  
If I could love thee less."

But he died young, without fulfilling the rich promise he had given. His name was Bransford Vawter.

Nor were we without a humorist in our ante bellum literature. Dr. Bagby both wrote and lectured in a richly humorous vein.

Amongst the new lights that have arisen since the War, we might mention Amelie Rives and M. G. McClelland, two talented women related to each other through their common ancestors, the Cabells. Amelie Rives showed a rich, exuberant vein of talent in "The Farrier Lass," and some of her other early works, whilst her poetic vein seemed as rare and fine as her prose. Her friends naturally expected a great career for one so richly gifted, but unfriendly (and it seems to me too severe) criticism on "The Quick and the Dead," doubtless operated to discourage Miss Rives from the career to which her natural gifts so strongly called her, so we have had but little from her pen of late years.

Miss McClelland made a hit with her first novel, "Oblivion," which was pow-

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**IN THE TREATMENT OF DISEASES REQUIRING AN EFFICACIOUS EXTERNAL REMEDY.**  
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eful and of thrilling interest. "The Self-Made Man" (published by Lippincott), was almost equally good. Then followed a series of novels and short stories, but unfortunately her career was cut short, by her untimely death, in her prime.

Thos. Johnson Page is our most prominent literary character except Mary Johnston. His works are too widely read and too well known to need more than a passing comment here. The simple pathos of "Marse Chan" went to every heart at once, and gave Mr. Page a position in the front ranks of literary talent. But it required a longer and more consecutive work to show the greatness of Mr. Page's powers, and this we have in "Red Rock," a book that deserves a permanent place in literature, both for its fidelity to history and its admirable character painting. The character of Dr. Blair seems to me almost as finely drawn as that of Col. Newcome—the latter a perfect gentleman of the old world, and the former of the new—the essential elements the same in both cases. Then, where could one find a more perfect portrayal of the old Virginia gentleman than in the case of Miss Thomasia?

Mary Johnston burst upon us like a meteor or a comet, and took the public by storm. In ten weeks, 200,000 copies of "To Have and to Hold," were sold. For vividness and thrill and rapid marching on of the plot, it would be hard to find her equal, either in this country or abroad.

Another talented Virginia authoress rises to my mind, Mrs. Burton Harrison. This lady, although she has lived in New York for many years, is a Virginian of the bluest blood, blending in her veins the blood of the Carys and Fairfaxes. She is well known as the authoress of "Anglo-Maniacs," and other charming romances, besides writing short articles for the leading magazines. In poetry, I think our Mrs. Margaret J. Preston compares favorably with the New England poetess, Lucy Larcom.

But not all Virginia writers devote themselves to fiction; some follow graver paths. There is, for instance, the eminent Matthew Maury, whose admirable works on Geography have been of such service in our schools. He also compiled the most complete and valuable log books ever published, and wrote a treatise on Navigation, and "Letters on the Amazon," and on "Atlantic Slopes of South America."

Then there is Mr. Alexander Brown, who has devoted himself to Genealogy, and to our early Colonial history, he having studied this subject exhaustively for many years past, with access to many rare MSS. bearing upon it. Mr. Brown is, I believe, a member of every Historical Society in this country, and also of some noted ones abroad. His work on "The Genesis of the United States" is a very valuable contribution to history, and is an extremely desirable book for college libraries. Mr. Brown has also written other historical works, exhibiting great research and scholarship.

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# "BLACKLEGINE"

## Pasteur Blackleg Vaccine Quite Ready for Use.

This is in the form of a cord impregnated with the vaccine. Each dose is separate and applied with a special needle. The dose is hitched on to a notch in the needle and then inserted under the skin at the shoulder. The needle is provided with a detachable handle. Vaccination with "Blacklegine" is as rapid and easy as taking a stitch. There is no dissolving, or mixing, or filtering a powder; no injecting or trouble in measuring doses; no expensive syringe outfit.



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Prices: "Single Blacklegine" (for common stock): No. 1 (ten doses), \$1.50; No. 2 (twenty doses), \$2.50; No. 3 (fifty doses), \$6.00. "Double Blacklegine" (for choice stock) (first lymph and second lymph, applied at an interval of eight days), \$2.00 per packet of ten double doses. Blacklegine Outfit (handle and two needles), 50 cents.

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"MOUNT SHARON"  
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"HEREFORD CATTLE"  
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NOW OFFERS FOR SALE

**HEREFORD CATTLE.**—Calves, entitled to registration, \$75 to \$100. Grade Calves by "Sir Edward" \$25 to \$40.

**SHROPSHIRE SHEEP.**—Bucks, one year old and over, \$15 to \$30. Ewes, one year to three years old, \$10 to \$12. Buck Lambs, July delivery, \$10. Ewe Lambs, July delivery, \$8.

**POLAND-CHINA HOGS.**—Pigs, six weeks old, \$4.50. Pigs, three months old, \$7.50. Pigs, five months and over, \$9 to \$15.

**M. BRONZE TURKEYS.**—Toms, \$3. Hens, \$2.50. Eggs, per sitting of 12, when in season, \$6.

**MUSCOVY DUCKS.**—Pure White Drakes, \$1.25. Pure White Ducks, 75 cents. Pairs, \$3; trios, \$2.75.

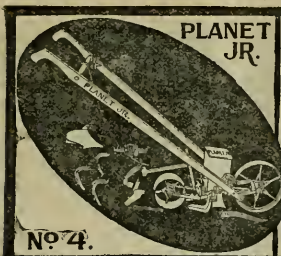
**ROUEN GEES.**—Ganders, \$2.50. Geese, \$2. Eggs, per sitting, \$2.50.

**WILLIAM L. J., Jr., No. 21058,** half brother of Axtell, will serve a limited number of mares for \$25 the season. Mares boarded at lowest figures per month.

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# HEREFORDS

GAZETTE 75100 at head of herd; one of the best sons of St. Louis.  
A choice lot of Yearling and Bull Calves for sale at bottom prices if taken at once.  
Farm three miles from station. H. L. MORGAN, Saltville, Va.



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## THE GOOD GARDEN

presumes good planting and good cultivation. The best, safest and surest way to secure these results is from the use of the "PLANET JR" No. 4 Combined Hill and Drill Seeder, Single Wheel Hoe, Cultivator and Plow. The hopper holds two quarts of seed and will sow any garden seed in continuous rows, or drop it in hills, at five different distances. The index is tested and accurate, and the drill will in every case sow the amount of seed desired. Simply lifting the handles throws it out of gear. When ready to cultivate take off seed box and put on tool frame and it is ready for cultivating between or astride the rows, hilling up, plowing, etc. No tool has ever been made to equal it for the home, gardener or small farmer.

Write at once for our new 1902 catalogue. It tells all about "PLANET JR." Seed Drills, Wheel Hoes, Horse Hoes, Cultivators, Two-Horse Cultivators, Sugar Beet Seeders and Cultivators, etc. Hundreds of thousands of these Catalogues now printed and ready for distribution. We mail a copy free.

S. L. ALLEN & CO., Box 1107 X, PHILADELPHIA, PA.

Two Gold Medals at Paris Exposition; Highest Award.

### DON'T FORGET THE WINTER COURSES.

If you have not already received a copy of Agricultural Education and the circular of information in reference to the Short Course in Dairying and the Winter Course in Agriculture, you should write Prof. Charles W. Burkett, A. & M. College, Raleigh, N. C., at once for these two publications, which will be sent free.

It is not too early to arrange for attending either course at this time. It is hoped that a large number will enroll for these courses, which are of the highest value and importance to young men and women interested in agriculture in any way. Women are admitted under same conditions as men. The cost for board, room and registration fee is but thirty dollars. The instruction will be worth ten times the cost of the course. There ought to be 100 young men and women in attendance this winter. Will you be one? You ought to be, that is sure. Take the course and learn the proper way of making butter and handling milk; of feeding the various classes of live stock; soil improvement; judging horses and cattle; and other practical courses of the utmost value to the young men and women in any way connected with the farm.

Course begins January 2d, 1902.

CHAS. W. BURKETT,  
Professor of Agriculture.

In our last issue we made an error in the advertisement of Mr. T. A. Cary, agent for the Northwestern Mutual Life Insurance Co. In giving the splendid results of Mr. J. Heffelfinger's fifteen-year endowment policy we made it to expire in 1891, when it should have been 1901.

This company is making a fine showing for its policy-holders. Mr. Cary showed us a letter from Judge R. W. Winston, Durham, N. C., in which he says: "This is what I call a good thing; no company that I know of is ahead of yours, and I authorize you to say that I endorse your company."

Send in your age to Mr. Cary, and let him submit you the cost on a policy on your life under the Northwestern's various plans.

"I am afraid," said a certain small boy's mother, "that you are overeating. Aren't you a little apprehensive?" "No," was the answer, after due deliberation. "You know ladies are naturally timid." *Washington Star.*

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## HEREFORD CATTLE REGISTERED

Calves, Yearling Bulls and Heifers. Sired by "Gold Standard," by "Pride of Evergreen," who sired Champion at International Show, Chicago, 1900. Can offer calves no akin.

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MUSCOVY DUCKS. TOULOUSE GEESE.

E. M. GILLET, Verona, Baltimore County, Md.

## ROCK HILL SHORTHORNS

Herd headed by the 1400 lb. yearling bull, ROCK HILL ABBOTSBURN 155113, grandson of Mary Abbotsburn 7th, champion of America from 1895 to 1898. Six cows bred to Va. Abbotsburn. Five bull and two heifer calves.

**POLAND-CHINAS**, all sizes. Also two suckling fillies; one a three-quarter Percheron, mahogany bay with star, weight 600 lbs. at 5 mos.; the other a gray, fine style, all the gaits, same age weighed 550 lbs. at 5 mos. I will offer some rare bargains for next 30 days as I expect to move and will be short of feed.

B. B. BUCHANAN, BROWNSBURG, VA.

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## Farmers Mutual Benefit Association.

A Fire Insurance Association, chartered by the State for the farmers of Virginia, under an amended and well protected plan.

Insures, against Fire and Lightning, only country property—no stores or unsafe risks. Average cost per year for two years has been \$3.50 per \$1000, including dwellings, barns, produce, &c.,—about one-third the usual cost of insurance to farmers. Amount of property insured \$325,000. Estimated security in real and other estate, \$600,000.

For further information, address,

CHAS. N. FRIEND, General Agent.

MENTION THIS JOURNAL.

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URY STOCK FARM offers a choice lot of

## HOLSTEIN-FRIESIAN HEIFERS AND BULLS

Of the richest breeding. Sired by Ury Alwina Count Paul De Kol, Count De Kol Metchilde and Woodland Comus. Address at once

THOS. FASSITT & SONS, Sylmar, Md.

## GRINDING ON THE FARM.

MODEL MILLS FOR GRINDING DAIRY FEED,  
GRAIN, OIL CAKE, COTTON SEED,  
PHOSPHATE, ETC.

Messrs. Sprout, Waldron & Co., Muncy, Pa., are making some remarkably fine portable mills for use on farms. They grind all kinds of dairy feed and every kind of grain—oats, rye, corn, barley, provender, clover, hay, corn-stalks, corn and cob—anything suited to live stock feeding. They can also be used for crushing cement rock, phosphate, etc.

These are widely different uses, indicating both great strength and very accurate adjustment—essential to farm work.

These mills are very simple, can be operated by any one of average intelligence, and will not get out of order. In fact there is no possible chance of its getting out of order.

One of these mills will be sent to any responsible person for a free trial of fifteen days. Or if you prefer to know more of them you may have a descriptive catalogue, free, by sending your name and address to Sprout, Waldron & Co., Muncy, Pa.

## WINTER PAINTING.

Winter, while usually the most convenient time for painting, is in most parts of the country a very poor time for exterior painting, at least. For interior painting it is also objectionable, because the necessary closing of doors and windows intensifies and prolongs the disagreeable odor of oil, turpentine and some pigments. Where the paint is poisonous the confinement of its vapors also increases its deleterious effects.

But where a room that requires repainting can be spared for a time from use, winter is the ideal time for doing the work, provided the room can be kept warm. Artificial heat, to begin with, insures an even temperature, the absence of rush in his trade assures greater attention to the job on the part of the painter, and finally the absence of dust in a closed room enables one to give each coat a longer time for thorough drying, without deterioration in appearance.

Time, a dry atmosphere, and even temperature will take in paint the place of dryers, and dryers are literally oil destroyers; consequently, the less we can use of them the better for our paint. Pure zinc white paint, tinted or untinted, is on every account the most durable, the most beautiful, and the most wholesome that can be used on the interior of a house; but when applied without dryers it dries slowly; hence, under the conditions mentioned above, the leisurely months of the winter are the best season for applying them.

STANTON DUDLEY.

One of the most notable signs of the present good times is the large amount of goods seen at the freight depots all over the country coming direct from such large mail order houses as Marvin Smith Co., of Chicago. The farmers who deal with this firm say that they can always depend on fair treatment, and a large saving in cost, \$1.00 going almost as far \$2.00 spent with the local dealer.



## Easy Harness

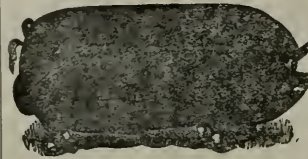
All harness, old or new, is made pliable and easy—will look better and wear longer—by the use of

### Eureka Harness Oil

The finest preservative for leather ever discovered. Saves many times its cost by improved appearance and in the cost of repairs. Sold everywhere in cans—all sizes. Made by STANDARD OIL CO.

I AM NOW BOOKING  
MANY ORDERS FOR  
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## BERKSHIRE PIGS



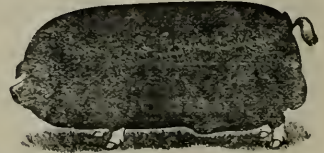
not fancy prices. Three car-loads good TIMOTHY HAY cheap.

for spring shipment. All sired by my famous boars, SIR JOHN BULL and UNCLE SAM. The former imported by me; the latter bred in the purple. I have four strains of registered sows, so I can furnish pigs no akin. Also GILTS and BRED SOWS.

FIVE high bred three-year old (in the spring) COLTS cheap. Fancy stock, but

THOS. S. WHITE, Lexington, Va.

## POLAND-CHINAS.



TECUMSEH G. 49283.

I have a large number of pigs by my fine boars, "TECUMSEH G," 49283, and "MONARCH," 48705, and can furnish pairs not akin or related to those previously purchased. Sows in pig and young boars and sows of all ages. Send to headquarters and get the best from the oldest and largest herd of Poland Chinas in this State at one-half Western prices. Address **J. B. GRAY, Fredericksburg, Va.**

## CISMONT DORSETS..

CISMONT STOCK FARM offers well developed young Dorsets of the best blood of England and America.

Prices reasonable.

G. S. LINDENKOHL, Keswick, Albemarle Co., Va.

## 50 TAMWORTH AND POLAND-CHINA PIGS

~ FOR SALE. ~

Eligible to registration. A few ready for service. J. C. GRAVES, Barboursville, Va.

**FARQUHAR VARIABLE Friction Feed SAW MILL,**

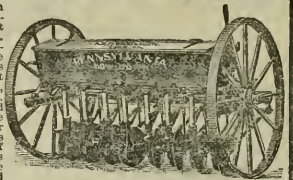


with patent feed, patent dogs and set works is the most convenient, durable, perfect in operation, and the cheapest high-class mill on the market. There are more of these mills in use than any other make, because they combine all the latest improvements. The sawyer standing in one position, controls the engine, sets the log, and regulates the feed of the carriage. The carriage is moved forward and backward by means of the Reamy patent feed and backing device.

**ALL ABOUT THEM IN THE CATALOGUE.**

**Pennsylvania Disk or Hoe Drill.**

This Low-Down Disk Grain and Fertilizer Drill is mounted on a steel frame, giving it great strength and lightness. Each disk works independently and has an adjustable coil spring pressure of its own—enables the disc to cut its way through corn stalks, stubble, weeds, grass, etc. It is sure to put in the seed every time. Chain drive force feed, for grain, grass or phosphate. No gear—down feed power from center of main axle. No joint—saves horses' necks. Accurate grain, grass, phosphate, and land measure.



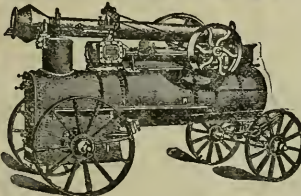
**LOW DOWN, EASY TO FILL.**

Here is a name

**"FARQUHAR"**

that stands for merit.

**"IMPROVED" AJAX THRESHING ENGINE.**

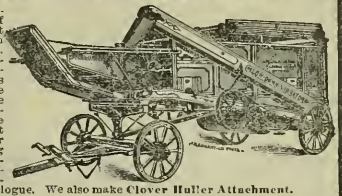


This portable engine is made most carefully of the best material. The boiler is made of the best grade of boiler steel, tensile strength, 25,000 to 6,000 pounds. The steel fire boxes are strongly riveted and tested at double the strain they will ever be required to use. No Farquhar boiler ever exploded. The engine parts are of the most improved patterns, and of the best material known. You ought to know about this engine.

All these things fully described in the catalogue. It is free. Also full line including all kinds of farm machinery.

**FARQUHAR LOW-DOWN SEPARATOR VIBRATOR**

threshes more rapidly, saves all kinds of grain and delivers it in better condition than any other made. No cracking or wasting of grain. The separating capacity is very large and the machine cannot be crowded. It will easily take care of all the grain that can be put through the cylinder without wasting power. We build separators of seven different sizes, all described in the catalogue. We also make Clover Huller Attachment.



**A. B. FARQUHAR CO., (Limited) YORK, PA.**

..THE..

**Cardwell Machine Co.,**

*Cary and 19th Sts., Richmond, Va.,*

..MANUFACTURERS..

**AGRICULTURAL IMPLEMENTS**

**AND MACHINERY.**

THRESHERS, HORSE POWERS, CORN PLANTERS, CORN SHELLERS, SMITH WELL FIXTURES, GENUINE SMITH STRAW CUTTERS, PEANUT MACHINERY, BALING PRESSES.

**Tobacco Machinery, Trucks, Screws, Elevators, Hand and Power, for Stores, Factories and Warehouses.**

Successors to J. W. CARDWELL & CO. and H. M. SMITH & CO.

## CATTLE EXPOSITION.

Geo. F. Weston, Manager Live Stock and Dairy Department.

As veterinary inspector and sanitary officer for the Cattle Show, I am pleased to say that we will use every means to preserve the health and comfort of the cattle while in Charleston.

This State is remarkable for its freedom from diseases of cattle. During the three and a half years I have held the office of State Veterinarian not a single case of blackleg, anthrax, lump-jaw, or pleuropneumonia has been reported within the State. After numerous tests all over the State, tuberculosis has been found in only one herd. A few cases of Texas fever are reported during summer and fall, but this disease never appears during winter. No one should have fears in sending cattle to Charleston. I will be there when they arrive, have the grounds thoroughly disinfected, and inspect all cattle to see that none having a suspicion of contagious diseases are admitted to the grounds.

Please notify me when cattle will be shipped so that I may be on hand in time to give them the proper attention. On arrival at Charleston, do not unload them until I have been notified, at Mr. Weston's office, and I will see that they are properly handled.

G. E. NESOM, Veterinarian.

## "THE FARMER'S ADVOCATE."

An art gallery and library combined would be an appropriate description of the Christmas issue which the publishers of the FARMER'S ADVOCATE, of London, Canada, have just sent out to their readers. We have seen nothing more effective and unique than the colored frontispiece, which includes a beautiful photogravure of the farmer king, Edward VII, followed up within by a careful description of the royal farms and herds at Windsor, written by a member of the staff who visited England last summer. Then follow over 60 pages of instructive and entertaining articles, varying from grave to gay—every page embellished with a wealth of beautiful views representing every portion of the Dominion. Just which set of features are the more tempting it would be hard to say, and we advise the reader to secure the ADVOCATE and judge for himself, or herself, for among the portraits within we notice a Manitoba lady and her article has the place of honor. To one new feature we must especially refer, viz., the publication of sketches of a dozen leading Canadian artists, with photogravures of paintings selected from among the best of their works. It is safe to say that the Christmas ADVOCATE will be warmly received and win the appreciation which it richly deserves. It surpasses by far anything its publishers have hitherto issued. It is sent to all subscribers free of charge.

The old world is growing smaller every day. With free mail delivery, we can order anything we want from the larger cities, and thus get the benefit of a large stock to select from. Such old reliable firms as Marvin Smith Co., of Chicago, are doing a great deal in bringing this about.

# The Florence Wagon

The Best FARM WAGON  
Money Can Buy.



Maker of wagons for 20 years. Dept. E

Possesses every merit that makes a wagon best for all farm purposes, being substantially made from first-class seasoned timber, well ironed, neat and handsome in appearance and light of draft. **EVERYONE FULLY GUARANTEED.** Ask to see the Florence before you buy a wagon. If we have no agency in your neighborhood, write us for particulars of our attractive offer to the farmer direct. It will interest you and save you money. Write for free illustrated catalogue of Florence Wagons and copy of our periodical, "The Waggin' Tongue."

**FLORENCE WAGON WORKS,**  
Florence, Alabama.



## G. & A. BARGAMIN CO

RICHMOND, VIRGINIA.

ESTABLISHED 1817.

### PUMPS, RAMS, HOSE, Etc.

Water Pipe and Drain Pipe, Fire Clay Pipe, Bonnets, Flue Rings, etc.

Water Closets, Bath Tubs, Wash Stands and Sinks. Water Heaters and Tanks. Everything in the Plumbing and Steam Heating line.

BOLTS, NUTS, RIVETS, BELTING, Etc.

CHARTERED 1870.

# Merchants National Bank

OF RICHMOND, VA.

Designated Depository of the United States, City of Richmond and Commonwealth of Virginia.  
Being the Largest Depository for Banks between Baltimore and New Orleans, this Bank offers superior facilities for direct and quick collections.

Capital Stock, \$300,000.00

Surplus and Profits, \$531,000.00

JNO. P. BRANCH,  
President.

JNO. K. BRANCH  
Vice-President.

JOHN F. GLENN,  
Cashier.

DIRECTORS—John P. Branch, B. B. Munford, Chas. S. Stringfellow, Thos. B. Scott, B. W. Branch, Fred. W. Scott, Jas. H. Dooley, Jno. K. Branch, A. S. Buford, R. C. Morton, Andr' Pissini, Jr., J. P. George.

## GASTON STOCK FARM.

### Holstein-Friesian & Jersey Cattle.

Having selected my foundation stock from the best, I can offer animals of each breed of highest breeding and individual merit, at moderate prices, containing the blood of the best families, and bred with great care.

I am prepared to sell HOLSTEIN BULLS, and BULL CALVES and JERSEYS of either sex.

JNO. U. DETRICK, Somerset, Va.

When you write to an advertiser, always say you saw the advertisement in THE SOUTHERN PLANTER.

## CALF MEAL.

In this issue will be found an advertisement of Blatchford's Calf Meal. This is an old English preparation now made in this country, and has a reputation acquired in both countries for being the best substitute for milk for raising calves now on the market. The analysis of the Meal shows it to contain the required ingredients for making bone, muscle and growth, and that it does this is testified to by some of the best authorities in the country. Amongst others who have given testimonials we find the names of several stock-breeders who are well known to us, and whose opinions are deserving of the greatest weight. We have no hesitation in advising a trial of the Meal.

The McSherry Manufacturing Company, of Middletown, Ohio, advertise in this issue their transplanting machines. These machines have been thoroughly tested, and are found to be effectual and labor-saving. Tobacco growers and truckers will find them great helps, enabling them to set out crops in much less time, will thus save the "season" and secure stands when without such help this might be nearly impossible. Now that the labor difficulty is such a pressing one in many parts of the South, these machines will be found to meet a pressing want.

Gilbert Bros. & Co., of Baltimore, advertise Yager's Liniment for man or beast in this issue. This is an old preparation, and the test of long usage has fully demonstrated its effectiveness. A bottle should be kept in every stable for use in case of accident. It is quick, healing and soothing in action. It has also been found most efficacious in relieving rheumatic pains in man.

Messrs. T. W. Wood & Sons, of Richmond, Va., send us an advance copy of their Annual Seed Catalogue. As usual with this firm, the catalogue is got up in beautiful style and is filled with information of value to farmers not only as to the seeds offered, but on many other important points. It is entirely rewritten, not merely revised, and will be found of constant use as a reference book. Send for a copy. It will be sent free.

## THE OLEOMARGARINE BILL.

The National Dairy Union is making a strong effort to secure the passage of the bill amending the National Oleomargarine Law, known as the "Janney-Grout Bill," in the present session of Congress. The bill proposes to put a stop to the sale of oleomargarine as butter by taxing the maker and dealer and also the article itself at a heavy rate. This bill would have passed last year but for the obstructive action of the Senate, it having passed the House. To secure its passage, it is essential that it be sent to the Senate very early in the session. We would urge every farmer to write his representative in Congress asking their support of the bill at once.

A Neat BINDER for your back numbers can be had for 25 cents. Address the Business Office.

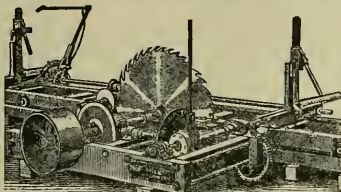
# G How are Your Eyes?

We are the largest optical establishment South, and give proper adjustment of SPECTACLES and EYE GLASSES. Complete manufacturing plant on the premises. Mail us the pieces and we will from them duplicate your Glasses. Glasses by mail our specialty.

**Our PHOTO DEPARTMENT** is also complete with CAMERAS, KODAKS and PHOTO SUPPLIES. Developing and printing finely executed.

Our line of GRAPHOPHONES, with latest records, OPERA GLASSES, FIELD GLASSES Incubator and Dairy THERMOMETERS, etc., etc., is also complete. Lowest charges in all cases.

**THE S. GALESKI OPTICAL CO., 9th and Main Sts., Richmond, Va.**



## Farmers' \$125 Saw Mill.

Cuts 2000 ft. lumber a day with only 4 h. p.

Our large, handsome catalogue tells all about the famous DeLoach Variable Friction Feed Saw Mills, 4 to 100 h. p., \$125 up. DeLoach Saw Mill Machinery, Planers, Shingle, Lath and Corn Mills, Water Wheels, etc. Write for catalogue and price f. o. b. your depot. DELOACH MILL MFG. CO., Box 600, Atlanta, Ga. (Branch, 120 Liberty St., New York.

ORGANIZED 1832.

# THE VIRGINIA FIRE AND MARINE INSURANCE CO.

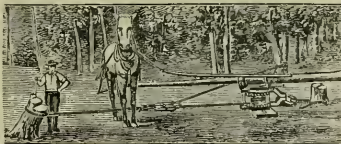
RICHMOND, VIRGINIA.

ASSETS, - - \$800,000.

WM. H. PALMER, PRESIDENT.

W. H. MCCARTHY, SECRETARY.

DIRECTORS: Wm. H. Palmer, D. O. Davis, E. B. Addison,  
Wm. Josiah Leake, W. Otto Nolting, N. W. Bowe.



# STUMP PULLERS

All Sizes and Prices. Catalogue Free  
**MOHLAND & COMPANY,**  
 300 Jeff Street, BURLINGTON, IOWA



**FORTIFY YOURSELF** against any possibility of failure in your next seasons and known worth  
**CANNOT FAIL. THE PETALUMA INCUBATOR**  
 Is a machine of that kind. It is the machine that produces only high percentages of hatch. Made of best California Redwood, carefully packed and lined, perfectly heated and regulated. It gives satisfactory results every time. Made in sizes from 84 eggs up. **WE PAY FREIGHT ANYWHERE IN THE U.S.** It will pay you to get our **FREE** catalogue and prices before you buy. Petaluma Incubator Co. Box 46, Petaluma, Cal.

When corresponding with advertisers, always mention  
 The Southern Planter.

STAPLE AND FANCY GROCERIES,  
FEED, &c.

In this issue will be found a full page advertisement of D. O'Sullivan, 18th and Main street, Richmond, Va., in which will be found goods offered at prices way down below those usually charged. We have personally dealt with Mr. O'Sullivan for several years, and have always found him reliable both as to quality and quantity, and always ready to make good his offers and correct any mistakes inadvertently made. He does a large business, and therefore buys in large quantities and secures bottom prices; hence, his ability to sell cheaply. Give him a trial order and say you saw his advertisement in the *Southern Planter*.

The American Free Trade League send us a copy of the Free Trade Almanac for 1902. It contains some excellent articles bearing on Free Trade. The adoption of a free trade platform is bound in the near future to be a dominant question, and people should inform themselves on the subject. Published by the Free Trade League, Boston, Mass. Price, 5 cents, \$2 per hundred.

ANOTHER MINNEAPOLIS SUCCESS.

Everybody is interested in success. The majority of people are striving for success, and a small minority achieve success, but nevertheless success, successful people, and successful propositions are intensely fascinating to the great majority of human beings.

One of the great successes that we have in mind at the present time is that of the enterprising, pushing young man, M. W. Savage, who founded and is proprietor of the International Stock Food Co., Minneapolis, Minn. He can be numbered with the successful business men of the country, beginning twelve years ago without capital, but with keen insight into affairs and close observation and great perceptiveness and his marked ability for organization, he has built up by industry and untiring energy the largest Stock Food business in the world, and it is at the present time growing faster than ever before. He perceived that here was a field to be occupied by such a proposition as "International Stock Food," and having an article of merit, by his forcible, expansive and persistent efforts has widened out until it covers the country, and increases each successive month the business of the previous one.

If the goods that he manufactures did not have merit, it would have been impossible to have built so magnificent and wonderful a business as he has, but he built upon a solid foundation, and is now reaping his reward.

"AMERICAN SWINEHERD," November, 1901.

Orlando Harrison, President of the Peninsula Horticultural Society, who has spent his past life in horticulture, has engaged some of the best men in the country to talk on different subjects at their meeting to be held at Berlin, Worcester county, Md., January 8th, 9th and 10th.

All horticulturists and agriculturists invited to attend.

# Seed House of the South.

RED CLOVER.  
MAMMOTH CLOVER.  
CRIM-ON CLOVER.  
WHITE CLOVER.  
LUCERNE CLOVER.  
ALSYKE CLOVER.  
BOHARA CLOVER.  
JAPAN CLOVER.  
BUR CLOVER.



TIMOTHY.  
ORCHARD GRASS.  
RED TOP or HERDS GRASS.  
KENTUCKY BLUE GRASS.  
RANDALL GRASS.  
TALL MEADOW OAT GRASS.  
JOHNSON GRASS.  
GERMAN MILLET,  
BUCKWHEAT.  
OATS and  
CANE SEED.

"Whatsoever One Soweth, That Shall He Reap."

We sell strictly reliable FIELD AND GARDEN SEEDS of every variety at Lowest Market rates, included in which are RAGLAND'S PEDIGREE TOBACCO SEEDS.

WE ALSO SELL

## Our Own Brands of Fertilizers

For Tobacco, Corn, Wheat, Potatoes, &c.

Pure Raw-Bone Meal, Nova Scotia and Virginia Plaster and Fertilizing Materials generally.

Parties wishing to purchase will find it to their interest to price our goods.

Samples sent by mail when desired.

Wm. A. Miller & Son,  1016 Main Street  
LYNCHBURG, VA.



## Japan Plums

And all other desirable standard and new varieties of PLUMS, APPLE, PEACH, PEAR and ORNAMENTAL TREES, SHRUBS, ROSES, Etc.

HEADQUARTERS FOR TENNESSEE  
PROLIFIC STRAWBERRY.

The Most Reliable Variety Ever Grown in the South.

Three hundred and fifty acres under cultivation. Write us if you contemplate planting. Catalogues free.

AGENTS WANTED. WRITE FOR TERMS.

W. T. HOOD & CO.

OLD DOMINION NURSERY,

RICHMOND, VA.

# If You Want YOUR GOOSE TO LAY "THAT GOLDEN EGG"

FEED HER ON MY GRAIN. You must also use my brain stimulator.

**DURING THIS GLORIOUS WINTER HOLIDAY SEASON** I am going to offer my friends and customers the most complete stock of GROCERIES, FEED and LIQUORS that has been seen by the purchasing public during the period of their existence. Bargains, gifts and donations—that is what you may properly call them, because we have not taken into consideration the price. Cost cuts no figure with us; all we want is your orders, and you get \$3.00 worth of goods for \$2.00 in cash; here is a sample:

**COTONSEED HULLS, the finest winter feed known to the dairyman; it is wholesome, pure, fattens stock, and keeps them so; per ton, \$8.00. It is cheap at \$12.00. Order a couple of tons for sample.**

Order your NEW YEAR'S GOODS from D. O'SULLIVAN, Richmond, Va. \$25,000.00 worth of Groceries are on the shelves and in the warehouses to be sold regardless of cost price. Stop paying two prices. You can buy your goods at wholesale prices from us, no matter how much you want or how little you need. Send me your orders. Send for my beautiful price list, showing what you can purchase for a few dollars; we mail it free on application.

60,000 bus. Finest Corn, 80c. ♦♦ 30,000 bus. Oats, 57c.  
SEEDS OF ALL KINDS. Write for Catalogue.

800 sacks Salt, large sacks.....	1.00	Culpeper Creamery, in any quantity, per pound.....	.18	Large jars French Mustard.....	.10
Lump salt for stock, per lb.....	01	Gelatine, per package.....	.09	Finest Home-made Cakes.....	.08½
Bread Soda, per lb.....	02	100 Fine Key West Cigars.....	2.10	Fresh Milk Biscuits.....	.08
200 bags best Lagnayra Coffee.....	12	Only 2 cents for a 10 cent Cigar.		French Candy in 30 lb. buckets, lb.	.05
These Coffees are 2 cts. cheaper than the market price. We have a large stock and want to sell.		Plantation Cigars, 100 in a box.....	1.10	Royal Baking Powder, box. ½-lb.....	.24
500 half barrels White Fish.....	3.25	Fine Heavy Brooms.....	.25	Good Luck Baking Powder, doz. 1 lb.	.88
400 boxes best Ginger Snaps.....	04½	Carpet Brooms, worth 25c, for.....	.18	God Luck Baking Powder, doz. ½ lb.	.43
80 bags Navy Beans, bushel.....	2.25	Bath Bricks, for scouring.....	.05	Nutmegs, 5 for.....	.03
Rock Candy Syrup, per gal.....	30	7 bars Octagon Soap.....	.25	Mustard, large boxes.....	.10
Suzar-house Syrup, per gal.....	20	120 cakes fine Laundry Soap.....	2.50	Ess. Lemon, large bottles.....	.10
Finest New Orleans Molasses, pr gal	40	7 large cakes Tar Soap.....	.25	Ess. Vanilla, large bottles.....	.10
Home-Made Blackberry Brandy, per gal.....	60	6 bars highly-perfumed Toilet Soap	.20	Ess. Cinnamon, large bottles.....	.10
Fine Old Port Wine, per gal.....	05	Large jars Vaseline, suitable for toilet purposes.....	.05	Macaroni, per lb.....	.07
Sweet Sherry Wine, per gal.....	70	800 doz. Household Ammonia, quart bottles.....	.07	Star Lye, doz.....	.30
Catawba Wine, per gal.....	60	6 bars Sand Soap, for scouring dishes, pans and tableware.....	.25	8 lbs. Laundry Starch.....	.25
Old Northampton Apple Brandy (6 years old).....	2.00	6 doz. boxes Matches (72).....	.25	We are agents for a specially prepared Juniper Gin, a sure cure for kidney troubles. It has cured 100 of our customers. Order a quart at 45. \$1.75 gal. No charge for packages.	
McDermott's Malt Whiskey, large quart bottles, full strength, fine flavor. Sure cure for consumption, coughs, colds, or weakness; cures chills, fever and ague, and nervousness, per bottle.....	85	3 cakes Sapolio.....	.23	Bumgardner's 6-years-old Old Rye Whiskey, gal.....	3.00
Tomatoes, 3-lb. cans, per doz.....	1.00	Electro-Silicon, for cleaning silverware, 3 for.....	.25	Clemmer's Old Rye, quart.....	.40
Fine Corn, per doz.....	75	10,000 large packages Soap Powder, Gold Dust Washing Powder, 4 lbs, Granulated Sugar.....	.05	500 bottles 3-Star French Brandy, worth \$1.25, now selling for.....	.75
Green Peas, tender and sweet, doz.	70	New Cabbage, crate.....	1.00	Order a quart Malt Whiskey. It is the best medicine for chills and fever, loss of appetite, dyspepsia or indigestion. Makes rich, red blood, builds and tones up the system, restores lost appetite. A sure cure for lung trouble. Per large bottle.....	.85
Family Roe Herrings, per doz.....	18	Fine, large, fat New Mackerel, weighing a pound each.....	.05	Medicated Corn Whiskey, 8 years old, thick and finely flavored, fine tonic, gallon.....	2.00
Sugar-Cured Breakfast Bacon.....	13	Cotton-seed Hulls, 100-lbs.....	.40	Angostura Bitters, finest tonic made	.75
Finest Rice, per pound.....	06	5,000 lbs. finest Green Tea.....	.35	Sweet Sparkling Cider, per gal.....	.40
Import-d Sardines.....	10	1,000 lbs. finest Black Tea.....	.35	50 tons City Made Shipstuf.....	1.35
Fresh Mackerel in Cans, each.....	05	These are the finest goods sold anywhere. Order 5 or 10 lbs. for sample.		8,000 Bushels Finest Oats.....	.59
French Mustard, Jar.....	05	Try a 15 lb. kit of our New Imported Mackerel.....	1.25	10,000 Bales Timothy Hay, hundred,	.80
Byrd Island Patent Family Flour, keeps much longer, yields 40 lbs. more bread than any other flour sold; ask for it, and have no other, barrel.....	4.50	New Cut Herring, doz.....	.10		
Culpeper Creamery Butter. The finest of all Creamery Butter is		New Carolina Rice.....	.05		
		Flaked Hominy.....	.04½		
		80 California Hams, 8 to 10 lbs.....	.09		
		Rolled Oats, per lb.....	.02		
		This is an exceptionally big bargain.			
		80 doz. cans Chipped Beef.....	.07		

D. O'SULLIVAN, Eighteenth and Main Streets, Richmond, Va.

## PLENTY NONE CAN UNDERSTAN'.

I b'lieve the Bible blindly,  
 B'lieve it 'ith all my heart;  
 Don't go writin' on high crit'icism,  
 'Bout Jonah en th' ark.  
 F' thar's plenty nowdays, y' see,  
 No man can understand,  
 F' instance, thar's the trolley keers,  
 A-run by th' trolleyman,—  
 Jees' techin' a little handle,—  
 Ez plain ez plain can be,  
 En off' we go from city gay  
 T' th' broad en sparklin' sea.  
 I ain't refusin' t' ride  
 Coz I don't know how she's run.  
 I jes' pays m' fare,  
 En then bez all the fun.  
 I'll continuer to read the Bible,  
 En foller ez bes' I can;  
 En when I die, y' know,  
 He'll explain th' hull curus plan.  
 HENRY WILLIS MITCHELL.

Tenderfoot (on Texas ranch): I should think it would be a lot of trouble for a man to pick out his own cattle from among so many.

Cowboy: Oh, that's an easy matter. The trouble begins when he picks out some other man's cattle! See?—*Chicago News.*

## "DON'T'S" FOR YOUNG HOUSEKEEPERS.

Don't pnt butter in your refrigerator with the wrappings on.

Don't use butter for frying purposes. It decomposes and is unwholesome.

Don't keep custards in the cellar in an open vessel. They are liable to become poisonous.

Don't pour boiling water over china packed in a pan. It will crack by the sudden contraction and expansion.

Don't moisten your food with the idea of saving your teeth. It spoils the teeth and you will soon lose them.

Don't use steel knives for cutting fish, oysters, sweetbreads or brains. The steel blackens and gives an unpleasant flavor.

Don't scrub your refrigerator with warm water. When necessary sponge it out quickly with two ounces of formaldehyde in two quarts of cold water.

Don't put tablecloths and napkins that are fruit-stained into hot soapsuds; it sets or fixes the stains. Remove the stains first with dilute oxalic acid, washing quickly in clear water.—Mrs. S. T. Rorer, in the January *Ladies' Home Journal*.

We are generally too ready for the sake of peace to put a premium on ill-temper, and to give the cross person the right of way. This is often cowardly and almost always a mistake. Ill-temper should be gently resisted.—January *Ladies' Home Journal*.

If woman would only remember that her influence over a child the first few years of its life can have greater effect, and produce wider and more lasting results than her whole life given up to walking in the ways of men!—Cardinal Gibbons, in the January *Ladies' Home Journal*.

# DON'T BUY A SPRAY PUMP

UNLESS YOU BUY THE BEST.

## "Maryland High Pressure"

BEST IN THE WORLD!

By working Pump a half minute you spray continuously for fifteen minutes with a very fine or coarse spray, narrow or wide spread as you may wish. Four gallons of solution carried easily with shoulder strap, leaving both hands free to direct spray. Saves material and labor. Write for prices and complete description.

FRANKLIN DAVIS NURSERY CO., Baltimore, Md.



### Elmwood Nurseries.

We offer a splendid assortment of first-class Whole Root Home Grown Trees Standard Varieties.

APPLES, PEACHES, PEARs,  
 CHERRIES, PLUMS,  
 APRICOTS, GRAPES,

QUINCES, CURRANTS, GOOSEBERRIES, RASPBERRIES, BLACK-BERRIES, STRAWBERRIES, ETC., EVERGREENS, ORNAMENTAL TREES AND SHRUBS.

POLAND CHINA PIGS.

BRONZE TURKEYS, BROWN LEGHORN AND PLYMOUTH ROCK FOWLS.

WRITE FOR DESCRIPTIVE CATALOGUE.

J. B. WATKINS & BRO.,  
 HALLSBORO', CHESTERFIELD CO., VA.



A washing machine is as great a necessity in the house as a wringer.

## The Richmond Rotary Washer

has too many good points for explanation in an advertisement. Your name on a postal card will bring our booklet, with full particulars of our six different machines and how to get them. One of them will certainly please you. All are made with electrically welded wire hoops sunk in grooves—our patent. Being the largest manufacturers of woodenware in the world, we can make better machines for the money than anyone else. If you want a machine that washes, buy one of ours.

THE RICHMOND CEDAR WORKS, Richmond, Va.

## The Chesapeake & Ohio Railway

EXTENDING FROM CINCINNATI AND LOUISVILLE, AND THROUGH ITS CONNECTIONS

THE BIG FOUR SYSTEM, from Chicago, St. Louis, Peoria, Indianapolis, Sandusky and Cleveland;

THE OHIO CENTRAL LINES, from Toledo and Columbus;

THE CINCINNATI, HAMILTON & DAYTON, from Detroit, Toledo, Lima and Dayton—

FORMS THE MOST DIRECT And from Five to Twelve Hours the Quickest ROUTE.

TO STAUNTON, LYNCHBURG, CHARLOTTESVILLE,  
 RICHMOND, PETERSBURG, NORFOLK,

And Principal Virginia Points.

H. W. FULLER, Gen. Pass. Agt. C. & O. Ry., Washington, D. C.

# Walter A. Wood

MOWERS, BINDERS, REAPERS,  
WHEEL HAY RAKES <sup>AND</sup> TEDDERS.

THE OLD RELIABLE, with all up-to-date improvements. The MOST DURABLE, EASIEST RUNNING and CHEAPEST MACHINES TO KEEP IN REPAIR in this country.

**OUR SPECIAL POLICY FOR 1902** is to give some of the expense paid to railroads and hotels to the farmers and agents. If you have not decided to buy a WOOD MACHINE, or to secure the agency for it, just write us at Richmond, and it will pay you.

**WALTER A. WOOD MOWING AND REAPING MACHINE CO.,**  
**RICHMOND, VIRGINIA.**

ANY MAN who thinks he can secure orders for a few machines in his neighborhood should write us.

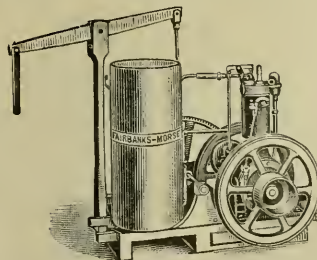
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FOR EVER BEING WITHOUT A WATER SUPPLY NOW. UNLIKE ANY OTHER, BECAUSE IT NEVER FAILS AND IS SO SIMPLE.

# "The Jack of All Trades"

## We Guarantee

that a boy of average intelligence, 12 years old, can run it as well as any mechanic can. Costs between 1 and 2 cents an hour to run.



## It Pumps

water, shells corn, saws wood, churns butter, runs printing press, and a hundred other things. It has the strength of 15 men.

Any number of testimonials can be furnished from all over Virginia and the Carolinas. There never was one to fail in giving satisfaction. Think over, won't you?

ASHTON STARKE, Prop.

**RICHMOND ENGINE AND PUMP CO., Richmond, Va.**

JOHN P. BRANCH, President.

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CAPITAL STOCK, \$200,000.00.

NO. 1754.

SURPLUS AND PROFITS, \$556,092.11

# MERCHANTS NATIONAL BANK, Richmond, Va.

UNITED STATES, STATE, CITY DEPOSITORY.

Comparative Statement for the Following Years:

### ASSETS.

CLOSE OF BUSINESS ON.....	Sept. 30, 1881.	Sept. 30, 1886	Sept. 30, 1891.	Sept. 30, 1896.	Sept. 30, 1901.
Time and Demand Loans.....	\$686,699 75	\$689,229 04	\$575,735 54	\$777,736 07	\$1,474,962 59
Real Estate, Furniture, etc.....	1,969 82	39,925 42	68,038 45	82,172 79	75,737 54
5% Redemption Fund.....	10,000 00	7,500 00	9,000 00	9,000 00	10,000 00
United States Bonds.....	200,000 00	250,000 00	461,000 00	400,000 00	961,290 00
Premium on U. S. Bonds.....		36,000 00	50,170 00	35,000 00	8 00
Miscellaneous Stocks and Bonds.....	18 617 00	76,947 10	7,070 66	76,040 03	643,054 71
Cash.....	68,249 31	147,457 00	235,377 71	130,812 56	280,866 83
Due from Banks.....	42,579 89	22,826 15	124,668 55	603,363 30	781,995 68
<b>TOTAL.....</b>	<b>\$1,028,885 90</b>	<b>\$1,229,374 71</b>	<b>\$1,799,305 91</b>	<b>\$2,144,154 75</b>	<b>\$4,242,044 55</b>

### LIABILITIES.

CLOSE OF BUSINESS ON.....	Sept. 30, 1881.	Sept. 30, 1886.	Sept. 30, 1891.	Sept. 30, 1896.	Sept. 30, 1901.
Capital Stock.....	\$500,000 00	\$200,000 00	\$200,000 00	\$200,000 00	\$200,000 00
Surplus and Undivided Profits.....	52,824 17	116,192 50	116,978 20	266,796 27	556,092 11
Circulation.....	150,000 00	180,000 00	176,850 00	174,600 00	200,000 00
Deposits.....	519,121 83	743,182 21	1,256,477 71	1,502,738 48	3,285,932 44
Re-discounts.....	77,039 80				
<b>TOTAL.....</b>	<b>\$1,028,885 90</b>	<b>\$1,229,374 71</b>	<b>\$1,799,305 91</b>	<b>\$2,144,154 75</b>	<b>\$4,242,044 55</b>

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# Latest Improved FARM IMPLEMENTS



**HAND POWER CUTTER.**

These machines sell at eight. They have heavy fly wheels and make three cuts to each turn of the crank. They will cut hay, straw or fodder, and will cut from 1/4 to 2 in. They are shipped K. D., securing the lowest possible freight rates.

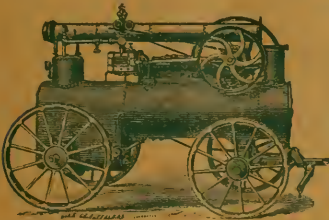
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The frame is made of thoroughly dry hard wood. The joints mortised, tenoned and bolted. The bearings are bolted on to the frame instead of screwed. The iron work is made from the very best material, and every piece is carefully inspected before being put on. This machine is high grade all the way through. It is handsomely painted, striped and varnished.



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Mr. Jacob Heffelfinger of Hampton, Va., took out policy No. 144,840 in 1886; amount \$5,000; kind, 15 year endowment, 15 year accumulation period; annual premium, \$354.75. The result at maturity in 1901 was as follow:

<b>Total Cash Value of Policy</b> .....	<b>\$6,933 39</b>
<b>Total Annual Premiums</b> .....	<b>5,321 25</b>
<b>Net Profit over Cost</b> .....	<b>\$1,612 14</b>
<b>And 15 years insurance for \$5,000.</b>	

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Are the inevitable result of giving OWENS & MINOR'S DIXIE CONDITION POWDERS. If you wish fat and smooth Cattle and healthy Milch Cows, give

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**DIXIE NERVE AND BONE LINIMENT**—Best on earth for Man or Beast. Large Bottle 25 cts.; everywhere.

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Our Fertilizers can be relied on to give satisfaction. They are especially prepared for the Crops named. Other brands for other crops. Write for prices.

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5000 Tons ACID PHOSPHATE for Sale.

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# Southern Planter

A MONTHLY JOURNAL

DEVOTED TO

Practical and Progressive Agriculture, Horticulture,  
Trucking, Live Stock and the Fireside.

OFFICE: 28 NORTH NINTH STREET, RICHMOND, VIRGINIA.

THE SOUTHERN PLANTER PUBLISHING COMPANY, - - - - Proprietors.

J. F. JACKSON, Editor and General Manager.

Vol. 63.

FEBRUARY, 1902.

No. 2.

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**IVANHOE POULTRY YARDS, HENRICO Co., VA.**

..BREEDERS OF..

# EXHIBITION BARRED PLYMOUTH ROCKS, HIGH-CLASS BELGIAN HARES and FANCY PIGEONS.

At the great RICHMOND SHOW, October 7-12, 1901, we won as follows :

1st PEN OLD BIRDS.

1st COCK.

1st COCKEREL.

1st PEN YOUNG BIRDS.

1st and 2nd HEN,

1st and 2nd PULLET.

We only exhibited ten birds and won everything on PLYMOUTH ROCKS that could be won by that number of birds. We only exhibited three young BELGIAN HARES ; won 2nd and 4th on Does, out of a class of sixteen ; won 1st on Buck, and medal for the best Buck in Show.

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Where the Planter has the Good Judgment and Discretion to use the Famous

# Star Brand and Anchor Brand

(SPECIALS)

# TOBACCO FERTILIZERS.

These brands have been before the public for more than thirty years. Some of the largest yields of tobacco have resulted from their use. When Rich Flavor, Silkiness, Fine Texture and Good Prices are desired, these celebrated brands are unsurpassed. Don't experiment with new brands when you can get the old and tried ones at about the same prices. Make your plans to use these brands on your 1902 crop.

**NOT HOW CHEAP, BUT HOW GOOD.**

This is the Idea on Which These Celebrated Brands are Made.

DON'T FORGET they have served you well for nearly thirty years, holding their own against every brand that has been brought in competition with them, and they stand to-day unrivalled as the Great Tobacco Fertilizers of the country.

Other brands have come and gone, and will continue to do so. They have been tried and found wanting. Ours have stood the test with increasing reputation. For Testimonials of Tobacco Growers, address

**ALLISON & ADDISON,**

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**RICHMOND, VIRGINIA.**

# The Southern Planter.

DEVOTED TO

PRACTICAL AND PROGRESSIVE AGRICULTURE, HORTICULTURE,  
TRUCKING, LIVE STOCK AND THE FIRESIDE.

---

Agriculture is the nursing mother of the Arts.--XENOPHON.  
Tillage and pasturage are the two breasts of the State.--SULLY.

---

63d Year.

Richmond, February, 1902.

No. 2.

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## Farm Management.

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### WORK FOR THE MONTH.

With the exception of the last week in December and the first week in the new year, which were abnormally wet, resulting in heavy floods in the valleys, the past month has been cold and dry. The absence of snow and the long continued cold has, we fear, done much damage to fall sown crops, especially to those seeded late, which unfortunately was largely the case. Wheat, oats, clover, and grass look badly almost everywhere, and this we learn from our exchanges is largely the condition in the West. This will mean much pressure added to the usual spring work as much land will have to be plowed and reseeded which was thought to have been got out of the way until fall. Where the plant of wheat and oats is not killed so badly as to make it probable that no paying crop can be made without re seeding, much may often be done to help the crop to re establish itself, if the spring be genial. So soon as the wheat and oat land is dry enough to roll, take a heavy roller, preferably a corrugated one, and give it a good rolling. This will consolidate the soil around the roots and give the plant an opportunity to recuperate. After the crop is seen to be growing again, take a harrow and harrow it over lightly and top dress with 100 or 150 pounds of nitrate of soda to the acre. If it is desired to re-seed with grass and clover this should be sown after the harrowing, and the land be either re harrowed and rolled again or only rolled at this time. This may seem a heroic measure for recuperating a crop, but we have done it with success.

Whilst the hard frost has prevented progress being made with plowing for a month past, it has on the other hand done an immense amount of good on land

plowed in the fall and early winter. The disintegrating action of the weather will put these lands into fine seeding condition as soon as the frost is out of it, and will save many days of hard labor with the harrow cultivator and roller. These lands also will be well charged with moisture, which, if carefully conserved by cultivation, will help largely to overcome any drouth with which we may be stricken. Whilst it is always impossible to foretell the character of the weather we may have during the crop growing season, yet, judging from the past, it is highly improbable that we shall be favored this year with such frequent rains as was the case during that season last year. The season was an abnormal one, and we may reasonably look to a return to normal conditions again. This emphasizes the importance of as early a breaking of land not already plowed as possible, and also as deep a breaking as can be given, so that the spring rains be caught and stored. This deep breaking at this time of the year ought not to be done by plowing a deeper furrow than has been plowed before except to the extent say of an inch or two. It is too late for the subsoil to be turned onto the surface in any considerable quantity. There is not time for it to become sufficiently aerated to liberate its plant-food before seeding time. Use a subsoil plow, or, failing this, a single-tooth cultivator, and break the bottom of the furrow loose, leaving the new soil there to become mixed with the old soil by the cultivation of the land for the crops. This increased depth of soil will hold and conserve a large quantity of water, and it is rarely that we have a superabundance of this necessity of plant-life and growth in the South. Few realize what an enormous draft upon the water content of the soil is made by an ordinary crop of corn, wheat, oats or

clover and grass during the period of its growth. In experiments made at the Wisconsin Station, it was shown that each ton of dry matter in a corn crop (corn and fodder together) required  $2\frac{1}{2}$  inches of water per acre to produce it. This means that in the absence of water from below there must fall on each acre, and be absorbed by it, 283 tons of rain for each ton of crop produced to enable it to perfect its growth. Red clover required 452 pounds of water for each pound of dry matter. Oats required 557 pounds of water for each pound of dry matter; whilst peas called for 477 pounds of water for each pound of dry matter. How important, then, is it that every effort should be made to provide for a reserve of water in the soil before the crop is planted. This can best be done by deep plowing, subsoiling and perfect cultivation of the land before planting. Whilst it is important that this work should be taken in hand as soon as possible, we would urge that land be not plowed when too wet. When plowed wet, the land bakes into hard clods, which can scarcely ever be thoroughly broken. The bearing of perfect cultivation on the yield of a crop is not half realized as it should be. It is infinitely more important in its effect than the amount of fertilizer applied. With repeated and perfect breaking and mixing of the land before planting a crop can be produced without fertilizer or manure, but all the manure and fertilizer which can be applied without cultivation of the land will not make a maximum crop. Even a crop so exacting in its requirements of plant-food as the Irish potato has been grown in rotation for five years without any fertilizer on land of only average fertility by complete frequent and perfect plowing and cultivation. We believe we are well within the mark when we say that the average yield of all crops grown in the South can easily be doubled by plowing, subsoiling and cultivation alone without any fertilizer or manure.

It is too early to seed any crop except Canada peas and oats, unless it is in the States in the far South where oats may be seeded as soon as the land can be got ready. Canada peas and oats seeded together ought, however, to be got in as soon as the land can be made ready. These peas are very intolerant of hot weather, and should be matured in May or June at the latest, or they will mildew badly. In Middle and Tidewater Virginia they make an excellent early forage crop seeded in February or at the latest the first week in March. In Piedmont and the mountain sections they may be seeded as late as the end of March or first week in April. They are best grown on land plowed in the fall or early winter. The peas should be sown at the rate of one and a half bushels to the acre, and be plowed down so as to give them good cover. Half to three-quarters of a bushel of

oats to the acre should then be sown on the peas and be harrowed in. They make a splendid pasture for hogs, or can be cut for feed for other stock, or to be made into hay. If the land is thin, apply 300 or 400 lbs. to the acre of acid phosphate.

Where oats have not been seeded in the fall (as should always be done in the South as far as possible), or where fall-sown oats have been winter killed, land should be prepared and oats be sown not later than March, except in the mountain sections, where they may be sown as late as April. The best varieties to sow are the Virginia Gray Winter in February and the first half of March, and the Rust proof later. The spring sown oats rarely make so good a yield in the South as the fall-sown ones, but if got in early and the land be given good preparation, and if they be helped with 300 or 400 lbs. of acid phosphate and 100 lbs. of muriate of potash to the acre, they may make a paying crop, and will be found useful either as feed, to make hay or for the grain. A top dressing of 100 lbs. of nitrate of soda to the acre after the oats have commenced to grow freely will wonderfully help them.

Grass and clover should be seeded at the end of the month, and in March, where not seeded in the fall, or where the fall seeding has been killed, as, unfortunately, is largely the case this year. The spring seeding of these crops is, in the South, in our experience, a very speculative business; and especially when seeded in a grain crop. Whilst the seeds germinate well enough, yet the hot weather comes on so quickly that before they have got good root-hold they are frequently burned out. Especially is this so in a grain crop. The grain plants are much stronger than the grass and clover, have deeper and wider root systems, and thus can appropriate to themselves so large a proportion of the available plant food as to starve out the weaker plants. This result can be very largely obviated by seeding the grass and clover alone on a well prepared rich seed bed. For securing a good stand of grass and clover, we have never found any fertilizer to give so good results in the long run as a heavy dressing of good, rich, farm yard manure, supplemented with bone meal used liberally—say, at the rate of 500 or 600 lbs. to the acre. One of the most important matters requiring attention when seeding grass and clover, is to have the land seeded, free from weeds. It is useless to expect a good stand, or to try to make a good sod, on land filled with weed seeds. Weeds are more robust whilst in growth, and of stronger vitality than either grass or clover; and if present in the land in quantity, will undoubtedly kill out the grass and clover. Two and a half to three

bushels of grass seed to the acre, is little enough; whilst from 10 to 12 lbs. of clover seed should be sown. Cover by harrowing and rolling. In seeding on a grain crop, we would harrow the land first, then seed and harrow again, and follow with a roller. This will help the grain crop, as well as the grass. For a meadow, sow Tall Meadow-oat grass, Orchard grass, and Red Top, with a few pounds of clover seed. For a pasture, a mixture containing a larger variety of grasses is better; and the fact that they mature at different seasons, is an advantage as lengthening the grazing period. Orchard grass, Red Top, Smooth brome grass, Meadow fescue and Blue grass are good.

The high prices for which tobacco has been and still is selling will, we fear, have the effect of causing an excessively large area to be set out this year. Many who never raised a plant before will essay to grow a large crop with the usual result—a lot of miserable, mean, poor tobacco. This is going to affect the price of all on the market, and therefore we think it wise to caution old experienced growers not to increase the size of their crop. Let what you make be of the best and you may then hope to come out with some profit. The beds should be got ready as soon as weather will permit. Burn well and break fine, but not deep, fertilize the soil with a high grade tobacco fertilizer, and raise plants of only the best variety for making that type of tobacco for which your land is suited. Study quality first, then quantity. The man who always makes poor tobacco is the one who always grumbles most at the price for which it sells.

Don't neglect to order your seeds and fertilizers without delay. It is poor policy to have to wait for these when your land is ready and the season on. Often in such a case the best time of the whole season for planting goes by and a poor stand and poor yield is the result. It is as easy to order the goods at one time as another, and you are much more likely to have prompt attention ordering early before merchants and dealers are busy.

#### HOW TO KEEP SMUT OUT OF WHEAT.

*Editor Southern Planter:*

Sixteen years ago I began to raise wheat. I bought my seed from a man who had been soaking his seed in a solution of bluestone, but I did not soak mine. My first and second crop did not have any smut, the third crop had some, and the fourth crop was about half smut. So I had to buy new seed and make a new start. I thought I would try soaking the seed in a solution of bluestone, and I did so, using about one ounce to a bushel of wheat. I have kept this up every year, and I have never seen a smut-head since.

*Halifax Co., Va.*

W. P. DIX.

#### MAKING FARMING PAY ON SMALL POOR FARMS.

"Try and teach us the most economical way to live on the farm and improve the land without any bought fertilizers at all. One year I used 200 lbs. of Peruvian Guano to the acre on wheat, made 10 bushels to the acre, cut and sowed field peas on the ground, cut them for feed, put in wheat without fertilizer of any kind and made 22½ bushels of wheat to the acre."

"You have told us all about how they do on the Biltmore farms, &c., which is all real nice and right, but it makes a fellow feel small to read of their doings there and then compare it with the way we have to do here. Now what we want you to tell us is how a man with 150 acres of thin land, 3 or 4 horses, and about the same number of cows, and 15 or 20 sheep, together with a wife and 8 or 10 children, can make a living at farming, keep out of debt and give his children just a common school education? If you can do this you will confer a blessing on your fellow citizens."

The foregoing are extracts from two letters just received from subscribers in different sections of this State, and place us on the defensive as to what *The Planter* has been doing in the past. A person who had not regularly been reading *The Planter* and who read these letters would suppose that in the past we had given our whole attention to shewing how rich men managed their farms, and that our sole advice to all farmers had been to follow these examples, buy commercial fertilizers with a lavish hand, and be utterly regardless of the financial results at the year's end, being satisfied if only the farm was improved and the live stock thereon was fitted to win premiums at the Fairs. Now, if there is one thing upon which we have prided ourselves more than another it is that during the more than twelve years we have edited this Journal we have given almost constant attention to the position of the farmers owning poor small farms and dependent on them for a livelihood. We will venture to say, without looking over the files of *The Planter*, that we have written more articles on the economical improvement of small poor farms, without unnecessary recourse to commercial fertilizers, than we have written on any other subjects pertaining to the farm. We have conducted long and persistent controversy through the Journal with the advocates of the system of trying to improve poor farms with fertilizers without live stock, and have had the satisfaction of knowing that these parties have seen the error of their views and are now as persistent advocates of our views as we could wish. We have led the way in the South to the use of peas and the other leguminous crops as improvers of land, and to the growth and production of hay and forage crops, not as sale crops mainly, but as the means whereby live stock could be maintained on the farm and the products thereof be converted into concentrated market products, which should not carry off from the farm fertility in any-

thing like the quantity which the sale of the crops themselves necessarily do. The results of these efforts may be seen on hundreds of farms throughout the South, and we hold scores of letters from farmers admitting their indebtedness to us for putting them into the way of making farming profitable. It is true we have frequently published accounts of how rich men are managing their farms, and we are always glad to do so, because these men can afford to make experiments and thus point out what is needed to secure success. Another lesson these men teach is that of business management, which is usually so lacking on farms in the South. It is but little good to grow crops and stock and then fail to realize the profit in them, and yet this is what many do for want of business management. As an illustration of the way in which these rich men manage their places and the results obtained, one of them wrote us some time ago that he made more clear profit on the amount of capital invested on his farm than he did upon the capital invested in his cotton mills. Such lessons as these, and many others, are derived from these reports. They need not make and ought not to make a man "feel small," but rather should spur him up to emulate in a small way the examples given. Thousands of large and successful farmers made their start in life in a very small way and on a very poor farm, and thousands will yet do so. We have always made it a feature each spring to urge each man to produce *first* on his farm all the home supplies needed for himself, his family and his stock. This policy we believe to be a sound one, however fitted the farm may be to produce sale crops. The man who makes his own supplies is an independent man and the fluctuations of the market need trouble him little, for there is always a time in every year when he can sell at the highest point of the market, and he can afford to wait for this when his home supplies are all provided on the farm. The question of the production of crops without the use of commercial fertilizers is one to which there are two sides. The man with a poor farm devoid of vegetable matter, and with the soil in a bad physical and mechanical condition, cannot afford to use any but the cheapest forms of commercial fertilizers, in the shape mainly of acid phosphate, and this for the sole purpose of inducing the growth of vegetable matter to be turned into the soil or to be fed to stock, the manure from which must be carefully saved and returned to the land. The man with a farm of which the soil is well filled with vegetable matter and in a fine physical and mechanical condition can for many crops, and especially for truck crops and tobacco, well afford to use liberally the richest forms of commercial fertilizers in order to force the land to its maximum production. The great mistake made by

most southern farmers is that they reverse this rule and gamble with fertilizers on poor soil to produce a sale crop which still further depletes the fertility of the farm and leaves the farmer poorer than before. Our correspondent with the 150 acre farm of thin land and with the small head of live stock and large family will do well to make such a change in his system as will lead to his being able to carry on the farm a much heavier head of live stock, in the shape of cattle, sheep and hogs. Three or four horses, the like number of cows, and 15 or 20 sheep, is no stock to carry on 150 acres of land. We know many farmers who carry more than this on 25 acres of land and have done so ourselves. Reduce the area of land under the plow to the capacity of a pair of good horses and sell the others. Horses are expensive luxuries unless fully employed. And proceed to improve this by deep plowing and the production of leguminous and forage crops for consumption on the farm. These will provide feed for many more cows or beef cattle, for a larger flock of sheep and for a drove of hogs. Instead of 20 sheep carry at least 50. They will get most of their living from what is grown on the unplowed land of the farm, needing only a little help in two or three winter months. These should give from 60 to 70 lambs every year, each of them bringing with the wool from the ewe more than the value of the ewe which bred them, besides having improved every acre of the land on which they grazed so that in a few years it will carry a rich sod and be capable of producing a heavy yield when plowed. A drove of hogs can be raised from two sows each year, which if grown on peas, Soja beans, artichokes and clover, will not, with the small quantity of corn required to harden and complete the feeding, cost more than 2 or 3 cents per pound for the meat produced, and worth on the market from 5 to 7 cents. A small farmer told us in this office a short time ago that he made hog meat every year which did not cost him more than 2½ cents per pound. Last year he made fat hogs which sold for 5½ cents a pound which had never eaten a bushel of corn each. They were fed on the food we mention. Keep fowls and give them attention, each hen can easily be made to return a net profit of \$1.00 per year. A small flock at this rate will provide the family groceries and eggs are as good currency as the best the nation supplies at every store. Improve your stock of all kinds by breeding only from pure bred males. If you cannot afford at first to buy a pure bred male join with a neighbor or two in owning one. Follow this system and keep increasing your knowledge of agriculture by careful study of the best Journals and the Bulletin of the Experiment Stations, and you will soon see that it is easy on 150 acres of land to keep and educate a large family and live in comfort and independence. You can never do it by growing crops and selling them off.

## GROWING BREWING-BARLEY.

*Editor Southern Planter :*

The Department of Agriculture has imported Moravian barley for distribution among farmers who are interested in the growing of barley for brewing purposes.

Moravian barley is considered to be the finest brewing barley. It is plump, very starchy, has a light and bright color and a very fine skin. It is especially valuable for making fine light beer, and the price paid for it exceeds that of all other barleys.

The successful growing of brewing barley depends pre-eminently on the soil, but even the best soil will not produce fine barley without good, fresh, proper fertilizing, and the right climate. Barley is a crop which requires a very fine and deeply prepared soil a superficial smoothing off of the surface with a drag, so often referred to in our agricultural papers, will not answer. It is of no use to try to grow brewing barley on a poorly prepared soil. Experience has shown that beets fertilized with barn yard manure are the best crop to precede barley, no other crop leaving the soil in such fine tilth. But whatever crop may precede barley, if beets are not grown or not in sufficient quantities, the soil must be gotten into the finest condition before winter. If barley follows beets the soil is plowed in fall and the surface only loosened in spring for the reception of the seed. Plowing in spring is not only considered unnecessary, but injurious on account of the easily drying out of the soil. Of the different kinds of soil a mild loam soil in old fertility will produce the finest barley. Considerable brewing barley is grown, however, on heavy loam soil, sandy loam soils and rich lowland, but the barley is not so starchy and has neither the bright color nor the fine skin of the former. The best Moravian barley sells abroad as high as \$2.70 per 100 pounds against \$1.83 obtained for common barley.

In regard to the fertilizing with commercial fertilizers I would like to cite the experience of men like Märcker, Ullman, Remy, and others, who have made a special study of the growing of barley for brewing purposes.

### POTASH.

Barley is a very delicate plant which takes up potash and phosphoric acid only slowly, and therefore, potash fertilizers will even pay on soils comparatively rich in potash. But the most important point in applying potash is the improvement in the quality of the grain. Barley fertilized with potash will contain a larger amount of starch, as much as 64.3 per cent. against 60 per cent. of the unfertilized, which is identical with a higher price. Sylvanite, as a source of potash, has proved to be a complete substitute for kainite, and is at present preferred by many farmers.

## PHOSPHORIC ACID.

The average of a great many experiments with water soluble and citrate soluble phosphoric acid shows a gain of the former over the latter of 58.7 per cent. The difference is so great that it is advisable to use the water soluble phosphoric acid, viz., superphosphate, or the double quantity of the citrate soluble phosphoric acid as it is contained in Thomas slag, if the same results are to be obtained. This, of course, involves a larger outlay, but where this is of little consideration Thomas slag may be applied and the larger quantity of phosphoric acid applied to the soil will benefit the next crop, and will not be a bad investment after all. This will especially be the case if clover or alfalfa follow barley, on account of the large quantities of phosphoric acid consumed by these crops. If clover is sown with barley, or follows barley, from 400 to 500 pounds of Thomas slag should be applied, and in case of alfalfa from 700 to 800 pounds will not be too much. If both, superphosphate and Thomas slag are applied, they should not be mixed, because the water soluble phosphoric acid coming in contact with the large quantities of lime contained in Thomas slag, will become reverted. If both are going to be used, the Thomas slag should be harrowed in, and the superphosphate alone, or mixed with Chile saltpetre (nitrate of soda), used as a top dressing. Thomas slag cannot be mixed with ammonia sulphate without considerable loss of ammonia.

### NITROGEN.

If barley is grown for brewing purposes, Chile saltpetre should be applied with caution, especially if the soil is deficient in mineral plant food. If this is not the case, as much as 150 pounds per acre may be given without bad results. Growers of brewing barley have often asserted that the good old guano produced better barley than the new fertilizers, and recently undertaken experiments show that they are right. A 4 or 5 per cent. higher extract has been obtained from barley fertilized with guano.

### BARLEY ON LIGHT SOILS.

During the early stages of the growing barley the plants take up more nitrogen than later on, sometimes more than they need, and this may lead to a too strong development of the blades and leaves. If the supply of nitrogen in the soil does not become exhausted before the plants are fully developed, and if it is not cut off on account of drought, a good crop of fine barley may be looked for. The strong development of the blades and leaves, however, will also cause the formation of a strong head. If the development of the plants should now be interrupted by one or both of the above-named causes, the result will be a grain deficient in starch, the amount of produced starch being insuffi-

cient to fill out the large head formed by the former luxuriant growth, a grain unfit for brewing purposes.

On soils where the supply of nitrogen is not so easily exhausted, as well as on those possessed of a good water holding power, this will not so easily occur; but on light soils which are more subject to leaching and are easily affected by a drought of even a short duration, a strong rank development of the plants must be avoided. For these soils a slow source of nitrogen, as will be obtained from guano and ammonia salts, is to be preferred. As the nitrification increases and decreases with the moisture content of the soil, the growth of the plants will be in conformity with the general conditions of the soil. The grain crop will probably not be so large as it would have been in favorable years from the effects of Chile saltpeter, but it will be of a finer quality, richer in starch, and better for brewing purposes, and a higher price will be realized for it. On light soils winter barley sometimes gives better results than spring barley, because it yields better on these soils, and it is a fairly satisfactory barley for brewing purposes.

It is to be hoped that the enterprise of Secretary Wilson in sending our farmers a variety of the finest plants and seed obtained in all parts of the world, for testing or improving their crops, will meet with success. The Moravian barley is the finest barley grown, and it will be of interest to note the success our farmers will have with it.

*District of Columbia.*

H. WINKELMAN.

### APPLYING MANURE.

*Editor Southern Planter:*

The question is often asked in agricultural papers—Is it not better to haul the manure direct from the barn to the field, instead of piling it up in the barn yard? That depends upon circumstances. As a rule, it is not, but there are exceptions to this rule.

On small farms, where the farmer does all the work himself, or with the assistance of his family, or probably one or two hired men, or on large farms, with a uniform soil, it may work very well, but on farms with different kinds of soil, and where all the work has to be done with hired help, it cannot be so successfully carried out. Different kinds of soil require different treatment, different crop rotations, and manure in different states of decomposition in order to give the best results. If from three to four, or, as I have seen it, even six fields of different sizes, with different soils, and in different states of fertility, have to be manured, especially if the manure is scarce on account of short crops, a very close account has to be kept to distribute the produced quantity proportionally according to the needs of the different soils and crops. This is difficult

to accomplish if the manure is hauled every day from the barn to the fields. The loads will differ in size and weight, because the same quantity of bedding is seldom used from day to day, and it is troublesome to keep a correct account of the applied quantity. The manure is also not uniform, the droppings and bedding not being thoroughly mixed, and in large barns, where cattle for different purposes are kept and fed, the quality of the manure and of the loads will differ accordingly.

If the manure, however, is piled up in the barnyard, it not only becomes better mixed, but when the time for its application has come, we can also see better when a dozen loads or so have been taken out, if the produced quantity comes up to our expectations; and if it is found wanting, we can begin to economize from the very start. On large farms, where 1,000, 2,000, and sometimes 4,000 loads of manure are produced every year, and have to be divided between three, four, or even five fields, it is a very important matter to get the right quantity to every field.

The piling up of the manure in the barnyard has also the advantage of getting it in the very state of decomposition best suited to the needs of the soils and the crops.

As already stated previously, we want manure strawy for the heavy soils, partly decomposed for the light loam soils, and well decomposed for the sandy soils.

Another point which is in favor of piling the manure up in the barnyard is that we can superintend the hauling to the field better than if applied every day. What we want is to get an even stand of the crop over the whole field.

If the soil is uniform, the applying of the manure is a small matter, but if the land is rolling, with low rich places and some high, and poorer places, it becomes more complicated. In this case, it should be superintended by somebody who is familiar with every square foot of soil in the fields, and sees to it that it is accordingly applied.

If the produced quantity is hauled to a field every day, it has quite necessarily to be left to the farm help, who are more or less often changing places, seldom possess the necessary knowledge of the soil, nor do they take the right interest in the work.

A further point which is against the direct hauling of the manure to the field is that the soil is not always in a condition to receive it. If, for instance, a weedy pasture or stubble is plowed up, the weeds should be destroyed before the manure is applied. If this is not done, and both are plowed under together, the manure will give the weeds a fresh start, and the soil may become so weedy that it is next to impossible to get it clean in time for the reception of the crop.

*District of Columbia.*

H. WINKELMAN.

## FERTILIZERS AND CROPS.

Farmers sometimes claim that fertilizers "burn out" crops, and it is generally noticed that this injury occurs in seasons having a long dry period, or an unexceptionally hot summer. It is claimed also, that farmyard manure never has this effect. In appearance, this "burning out" very much resembles a forced maturity—the crop is matured before it has reached its full growth. The injury consists in a lessened quantity of forage in the case of forage, but in cereal crops the grain production is reduced in a much larger proportion than stalk or straw. It is common enough to have what seems a fair yield of straw, but a very slim return in seed. As a matter of fact, this is exactly what would happen with forced maturity; all the substance of the crop is confined to that portion usually formed in the earlier stages of growth.

This effect is very commonly noticed with the use of ordinary commercial fertilizers. These goods are very valuable so far as they go, but a great many of them do not go far enough. As is now well known, plant fertilizer consists of three substances—nitrogen, potash, and phosphoric acid. All three of these are needed in certain proportions; at the same time each has in a measure its own special line of work. In the case of phosphoric acid, this special line of work is in the nature of hastening the maturity of plants, particularly when used in excess as compared with the other two elements of plant food. That is, if it has not enough potash and nitrogen to "go with it" in building up the plant substance of crops. This feature is used to advantage by sugar planters in Louisiana, where there is danger of the unripe cane being caught by frost, and its sugar-making value greatly lessened thereby. The sugar planters use an excess of acid phosphate, which hastens the maturity of the crop.

While the sugar planters find this feature an advantage, the same action on a field of corn, oats or wheat would be a great disadvantage, and this is just what is described when a grain farmer says his crop is "burnt out," nine times out of ten. The reason is a very natural one. Commercial fertilizers are always half acid, half phosphate, or at least average that. They contain a great deal of phosphoric acid, but very little nitrogen or potash. The result is, in the course of time, the nitrogen and potash of the soil become very much exhausted, but the phosphoric acid keeps coming just the same. The conditions sooner or later become those of the Louisiana sugar planters—the crop is subject to a forced maturity, and the grain yield fails. Acid phosphate is a very valuable plant food; it is indispensable, but it cannot do the whole work of plant feeding. It is in its abuse that it causes injury,

an abuse all the more unfortunate when we consider that if it had the needful nitrogen and potash to go with it, it would be doing useful crop-making work, instead of reducing the crop. BRYAN TYSON.

Moore Co., N. C.

## SAWDUST AS A FERTILIZER.

*Editor Southern Planter:*

I see the sawdust problem bubbling to the top again. I will once more cast my mite into the treasury of experience and observation.

I never claimed that sawdust was an immediate fertilizer, but it is a mechanical agent. Give me plenty of sawdust, and I can improve any stiff clay land.

All observers know that in low places in the forests the land is always better than on the ridges or elevated portions, and the reason therefor is easily solved. It is the accumulation of trash that contains the same ingredients as sawdust does.

But it must be borne in mind that raw or green sawdust should not be put on land. Let it lay in heaps till it partially decays, then put it on the land with a liberal hand, plow it in, and plant the land to peas, using some good commercial fertilizer. Turn in the peas and you will see a vast improvement in the land.

The sawdust already started rotting, will continue to decay, and will make the land porous and friable. As to oak or pine, I would prefer first, sap pine, next oak.

Every observer has noticed that chip yards and saw dust piles are always moist, no difference how dry the weather. This proves that sawdust is a retainer of moisture.

For use upon gravelly or gritty land, it will be much better to burn all woody substances and apply the ashes, because such land is already too open or porous.

Goochland Co., Va.

EXODES.

## KILLING SASSAFRAS AND IMPROVING LAND.

*Editor Southern Planter:*

I bought a farm a few years ago, and the field in front of the house was very poor, and so thickly set in sassafras, that had it been anywhere else on the farm, I should have turned it out to grow up.

I tried grubbing on the "dark moon in August," and turning out a bush now and then to grow, but saw no good it did. I thought I would try once more, and succeeded, and write this for the benefit of any one interested. I trust it may help some one.

I fallowed the land in June for peas, turning under every sassafras sprout possible, and grubbing the rest. I gave the peas a dressing of 300 lbs. of acid phosphate per acre. I cut a crop of hay, which paid for the fer-

tilizer. I refallowed the land and seeded German clover with a like dressing of phosphate (one of my neighbors said he did not think any one but myself would have the heart to sow clover on such poor land). I cut off a crop of clover (not heavy, but it certainly helped to pay expenses). I fallowed the land again and seeded peas, using phosphate in like quantity, and after cutting a nice crop of hay, I fallowed and seeded wheat, making fifteen and a half bushels per acre.

This would not be complete if I did not say that at every plowing I covered every sassafras sprout possible, and, following the teaching of the *Planter*, each time I plowed a little deeper, so as to increase the depth of the soil, and, of course, at every cutting, the mower clipped every piece of sassafras that showed its head.

The result is, in place of a dead, poor field, thickly set in sassafras, I have a nice piece of land in a fair state of improvement, with scarcely a sassafras sprout to be seen, and all done in a short time.

G. A. G.

#### ENQUIRER'S COLUMN.

Enquiries should be sent to the office of *The Southern Planter*, Richmond, Va., not later than the 15th of the month, for replies to appear in the next month's issue of the *Planter*.

#### Orchards—Disease of Apple and Pear Trees—Twig-blight, Leaf-blight, Rust on Leaves, Bitter Rot, Etc.

All are prevalent diseases here. What is the cause of twig blight? Is it caused by an insect or climatic influence? Also, the cause of leaf blight and rust on leaves, bitter rot, etc.? Why is it that some apple trees in some orchards have bitter rot and others do not? Is it considered contagious? Would spraying be of any benefit in eradicating any of the above diseases? What mixtures would you recommend to spray with? When and how often to spray? Then what kind of sprayer would you suggest as the most suitable and durable? The automatic, with compressed air (4 gallons), or knapsack with lever pumps (4 gallons), or a pump placed in a barrel and carried on a wagon?

I have two orchards. One has been manured and cultivated every year for several years. The other one has not been manured so much, neither cultivated so often, but the disease is about the same in both orchards. Not only so with mine but surrounding orchards affected in same way. Now we want some light on the various diseases affecting our orchards and a remedy for the same by which we can save our orchards, etc. All praise to *The Planter*  
Sullivan Co., Tenn.

J. W. SWADLEY.

"Twig blight," or "fire blight," of pear and apple is caused neither by an insect nor by climatic influences, but by a specific organism (*Bacillus amylovorus*)

which belongs to the group of plants known as bacteria.

The only remedy known so far is the drastic one of the use of the knife. All affected twigs should be cut off below the lowest point of injury and be destroyed.

The "scab," "orange rust," and "leaf spot" are caused by minute plants known as fungi. All of these diseases appear early in the season and require prompt treatment to prevent their development. They can be prevented by spraying with Bordeaux mixture (4 pounds copper sulphate, 5 pounds quick lime, and 50 gallons water). Two applications are necessary, one just before the bloom begins to open and the second immediately after the bloom has dropped. If Paris green is added to this second application the codlin moth will also be destroyed.

"Bitter rot" appears later in the season and is more difficult to control. If the trees are thoroughly plastered with Bordeaux mixture at the very first appearance of this disease it will usually be held in check. Fruit once attacked, however, cannot be saved. Treatment for all of these different fungous diseases must be preventative, and, therefore, promptness is essential to successful work.

As to pumps, a strong well made barrel outfit is the proper rig where large trees or a number of small ones are to be treated. For garden work a properly made knapsack pump is all that is necessary.

#### Lye Wash for Orchard Trees.

Would you recommend a wash composed of one box of ordinary concentrated lye to five gallons of water for a young apple orchard six years old? Do you know of anything better for the health of the trees? Please give directions for mixing and applying the best wash you know of, unless you disapprove of all "washes," as some do.

Fauquier Co., Va.

F. H. M.

A winter wash of lye is one of the best means of keeping trees in a clean and healthy condition. One "box" or "can" of concentrated lye will make about eight gallons of the wash. However, brands of lye differ in strength, and it is better to use the acid spindle in testing strength of solution than to depend on formulas. Add lye until the solution will read 3° on the Baumé acid spindle, which is about the proper strength. These acid spindles can be had from most any dealer in chemical supplies at a cost of about 50 cents.

#### Fertilizer for Asparagus

What is the best fertilizer to apply on asparagus in early spring for early cutting?  
Northampton Co., Va.

ROBT. B. TAYLOR.

A fertilizer for asparagus should have 5 per cent. ammonia, 7 per cent. of available phosphoric acid,

and 8 per cent. of potash. This may be had by mixing 200 lbs. of nitrate of soda, 700 lbs. of cotton seed meal, and 800 lbs. of acid phosphate (13 per cent.), and 300 lbs. of muriate of potash to make a ton. Apply at the rate of 500 lbs. to the acre, and harrow in. As a permanent fertilizer for an asparagus bed, farmyard manure, bone meal, and muriate of potash are always to be commended.—ED

#### Analysis of Ashes.

Will you please inform me, through your journal, the analysis—

1. Of oak ashes.
2. Of pine ashes.
3. Of coal ashes.
4. Of leached ashes.

Prince George Co., Va.

A. F. LEE.

Hard wood ashes (hickory and oak) unleached, have from 4 to 5 25 per cent. of potash and 25 per cent. of lime. Soft wood ashes (pine, etc.), from 2 to 3 per cent. of potash. Coal ashes have practically no fertilizing value. They contain only from 0.10 to 0.40 per cent. of potash. Leached wood ashes contain only about 1 25 per cent. of potash, but have about 30 per cent. of lime.—ED.

#### Fertilizers for Irish Potatoes and Watermelons

1. What brand of fertilizer is best for early potatoes?

2. What best for watermelon? B. S.

James City Co., Va.

1. We never advise any brand of any particular maker of fertilizers for use by our subscribers for raising any particular crop. What we do is to state what fertilizer constituents the particular crop calls for and from what source these can be obtained, leaving to the subscriber the choice of the brand which most nearly complies with the requirements of the crop, or leaving him to purchase the constituents required and mix for himself as he thinks best. Irish potatoes require a fertilizer having from 5 to 6 per cent. of ammonia, 7 or 8 per cent. of available phosphoric acid, and 8 or 10 per cent. of potash. These constituents can be had as to the ammonia from nitrate of soda and cotton seed meal as to the phosphoric acid from acid phosphate or dissolved bone, and as to the potash from muriate of potash.

2. Watermelons require a fertilizer with 5 or 6 per cent. of ammonia, 5 per cent. of available phosphoric acid, and 6 or 7 per cent. of potash.—ED.

#### Shearing Sheep—Feed for Cows—Drain-pipe.

1. Is it a good practice to shear breeding ewes twice a year?

2. Should early lambs intended for breeding ewes be sheared in late summer after birth?

3. Are the Horned Dorsets as good wool producing sheep as the Southdowns?

4. If feeding milk cows corn stover, pea vines and hay for roughage, should each kind of feed be fed as a full feed separately, or the three mixed at each feed?

5. Are tile drains having enl rged collars to receive the next joint (as sewer pipe has), as serviceable in draining wet places as hose which simply meet at joints?

CARTER RETRAC.

Henry Co., Va.

1. We do not recommend shearing sheep twice a year. Shear as early in the year as the state of the weather will justify, so that they may not suffer from the heat.

2. No.

3. In this issue will be found an article on Dorset sheep from a well known breeder, to which we refer you. He writes from a practical knowledge of the breed.

4. It is practically unimportant whether the feeds be fed mixed together or separately, so long as they are fed regularly every day. It is usually more convenient to feed them separately.

5. Tile drains should have no collars on them, but be merely met together in the drain. In this form they can be bought much cheaper, and are thoroughly effective when properly laid.—ED.

#### Seed Required Per Acre.

Will you kindly advise a out how many barrels of Irish potatoe is required to the acre when planted in quarters or halves? Our farmers have used the eyes or cut in small pieces, and they cannot estimate correctly.

New Hanover Co., Va.

Eight bushels of good sized potatoes cut to two-eyed pieces will plant an acre.—ED.

#### Is This So? If So, Why?

I have noticed and have had experience in Pennsylvania, that where briars have been growing corn will not make a crop. It is hard to get a good stand, and if a good stalk does grow it seldom has an ear on to be worth shucking. Wheat on a briar patch will not make the seed sown unless the land is limed. In Virginia if a briar patch is cleaned up and the field planted to corn, the best product will be where the most briars grow. What causes the difference?

Goochland, Va.

D. KNAPENBERGER.

Let us hear from some one on this subject.—ED.

#### Wash for Apple Trees.

I have a large apple orchard—nearly one hundred trees—and they are beautiful and trifty. I washed them down three years ago with a solution of concentrated lye, five gallons of water to a box, and it gave the bark a beautiful green appearance. I have since read that all "washes" are injurious, hence my desire for information.

Fauquier Co., Va.

F. H. MOSS.

Lye makes an excellent wash for apple trees. In this column will be found instructions as to the

strength to use it. Washes and sprays are an absolute necessity to the orchardist, if he is to be successful. We shall publish a Spray Calendar in the next issue, giving full instructions on the subject.—Ed.

#### Parasites in Sheep.

Can you publish in *The Southern Planter* a remedy for the stomach worms mentioned by Mr. Stubbs in his article on "Stock Raising," which cause "knotty guts"? They play havoc with the sheep in this locality.

Nelson Co., Va.

WM. B. MACGREGOR.

There are two or three parasites which affect sheep disastrously in various parts of the South, the *Cesophogomosta* causes the so called "knotty guts," the *Strongylus filaria*, and the *Strongylus contortus*. These parasites are, it is known, introduced into sheep from lowlying damp pastures, where the eggs are laid on the herbage and taken in by the sheep when grazing. It is probable that more loss is sustained from the *Strongylus* parasite than from the others, though both are sadly too common. The main remedy, indeed the only one known for the *Cesophogomosta*, is preventative. Sheep should not be grazed on low, damp land, especially when the herbage is damp with rain or dew. Nor should sheep be allowed to graze on any land upon which sheep infested with either parasite have been grazed until after such lands have been kept free from sheep for at least a year. For the *Cesophogomosta* there is no known cure. The parasites are encysted in the nodules on the intestines, and no medicine or remedy can reach them. Sheep infested with this parasite should, as soon as it is discovered, be changed to other high dry pastures, and be pushed into marketable condition as quickly as possible and be sold. The meat is no worse for consumption. For the *Strongylus contortus*, we published a remedy in the last December issue of *The Planter*. For *Strongylus filaria*, the remedy is gasoline in doses of from one to two table spoonfuls, given in flaxseed gruel or milk.—Ed.

#### Bermuda Grass—Angora Goats—Cow-Peas.

Is Bermuda a long life grass, is it simply a grazing grass, or will it do also for hay, and does it improve land, and would it do well on mountain land in Clarke county, and what quantity of seed does it take to the acre, how and when is the best time to sow it?

In what way are Angora goats profitable? Where can they be bought, and about what price does their wool sell for?

About what is the average yield of cow peas per acre on good ground as feed, also thrashed out?

Roanoke Co., Va.

SUBSCRIBER.

Bermuda grass is the best grazing grass for the summer months on the coast and plain sections of the South, but it is not a mountain grass. There blue grass or any of the *Poa* or *fescue* grasses are at home and are too valuable to be ousted by trying to grow Ber-

muda. Bermuda grass is best grown from root cuttings, as it does not produce seed in this country. The seed offered is imported. The cuttings, which are supplied by seedsmen, are dropped in the furrows in spring when plowing the land, and soon make a thick turf which will last indefinitely. It is no use for winter grazing nor for hay.

Angora goats are bred and kept mainly for their wool, which always commands a good price in the market. It is sometimes sold for as high a price as 30 cents a pound. You will find them advertised in *The Planter*.

Cow-peas will make as high as two tons of hay per acre, and will yield from 12 to 20 bushels of seed per acre.—Ed.

#### Churning.

Please give me a simple and efficient remedy for preventing cream from foaming while churning during cold weather.

Richmond Co., Va.

H. G. TAYLOR.

The cause of the foaming of cream whilst churning, or the difficulty of separating the butter fat varies, sometimes it is caused by churning at too low a temperature, sometimes by churning at too high a temperature, sometimes by overfilling the churn, sometimes by not properly ripening the cream, and sometimes by the condition of the cows, or some or one of them themselves. Before a remedy can be applied the cause must be ascertained. Sometimes the milk of only one cow in a herd is the cause. If this be ascertained the milk of that cow should not be mixed with that of the others. The cow usually at a fault, if the cause be a cow, is one far gone in the period of milking. If you have any cows that have not been fresh for a long time, test the milk of these by churning alone, and if found at fault, exclude this milk. If the fault be not thus discovered, change the temperature of churning. Usually from 55° to 58° degrees will be found to give the best results, both in churning and in quality of butter, but it may be necessary to raise this to 60 degrees or to lower it way down to 50 degrees. Be careful not to overfill the churn, give plenty of room for the cream to swell, and see that the cream is ripened to a proper degree of acidity before putting in the churn.—Ed.

#### Worms and Rot in Plums and Peaches—Strawberries.

I have a very fine "Satsuma Plum," which every year just as ripening sets in gets full of worms, and either rot or drop off. What should I do to the tree now that may prevent this. It is in very rich black soil; also, I have two peach trees that do the same.

Then, again, I have a patch of strawberries about three fourths of an acre, now coming into their second year; the plants on the bed have, through the past summer, spread very rapidly and formed a matted row.

Now, these I thinned out to a straight line, but are still matted in the drill. Will they under heavy fertilizing produce large berries? They are the "Hoffman." I have also on the same patch Lady Thompson, Clyde, Tubbs, Glen Mary and Nick Ohmer. I believe they are all "perfect flowering." Will they do anything in the way of fruiting? In November I covered the whole bed, just leaving the bushes without plowing.

*Kershaw Co., S. C.*

B. H. BAUM.

The worms in the plums are no doubt caused by curculio. The only remedy for this is to jar the trees with a sharp stroke of a hammer, first spreading a sheet under the tree. This jarring will cause the curculios to drop from the tree. This should be done before the insect has had the opportunity to sting the fruit and lodge its eggs therein. The eggs are usually laid shortly after the fruit has formed and commenced to swell. The rotting of the plums and peaches is caused by a fungoid disease which is very difficult to control in damp, warm weather. Spraying with Bordeaux or copper sulphate is the best preventative, and should be done before the rot starts. In next month's issue we shall publish a spray calendar with instructions. It is a wise precaution to thin the fruit so that these do not touch each other. The rot spreads much more rapidly when the fruit hangs resting on each other.

We would not apply more fertilizer to the strawberries, except it might be some potash, say, 200 pounds to the acre. The meal and phosphate would tend to make too much foliage.—ED.

#### Johnson Grass.

The Johnson grass question was discussed in the *Southern Planter* last year pretty fully, but not settled. The objectors live south of Richmond, Va. Have any of your readers who reside north of your city had experience with the grass? If so, will they not give results in the *Southern Planter*? I want a pasturage grass, and will risk such, though it be difficult to eradicate, as permanence, is my main object. Will Johnson grass do well as far north as Alexandria? When should it be sowed, and how? R. S. LACEY.

Please let us hear from some one on this subject.—ED.

Will you kindly inform me in your next issue the chemical action of lime on land? And also its action in exterminating sheep sorrel?

*Shenandoah Co., Va.*

A SUBSCRIBER.

In our issue of January, 1901, will be found an article upon this subject, giving the information asked.—ED.

#### Feed for Horses—Soja Beans.

1. Please advise me, through your valuable journal, as to feeding my work horses. At present am feeding cut corn fodder mostly as roughage, and corn and cob meal, three parts mixed with one part Soja bean meal, of which I feed one fourth of a peck to a horse

at each meal. Will it be harmful to feed Soja beans to horses in such proportion?

2. Do Soja beans impoverish the land when harvested? Soja beans are a good and sure crop, and I intend to put in a large acreage the coming spring. I raise some every year, and thresh them with a grain thresher. The yield per acre is twenty bushels on ordinary land, which I got last fall.

*Charles City Co., Va*

JOS. NEDVIDEK.

1. You need not fear injury to the horses from feeding the quantity of Soja bean meal you name. It will very much improve the balance of the ration.

2. No. Soja beans, like all the other legumes, are improvers of land, if only sufficient phosphoric acid and potash is used to keep the balance of the plant food in the soil. If grown for the seed, they will, of course, be more exhaustive than if grown only for hay or green feed. The application of 300 lbs. of acid phosphate to the acre will be found a paying investment on the crop.—ED.

#### Dehorning—Sowing Clover.

1. When is the best time to dehorn cattle, and how should it be done? Is there any danger in dehorning cattle in cold weather, and do you think it in any way injures cattle to dehorn them?

2. About what time should clover be sown in spring? I wish to sow it in wheat that was seeded last fall. Would it be a good plan to sow the seed, then harrow lightly and roll with a 2,000 lb. corrugated roller? If this is not advisable, please mention the best course to pursue in order to get a good stand.

3. How deep should sod land be plowed when a subsoiler is not available?

4. I have a steer which is losing hair from around eyes; can you give cause, and suggest a remedy?

*Abemarle Co., Va.*

X. Y. Z

1. The cool fall or spring months are the best time to dehorn. Then the flies are not troublesome, and the wounds soon heal. There is no danger usually. Now and again we hear of an animal dying, but very seldom. We believe the operation usually to be wholly harmless.

2. Clover, we think, should always be sown in the fall in the South, though we have known good stands obtained by spring seeding. Harrow the wheat lightly as soon as the land is dry enough to harrow. Then sow the seed at once, harrow again lightly, and if the ground is dry enough to roll, roll. If a corrugated roller is used, the second harrowing may be dispensed with. We think the corrugated roller an excellent one to use on wheat crops, whether seeding clover or not.

3. If plowed in fall or winter, go a little deeper than when previously plowed, so as to bring up some of the subsoil. If plowed in spring, do not go deeper than plowed before.

4. We presume the loss of hair is caused by lice on the animal. Wash with a tobacco solution, or, better

and safer, use Laidlaw's sheep and cattle dip, which you will find advertised in our columns.—ED.

#### Analyses of Fertilizing Constituents in Cotton Seed.

In your next issue would you kindly inform me of the fertilizing constituents in cotton seed Sea Island cotton seed, S a Island cotton seed meal, cotton seed meal?

AN OLD SUBSCRIBER.

We have no tables giving analyses of the different varieties of seed. The following gives the average fertilizing constituents as found by 15 different analyses of seed:

	Nitrogen. per cent.	Phos Acid. per cent.	Potash per cent.
Minimum .....	1.96	0.76	0.73
Maximum .....	5.17	1.77	1.63
Average .....	3.13	1.27	1.17

#### AVERAGE ANALYSES OF COTTON SEED MEAL.

Nitrogen. Phosphoric Acid. Potash.  
6.64 per cent. 2.63 per cent. 1.79 per cent.—ED.

#### Black Pea Hulls as a Feed for Hens.

I would like to know how the pods from black peas (cow peas), the empty pods, after the peas have been thrashed out of them, compare with the rest of the vine or with clover hay, as to richness, amount of protein, etc.

We have been using them in the place of clover (as we had no clover) in our chicken feed. We cook them thoroughly first, and thus prepare them, the chickens are very fond of them, and we think that they help bring the eggs; at any rate, 28 hens laid 475 eggs for us in December.

Amelia Co., Va.

L. ST. PIERRE.

We have no analyses of the pods at hand, but no doubt, like the rest of the plant, they are rich in protein and will make good food for either hens or stock.—ED

#### Restoring an Old Fence.

On page 5 of the current issue, you advise the repairing or renewing of rail fences—making them straight and using posts in connection with the rails. I would very much like to be advised in any way you see fit, your method—that is the fixing of the posts. Do you set two together and drop one end of the rails for both panels between the posts? If you use any wire, the kind and size? Or do you recommend one post and nailing the ends of the rails to it?

A. H. WATSON.

We do not see well how we can make the explanation of the method of reconstructing the fence plainer than we have done. After the posts are set in the ground at the proper distance apart, take a piece of ordinary plain fencing wire and cut off a length sufficient to reach from nearly the ground line of the post to the top of the post after allowing sufficient to form a loop to go over each two rails. Take a strong wire staple and fasten this piece of wire to the post just below where the bottom rail is to be placed. Then take

a rail and place the end against the post, resting it on the wire, and carry the wire round it so as to hold it in place, fastening the wire at the top side of the rail to the post by another staple. Carry the wire up the post to where the next rail is to be fixed and proceed as before. At the next post, there will be two rails to fix at each place, but the method will be the same.—ED.

#### Bud or Cutworm—Gasoline Engine.

1. Can you give me a remedy for preventing the bud or cutworm from destroying corn?

2. Is a gasoline engine safe, and will a 1½ horse-power run a wood saw to cut stove wood or a feed-cutter for a few head of stock?

Gulfport Co., N. C.

D. B. SMITH.

1. The best way to get rid of the trouble of the bud or cutworm is to poison them before the corn comes up. Mix some Paris green with bran and moisten it so that it can be made into small balls. After the land is plowed, and before the corn appears, drop these balls about the field. The worms will eat them and die, or bunches of green clover can be dipped in Paris green solution and be dropped about the field, which the worms will eat and be killed.

2. Gasoline engines are perfectly safe when properly fixed and fitted. You will find several makes advertised in the *Planter*. Write the makers for information, as to the work they will do. We know several parties who are using them with great satisfaction.—ED.

#### Rape.

Please state in your next issue the better time this spring for seeding rape for sheep and hog grazing. I sowed a lot last September that is looking fairly well considering the hard freezes we have had.

R. O. CATES

Sow as early as you can get the land ready, but not so early as for the crop to be caught, when first starting by the late spring frosts. Rape, when in strong growth can stand a sharp frost, but is tender when first germinating.—ED.

#### Kieffer Pears—Early Grapes for Tidewater Virginia Rot-Resistant Peaches.

1. Would the *Planter* advise setting Kieffer pears? They are our only sure pear, but some fear too many are being planted.

2. Who can tell anything about the Liston grape for planting in Tidewater, where the Niagara, Concord, and Moore's Early dwell? Is there a better early market grape than Moore's Early?

3. I should also like information about the Greensborough and Comet's Early peach. Do they resist rot as well as Elberta or Sneed?

Surry Co., Va.

A. F. AMES.

1. There is no doubt but that great numbers of Kieffer pears are being planted, and the result will probably be a glut in the market and a low price for

the fruit in the near future. An effort is being made to find a market abroad. If this succeeds, as appears likely from the result of an experiment made this fall, the relief may obviate much of the danger.

2. Will some of our fruit growers answer this question? We do not know this grape. We know of no better early market grape than Moore's Early.

3. Peach growers please reply to this question.—ED.

#### Fertilizer for Celery.

Will you inform me in your next issue what is the best fertilizer for celery? I am not prepared to use stable manure. Have land which will produce forty bushels of corn per acre—a sandy loam—been an old ice-pond for years—can irrigate it—am raising it for market.

Stokesland, Va.

E. D. WITHERS.

A proper fertilizer for celery is one having 7 to 8 per cent. of ammonia, 5 to 6 per cent. of available phosphoric acid, and 8 to 10 per cent. of potash. Such a fertilizer can be made by using 300 lbs. of nitrate of soda, 600 lbs of dried blood or 750 lbs. of fish scrap, 600 lbs. of acid phosphate (14 per cent.) and 300 lbs. of murlate of potash. Irrigation will greatly help you to make the crop a success.—ED.

#### Fertilizer for Top-Dressing Clover and Timothy.

Will it pay me to top dress some clover and timothy with a fertilizer with the following analysis:

Available phosphoric acid, . . . . .	10.00 to 12.00
Insoluble phosphoric acid, . . . . .	1.00 to 2.00
Total bone phosphoric acid, . . . . .	24.00 to 30.00
Potash $K_2O$ , . . . . .	2.00 to 3.00
Equal to sulphate of potash . . . . .	3.60 to 5.40

If so, how much to the acre? The land is in fair condition and is rather stiff soil. Please answer this in your next issue of *The Planter*.

King and Queen Co., Va.

ALONZO MOODY.

The only items in the analysis quoted which are of any worth to the farmer or ought to be taken any notice of are the first (available phosphoric acid) and the Potash ( $KO_2$ ). We much doubt whether a top-dressing with this fertilizer will be of advantage. Had it been applied to the land before the clover and timothy was seeded and worked in it would have helped the crop, but applied on top its want of quick solubility will make it of only small value to the growing crop. A dressing of 150 lbs. to the acre of nitrate of soda will be much more profitable.—ED.

#### Analysis of Tobacco Stems—Value as a Fertilizer.

What is the analysis of tobacco stems? And what is their commercial value as a fertilizer?

As a tobacco fertilizer, is it best to apply them on the land as soon as broken up during the winter, or to wait until spring?

Amerst Co., Va.

W. B.

Tobacco stems vary considerably in their composition, according as they are the product of the different

types of tobacco. A fair average sample will analyze nitrogen 2.35 per cent., potash 8.20, phosphoric acid 0.70 (unavailable immediately). Calculated on this analysis they would be worth \$16.00 per ton at the point of shipment, but their bulk and cost of handling is so great as to reduce this value to the farmer very much, and the fact that the constituents are largely unavailable until decayed must also be taken into account when estimating their value on the farm. They should be got onto the land as early as possible so that they may have time to rot.—ED.

#### Cotton Seed Meal for Mules.

I would like to know if cotton seed meal would be good food for working mules in a mixture of equal quantity of oats and rice flour and what quantity of meal would be best to use.

Charleston Co., S. C.

H. R. HALE.

The South Carolina and North Carolina Experiment Stations both report that they have fed cotton seed meal to horses and mules with good results. Mr. Conner, of the South Carolina Station, suggests the following as a proper ration for a work horse or mule: Mixed hay 15 lbs., wheat bran 4 lbs, corn or corn meal or rice meal 6 lbs., cotton seed meal 2 lbs.—ED.

#### Ensilage and Silo Building.

I have a farm of fifty acres in Lewinsville, Fairfax County, Va., and keep fifteen cows, the milk from which is sold to a dairyman doing business in this city. At the present time I am feeding corn fodder, cotton seed meal, corn meal and bran, but such feed is so expensive that I am considering the advisability of building a silo and would esteem it a great favor if you would answer the following questions:

1. Is the feeding of ensilage, in connection with other food stuff, more economical than the food referred to in the foregoing?
2. How much ensilage will it take to feed the number of cows stated for seven months, using other food stuff in addition?
3. What would be the daily ration per cow per day?
4. How large a silo would be necessary and of what dimensions?
5. Could it be made of cement and if so would such construction be more satisfactory than one of wood?
6. Is a round silo more efficient than one of another shape?
7. How many acres would be necessary to raise the corn required?
8. What variety of corn makes the best ensilage?
9. How should it be planted and when should it be cut?

If, in addition to that contained in the answers to the foregoing questions, any information which would aid me in deciding as to building a silo, suggested by your knowledge and experience, would be greatly appreciated.

District of Columbia.

FRED DREW.

1. Ensilage is no doubt the most economical ration which can be fed to cows. In this issue will be found

a short article giving experience therewith. The writer is a dairyman with large experience.

2, 3. The average ration per cow, say 1,000 lbs. weight, is 40 lbs. per day. It is a matter of easy calculation from this data to ascertain the quantity required for any particular time.

4. In a later issue of *The Planter* we will give full instructions for building a silo and size and cubical contents required. In the issue of *The Planter* for July, 1901, will be found full information on this subject.

5, 6. There are many cement silos used in different parts of the country, but we are of opinion that a round wood silo is the best and most economical.

7. This depends on the fertility of the land. From ten to twenty tons of green corn fodder can be grown to the acre.

8. The large southern corn makes the best ensilage crops.

9. Plant in May or June, in rows 3 feet apart and 10 inches apart in the rows. Cut when just glazing and near maturity.—ED.

#### Corn Smut.

The cornstalks have a kind of smut or powdery black stuff in the shuck where the ear ought to be, the smut or powder when dry is in a hard lump and some times fine and very annoying to the one who gathers the crop and also to stock. Any information to rid a cornfield of said trouble will be thankfully received.

The harrow I spoke of in my second question is made by the Syracuse Plow Company at Syracuse, N. Y. Thanking you for information already received, hope to get more on the above questions.

Chatham Co., N. C. W. J. DURHAM.

This enquirer asked us about "Blast in Corn," and we replied to him in December that we did not understand his question. What he calls "blast" we now understand to mean smut. This is a fungoid disease for which no remedy is known. Every smutted stalk should be pulled out and the smutted ear be burnt as soon as seen and the stalk be fed to cattle. The smut itself has been thought to be harmful to cattle but experiments have not verified this unless fed in large quantity and exclusively.

We published an opinion as to the Harrow.—ED.

#### Gasoline Engines.

In the near future I want to equip my farm (of 225 acres in 7 fields) with a water supply. I have an everlasting bored well. Am undecided whether to use a wind mill or gasoline engine (wind mills blow over here in storms). What would be the cost per hour to run a gasoline engine (to lift water 15 feet above the level of the ground into a tank 30 yards from pump, well about 50 feet deep), and how much would it pump per hour? Will not some of our readers give their practical experience with gasoline engines and

wind mills, also the names of the manufacturers, &c. Would like to have the simplest made. See a great many advertised in your paper.

Culpeper Co., Va.

L. P. N., JR.

Will not some of our readers reply to this enquiry? We know several parties who are using gasoline engines with great satisfaction.—ED.

#### Tobacco Specking.

This disease attack the plant from the time it is in top until it is cut, and is worse in wet weather. If not against your rule I would be glad if you would give the quotations of your tobacco market in *The Southern Planter*.

Diswiddie County.

JAS. M. REAMES.

We are sorry to say that we cannot help you further in this matter of specking. The disease is no doubt of a fungoid character, but neither the cause nor the means of prevention are certainly ascertained. We have frequently published tobacco quotations but they are so wide as to be of little use.—ED.

#### Disc Cultivators—Subsoiling—Rotation.

1. What has been the experience of those who have used the Disc Riding Cultivators, such as were advertised in your paper last summer? Do they work well on stiff land a little hilly? Will they cover small grass and weeds as well as shovel cultivators? Is the draught on team more than two-horse cultivators?

2. What do you think of subsoiling poor, stiff land? Has it generally paid?

3. Would it not be safe to use plenty of cow stall manure, rotate the crops; say, oats and cow peas one year, cotton the next, corn and cow peas next, and oats again; using cow manure broadcast for corn and cotton, and try to simply break the land good and deep for the corn and cotton.

Am keeping cattle for butter, bed them, in box stalls, with plenty fine straw, and some sawdust, this gives us a great deal of manure to haul out, which does not get in the weather until it is spread in the field when needed.

We use a hand separator, and feed the warm milk to pigs and a few calves that we keep.

*The Planter* is of great service to me, and the articles, in the January, 1902 number, on stock raising and dairying are more than worth the price asked for the paper a whole year.

Craven Co., N. C.

J. H.

1. So far as we have ever heard the Riding Disc Cultivators give complete satisfaction. We have many friends who use them altogether and we have never heard complaint from them. They accomplish more work in the same time than other cultivators and do it well when properly handled.

2. We are strong supporters of subsoiling on all lands which have a good holding subsoil. We have personally subsoiled large areas and always with advantage. One of the great needs of southern lands is depth of soil to hold moisture and give room for root develop-

ment. In no other way can this be had but by subsoiling.

3. Subsoiling alone, however, is not sufficient. A good rotation of crops, such as you suggest, with the application of plenty of home made farm yard manure will always be in order, and cannot fail in the long run to be profitable.

You are on the right track for success in keeping cows and hogs and converting your crops into concentrated products at home and only making cotton as an incidental crop in the rotation. There is no reason why cotton should not be made in this way and be a profitable crop. It is the all cotton planter who makes a mistake. His crop always has too big a fertilizer bill tacked on to leave much profit however high the price.—Ed.

#### Hard and Soft Coal Ashes.

Will you please answer the following:

Are the ashes of hard and soft coal as good for fruit trees and grape vines as wood ashes?

*Granville Co., N. C.*

J. R. PACE.

These have no value as fertilizers.—Ed.

#### Hard Wood Ashes as a Fertilizer.

Will you please let me know in the next issue, the best way of using hard wood ashes in connection with other farm manures, such as hen house and stable manure—and what crops they are of most benefit to—about how much to use per acre for said crops?

*Cumberland Co., Va.*

THOS. N. WILSON.

The value of hard wood ashes is in their potash content, and therefore they are useful on all land not rich in potash and for all crops calling for a high percentage of potash in their growth. Light sandy lands usually lack potash, whilst nearly all heavy clay lands in this State are rich in it, though much of this is unavailable until lime is applied. Tobacco and Irish potatoes are examples of crops calling for much potash. So are nearly all the vegetables. Both hen house manure and stable manure lack potash, and therefore ashes may be used profitably with these. Ashes are an excellent fertilizer for orchards. Apply from 300 to 500 lbs. to the acre.—Ed.

#### Sowing Grass, Etc.

Last fall was so dry that I fear much grass seed as well as grain will be a failure. The winter oats are looking very badly, even those sown quite early, and the late sowing are looking worse. German clovers are also looking very uncertain. I was thinking it would be well to sow clover and orchard grass in February on our winter oats, and also sow some lots of grass alone in February, for in past years I have had very good success in seeding grass and clover on wheat, oats, and alone sown in February, even better gener-

ally than when sown in the fall. I have also reseeded timothy and red top in February with good success. We will have to be wide awake with these things or we are going to come short in our prospects this spring.

Will February or March be too soon to sow alfalfa? I have a notion to try some. Will it pay to top dress grapes with some good fertilizer in the spring? I have never used fertilizer in that way. I am rather late in asking these questions, but will be greatly obliged to you if you can answer them in your February number.

*Henrico, Va.*

F. GUY.

In this issue we advise seeding of grass and clover in February and March, and especially of seeding some alone. We have not much confidence in seeding alfalfa in spring. It should be seeded in the fall. Spend the summer in getting a piece of land into good condition to grow it. You will have more success. Grasses must be fertilized in spring.—Ed.

#### Fertilizer for Corn.

I have always been using a fertilizer on my corn called Pocomoke Phosphate, but it does not seem to give very good results. (I put it in the hill.) I would like to know what is the best fertilizer to use on corn; and also for black peas, for I find that I can make more money planting the same land in peas than I can in corn.

*Accomac Co., Va.*

A. T. TIGNAL.

We do not believe that any fertilizer can be used on the corn crop which will be directly profitable there. We have so advised for several years. It is possible to increase the yield of corn and fodder by the use of a good complete fertilizer, but we have never known the increase to be sufficient to pay for the fertilizer. We would always fertilize the land with phosphate and potash to make it grow a heavy crop of peas. These should then be cut for hay, leaving a high stubble. This should be turned down and be sowed again either with peas or with vetches or German clover and oats. This may have 300 or 400 lbs. acid phosphate applied to the acre when seeded. Plow down in spring after grazing with stock and plant to corn, and you will get a paying crop.

#### Ginseng.

Would you kindly inform me, through your journal, if ginseng can be successfully grown in Virginia?

*Fluvanna Co., Va.*

NEW SUBSCRIBER.

Yes. Ginseng can be grown in Virginia, but we doubt very much, from what we see of the success made with it elsewhere, whether it is going to be worth any one's while to grow it. It is a crop that takes three or four years to grow roots large enough to market, and the yield does not seem likely to be large. It is not worth touching, except as an experiment.—Ed.

## Trucking, Garden and Orchard.

### WORK FOR THE MONTH.

It is yet too early for much to be done in the garden and truck field beyond breaking the land and getting manure on to it except in the most Southern States. In these English peas and Irish potatoes may be planted as soon as the land can be got ready. In the Tidewater sections of Virginia and North Carolina, English peas may be planted during this month, and the first planting of Irish potatoes be made. Peas are very hardy, and will not suffer much even if caught by a light frost. They soon get over it. There is more risk in Irish potatoes, as frost is fatal to their producing an early crop, or even much of a later one. As, however, the first potatoes on the market always sell for a high price, it is worth some risk to try to catch this market, hence we would advise a small planting in the last half of the month.

English peas do best on good loamy soil not over rich, but yet not poor. When too rich, the growth runs more to vine than peas. A piece of land manured for Irish potatoes last year is about the best selection to make. Plant in rows 2 feet 6 inches to 3 feet apart, and in drills 5 or 6 inches deep. Scatter the peas in a broad row, say 4 inches wide, and tread firmly into the soil before covering. If the land needs a fertilizer, use acid phosphate and potash, say 400 lbs. of phosphate and 150 lbs. of muriate of potash. Plant smooth varieties for first crop and wrinkled ones for later.

Irish potatoes succeed best on a rich sandy loam soil, well filled with vegetable matter, a clover or pea tallow making an excellent preparation for the crop. This is a crop exacting in its requirements of good preparation of the soil and plenty of readily available plant food. Commercial fertilizer meets their requirement better than farmyard manure, besides being safer to use if any danger of scab be feared. Farmyard manure is very apt to cause scab to appear or to intensify it.

The following will make a good fertilizer for the crop :

300 lbs. of nitrate of soda.

600 lbs. of cotton-seed meal or fish scrap.

800 lbs. of acid phosphate (12 per cent.).

300 lbs. of muriate of potash.

Or one of the special brands of potato fertilizers put up by most of the large and reliable fertilizer houses may be used. Apply at the rate of from 500 to 1,500 lbs. to the acre broadcast. If less than 500 lbs. be used per acre, it may be put in the rows, but must be

carefully mixed with the soil by running a cultivator through it before dropping the sets. The rows should be 2 feet six inches or 3 feet apart, and the sets be dropped 12 to 15 inches apart in the rows. The sets may be cut to 2 or 3 eye pieces with advantage, but do not cut to single eyes. If the sets are at all affected with scab, dip in corrosive sublimate solution before cutting. Be careful in handling this solution, as it is virulent poison. Plant on the level, and keep level during growth. Cover to the depth of 4 or 5 inches. The first cultivation should be given before the potatoes show through the ground. This may be done with a harrow or weeder. After the crop is well above ground, cultivate frequently with a three-tooth cultivator, or with the Iron Age cultivator.

Sow small patches of early salads, such as cress, radishes and lettuce, in sheltered situation, or where they can be covered with mats or brush in the event of a frost.

Lettuce in frames should now be making good growth. Give air in the middle of the day, whenever the weather is mild, but see that the frames are well covered at night. As the crop is cut fill in with plants from the fall sown seed beds for a later crop.

Make provision for raising tomato, cantaloupe, melon, egg and pepper plants, by making up hot beds under glass, if you have no green house. Considerable gain in time of putting the crop on the market may be made by having plants raised ready for setting out when the weather becomes sufficiently mild.

Spinach and kale may be sown towards the end of the month if the weather is mild, though it is safer to wait until March, except in very mild sheltered sections. These crops should be sown in rows where they are to complete their growth, and not be raised in seed beds. Cabbage plants may be raised under frames to follow the fall-planted crops.

Asparagus beds should be worked over and be covered with well rotted manure and good soil to the depth of 10 or 12 inches. If new beds are to be planted, the land should be got ready by laying off rows 6 feet apart. These rows should be plowed out as deep as possible by running the plow two or three times in each row. Throw the top soil to one side and the subsoil to the other. Run the rows as near north and south as possible. Fill in to the bottom of the row four or five inches of the top soil and mix with it a dressing of bone meal, say, at the rate of 1,000 pounds

to the acre. Set out the plants in this trench and make firm in the soil and cover with more of the top soil. The subsoil should be spread between the rows to weather. Keep free from weeds during the summer and in the fall after cutting off the brush cover with farm yard manure. Do not order your plants before you are ready for them, as they will not grow if kept long out of the ground.

When getting out manure on to land to be planted have your acid phosphate and muriate of potash at hand, and spread on the manure and work in at the same time. To be of the greatest use to the crop these fertilizers must have time to become assimilated with the soil.

#### VIRGINIA STATE HORTICULTURAL SOCIETY.

The sixth Annual Meeting of the members of this Society was held in the Hall of the Chamber of Commerce, Richmond, on the 7th and 8th January. There was an excellent muster of the members and their friends when the meeting was called to order by President S. B. Woods. Mr. L. Z. Morris, the President of the Chamber, welcomed the gathering to the city of Richmond, and Mr. S. L. Lupton responded. During the forenoon of the first day's meeting Governor Montague delivered an eloquent address and promised his co-operation and support in endeavoring to secure for Virginia adequate representation at the St. Louis Exposition. There was an unanimous expression of opinion that Virginia's next exhibit should not be one of relics of the past but of the products of the present, and especially that an effort should be made to adequately display the fruit and horticultural resources of the State. With a view to this end, a resolution asking the Legislature of Virginia to appropriate \$5,000 for an horticultural and fruit exhibit was unanimously adopted. Addresses on topics of interest to fruit growers were delivered by Prof. Taylor, of the Department of Agriculture; Prof. Alwood, Prof. Van Deman, Prof. Phillips, Messrs. Hood, Watkins, Murrell, Walderstein, Jackson, and others. We make no attempt to summarize the points made, as the addresses were taken down by a stenographic reporter, and will appear in full in the annual report of the Society, which will be sent to every member. Those interested in fruit production, who are not already members of the Society, should apply for membership to the Secretary, Mr. Walter Whateley, Crozet, Va., when they will become entitled to a copy of the report. The old officers of the Society were re-elected, except Mr. Dinwiddie, Recording Secretary, who was succeeded by Mr. Price, of Blacksburg College. The meeting was one of the most successful ever held by

the Society, and resulted in the addition of a large number of new members. The Society was loud in its praise of the courtesy and liberal treatment extended to it by the Chamber of Commerce. There was a fine exhibit of apples made in the hall. We would urge that all who are interested in the apple and fruit industries of the State, should at once sit down and write their senators and delegates in the legislative assembly of the State, and request them to vote in favor of appropriating \$5,000 to make an exhibit at St. Louis. This appropriation should be made at the present session of the Legislature, as the work to be done will require time and a complete organization to be a success, and nothing can be done without money.

#### HOW TO MAKE THE APPLE ORCHARD PRODUCTIVE.

*Editor Southern Planter:*

Some varieties of apples begin to bear quite young, others are liable to go ten years or more after being set before they produce fruit under the best conditions. A good example of the early bearing varieties is the Wealthy; of the late bearing kind, the Northern Spy. As a rule, varieties that begin to bear when quite young trees are liable to die out younger than those which come into bearing when quite old. It is a good plan to set trees close together, setting every other tree to an early bearing variety, and after the trees have borne for several years, and begin to crowd somewhat, cut out the early bearing variety to give enough room for the late bearing kind. Thus you will get apples several years earlier than if all had been set to the late bearing variety.

Sometimes apple trees refuse to bear when they have been set ten to fifteen years. The trees look vigorous, make a good growth of wood every year, but refuse to even blossom. Of course if they blossom, the fault is either in not spraying or to imperfect fertilization of the blooms. If the tree makes a good growth, and does not blossom, it is a sign that there is too much nitrogen in the soil, or else the supply of other plant foods is deficient or not enough to balance the nitrogen. Sometimes the lack of fruiting is due to wrong selection of propagating buds, or to the fact that nothing has been done to disturb the natural growth of the tree and thus force it into bearing.

In selecting young fruit trees, it is very important that the buds or scions used in propagation be taken from the bearing branches of bearing trees of the variety that is wanted. They should not be cut from young nursery trees, from orchard trees that are too young to fruit, or from suckers that spring up on the inside of bearing trees. You must get out to the extreme ends of the bearing branches and cut the scions

from these, using the last year's growth. If your tree are already set out, and you are uncertain as to the pedigree of the scions used in budding or grafting them, it is safest and best to top graft these young trees with scions of known parentage.

Let us suppose that you have an orchard fifteen years old, and yet it refuses to bear. Such orchards are invariably full of branches. If the tree is shapely, and not too thick with branches, it is an easy plan to ring the trees in the early spring when the sap starts. Remove a ring of bark on half the limbs just above the body, about one eighth inch wide, reaching clear around the limb. This will usually start the tree into fruiting if the supply of necessary ingredients is in the soil.

Anything that tends to check the growth of the tree tends to force it into fruiting. If trees are trimmed when dormant, it tends to make them make more growth. If you cut off half the branches of a tree in the winter, it will send out numerous suckers the next summer to take their places. If you trim a tree when it is growing, it tends to check its growth and force it into fruiting. One of the safest and best ways to make fruit trees productive is to remove a part of the ends of the branches during July or early August, when the tree is in full leaf. The leaves are the lungs of the tree through which the food from the air is taken in and assimilated ready for the growth of the tree. If you remove part of these by trimming the branches in midsummer, you stop the growth of the tree and force fruit buds into being. It is quite a lot of work to prune the ends of the branches, and it must be done at a time when other work is pressing, but this is the safest method known to make unproductive fruit trees come into bearing.

Of course if the soil is deficient in potash and phosphoric acid, it is useless to try any method of pruning to accomplish these results until you have first supplied the soil about the trees with these necessary elements. The safest way is to apply some form of potash and phosphoric acid to the soil when you start in to prune. Then your efforts will not be wasted. Try an application of 800 lbs. of South Carolina Rock and 300 lbs. of muriate of potash to the acre, scattered around under the trees as far out as the branches run, or a little further, putting very little close up to the tree, and the most of it out where the fine feeding rootlets are located.

L. J. FARMER.

We would like to hear from some of our fruit growers on these ideas of Mr. Farmer if they have had any experience in the practice of them.—Ed.

When corresponding with advertisers, say that you saw the advertisement in the *Southern Planter*.

## THE ENEMIES OF THE ORCHARD—THE BORER.

When our forefathers settled in Pennsylvania, the country was new; they planted their fruit trees in virgin soil, full of strength and fertility; their orchards were sheltered on almost every side by thick woods, which arrested the fierce winds of winter and tempered the summer heat. The enemies of the orchard, if present, were not present in sufficient numbers to cause any noticeable injury. All that was necessary then was to stick the young trees into the ground and they grew luxuriantly without further care, and produced abundant crops of perfect fruit nearly every year. It is not so now. In order to secure the best results, the soil for an orchard must be fertilized, and if the land is level, without natural drainage, it must be underdrained. It must be plowed, and subsoiled or spaded where the trees are set to the depth of two feet. The trees, after setting out, must be mulched with straw or leaves to prevent evaporation of the moisture, and watered in case of a severe drouth coming on. If planted on a hill top, in exposed situations, there must be a wind break of evergreen trees or the orchard will look as scraggy and distressed as a cluster of hawthorns.

After the trees are set out, they must be constantly watched to prevent their destruction by borers.

When our orchard was planted, I knew nothing about any enemies to the orchard except the tent caterpillar, whose nests and broods could be easily seen and destroyed. I knew nothing of borers. Had seen articles about them in the agricultural papers, but had not read them. It was not until several trees were killed, and others on the way to destruction, that I began to make post-mortem examinations in the pursuit of knowledge. In the first tree examined, which was not much larger than a broom handle, a worm-hole was found near the top of the ground, where a borer had made his entrance. Cutting away the wood and tracing the hole, showed that the worm had gnawed its way first downwards, then around the tree and upwards, until it had arrived near the starting point, where it lay with its head close to the bark, with operations suspended until it was ready to emerge from the ruined tree a beetle with wings to fly, and the female with eggs to deposit on the bark of other trees, to hatch out another brood of borers. The borer is a very ugly looking grub-worm about one inch and a quarter long. When full grown, shaped like a bull-head fish, much the largest at the head, and tapering towards the tail. It has mandibles to cut away the wood, like the grub worms, which are so destructive to pine trees after they have fallen, and which pine tree grub worms they greatly resemble.

The usual period an apple tree borer remains in the

tree after its entrance is two years, but it sometimes takes longer to effect its transformation, and remains there. The beetle I have never seen, but is described as being about three quarters to seven-eighths of an inch long, with light brown and white stripes.

Mr. Satterthwait says in regard to fighting the borer: "The remedy is simple and easy; all that is required is to take out the worm with the point of a knife early in the season before it has eaten far. The slight wound then made will soon heal without harming the tree. The right time to do this is early in the fall, and it is very important to make thorough work and not allow any to escape."

The insect deposits its eggs at the top of the ground at the bottom of the tree, and it is recommended to bank up the earth around the trunk to the height of six inches or more, so the insect will then lay the eggs so far up the trunk that they can easily be seen and killed. After they have made an entrance they can be punched to death with a wire crooked to follow the hole.

Many things have been recommended to wash the trunks of trees with to prevent the beetle from depositing the eggs, but it is doubtful whether there is any remedy so effectual as killing the grubs.

People in this part of Pennsylvania do not take much stock in Mr. Stringfellow's method of setting fruit trees. He trims off all the roots except the main or tap root, makes a hole with an iron bar, sticks the tree in the hole, and tramps the dirt about it. That's all. He says that most of his trees set out thus grow, and no doubt they do live, but it does not prove that this is the best way to plant trees, although the cheapest. Corn will grow on the prairies by merely cutting a hole through the sod with one blow of an axe, dropping the seed in and tramping the sod back over it; but the Western farmers don't find this method to be the most profitable.

J. W. INGHAM.

Bradford Co., Pa.

### THE FARMER'S GARDEN.

*Editor Southern Planter:*

I believe that the entering wedge to a better system of agriculture in the South is the development of a more intensive system through the farmer's garden. In nothing is there such a want of consideration as is found in the almost entire absence of anything like the kitchen garden in all the Southern States.

In the North the garden is quite often the most important part of the farm life. In it the women and children learn the rudiments of a close, careful and exact attention to details and the requirements of success. Nor is this all, many a garden supplies more than half the food of the whole family, to say nothing of the wholesomeness of vegetables and the increased

health of those consuming them, especially in localities where salt meats are chiefly used.

A garden is the simplest thing to manage, located close to the house. It can be worked by all or any of the family at odd moments, although it must not for that reason be neglected, but on the contrary thus be enabled to receive double attention.

The chief thing is to have the ground plowed at least ten inches deep, and have the soil thoroughly incorporated with rotted manure. The ground cannot be too rich for the ordinary garden vegetable, such as beets, cabbages, celery, etc.

The plat devoted to raising the vegetables for the family does not need to be more than one fourth acre in extent, although my own garden is three acres, and none too large, although I have a great deal to sell by way of surplus.

Our word for it, when once a beginning has been made the farmer will never be without a garden, while it will grow more and more important, and the effect of the better knowledge of plant growth thus obtained will be extended to the whole farm.

The garden plat should be so located and so laid out that it can be cultivated with a mule, or at least with a wheel hoe. To insure this the seed should be sown in rows at least 15 to 18 inches apart, and made perfectly straight. When so planted the work of stirring the soil two or three times a week is a very simple matter, and can be readily done in an hour with a wheel hoe.

My own practice is to start plants in hot-beds, or in sun beds, and then to transplant them, which is preferable to sowing seed in the rows and then thinning out.

With this suggestion of how to begin a garden, I will in my next give directions for planting the vegetables usually found in the kitchen garden.

New York.

S. S. BOYCE.

### CHOICE APPLES.

The question of varieties must be left to each section to determine. There is a most valuable field open to young men to begin systematic work in hybridizing and producing new seedlings that may give some new and very desirable kinds, combining most of the excellent qualities desired. Sutton Beauty, Rhode Island Greening, Baldwin, Mackintosh, Red and Pound Sweet are among the best apples for New England, and for these there will always be a great demand.—G. T. P., in *Amer. Agri.*

### SPRING AND WINTER PRUNING.

A comparison of these methods as practiced on the Pacific coast shows that peaches on trees pruned in the spring were larger than those on trees pruned in the winter. Many farmers seem to believe that spring pruning can be practiced, thus making hand thinning unnecessary.—*Amer. Agri.*

## Live Stock and Dairy.

### A QUARANTINE FLURRY.

During the past month the live stock owners in the counties of Albemarle, Nelson, Louisa and Henrico have worked themselves into a great state of excitement and exhausted their vocabulary of abuse upon the Virginia Board of Quarantine because they dreaded that through their own failure to see to the enforcement of the laws they had made it imperative for those counties to be placed in quarantine and thus practically ruined their own live stock business. The Virginia Board of Quarantine has, ever since it was created and authorized to execute this law, found itself confronted with a difficulty, especially in the counties of Fluvanna and Albemarle. Every year there have been sporadic outbreaks of Texas fever in those counties, which have undoubtedly been brought from south of the river by cattle driven across the river, and yet the authorities have never been able to punish any one for the crime committed. This year the same difficulty again occurred. This time it was decided to ask Federal aid in the matter. The Federal authorities found ticks and tick-infested stock had been sold west and north of this State, said to have come from Albemarle county; and in justice to stock owners in States West and North, they decided at least the four counties of Albemarle, Nelson, Louisa and Henrico should be placed in quarantine from October last, until cleared of ticks, and they so notified the Virginia Board of Quarantine. The power of the Federal law is greater and overrides the State law. When stockmen realized the position in which they were placed they at once sent deputations to meet the Virginia Board empowered to make almost any terms only to avoid quarantine. The Board having now got the stockmen aroused in the matter, frankly put the position before them. They were prepared to use their influence with the Federal authorities to obviate the application of general quarantine regulations over the four counties, leaving infected sections to be locally quarantined, provided the local county authorities would enter into agreement with the Quarantine Board to vigorously prosecute every violation of the law which could be traced. An agreement to this effect has, we understand, been entered into by the county authorities of each county, and the Board will now ask the Federal authorities to suspend proclamation of the counties and only to enforce local quarantine in infected places. We trust that we shall hear no more of collusive evasion of the law. It behooves every stockowner north of the river to see to the rigid enforcement of the law and to work in harmony with the State Board of Quarantine, or the Federal authorities

in justice to stock owners elsewhere will certainly interfere and place every county in the State in quarantine. When our farmers have become sufficiently enlightened as to know that by the adoption of a "no-fence" law throughout the State the need for quarantine regulations will cease, then we may hope for better times. We have preached this doctrine for years but with little result. Elsewhere they are practising what we have preached and are getting out of quarantine.

### SALE OF A FINE HERD OF SHORTHORNS.

Senator Fairfax, of Aldie, Va., who was the owner of one of the choicest bred Shorthorn herds in the South, tells us that he has disposed of the same, reserving only for his own use upon his grade cattle one or two bulls. The buyer of the herd is Dr. D. M. Kipps, of Front Royal, Va., who was already the owner of some choice cattle. The Aldie herd was largely made up of cows by imported bulls, and many of them out of imported cows of the finest Scotch breeding. Whilst we regret to lose Senator Fairfax from the list of breeders, we are glad to know that the stock has not left the State, and we trust to be able to report further on it later.

Senator Fairfax reports the sale of 11 head of 2 year old half bred steers and heifers out of high-grade cows by Scotch topped Shorthorn bulls, which averaged 1,423 lbs. at the loading depot. We wonder what these would have weighed without the Shorthorn blood in them? Would they have weighed 1,000 lbs. apiece? Doubtful. This one sale would pay for a pretty good pure bred bull.

### DESIRABLE POINTS IN BROOD SOWS.

She should be something approaching the rangy order. She needs to be long and broad, and yet in every respect well proportioned, and, in a way, approaching the blocky form. The sow wants the square hips and full shoulders, and short legs that give evidence of capacity to carry a heavy body. As the frame work for the whole, one needs a rangy, bony frame, not coarse and angular, but well and closely compacted, capable of carrying plenty of flesh and showing it at a good advantage.

The sow should be a good suckler. There are good milking sows and poor milkers. Some will suckle a dozen pigs and make them grow better than another with half as many. This is a point that is hard to determine—the value of a sow for suckling, away from what one may determine from the probabilities of ancestry—depend on what she can do. It is not difficult, however, if one has an opportunity to observe pigs. Consequently, the importance of being careful to find a good suckler and hold to her for breeding.—*Drovers' Journal*.



CISMONT DORSETS.

## DORSET SHEEP.

### ORIGIN.

Although a comparatively new breed in America, the Dorset is, with the exception of the Southdown, the oldest known breed of English sheep. In its native home of Dorsetshire and Somersetshire, in Southern England, the breed has been kept in its original purity from a very remote period, having been bred there since before the Roman Invasion.

The American Dorset, as it is bred to day, by the members of the Continental Dorset Club, is fully equal to the best imported Dorsets and in some ways superior.

Woodland-Tranquility, the ram that made Woodland Farm famous, and who is now at the head of the Cismont flock, was bred by the Tranquility Farm and sent to Woodland as a lamb.

"This lamb made the circuit of the Western fairs in 1898, and won nearly everywhere, taking generally first and sweepstakes, winning over the Royal winner of England, specially imported for the purpose. He is an especially woolly ram, very blocky too, and hearty and healthy to the last degree."

### DESCRIPTION.

The Dorset is primarily a mutton sheep, slightly larger than the Southdown, the ram weighing from 200 pounds to 225 pounds, the ewe in good condition from 140 pounds to 175 pounds. It is solidly built, having a straight back, deep body, and short legs, the quarters are full and extend down well on the shank.

The lamb, both the pure bred and the grade, is well liked by both the feeder and the butcher, as they fatten very easily and cut up well.

Both sexes have horns of moderate size, those of the ram being heavier. These horns are not in the least objectionable, but on the contrary infuse a feeling of instinctive fearlessness, making them docile and less liable to attack from dogs than other breeds.

The fleece is of a medium staple, well crimped, white, soft, and strong, similar to that of the best of the latest improved Shropshire, with greater length of fibre. It sells well, usually bringing somewhat more than other wools of this class.

### DISTINGUISHING CHARACTERISTICS.

Its fecundity and ability to take the ram in the spring as well as in the fall.

Ease of fattening, early maturity and great milking powers.

Its wonderful lambs.

Its comparative immunity from the attacks of dogs. Wing says: "There is no lamb on earth that will grow so great a weight in a given time on the range as the Dorset, either half blood or pure bred. It is considered easier to make a pound of Dorset mutton than a pound of any other meat, whatever sort. They are the greatest milkers in the sheep tribe. These pugnacious horned sheep are not 'dogproof,' yet they come near it."

### DORSETS FOR THE SOUTH.

Dorsets are the sheep for the South, because the cli-

mate and conditions suit them, and their ability to have early, quick maturing lambs, makes them almost ideal.

#### HOT-HOUSE LAMBS.

Our mild climate, enabling us to dispense with the expensive plants required elsewhere, combined with late grazing, makes it possible for us to produce fall lambs at a very low cost to compete with the "Hot-House" lambs of the North.

Cow peas, soy beans, vetches, rape, the various root crops, together with rye and winter oats, which all grow here readily and luxuriantly, afford various combinations for compounding rations suitable for the ewe and the lamb, when combined with corn, cotton seed meal, or possibly a little oil meal.

Dorsets grown under these conditions should, if well managed, bring anywhere from \$7.00 to \$12.00 at about



DORSET MERINO EWES "DAIRY FARM."

sixty days old in the larger cities, such as Washington, Philadelphia or New York.

With our cheap lands, buildings and mild climate, I don't see why they can't be produced here successfully and cheaply. Briefly, we can produce the "Hot-House" lamb without the "Hot House."

#### EARLY SPRING LAMBS.

The growers of early spring lambs in the South have already found out the strong points of the Dorsets in this respect, and are now using Dorset rams on their grades almost exclusively.

Such men as Douglas H. Smith, and Mr. Heninger, of Tazewell county, Va., can't say enough in their

favor. Last year Mr. Heninger, who has bred and shipped large numbers of sheep for years, bred over 3,000 grade ewes to pure bred Dorset rams.

Mr. Smith, after trying Hampshires, Southdowns and Shropshires, finally tried Dorsets; he has been breeding them ever since, over six years now, and claims that they cannot be beaten as producers of strong, thrifty, early maturing lambs.

In a shipment of an equal number of Dorset and Shropshire lambs, the Dorsets averaged 110 pounds and the Shropshires 90 pounds. Both lots were born in February and delivered at the same time early in June. They were grown under precisely the same conditions, and were fattened on grass alone. The Dorsets were not only 20 pounds heavier, but were superior in other respects. Of course, these early lambs bring much better prices than those shipped late, when the market is more or less glutted. He says: "No sheep could do better, and if my experience tells me anything, no country could suit them better."

Mr. Joseph E. Wing writes: "There is a steady drift of Dorsets southward. The Virginians want them. North Carolina is taking them. Kentucky and Tennessee are taking them more slowly. Mississippi has them and is getting more. Louisiana has them and wants more. Texas has them and is doing good work with them."

#### NOT A BATTLE OF BREEDS

In this paper I have not attempted to belittle the good qualities of other breeds of sheep, but have endeavored, in response to the many inquiries concerning Dorsets, and especially Dorsets in the South, to show why and how the Dorsets, though readily adapting themselves to any section of the United States, are especially suited to the South, and wherein they excel, in this respect at least, over any of the other breeds.

Cismont, Albemarle Co., Va. G. S. LINDENKOHL.

#### THE COW STABLE.

*Editor Southern Planter:*

This is the age of iron and steel, and some agricultural writers have suggested iron mangers and feed boxes for horses and cattle as being strong, imperishable and cheaper in the long run than wood. The objection is that in cold weather, even in a basement stable, where water does not freeze, they would be cold and disagreeable to the lips of animals feeding from them. It is true that a piece of board, and a piece of iron, kept in the same room, are exactly of the same temperature, but the iron, being the better conductor, imparts its coldness instantly when touched by the hand of a person or the nose of a cow, and the touch in winter is far from agreeable, if not injurious. **As**

cows never gnaw their mangers and feed boxes like horses, there is no need of making them of iron, as wood will last a lifetime.

The drop or manure gutter behind the cows should be eight or ten inches deep. When our new barn was built, the drop was made but four inches. That was supposed to be sufficient to keep the cows clean, and so it was had they not stepped back into it and fouled their hind feet and then stepped back to their proper places, and thereby dirtied their floor and bedding. This stepping back they did many times in twenty-four hours. Confinement in stanchions would prevent this, but I do not altogether approve of stanchions. With a drop of eight or ten inches, cows are not apt to step back into the gutter. Some very good farmers advocate the practice of confining cows in stanchions, and having them all eat from a common manger like guests at a long table, with the food placed before them, each to help themselves. One writer says: "I would never make a manger with a separate apartment for each cow." Opinions differ. Our cow stalls are made exactly like our horse stalls, only a little narrower and shorter, with a manure gutter behind, and I would never make any other kind. In old times, when the food was all placed on long tables at the hotels for each person to help himself, good breeding, and a proper regard for public opinion, prevented grabbing or any guest from appropriating all the best dishes to his own use. Not so with cattle. They have no regard for public opinion, no sense of propriety, or care for the rights and happiness of others. They know of no law but that of self-preservation and "the survival of the fittest." They will rob each other of the last mouthful without any compunctions of conscience or any feeling of remorse. If this be so (and every cattle feeder knows it to be true), then the public table, with all the food put on it, and all the boarders turned into the dining room at the same time, is not exactly the best management.

It encourages the natural greed of animals and causes them to eat their fodder in too great haste for the necessary mastication and digestion. It is true that cattle have the power of raising their cud and re-chewing it, but an examination of their dung shows that they do not always do it, or only raise and remasticate a small proportion of it, and that an arrangement that causes hasty eating is just as pernicious and unhealthful for cattle as for human beings, and will as surely have the same tendency to impair their digestive organs and bring on disease.

Cows are not all of the same natural temperament. Some are nervous and quick to eat; others cold blooded, stolid, slow. The best cow I ever had was a slow, deliberate eater, good natured, patient, and never in a hurry. Do you suppose I would have had that cow

stand at a public manger, with a greedy cow on each side of her grabbing for the best fodder and getting it because she was slow?

Then again cows do not always feel well. They may have recently calved and are weak, or their minds may be troubled about their calves that have been taken away from them, or they may not have become hungry at the time the fodder is given to them. Such cows surely should have their food placed where it will remain undisturbed by others, and where they can eat it when they get ready.

It may be said that if enough fodder is put into the manger for all, they will do well enough; but every dairyman knows that no well fed cow will eat fodder that has been culled over, mussed over, slimed with saliva, breathed on, and all the choicest part picked out by some other cow, unless forced to do so by starvation.

Another thing: Some cows acquire the bad habit of throwing their fodder out of the manger under their feet. If they can reach no more, they will eat it, and spite nobody but themselves; but if they are in a situation to rob other cows of their share in the joint-stock manger, the robbery will go on, and what is under their feet will remain there as extra bedding, and be wasted.

I have always done the foddering and grain feeding of my animals myself when well. If I have a hired man in the winter, he milks, cleans stables, and cuts wood. I consider it as much the farmer's business to feed his stock as for the engineer on the locomotive to handle the engine, or the pilot on the steamer to turn the wheel which guides its course among the rocks.

I find out, by trial, how much food an animal will eat up clean, and then, if the feed is good, give them that much, and no more. Cattle will thrive no better for giving them more than they can eat up clean.

J. W. INGHAM.

[The owner's hand and eye should always control the feeding of his stock. More depends on *judicious* feeding than on the quantity fed.—Ed.]

#### COMPARATIVE SKIMMING QUALITIES OF HOLSTEIN AND JERSEY MILK.

*Editor Southern Planter:*

The following preliminary experiment was made for the purpose of comparing the skimming qualities of Holstein and Jersey milk:

For the experiment a number of Jersey cows and an equal number of Holstein cows were selected from the college herd; two hundred pounds of milk was taken from each lot of cows for each run. The milk would be allowed to accumulate until each lot amounted to two hundred pounds. The two hundred pounds taken would be taken after thoroughly mixing each lot. After each run the milk would be accumulated again, beginning with the next milking for the next run.

The first run was made February 25th, 1901, and similar runs were made upon each of the following dates in March: 2d, 5th, 11th, 16th, 19th, 23d.

The separating of the milk was done with a De Laval Separator, Crank Humming Bird; and in the tables following are shown the results for both lots of milk:

In the first column are found the dates upon which the separations were made, the second the pounds of milk separated, the third the per cent. of fat in the whole milk, the fourth the pounds of fat in each lot of milk, the fifth the minutes separating each lot of milk, the sixth the temperature at which each lot was separated, the seventh the weight of cream taken, the eighth the weight of skim milk from each separation, the ninth the per cent. of fat in skim milk, the tenth the pounds of fat in each lot of skim milk.

JERSEY MILK.

Date.	Pounds of Milk.	Per Cent. of Fat.	Pounds of Fat.	Minutes to Separate.	Temperature Separated.	Weight of Cream.	Weight of Skim Milk.	Per Cent. Fat in Skim Milk.	Pounds of Fat in Skim Milk.
Feb 25	200	6.1	12.2	60	90	40	160	.03	.048
Mar. 2	200	5.9	11.8	58	90	40	160	.035	.056
5	200	5.4	10.8	59	90	36	164	.05	.082
11	200	5.8	11.6	62	90	39	161	.04	.064
16	200	5.7	11.4	59	90	38	162	.04	.065
19	200	5.2	10.4	60	90	32	168	.05	.081
23	200	5.5	11.0	57	90	34	166	.025	.041
Totals	1400		79.2			259	1141		.440

Average per cent. fat in whole milk..... 5.65+  
 Average per cent. fat in skim milk..... .0385+

HOLSTEIN MILK.

Date.	Pounds of Milk.	Per Cent. of Fat.	Pounds of Fat.	Minutes to Separate.	Temperature Separated.	Weight of Cream.	Weight of Skim Milk.	Per Cent. Fat in Skim Milk.	Pounds of Fat in Skim Milk.
Feb. 25	200	3.9	7.8	60	90	42	158	.05	.079
Mar. 2	200	3.9	7.8	58	90	36	164	.05	.082
5	200	3.8	7.6	56	90	34	166	.1	.166
11	200	3.7	7.4	58	90	35	165	.08	.132
16	200	3.8	7.6	59	90	35	162	.11	.175
19	200	3.7	7.4	57	90	33	168	.075	.126
23	200	3.6	7.2	56	90	35	165	.075	.123
Totals	1400		52.8			252	1148		.486

Average per cent. fat in whole milk..... 3.77+  
 Average per cent. fat in skim milk..... .077+

In separating this milk, special care was taken to try and maintain as uniform a speed of the separator as possible, and with this in view the operator was required to note the speed of the separator at frequent intervals and increase or lessen the speed as might be necessary.

An examination of these results shows the percentage of fat in the skim milk from the Holstein cows to be double what it was in the case of the Jersey cows, as the average per cent. of fat left in the Holstein skim milk was 0.77 + per cent., while the average for the Jersey skim milk was only .0385 + per cent.

The percentage of loss of fat with the Jersey milk is found to be .55 + per cent. or .55 + of a pound lost in the skim milk for every 100 pounds of fat in the whole milk. With the Holstein milk, the percentage of fat lost in the skim milk is shown to be 1.67 + per cent., or 1.67 + pounds of fat lost in the skim milk for every 100 pounds of fat in the whole milk.

The loss, as shown above, or the percentage of fat in the case of the Holstein milk, is found to be three times as much as with the Jersey milk.

To summarize—the loss in the skim milk, pound for pound, or gallon for gallon, was found to be twice as much with the Holstein skim milk as with the Jersey skim milk. And the percentage of loss of all the butter fat handled was found to be three times as much with the Holstein milk as with the Jersey milk.

With this preliminary work, indicating as it did a heavier loss with Holstein milk than with Jersey milk, it was decided to make the test a more thorough one; so three Jersey cows were selected which had come to the pail upon the following dates: Dec. 19th, 1900; Dec. 31st, 1900; Jan. 3rd, 1901. And three Holstein cows, which had come to the pail upon the following dates: Dec. 12th, 1900; Dec. 20th, 1900; Jan. 9th, 1901.

These cows were selected as fresh at about as near the same time as possible; the milk being harder to skim as the cows progress in their period of lactation.

The milk from each lot of cows, after each milking, was chilled and held in creamery cold storage room, which was held between 30° and 40° F. All the time these milkings were allowed to accumulate until as much as one hundred pounds of each lot had accumulated, then all of each lot would be heated in a vat to the separating temperature, and after thoroughly mixing it, one hundred pounds would be drawn for the run. The milk for the next run would then be accumulated, beginning with the next milking, and so on.

In every case, a sample of the whole milk would be taken and tested for determining the per cent. of butter fat. This would be taken from the vat after thorough mixing. The one hundred pounds would be drawn at a temperature of 85° F. and separated as soon thereafter as possible.

Following is table showing results obtained with both Jersey and Holstein. The first column gives dates upon which tests were made, the second the pounds of milk for each test, the third the per cent. of fat in the whole milk, the fourth the pounds of skim milk, the fifth the per cent. of fat in the skim milk, the sixth the temperature of the milk when separated, the seventh the minutes to separate.

There were three separators used in this work; they were all made by the De Laval Separator Co., of New York. The first six runs were made with a Crank Humming Bird, capacity 225 pounds per hour. The average capacity for the six runs given show a little more than 225 pounds per hour, something less than 228 pounds per hour. The next sixteen runs were made with a "Baby" No. 2, capacity 600 pounds per hour.

	JERSEY.					HOLSTEIN.				
	Pounds Milk.	Per Cent. Fat in Whole Milk.	Pounds Skim Milk.	Per Cent. Fat in Skim Milk.	Temperature Separated. Minutes to Separate.	Pounds Milk.	Per Cent. Fat in Whole Milk.	Pounds Skim Milk.	Per Cent. Fat in Skim Milk.	Temperature Separated. Minutes to Separate.
May, 1901.										
8	100	5.4	82	.04	85 25	100	3.7	80	.1	85 25
11	100	5.4	80	.04	85 25	100	3.6	81	.08	85 27
16	100	5.6	82	.04	85 27	100	3.4	81	.06	85 26
19	100	5.8	80	.04	85 27	100	3.6	77	.045	85 26
24	100	6.	79	.025	85 27	100	3.7	82	.1	85 26
27	100	5.8	84	.05	85 27	100	3.6	83	.15	85 27
29	100	6.4	83	.1	85 10	100	3.4	83	.12	85 10
June.										
3	100	6.2	84	.1	85 11	100	3.4	84	.12	85 10
4	100	6.	84	.14	85 11	100	3.4	83	.13	85 10
7	100	5.2	83	.09	85 11	100	3.2	83	.12	85 11
10	100	5.8	84	.175	85 11	100	3.4	84	.127	85 11
12	100	5.8	83	.17	85 11	100	3.2	84	.25	85 10
14	100	5.	83	.12	85 10	100	3.8	83	.15	85 10
18	100	5.8	85	.05	85 10	100	3.2	85	.1	85 10
21	100	5.7	84	.05	85 10	100	3.3	84	.12	85 11
25	100	5.8	84	.05	85 10	100	3.2	84	.12	85 10
29	100	5.7	83	.05	85 10	100	3.1	84	.2	85 10
July.										
6	100	5.8	83	.05	85 10	100	3.3	82	.12	85 11
10	100	5.4	85	.1	85 10	100	3.4	85	.12	85 10
13	100	5.4	86	.2	85 11	100	3.2	86	.12	85 10
16	100	5.3	85	.15	85 10	100	3.4	85	.12	85 11
22	100	5.6	85	.1	85 10	100	3.6	85	.25	85 11
27	100	5.8	86	.05	85 14	100	3.6	85	.1	85 14
31	100	5.7	85	.1	85 14	100	3.3	85	.12	85 15
Aug.										
3	100	5.9	86	.14	85 10	100	3.6	86	.16	85 10
8	100	5.6	88	.2	85 10	100	3.1	86	.2	85 10
12	100	6.	85	.1	85 10	100	3.8	86	.25	85 11
16	100	5.9	87	.1	85 10	100	3.9	87	.275	85 10
22	100	5.8	86	.15	85 11	100	3.8	86	.26	85 11
	2900	5.71	84	.095+		2900	3.45+	83+	.188+	

in the skim milk from the Jersey milk was .095 +, while with the skim milk from the Holstein milk it was .188 + per cent., or about twice what it was in the Jersey skim milk. The per cent. of fat lost in the Jersey skim milk was 1.39 + per cent. This is the amount of fat or the pounds of fat lost in the skim milk out of every hundred pounds of fat in the whole milk.

An estimate shows 165.6 pounds of fat in the whole milk from the Jersey cows for the entire period and the loss in the skim milk to be 2.31 pounds. From this data the percentage of loss is estimated. The percentage of loss in the case of the Holstein milk is found to be 4.57 + per cent. or 4 57 + pounds lost out of every 100 pounds of fat in the whole milk.

Hence the percentage of loss of fat in the case of the Holstein milk is found to be something more than three times as much as with the Jersey milk. The results as shown in the preliminary test are verified in this work, extending over a longer period and with cows which were fresh at about the same time.

The centrifugal force applied to the milk through the medium of the centrifugal separator seems not to be sufficient to separate the fat globules less than of a certain size, the viscosity of the milk not being overcome in the case of the fat globules.

This work would indicate that Holstein milk would contain a larger number of these smaller fat globules which cannot be separated with the centrifugal separator than Jersey milk. This would account for a larger per cent. of fat in the Holstein skim milk than in the Jersey skim milk.

W. D. SAUNDERS,  
Asst. Prof. Dairy Husbandry.  
Experiment Station, Blacksburg, Va.

A PROFITABLE SHEEP INVESTMENT.

Editor Southern Planter :

As an inducement to Southern farmers to keep more stock, especially sheep, I give you the following statement of a very small sheep investment:

In November, 1900, I paid \$8 for four ewes, bred. Since then I have sold mutton amounting to \$6.30, consumed \$1.25 of mutton, and sold wool for \$5.11—making \$12.66 from \$8 invested, and I still have six sheep worth at least \$12 and prospects for five lambs, and another wool crop this spring worth about \$7.50.

I have never fed them to exceed one dollar's worth of food except pasturage, and have two lamb's skins with wool on them, worth as much as the food I gave them.

These sheep have had scarcely any attention—only a place they could go under to shelter from the weather when they wanted to. Had they been cared for properly and fed more grain, I believe the results would have been better.

CARTER RETRAC.

When corresponding with advertisers mention the Editor Southern Planter :

Ten of these runs show that separator was handling the milk up to capacity. The other runs seem to be a little less than capacity. The next two runs were made with a Baby No. 1, with a capacity of 450 pounds per hour. This machine was run so that a little more milk than its capacity was put through it. The remaining five runs were made with the same Baby No. 2 as the previous runs were made with, running to about full capacity in four runs out of the five.

These separators used were crank machines and were all operated by hand; and special care was taken, as in the previous work, to maintain during each run a uniform speed, and the time taken to separate each lot of milk shows that a reasonably uniform, as well as a sufficient speed, was maintained.

It is noted that the time to separate each lot of milk was practically the same, that is the Holstein and Jersey milk, hence the inference is that a separator will handle as much of a rich grade of milk as of a grade with a low per cent. fat.

It will be seen that the average per cent. of fat in the Jersey milk was 5.71 per cent. while with the Holstein milk it was 3.45+. The average per cent. of fat

## THE DUAL-PURPOSE COW AND HER MANAGEMENT.

Address delivered by THOMAS SHAW at the National Live Stock Convention, held at Chicago, December 3-6, 1901.

(Continued from January Number.)

How shall dual-purpose cows be secured? That is a great question. It is on the lips of thousands of honest enquirers to day. But two answers can be given—one applies to the present, the other to the future. The answer to the first is, through selection; and to the second, through breeding. That such selection has been rendered difficult by the pernicious teaching referred to, cannot be denied. Dual-purpose cows are doubtless much less numerous than they were years ago. How can it be otherwise, since they have been immolated to such an extent during recent years on the altar of false teaching? But the day is at hand when they will be bred, systematically bred, and in consonance with the laws that govern breeding. They will be bred on the great principle that like produces like. This line of breeding must be persisted in, and like all other breeding, it must be accompanied by a persistent, rigorous and never-ending selection. Dual-purpose cows must be bred from dual-purpose cattle. And for the men who are foremost in this great wide open field, an abundant and continuous harvest may be safely predicted, providing they understand their business. What hazard is there in dual breeding, since the rejected animals for milk production can be so profitably disposed of for meat as soon as their lack of fitness for such production is known? In breeding such animals, dams eminent for the dual quality must be preferred. For a time the chief difficulty will be in getting sires, as it will probably be found that immediate descent from two or three generations of good milk-producing cows, will be of far more consequence in such sires than exact dual form. With sires of such descent, a leaning to the beef form should be considered a decided advantage rather than otherwise. Through the sire chiefly seek to maintain stamina and sufficient fleshing qualities. Strange theories are being propounded in these latter days by one and another as to how those dual purpose cows shall be bred. Men are coming forward, in some instances fresh converts to dualism, and saying "I have found it." Their advice reminds one of the advice of Hushai the Archite to Absalom, with the difference that they are sincere. One of the most recent of those theories is the wretched one, that in order to get dual-purpose cattle, an extreme type of a beef bull should be mated with an extreme type of a dairy cow. The theory claims that if the progeny is a male it will make a good meat producer, and if it is a female it will make a good milk producer. This fallacy assumes, first, that the features of external form take chiefly after the male, and the features of

internal function take chiefly after the female; whereas the truth is, that the whole organism external and internal, inherits in the greatest degree the properties and the qualities of the parent that is most prepotent; that is to say, the parent that is most purely bred. This would mean, that mating such a sire, if purely bred, regardless of inheritance in dairy power from the more recent of his dams, with a good dairy cow of mixed breeding, would give all her progeny a bias in favor of meat-production. This theory also ignores the further fact, if two highly bred animals were mated thus, in the absence of affinity in the dominant blood elements, there would be a tendency to reversion. There would, in those instances, be no saying what the progeny would be. The unfortunate thing about this absolutely untenable theory is, that some well meaning men are holding it up to the gaze of the multitude, many of whom do not know any better. Wherever it is so held up, it ought to be riddled through and through with the shot and shell of condemnation. Others claim that the dual cow, howsoever bred, is a sport. This would involve the assumption that ninety one Red Poll cows in the herd of Garrett Taylor, Whittingham, England, which in 1893 gave an average of 5116 pounds of milk, were all sports. In fact, it would involve the assumption that nearly all the females of the Red Poll and Brown Swiss breeds were sports. The true idea is, that dual-purpose cattle are to be bred as all other cattle are bred; that is to say, by using sires and dams of dual-purpose types. And the sooner breeders settle down to this thought the sooner will the country be filled with this most valuable class of cattle. I have often wondered during recent years at the patience and meekness, and shall I add apparent want of spirit, shown by those who avowedly breed dual purpose cattle. They have meekly allowed the men who have had the unblushing cheek to stigmatize their animals as a myth, a delusion and a snare, to unfurl their banners, and march over the land without even throwing down to them a challenge. They have allowed the managers of Fairs to classify their cattle sometimes as beef and sometimes as dairy. And they have, without a word of public protest, allowed men to go in and judge their cattle who knew almost absolutely nothing about dual qualities. All this must stop and stop forever. But mark you, the men who must stop it are the men who breed dual-purpose cattle. It is high time those men were crawling out of their hiding places and pushing their cattle where they ought to be; that is to say, at the front. The dual-purpose idea must not be allowed to rest. Its opponents are clamoring for facts. They say give us facts, facts, facts, about the production of your cattle, and we will believe you. By facts they evidently mean records of milk production in individuals and in herds. And it must be con-

ceded, that in America, such facts are too seldom in evidence, not because they have not existed, but because they have not been collated. At present we have too frequently to cross the sea to gather these facts. Breeders of dual-purpose cattle must set to work and keep yearly records of performance in their herds. The work would doubtless handsomely repay the outlay regardless of the ulterior value of such facts. The experiment station must also do more in this line with dual-purpose cattle, and they must follow up values and performance in the progeny. This is now being done at the Iowa and Wisconsin stations, and it would also have been begun seven years ago at the Minnesota station had the writer succeeded in carrying out his desires. More of the stations must take up this work, none can do it better than they. But work even more aggressive ought to be inaugurated. If the dual cow is as represented in this paper, her value cannot be placed too quickly or too pronouncedly before the public. And where, I ask, in all America can this be better done than as suggested by Mr. R. G. Olive, that at the International Fat Stock Fair now annually held at Chicago. With a view to hasten such an end, I would respectfully suggest to the directorate of this Fair, that they offer prizes for dual-purpose cattle and their progeny somewhat after the following plan: For dual purpose cows let the directorate offer prizes at the Fair of 1902. These could be offered for cows shown in herds of, say, two animals in each. The judges, in making the awards, should consider the milk record of the cows from Nov. 30th to Nov. 30th preceding the show, the value of the calves produced by the cows and shown with them, and the cost of production of the milk and also of the calves. The second year, prizes should be offered, open to the same cows and to all their progeny for the two years. Thus the milk records could be compared for two years, and the progeny also. The second year, each cow would have two of her progeny by her side. Statements should be required the second year also as to cost of production. Each herd thus shown the second year would number six animals. Three prizes should be offered for each of the dual-purpose pure breeds and also for grades. In this way an exhibit should be brought together of surpassing interest to every one engaged in live stock production on the farm. Facts could thus be gathered up such as the opponents of the dual idea in cattle are so loudly and so defiantly clamoring for. In addition to the drawing power of such an exhibit, it ought to prove one of the most valuable of the entire Fair. But to make it operative at the Fair of 1902, it would be necessary for the directorate to make known the nature of the awards and the conditions relating to the same, without any delay. The feeding and management of these cows cannot be discussed at length in

this paper and it is only taken up to meet the requirements in the assignment of the subject. Only a few points will be discussed bearing on this phase of the question. 1. These cows must be reared by hand. This is absolutely necessary in order to secure good milking qualities in the dams. Some difference should be made in feeding the heifers and the steers of the dual purpose types. While both should be well started on whole milk for two or three weeks, and should also be fed a more or less liberal supply of grain during all the milk period and subsequently, to the end of the first year, the steers should be given grain more carbonaceous than the heifers, to secure higher fleshing properties. The feeding of the milk and other food should be so adjusted that the calves will not take on pot-bellies, which is out of harmony with beauty in the cow. Some have labored to produce the pot-belly in a cow calf, under the belief that it constituted depth of body. While the heifer is developing, her food should be such as to maintain good growth and ultimately good size, without producing overmuch or too little fleshiness. While it would be easily possible to develop too much of a tendency to lay on fat in such heifers, it by no means follows that they should be kept in that condition of leanness that would be incompatible with completest development, lest the habit of the digestion should be too much turned in the direction of beef-making.

2. What may be termed protein foods must be grown and fed to a far greater extent than at the present time. Especially is this true in all corn-growing areas. Advanced dairymen known very well what this means, and it has led them to invest heavily in wheat bran, even when they have had to pay high prices relatively for the same. The computation that would tell us, could it be made, how much is lost every year in the corn belt in the United States through feeding food out of balance would be interesting, and it would be no less astounding than interesting. This unbalanced production of food arises, first from the higher adaptation of the area named to the production of food relatively low in protein, and rich in carbohydrates; and second, from the lack of disposition on the part of the farmers to introduce a more varied production.

In order to get protein, the farmer who cannot rely upon clover to furnish him with what he wants in that line, goes to the feed merchant and gets a supply from him, usually in the form of bran and shorts.

Now when a large proportion of farmers do this, but one result can follow. The price must run up, since there is not, nor will there ever be, enough bran and shorts to meet the needs of stockmen who, in the future, will look to these as the sources from which they obtain their protein. Besides, it may be taken as an axiom in farming, that where the conditions are suitable, the

farmer can grow food, including protein, more cheaply than he can buy it. In all the corn belt, therefore, and indeed in all the wheat belt lying to the northwest of it, the problem of problems to day is the growth of more protein on the farm. The men who are first to work out this problem will be the men who will stand in the front rank as public benefactors, for the protein which is so valuable in feeding stock is also valuable in feeding the land which grows it, since it is usually furnished by leguminous plants. This dual quality, therefore, in protein, is simply beneficent.

The plants which will in the future furnish the chief supplies of protein in the area named, are such as, clover in its several varieties, peas and beans. While clover stands prince among these legumes, it alone will not suffice. It will not, for instance, furnish the farmer with all he needs of protein for his swine, nor even for his milch cows. Alfalfa also is going to be grown in ten times ten thousand places in the west and northwest, where now the common idea prevails that it cannot be successfully grown. In this way, millions and millions of tons of protein will yet be furnished by the soil and air from this one source alone. The growth of peas in the northwest is yet in its infancy. Two great families may be chosen from, viz., the Canada pea and the cow pea. Happily, the latter will grow well where the heat is too much for the former, and *vice versa*, so that one or the other of these protein plants may be grown in all parts of the northwest. Soy beans also have their place, and their growth in the future will be multiplied. Thus happily the supply of protein plants is not limited. But with the exception of the clover plant, we are little children in our knowledge as to the best methods of growing them, the best combinations in which they may be grown, and the best methods of preparing them for live stock and feeding them to the same. If more of our experiment station workers would come down from their journey through the clouds and work out these problems, the results would be fraught with blessings to the world.

3. All kinds of cows, including dual-purpose cows, to produce the best returns, must needs be fed on what may be termed common sense principles. In the first place they must be well fed. While excess of flesh over that amount which will best conduce to the end sought is wasteful, any lack of flesh below what conduces to the same end is more wasteful, since it increases so much relatively the food of maintenance. As a rule, the great mistake in the average herd lies in keeping the animals in the same, young and old, too low fleshed. In the second place, they must be fed on foods to the greatest extent possible produced on the farm, given in due balance approximately as to their constituents, and grown and handled in that way

that will involve the least possible labor on the part of man that will adequately secure the desired end. In other words these foods will, as far as practicable, be grown in mixtures, the threshing and grinding being done by the cow. And in the third place, while the animals will be liberally fed, they will also be fed grain in what may be termed a rational way. No farmer can afford to drive the machinery of milk production in his cows so fast that in a few years the machine is worn out. This of course is done by excessive grain feeding. The city milkman may afford to do this, but the farmer cannot. His cow should be good for ten years of free production in the dairy every year, barring accident or disease.

4. The culling of the herd must be severe. With unsparring eye cows that are not possessed of the requisite dual qualities ought to be sent to the shambles. Happily for the farmer he can do this without loss. If his cow is not a good milk producer, she is pretty certain to fetch a good price for beef. Under such conditions the best only should be kept. Under intensive conditions of farming numbers can never atone for lack of quality.

With cows thus bred and managed, this entire Mississippi Valley would become filled with herds of dual-purpose cows, the equal of which the world never produced before. Varied production, that Magna Charta of safe farming, would prevail as never before. The calf at the pail and the pig at the trough would have skim milk to balance the carbohydrates in the other food elements as never before. Cannery and culls among bovines would melt away and disappear as never before. And the pulsations of improved meat production would beat vigorously from the North to the South, and from the East to the West.

## SILO EXPERIENCE.

*Editor Southern Planter :*

Thinking some of your readers are interested in ensilage, I will give my experience with the two silos constructed last summer, measuring fourteen feet across and twenty feet high. These silos were filled about the 10th of September with Cocker's Prolific corn. The corn was well eared and had passed the milky stage; some of it was ripe, and was cut by a harvester, which left it bound in bundles, making it much easier to handle. It was carried to the cutter from the field. It took about one and one half days to fill each silo. For covering, old straw and chaff was used on top, about one foot thick. Commenced feeding cows day after filling; no loss whatever from top to bottom. This comes nearer being "sweet ensilage" than any I have put up during my six years experience. There is no reason why the South should not be a dairying country when we can have, in great quantities, ensilage, peas and sorghum. Nothing makes a cow respond to milk more readily than ensilage and peas, with bran to make up a complete ration.

There is no domestic animal, in the South, less appreciated than the cow. Her habits and wants are less studied. There is a wonderful future for our Southern people who take an interest in dairy products, if they would read, think and act.

*Nottoway Co., Va.*

T. O. SANDY.

## The Poultry Yard.

### SO-CALLED "RED ALBUMEN" A FRAUD.

Poultry feeders and farmers throughout Western New York have been much excited during the past few weeks by the exploiting of "Red Albumen." Doubtless many of them have been victimized; for druggists report demands for this material almost unprecedented even in the sale of patent medicines, and so far as evidence collected by the Station goes each purchaser has been defrauded.

There are at least two preparations sold under the name red albumen, probably more; for the druggists in many places were evidently not supplied with the original material, but realized that the farmers were determined to be "gold bricked" any way, and so met the demand by substituting compounds from their own stock. One of the preparations, that reaching the Station under the label of the United States Salyx Co., New Concord, Ohio, has practically no feeding value, as it contains one tenth of one per cent. of protein (albumen), the remainder being almost wholly oxide of iron (red paint) and sand. No phosphorus was found, nor was there any evidence of strychnine or the newly discovered (?) "alequet." Unless fraud has been worked upon the Salyx Co., this is the original "red albumen."

If so, instead of being worth 50 or 60 cts. a pound, it is worth only from 1 to 2 cts. a pound as "Mineral Red" or "Ground Iron Ore" used for paint.

Druggists, or others who have substituted some other product for the original "red albumen," have been less conscienceless toward the farmers; for they have sold them an albuminous compound, probably a by product which contains 11 or 12 per cent. of nitrogen or about 72 per cent. protein. This sells for varying prices, depending upon the druggist's mood; but usually at the price fixed for the original article, 50 or 60 cts. a pound. Animal meal, which supplies the best of albuminoid for poultry, contains more than half as much protein, and sells at from 3 to 5 cts. a pound.

W. H. JORDAN, Director.

Geneva, N. Y., Dec. 19, 1901.

[We have the same report from every State. Farmers love to be fooled better than any other class of people, and they are. The very best of these so-called red albumen feeds are nothing but dried blood, worth a few cents a pound, and just about as likely to make hens lay as meat scraps of any kind.—Ed.]

### DAILY RATION FOR HEN.

Recently the *Rural New Yorker* asked the following question of its readers: "Have you ever measured the grain feed required by a hen of average size? Various estimates have been made, and we would like to know what the practical poultry keepers have to say about it. In our experience, five ounces of dry grain have given good results as a daily ration."

We give the answers, which agree with our experience:

"My hens give better results on a daily ration of five ounces dry grain than when a larger or smaller quantity is given."

"As I keep different breeds of poultry, I have never accurately measured the grain food required daily by the average sized hen, and therefore cannot advise definitely, although it seems to me five ounces of dry grain as a daily ration is correct, according to your experience."

"I cannot give any definite figures. I feed wheat, in the sheaf, to quite an extent, and have never made any attempt to weigh their complete rations for any day or length of time. Making a rough estimate, I think it is about four ounces of dry grain daily. I feed some cabbage and clover hay through the winter, which would make a difference in the grain."

"I have made two or three estimates, and make it a fraction less than five ounces. Twenty five years ago, when I commenced to keep hens, corn was about \$1.45 per bag, bran \$21 per ton—those are the only prices that I remember. The cost for grain, shell and everything they ate, was—during the winter—just two cents per hen per week. I feed all the hens—Barred Plymouth Rocks—will eat up clean three times a day."

"Our rule is to feed all the hens will eat up clean, and no more. In several particulars, our method of feeding makes it difficult to form a correct estimate of the grain eaten. In the morning we feed a mash composed largely of small potatoes, turnips and cabbage, boiled up and mixed with bran and animal food. At noon either a few heads of cabbage, or a little buckwheat, is fed, and at about 4:30 P. M. they are given all they will eat of a mixture of wheat screenings and whole corn. The corn is of our own raising, and is fed in an unusual way. The corn is husked, and instead of being shelled, is run through a Tornado feed cutter. This shells part of the corn, and cuts the ears, cob and all, up into lengths of about three quarters inch. The hens have no trouble in picking the kernels from these pieces of cob. This saves us from the expense of a sheller, is much quicker, and so far as we can see, is just as satisfactory in its results as any other way of feeding corn."

"I think your estimate of five ounces dry feed per hen too high for economical feeding. I am no poultry specialist, keeping only from 50 to 75. The most practical experiment I have recently made was with a flock of about 60 hens and chickens about equally divided, chickens full grown. I have had them confined in a yard for from six to eight weeks to keep them from my garden, as they were very fond of cabbage and tomatoes. I feed twice per day. Morning four quarts of oat, and at night four quarts of corn. During the day they would usually have a quantity of cabbage or refuse apples or pears, which they needed to get best results from grain. The fowls were contented and kept fat, and young ones increased in weight. They are of the Wyandotte breed. I did not get many eggs in the meantime, as they soon commenced moulting. Seven and one half pounds of corn and 4½ of oats make a daily ration of 12 pounds or 192 ounces, which gives but little over three ounces per fowl. Had my experiment taken place earlier, expecting egg production, I might have added a little, if not in quantity, in variety; but with the necessary variety of food for the health of the fowls and for eggs, I believe 4 ounces would be a large daily ration."

## The Horse.

### NOTES.

That the Richmond Horse Show Association is now a permanent organization, and that annual shows are to be held here, meets with general satisfaction, not only in local circles, but throughout the State. The initial show was held here last October, and proved a great success, which so encouraged the management that one on a much larger scale has been decided upon for this fall, the dates of which will probably be the week of October 13th to 18th, closing with a performance on Saturday night instead of the afternoon, as at the last show.

The officers of the Association are live men, and include J. T. Anderson, President; Harry C. Beattie, Vice-President; Leigh R. Page, Jr., Secretary, and J. S. Crenshaw, Treasurer; while the Board of Directors is made up of the foregoing, and in addition, some of the best known and most substantial of Richmond's business men. The big Auditorium building at the old Exposition grounds has been leased for a period of five years, and the contract let for improvements to cost over \$5,000. When completed, this building will seat ten thousand people, and a full view of the show ring may be had from every seat in the house. There will be seventy five boxes, and about half of them have already been taken by out-of-town people.

Virginia's historic capital is an ideal city for horse shows, and their establishment here not only appeals to, but enlists the support and patronage of the best classes, and society turns out in force. That the Richmond Horse Show is a fixture is the general verdict, and this will be hailed with wide satisfaction.

The Hon. William T. Townes, President of the Porto Rican American Tobacco Company, San Juan, P. R., and with Export Department of the American Tobacco Company, 111 Fifth Avenue, New York, has commenced collecting a small but select band of thoroughbred brood mares for his stud at Stokesland, Va. Among them are the full sisters Katie C. and Helen Wilmer, both bays, by imported Charaxus, out of Elite, the sister of Eolian, by Eolus; Bonnie Osra, chestnut mare, 5, by Eon, dam St. Olga, by imported St. Blaise, and Goldie M., bay mare, 16, by Milner, dam Vrenetta, by Voltigeur. Another well bred one in the collection is Cremorna, chestnut filly, 2, by Requitat, dam Afterglow, by Hanover. This season Bonnie Osra is in Kentucky, will be mated with imported Albert, to whom she was bred in 1901; Katie C. will be sent to the court of imported Fatherless; Helen Wilmer will visit imported Water Level, and Goldie M. goes to Jim Gray.

Mr. Courtlandt H. Smith, of the Hampton Stock Farm Theological Seminary, Virginia, has sold to a gentleman in Savannah, Ga., by whom they will be used as a coach team, the pair of high stepping bay mares, Lady Lyons and Lady Herbert. These mares were winners at the Richmond Horse Show last fall, and came in for quite a share of attention on account of their good looks and manners. Price reported for

the pair was \$2,000. Other recent sales by Mr. Smith include the two good hunters, Craven and O'Malley, to Mr. Clarence Moore, of the Chevy Chase Hunt, Washington, D. C.

The bay stallion Lepanto, who has fine size and handsome proportions, is now owned by Mr. H. M. Johnson, of Bedford City, Va., and frequently driven on the road, where his good manners, looks and disposition come in for quite a share of attention. Lepanto was sired by Petoskey, son of George Wilkes, from a mare by Hunter's Lexington, and in former days was the apple of the eye of his breeder, the late James Long, of Georgetown, Ky., who exhibited him and captured numerous premiums by virtue of beauty of form, quality and finish. Petoskey was bred to his own dam, Fanny, by Iron's Cadmus, and the result was the fast pacing mare Nelly O'Neil, 2:22½, who in turn was mated with Lepanto and threw the bay pacing horse Willie O'Neil, 2:24½. As an example of inbreeding, the latter stands out prominently, and a tabulation of his pedigree forms a subject of more than passing interest to students of blood lines.

Mr. Conrad Kownslar has been elected Secretary and Treasurer of the Clarke County Horse and Col Show Association, to succeed Mr. Charles Mullikin, who has resigned. This Association has purchased the Shenandoah Driving Park and woods fronting same, where future horse shows will be held.

The giant trotting gelding Mosul, 2:09½, by Sultan, dam Virginia Maid, by Sam Purdy, and the brown stallion McZeus, son of McKinney and Grace Kaiser, two of the fastest horses in Virginia, were sent north last month, and went the way of the auctions in New York city.

The horses owned by James C. Smith, City Sergeant of Richmond, the veteran breeder, owner and road driver, are in winter quarters at Montezuma Farm. They are in charge of Trainer Hanson, and the stable includes Hulman, 2:20, by Quartermaster; Forney, b. g., 5, by Sidney Prince, dam by Bendee; Clarion, b. g., 4, by Russel Rex, dam Helice, by Norval, and others.

D. S. Jones, of Newport News, Va., has again entered the breeding ranks, and recently purchased some richly bred trotting stock, among them ten head from A. A. Kitsmiller, of Valley Junction, Iowa. This lot included the black stallion, 5, by Ellerslie Wilkes, dam Anna V., by Pilot Medium; brown colt, 3, by Ellerslie Wilkes, dam by Princeps, and a couple of bay fillies, two and three years old, by Ellerslie Wilkes, dam by Wilkes Boy. L. K. Bryan, who formerly trained for Mr. Jones, is again in charge of affairs, and expects, when the season opens, to have a good stable of horses ready for the races.

BROAD ROCK.

Mention the *Planter* to your friends.

## Miscellaneous.

### THE VIRGINIA CONSTITUTIONAL CONVENTION AND THE FARMERS.

When the Convention met—now seven months ago—a committee was raised out of the body to whom was referred the subject of agriculture in all its bearings on the prosperity of the State and the duty of the State towards those engaged in that pursuit. The Hon. H. C. Stuart, of Russell, a most prominent and influential farmer from the Southwest, was made chairman of the committee. This committee has held a number of meetings and heard arguments upon various agricultural subjects and the best way to develop the interests of the State. As a result of their deliberations, the committee, on Monday, the 27th January, presented the following report to the Convention, and the same was ordered printed.

Section 1. There shall be a Board of Agriculture and Immigration, composed of one member from each Congressional District in the State, who shall be appointed by the Governor, subject to the confirmation of the Senate, for a term of four years; except that the member first appointed after the adoption of this Constitution from the odd numbered Congressional Districts shall hold office for two years.

The rector of the Board of Visitors and the president of the Virginia Polytechnic Institute shall be members *ex officio* of the Board of Agriculture and Immigration.

The General Assembly may, in its discretion, add other members *ex officio* to the said Board.

The powers and duties of the said Board shall be such as may be prescribed by law: provided it shall maintain its principal office at the capital of the State and shall elect and have power to remove its officers, among them a Commissioner of Agriculture and Immigration, whose term of office shall be four years.

The President of the Board and the Commissioner of Agriculture and Immigration shall be members *ex officio* of the Board of Visitors of the Virginia Polytechnic Institute.

Section 2. No license, tax, nor charge of any kind whatever shall be assessed against or collected of any producer of farm products for the right to sell in any part of the State the products which he has raised.

Section 3. Counties, cities and towns shall have the power to exempt from local taxation, for a period of not more than five years, manufacturing enterprises to be established therein; provided there is no other enterprise of a like nature already established in such county, city or town that is not exempt from local taxation.

The committee has not been unmindful of the importance of extending encouragement to desirable immigration. Under the report, the Bureau of Immigration will be combined with that of Agriculture, as heretofore; thus leaving practically the administration of the Immigration Bureau to the agricultural interests of the State. The appropriateness of this arrangement is manifest when it is considered that

persons engaged in agricultural pursuits, who are most usually land-owners, are, by reason of their calling, more nearly interested in attracting desirable immigration than any other class. It may be added that the agricultural classes, more than any other, realize and appreciate the vital value and need of such immigration.

It may be said, in conclusion, that a great many suggestions and propositions have been made to this committee, which have been reported on adversely, for the reason that it was deemed unwise to burden the Constitution with provisions which were fairly within the power and discretion of the General Assembly.

This report reaches us too late in the month to admit of our giving it that consideration which its importance demands, but we cannot forego the opportunity to congratulate the chairman and his colleagues (for we understand the report is the unanimous one of the committee) upon the courage and wisdom displayed in dealing with the vital question of the creation and election of a State Department of Agriculture and of an executive officer of that department. As is well known to our readers we have always been opposed to the existing system, and have pleaded strongly for the creation of one Board having jurisdiction over all the agricultural interests of the State and with the power to appoint and discharge its officers. Whilst the report does not give us quite all we have asked we will be content to accept what is offered. We are to get a Board permanent in its character and of which the executive officers of the Virginia Experiment Station and Agricultural College are to be *ex officio* members, and with power to appoint the Commissioner of Agriculture (why not call him by his proper name, Secretary of the Board of Agriculture), and all the officers. The President of the State Board and the Commissioner are also to be *ex officio* members of the Executive Committee, having control of the Experiment Station and Agricultural College. Such a Board as this has within it the potentiality of great good for the agricultural progress of the State. There can be and doubtless will be a hearty co-operation in the working of the experiment stations, the college and the departmental work of the office in Richmond, and all will be in position to make available the scientific knowledge of the faculty of the station and college. This of itself will be of untold value to the farmers, whilst it will be secured at the minimum of cost to the State. We would urge every farmer to write his representative in the Convention and ask his support of the committee's report. The State Department of Agriculture has been redolent of politics ever since the Commissioner and Board was created. It has never helped

it to do anything for the advancement of the agricultural interests of the State, and it is time for the influence to cease. The committee's report secures this, and hence it should be adopted.

### THE MUTUAL FARMERS' CLUB OF FREDERICK COUNTY, VA.

The Mutual Farmers' Club met at Spout Spring Mill, the residence of Daniel S. Wood, Saturday, January 4, 1902.

President Clevenger called the meeting to order at 10:45. Satisfactory excuses were given for the absence of three members. The minutes of last meeting were read and approved. The criticism of D. W. Branson's place read, and a few remarks followed.

S. L. Lupton, S. L. Pidgeon, and H. S. Lupton were appointed to select and refer questions for next meeting.

As the editor of the "Advertiser" had no paper prepared, he substituted a good poem.

Under the head of unfinished business came the questions referred to S. L. Lupton, H. S. Lupton, and H. M. Bond, at some of the former meetings.

As S. L. Lupton was unprepared, his question was deferred.

H. S. Lupton gave a brief answer to the question, "Why do farmers object to having the birds destroyed by the hunters?" Mr. Lupton took the view that it was not so much the destruction of the birds that the farmers objected to as the terrible nuisance of trespassing by the hunters. The subject elicited a discussion which resulted in a vote being taken favoring the appointment of a game warden.

H. M. Bond, in answering the question referred to him as to the best manner of holding a Farmers' Institute, advanced no new suggestions, but thought the past efforts were successful enough to continue in the same way.

The referred questions of the day were next in order. First came the one referred to D. W. Branson, "Give your idea of the best way to cultivate and breed corn?" Mr. Branson preferred planting corn in hills and tending it both ways. He would plant it three feet nine inches each way, and then at the proper time thin to two stalks in a hill. He thought the first plowing should be deep, and then as the season advanced not so deep. He thought that the corn should be worked frequently in dry weather to form an earth mulch, and thus prevent the evaporation of moisture. To improve the variety, Mr. Branson thought best to select the finest ears possible when husking, after which they should be put in a dry, airy place, so that they will thoroughly dry before freezing weather. Then

when shelling to plant, re sort and use only the best; by pursuing this method the variety could be improved. A discussion on the best method of planting followed the reading of the essay, some preferring it in drills rather than hills.

Next came the question referred to J. H. Doing, "What is the best literature for the rural home?" Mr. Doing thought that every farmer should read such books as would thoroughly acquaint him with his work, and supplementary to this, become familiar with the best of poetry, art, science, and fiction. He considered the best literature for the rural home that which uplifts and sends the mind along healthy, pure channels.

At this point dinner was announced, and after that was over, and the premises were viewed, business was again resumed.

S. L. Pidgeon was called upon to answer his question, "What can be done to protect young fruit trees from the attacks of the locusts?" Mr. Pidgeon had written to Prof. Alwood, of Blacksburg, for information, and in reply he advised wrapping the bodies of young trees with newspaper. Prof. A. stated that in their orchard, where the trees had been sprayed, no damage had been done, while adjoining unsprayed orchards suffered seriously. But Prof. A. did not say that the spraying saved their trees—the fact remained, however.

Under the head of New Business, Senator Lupton made some remarks about holding the Farmers' Institute. Quite a discussion followed, which resulted in the appointment of H. S. Lupton, N. W. Solenberger and Lewis Pidgeon as a committee to call together interested parties for the purpose of formulating plans for holding an Institute.

The following questions were reported for next meeting:

- (1) What kind of a garden should a farmer have? Referred to E. L. Irish.
- (2) Do you consider it wasted material for a well-educated young man to work upon the farm? Referred to J. L. Rees.
- (3) Which is the most profitable to the farmer, timothy or clover? Referred to N. W. Solenberger.

The hour of adjournment having arrived, an invitation was accepted to meet at "Sunny Croft," the residence of J. W. Branson, Saturday, February 1st, 1902.

Then adjourned.

W. E. BRANSON, *Secretary*.

C. C. CLEVINGER, *President*.

When corresponding with advertisers mention the *Southern Planter*.

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## PUBLISHER'S NOTES.

### Whose Money?

On December 26th last, we received \$1.00 in coin in one of our self-addressed envelopes post marked "Hampton, Va.," but the sender omitted to sign his name. We shall be very much pleased to credit it to the proper person, provided he will claim same. We have a great number of subscribers at Hampton and in that vicinity, so it is impossible for us to do other than hold it until some one writes for it.

### A Bit Personal.

We cannot refrain from publicly thanking a host of friends for their liberal support and unstinted words of praise for our efforts to make *The Southern Planter* a real help to them in their farming operations. Hundreds of commendatory letters have been received lately, and we can assure the authors that they are truly inspiring. We publish a few recent ones, picked up at random.

January 18th, 1902.

If every farmer in the State would read *The Southern Planter* faithfully and intelligently, the material prosperity of the State would be enhanced almost beyond comparison: A. H. BURROUGHS, Campbell county, Va.

January 15th, 1902.

In continuing my subscription for your paper I cannot do so without expressing my admiration of the matter, and the manner in which it is conducted. I have been a reader of agricultural papers ever since Luther Tucker established the "Genesee Farmer," and Judge Buel the "Albany Cultivator," sometimes reading thirteen papers, and I must say that I like yours *best of all*. At one time I gave the "County Gentleman" precedence, but now, reading both, I think that in *sound, practical* matter, and the manner in which it is presented, you are ahead. Yours truly,

P. NORTON, Davidson Co., N. C.

January 2d, 1902.

I would not be without *The Southern Planter* for four times its cost. Through its instructions I have increased my wheat crop from 40 bushels to over 1,000 bushels, and other crops in proportion.

W. C. FROATE,  
Hancock county, Tenn.

January 4th, 1902.

I very much prize your valuable paper. FREDERICK MAGLOTT,  
Hardin county, Ohio.

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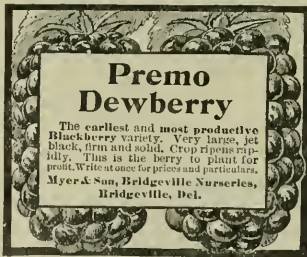
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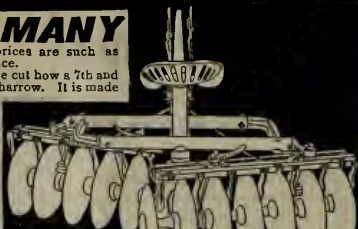
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205 N. Paca St., BALTIMORE, MD.



January 25th, 1902.  
You will never know how much I have appreciated that Queen of farm journals, *The Southern Planter*, all these years. During my long affliction, even when I was not able to leave my room, *The Southern Planter* was not only a welcome visitor, but the well written pages made me forget my sufferings for the time being. Success to you. Your journal should be in the hands of every farmer.

G. E. ROBERTSON,  
Chesterfield county, Va.  
December No. Forest and Field,  
Atlanta, Ga.

*The Southern Planter* is undoubtedly the best paper published for the farmer in the South. It is only necessary for our readers to examine a copy to be convinced that what we say about it is true.

January 22d, 1902.  
I can't do without *The Southern Planter*.  
E. M. NEEDER,  
Montour county, Pa.

January 21st, 1902.  
In renewing my subscription, I feel it my duty to thank you for the good *Southern Planter* you have been sending me the past year. Fifty cents is a small price for it. I wouldn't sell my January No. for that. We (self, wife and children) read it with interest, pleasure and profit. Success to you, dear Editor.

B. M. SHEPHERD,  
Montau county, Va.

**DEAFNESS CANNOT BE CURED** by local applications, as they cannot reach the diseased portion of the ear. There is only one way to cure Deafness, and that is by constitutional remedies. Deafness is caused by an inflamed condition of the mucous lining of the Eustachian Tube. When this tube gets inflamed you have a rumbling sound or imperfect hearing, and when it is entirely closed Deafness is the result, and unless the inflammation can be taken out and this tube restored to its normal condition, hearing will be destroyed forever; nine cases out of ten are caused by catarrh, which is nothing but an inflamed condition of the mucous surfaces.

We will give One Hundred Dollars for any case of Deafness (caused by catarrh) that cannot be cured by Hall's Catarrh Cure. Send for circulars, free.

F. J. CHENEY & CO., Toledo, O.

Sold by Druggists, 75c.

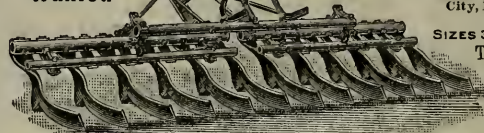
Hall's Family Pills are the best.

## ACME Pulverizing Harrow

Clod Crusher and Leveler  
**SENT ON TRIAL**

Agents  
Wanted

To be returned at my expense if not satisfactory. I deliver free on board at New York, Chicago, Columbus, Louisville, Kansas City, Minneapolis, San Francisco, etc.

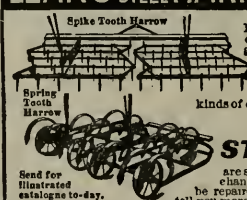


SIZES 3 TO 13-2 FEET  
The best pulverizer - cheapest Riding Harrow on earth. We also make walking

Acmes. The Acme crushes, cuts, pulverizes, turns and levels all soils for all purposes. Made entirely of cast steel and wrought iron—indestructible.

Catalog and Booklet, "An Ideal Harrow," by Henry Stewart, mailed free.  
**DUANE H. NASH, SOLE MFR., MILLINGTON, NEW JERSEY, and CHICAGO.**  
PLEASE MENTION THIS PAPER.

## LEAN'S ALL STEEL HARROWS & LAND ROLLERS.



Made throughout of specially forged steel and tempered under our own process. Light weight and light draft combined with the greatest strength and rigidity. All working parts are placed within an outside frame. The position of the teeth can be instantly adjusted by steel lever to any position or cleared of rubbish without stopping team. In preparing ground for seed or for harrowing all kinds of crops there is nothing that will equal Lean's.

Send for illustrated catalogue to-day.

**OUR STEEL ROLLERS** are so constructed that all parts are interchangeable and if any part should break, can be repaired at home at small cost. We want to tell you more. Why not send for our catalogue?

**RODERICK LEAN MFG. CO. MANSFIELD, OHIO.**

<p>Send We have No Agents</p> <p>No. 165</p>	<p>For That's Why Our Prices</p> <p>No. 330</p>	<p>FREE Are So Low For</p> <p>No. 451</p>	<p>Catalog. The Best Harness</p> <p>No. 408</p>
<p>\$11.10 is our price. Re-tails at \$16. High Grade Single Strap Harness, cut Nick. or Davis rubber trim. 1 1/2 in. in traces, 1 in. lines, full kip collars, \$18.50. With heavy hip collars, \$27.25. Also rope breast collar, 1 1/2 traces, 1 in. line harness, \$14.00 to \$25.00. <b>Send for Free 320-page Catalog.</b> It shows 24 styles Harness. Also harness repairs strap work, snaps, buckles, Fly Nets, and everything for the barn. <b>MARVIN SMITH CO., 65-57-59 N. Jefferson St., Chicago.</b></p>	<p>\$22.50 is our price. Re-tails at \$30. Extra quality Double Buggy Harness, lines, Pole and Breast straps 1 1/2 in., with snaps and slides. No lower price. Genuine bolt from oak tanned leather. Nick. in traces, 1 in. lines, full kip collars, \$35.00. With heavy hip collars, \$47.25. <b>Send for Free 320-page Catalog.</b> It shows 24 styles Harness. Also harness repairs strap work, snaps, buckles, Fly Nets, and everything for the barn. <b>MARVIN SMITH CO., 65-57-59 N. Jefferson St., Chicago.</b></p>	<p>\$18.50 For this Farm Harness, Trace</p>	<p>\$24.20 For Heavy Team Harness, with breeching 1 1/2 in. traces (or 1 1/2 in. lower price). Genuine bolt from heavy oak tanned stock. With heavy hip collars, \$27.25. <b>Send for Free 320-page Catalog.</b> It shows 24 styles Harness. Also harness repairs strap work, snaps, buckles, Fly Nets, and everything for the barn. <b>MARVIN SMITH CO., 65-57-59 N. Jefferson St., Chicago.</b></p>

**STERN OLD MOTHER EXPERIENCE**

has enabled us after 15 years to make perfect **The Reliable Incubators and Brooders.** You ought to have our 20th Century Poultry Book in the house. It will cost you but 10 cents and will make you a master in the poultry business. **Reliable Incubator & Brooder Co., Box B-11, Quincy, Ill.**

# This Pennsylvania

Low Down Disc  
Grain and Fertilizer **DRILL**

Force Feed,  
Disc or Hoop.



is not like any other. It is better and these are the reasons why.

It is mounted on a steel frame which combines greatest strength and lightness. Each disc works independently and has an adjustable coil spring pressure of its own—enables the disc to cut its way through cornstalks, stubble, weeds, grass, etc. It makes sure to put the seed in every crevice. Chain drives force feed, for grain, grass or clover. No gears—drives feed from center of main axle. Balances perfectly—saves the horses' backs. Absolutely accurate grain, grass, phosphate and land measures. Being low down it is easy to fill. Don't buy a drill of any kind until you send for Free Catalogue of Implements, Engines, Saw Mills, and Threshing Machinery.

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# HENGH'S 20th Century Steel Ball Coupling Cultivator



Parallel beam movement, pivoted axle, with lateral beam movement in connection with the movable spindles, or either independent of each other. Lateral beam movement operated also by hand lever. Centre lever for spreading and setting shovel ranges.

Order immediately and the most complete literature thereon for next season. Cultivator on the market, having every possible movement of the shovel range. The HENCH & DROMGOLD CO. Mfg. York, Pa.

# STEEL ROOFING



Strictly new, perfect, Semi-Hardened Steel Sheets, 2 feet wide, 6 feet long. The best Roofing, Siding or Ceiling you can use. No experience necessary to lay it. An ordinary hammer or hatchet the only tools you need. We furnish free with each order sufficient paint and nails. Comes either flat, corrugated or "V" crimped. Delivered free of all charges at the following prices

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Prices on other States on application.  
A square means 100 square feet. Write for free catalogue No. 106.  
CHICAGO HOUSE WAREING CO., W. 35th and Iron Sts., Chicago

# 30 DAYS TRIAL.

on any vehicle we make. Keep it if you like it, return it if you dislike it. We save you dealer and jobber profits. If you want to know more send for our Free 32nd annual catalogue. KALAMAZOO CARRIAGE & HARNESS MFG. COMPANY, (Successors of the Ford Plant) Station 69, Kalamazoo, Michigan.



## REPORTS.

California Experiment Station, Sacramento, Cal. Bulletin 133. Torrance of Alkali by Various Cultures.  
Bulletin 134. Report on Conditions of Vineyards in Portions of Santa Clara Valley.  
Bulletin 135. The Potato Worm in California.  
Bulletin 136. Erinose of the Vine.  
Bulletin 137. Pickling Ripe and Green Olives.  
Colorado Experiment Station, Fort Collins, Col. Bulletin 66. Relation of Bovine to Human Tuberculosis; Tuberculin Tests of the College Herd.  
Georgia Experiment Station, Experiment, Ga. Bulletin 55. Corn Culture.

Maryland Agricultural College, College Park, Md. The College Quarterly.

Cornell Experiment Station, Ithaca, N. Y. Bulletin 196. Fourth Report on Potato Culture.

New York Experiment Station, Geneva N. Y. Bulletins 199 and 200. Botanical Bothersomen.

South Dakota Experiment Station, Brookings, S. D. Bulletin 72. Ornaments for South Dakota.

Virginia Experiment Station, Blacksburg, Va. Third Report of State Entomologist and Pathologist on the San Jose Scale.

U. S. Department of Agriculture, Washington, D. C. Public Road Inquiries. Bulletin 21. Proceedings of the International Good Roads Congress.

Farmers' Bulletin 444. Experiment Station Work.

Farmers' Bulletin 145. Carbon Bisulphid as an Insecticide.

Experiment Station Record, Vol. XIII, Nos. 3 and 4.

Climate and Crop Service. Weather Bureau. Crop Reporter. Weather Map—December.

Department of Agriculture for West Indies, Barbados, Bulletin. Seeding and other Canes in the Leeward Islands.

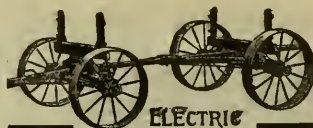
## CENSUS BULLETINS—MANUFACTURES.

Bulletin 119. Mississippi.  
Bulletin 120. West Virginia.  
Bulletin 121. Hawaii.  
Bulletin 122. Industrial Combinations.  
Bulletin 123. Gas.  
Bulletin 124. Lead, Copper and Zinc Smelting and Refining.

## NITRATE OF SODA.

We invite the attention of our readers to the advertisement of Mr. Wm. S. Myers, Director of the Nitrate of Soda Propaganda, New York City. Mr. Myers will send to any one requesting him some valuable pamphlets on the use of Nitrate of Soda.

To make cows pay, use Sharples Cream Separators. Book "Business Dairying" & Cat. 305 free. W. Chester, Pa.



**ELECTRIC**  
**Handy Farm Wagons**  
make the work easier for both the man and team. The tires being wide they do not cut into the ground; the labor of loading is reduced many times because of the short lift. They are equipped with our famous Electric Steel Wheels, either straight or staggered spokes. Wheels any height from 24 to 60 inches. White hickory axles, steel hounds. Guaranteed to carry 400 lbs. Why not get started right by putting in one of these wagons. We make our steel wheels to fit any wagon. Write for the catalog. 15c free.  
ELECTRIC WHEEL CO., BOX 146, QUINCY, ILL.



**WE'LL PAY THE FREIGHT**  
and send 4 Burgly Wheels, Best Tires on, - \$7.95 With Axles, \$4.00. Rubber Tire Wheels, 15-00 1 1/2 mg. wheels 4 to 4 in. tread, Top Burgly, \$2.95; Harvest, \$3.60; Repair Orate Wheels, \$5.00. Write for catalogue and price instructions. Leave how to buy vehicles and parts direct. Umbrella Free with first order. W. Y. BOOB, 430 E. 7th St., CINCINNATI, OHIO.

# "Rich Soil"

can be had more quickly, cheaply and surely by using  
**THE SPANGLER**  
Single Row  
**FERTILIZER DISTRIBUTOR,**

than with any means known. It distributes all kinds of fertilizer into the open furrow after the ground is prepared for Potatoes, Cotton, Tobacco, Corn, Beans, Peas, etc. It saves fertilizer by putting it on the right spot. Sows 150 to 250 lbs. per acre. We also make the



**SPANGLER CORN PLANTER** with and without fertilizer attachment. The best and most Perfect Corn Planting Machine ever put into a field. Send for catalogue and direct to THE SPANGLER MFG. CO., 501 QUEEN ST., YORK, Pa.

# HERCULES STUMP PULLER



Clears an acre of heavy timber land each day. Clears all stumps in a circle of 150 ft. without moving or changing machine. Strongest, most rapid working and best made.

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Write for Prices.

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Only \$14.41 High Grade **SAW FRAME.**  
30 in. 1st quality, Dison saw filed and best, only \$4.75. 13 different saw frames, right and left. Specifications. Write for full cash catalog No. C-81. Both sent free. Write now. Cash Supply & Mfg. Co. Dep. Y. Kalamazoo, Mich.

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Buy from manufacturers direct and save the Dealer's Profit. There's no secret. We make many designs, and sell more Ornamental Fence than any other firm in the business. Why? Because we use nothing but the best material, every one can buy, sell direct to the user at FACTORY PRICES, and guarantee any one can erect our fence. We make special prices to Churches, Communities and large Parks. Send us your address. We will take pleasure in mailing you our large 32 page catalog on Ornamental Fence, free. If you are interested in Farm Fencing send for our 42 page Catalogue. Address **Box Q COILED SPRING FENCE CO., Winchester, Ind. U. S. A.**

### DUPLIX MACHINE

The only successful field fence maker. Ball Bearing. Automatic, simple, life-lasting. A level headed boy can take it apart and put it together. It makes most perfect wire mesh. **Machine sent on Trial. Plain and Barbed Wire at Wholesale Prices. Catalogue Free. KATZELMAN BROTHERS, D-95 Muncie, Indiana.**



### PAGE

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of pieces in a 40 rod roll of OURS and YOURS!  
**FENCE WOVEN WIRE FENCE CO., ADRIAN, MICH.**

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3 Styles 9 Sizes. \$25 to \$150  
**HANDY FARM WAGONS**

**TILE DITCHER**  
Cuts 100 rods per day.  
**BEST CORN HARVESTER**  
MADE. Cats. Free.  
**H. L. Bennett & Co. WESTERVILLE, O.**

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Then you need a power to pump it to your house or barn. The **RIFE Hydraulic Engine** is the best. Pumps more water. Never stops. Requires no attention. Sold on 80 days trial. Send for free book. **RIFE ENGINE CO., 128 Liberty St., New York.**

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Runs 24 hours a day and 365 days a year 40 years experience. Water for HOUSE; water for STOCK; water for IRRIGATION. Once started costs but ONE CENT per month. As simple as a wheelbarrow and as efficient as a Corliss Engine. Information and instruction in plain terms. Prices on ram or complete outfit by return mail. Address **PRYCE W. BAILEY, Export, Seneca Falls, N. Y.**



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ONE OF THE LARGEST MANUFACTURING FIRMS IN THE COUNTRY SELLS DIRECT FROM CARRIAGE.

The retail profits on carriages range from thirty to seventy per cent. on manufacturers' prices, according to circumstances.

The Columbus Carriage and Harness Co., realizing this condition, have adopted the plan of dealing direct with carriage buyers and eliminating the middleman altogether. They sell to the customer at the same rate they formerly sold to dealers, thereby saving him the intermediate profits, and in addition gives him a wider range of selection.

Since the adoption of this policy by the Columbus Carriage Company, the business has increased rapidly and they are now the undoubted leaders of their class in the country.

The remarkable increase in their trade in the West has made necessary the starting of a western repository at St. Louis, from which western shipments are made. This repository is one of the most complete of its kind west of Chicago.

One of the distinguishing features of the relations between the Columbus Carriage Co. is the liberal manner in which the company deals with their customers. Each carriage is sent to the customer with the definite understanding that if it is not in every way satisfactory, it can be returned to the factory and the purchase money will be returned and no freight charges made either way.

This Company also supplies harness, robes, and other horse accessories at wholesale prices, and on the same terms as the carriage sales are made—they can be returned at the maker's expense if not entirely satisfactory.

The high quality of the Columbus Carriage goods has been secured through the care in which the raw materials are selected. Every piece of hickory and other wood that goes into a Columbus Carriage Company vehicle is thoroughly tested before it is used. Every bolt and bar must stand the most severe strains before it becomes a part of the finished product. Great care is taken with the hides, each piece of leather being cured by skilled workmen and finished by the best modern processes. The dangers of broken harness and runaway teams are reduced to a minimum when the harness comes from the Columbus Carriage Company factory.

Any one interested in the carriage question will find it to his advantage to write for a catalogue and study its prices. The money that can be saved in this way is considerable, and should not be overlooked when a purchase of this kind is contemplated. Address The Columbus Carriage Co., Columbus, O.

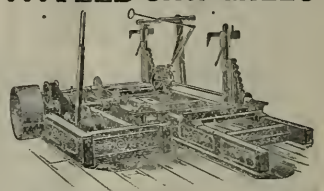
### THE DES MOINES EVENERS.

The Des Moines (Iowa) Eveners Company are advertising their well known Eveners elsewhere in this issue. For equalizing draft on the teams, this device is certainly the best we have ever seen. Every horse puller his own share when these are used. Send for descriptive circular.

**150 Kinds for 16c.**  
It is a fact that Salzer's vegetable and flower seeds are found in more gardens and on more farms than any other in America. There is reason for this. We grow and operate over 600 acres for the production of our choice seeds. In order to induce you to try them we make the following unprecedented offer:

**For 16 Cents Postpaid**  
20 kinds of rarest lettuce radishes,  
13 magnificent earliest melons,  
16 sorts glorious tomatoes,  
25 perfect lettuce varieties,  
15 splendid best sorts,  
63 gorgeously beautiful flower seeds,  
In all 150 kinds postpaid! We furnish bushels of charming flowers and lots and lots of choice vegetables, together with our great catalogue telling all about Tomato and Tea Oil and Irons and Spitz, onion seed at 2c, a pound, etc., all only for 16c. in stamps. Write to-day.  
**JOHN A. SALZER SEED CO., La Crosse, Wis.**

### VARIABLE FRICTION FEED SAW MILLS

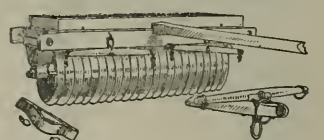


A great improvement in Friction Feed Saw Mills. Repair Bills are practically nothing with this feed. Most durable on the market. We build mills with Fog Beam or Rainnet Set Works on trucks or rollers. Also Wood Planers, Engines, etc. Catalogue free.

**SALEM IRON WKS., Winston-Salem, N. C.**

### THE CAMBRIDGE

Corrugated Land Roller and Pulverizer.



THE BEST IN THE WORLD.

Address... **R. F. HARRIS & SON, Charlottesville, Va.**

**SPAIN'S CHURN** TRADE MARK **BESTOV**  
Hand made of White Cedar. Never water soaks or sour. Simple to operate. Best after 30 years test. We have others also. Automatic milk scales, jars, butter workers, printers, shipping boxes, etc. Everything for dairy or creamery. Send for catalogue.  
**Dairymen's Supply Co., Philadelphia, Pa.**

### POTATO PLANTER

Cheapest Potato Planter on the market. Send for circular. Address **J. R. STEITZ, Station D. R. No. 1, Milwaukee, Wis**

No. 1 Iron Age Double and Single Wheel Hoe.

No. 6 Iron Age Combined Harrow and Cultivator.

No. 1 Iron Age Combined Harrow and Cultivator.

Improved Robbins Potato Planter.

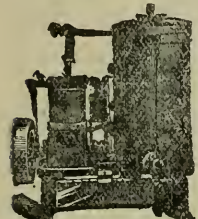
No. 6 Iron Age Horse Hoe and Cultivator.

## Look for the full name IRON AGE branded on the tool.

Don't be imposed upon by dealers selling implements made in imitation of the famous Iron Age brand. All the IRON AGE tools are MARKED WITH THE FULL NAME. The name is for your protection. It is a guarantee of best materials, best ideas, best workmanship, and all the merits that have made Iron Age tools popular with three generations of farmers and gardeners. Write for a FREE copy of the IRON AGE BOOK for 1902, telling all about these marvelous labor savers, and giving prices on Potatoes, Horse Hoes, Seed Drills, Wheel Hoes, Riding Cultivators, the Improved Robbins Potato Planter, etc.

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After Being on the Market TEN YEARS,  
The ACME Engine Still Leads



For Churning, Cutting & Grinding Feed, Filling Silos, Elevating Water, and all Farm and General Uses where Small Power is Required. Fuel, Kerosene Oil. No Skilled Engineer required.

ROCHESTER MACHINE TOOL WORKS,  
No. 17 Frank St. Rochester, N. Y.

THE PAINT OF THE FUTURE.

In a book of which an English translation was recently published by Van Nostrand & Co., the eminent authority, Dr. Josef Bersch, says: "Although white lead has at present an enormous use, it is to be hoped that this pigment, of good color, but little permanence, may be entirely replaced in time by zinc white, and for some purposes by enamel white" (artificial barytes)

Any one who watches the government statistics, year by year, can readily see that the drift is rapidly in the direction indicated by Dr. Bersch. In this country alone, the consumption of zinc white has nearly doubled in a few years, while the consumption of white lead, despite the increase of manufacturing plants and the growth of paint consumption has decreased. The reason for this change is not far to seek; paint users have been educated. They know, as they never knew before, the value of paint, and the properties that make it valuable. Experience and facts have been compiled and laid before them in a form that "he who runs may read."

As a result of this education, the better grades of ready mixed paints are gradually winning preference, and in the latter the pure linseed oil class is obtaining rapid prominence. Good ready mixed paint cannot be made without zinc white, and this partly, at least, explains the increasing use of that pigment.

A mong paint manufacturers who pride themselves upon the quality of their product, among well informed and judicious consumers, as well as among careful architects, there is evident a growing preference for pure oil paints containing both zinc white and white lead, but with a preponderance of the first named pigment, and, from present conditions, it is safe to predict that the paint of the future will be compounded on something like that basis.

STANTON DUDLEY.

Can it be possible that the entire business of the country merchant is going to revert to the catalogue houses? With free mail delivery and the parcel post, which is coming before long such firms as Marvin Smith Co., of Chicago, who are always reliable, will be in almost-personal touch with the whole country.

**8 Dollars**  
BUYS DELIVERED, An 800 Lb. GOOD SCALE, On Wheels.

PLATFORM 16 x 25 in Cut Steel plates, carefully tempered. Accurate, durable, well finished. Other sizes and WAGON SCALES same make. For circulation, address:

**JONES**  
HE PAYS THE FREIGHT.  
BINGHAMTON, N. Y.  
Box 31

A HANDY WAGON-BOX

A farmer don't need two men and a block-and-tackle to handle a Folding Wagon-Box.



A farm wagon-box built in separable parts so that one man or boy easily and quickly puts it on or off the running gear any place. When not in use, it requires less than one tenth the storage space of the old style box. Simple, light, strong and durable. Guaranteed.

Write **FOLDING WAGON-BOX CO.,**  
Haverhill, Ohio.

CELEBRATED Des Moines Eveners.



No. 3—four horses for left hand binders. No. 4—for R. H. binders. Positively possible-draft. For ten years the standard in the wheat belt. With a change of irons, works on gang and sulky plows. You run no risk buying these goods. Prices very reasonable.

**DES MOINES EVENER CO., Des Moines, Iowa.**

BLATCHFORD'S CALF MEAL.

"Please send me 500 lbs. of BLATCHFORD'S CALF MEAL, as we find nothing like it to raise thrifty Jersey calves."—ASA B. GARDNER, JR., Glencoe, Md. Address  
**THE BARWELL MILLS, Waukegan, Ill.**

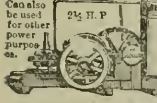
The MIETZ & WEISS Kerosene Engines.



Cheapest and Safest Power known. For pumping and electric lighting, grinding corn separating cream, sawing wood, and all power purposes. Send for catalogue.

A. MIETZ, 128 Moll Street, New York.

The "Weber Junior" Pumper



It is all complete, ready to attach to pump. Equals 50 men in pumping water. It is simple, light, and cheap. It is shipped in crates completely fitted. Its connections made. Easy to start, any one can operate it. Every one guaranteed. One size up to 2 1/2 H. P. Send for catalogue. Weber Gas & Gas Engine Co., B. 7-123 Kansas City, Mo.

WROUGHT IRON PIPE

Good condition, used short time only; new threads and couplings for steam, gas or water; sizes from 1/2 to 12 inch diameter. Our price per foot on 1/2 inch is 3c, on 1 inch 5c. Write for free catalogue No. 166.

**CHICAGO HOUSE WRECKING CO.,**  
W. 32th and Iron Sts., CHICAGO.



**Krauser's Liquid Extract of Smoke**  
Smokes meat perfectly in a few hours. Made from livery wood. Delicious flavor. Cheaper, cheaper. No smokehouse needed. Write for circular.

**E. KRAUSER & BRO., Milton, Pa.**

74th Year.

# BUIST'S Prize Medal SEEDS

for the  
**Garden and Farm**

are grown from  
**Selected Seed Stocks**  
and are the **FINEST**  
that can be produced. They are the

**Best Seeds for Private  
Gardens or Market Gardeners**  
where Purity and Quality  
is of so much importance

Send for Buist's Garden Guide for 1902, 142 pages. It is not simply a catalogue, but full of desirable and important information on gardening, including a Calendar of monthly operations. Large purchasers of seeds should also send for our Wholesale Market Gardeners' Price List. Both are mailed free.

**ROBERT BUIST COMPANY,**  
Seed  
Growers, Philadelphia, Pa.

..ELMWOOD NURSERIES..

## ASPARAGUS

100,000 2-yr.-old Asparagus roots, 5 varieties. A special rate of \$3.50 per 1000 for 2 mos for BARR'S, PALMETTO, CONOVER.

## APPLES

A large general assortment, including WENESAPS and YORK IMPERIALS.

**Splendid Assortment of  
Ornamental, Shade  
and Fruit Trees.**

**EGGS** from B. P. Rocks. Light Brahmas, Brown Leghorns, at \$1.00 per 13.

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Your money back if  
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### SEEDS

Send a postal card for our seed catalog and see the wonderful results we offer in our seeds. This beautiful hand-colored, plain letter, Quarto size paper, containing the names of our seeds, and lists of other beautiful premiums given to users of our seeds. Premiums for large or small orders. Seeds guaranteed.

FORREST SEED CO., 25 MAIN ST., CORTLAND, N. Y.

### THE HALLOCK WEEDER.

The following letter, received from Mr. J. H. Summerton, of Columbia, Tenn., will give our readers a pretty good idea of the value of the "Success Anti-Clog" Weeder and Cultivator.

Mr. Summerton writes that last spring one of the Success Weeders was shipped to Col. H. A. Brown, of that place, but that fortunately for him Col. Brown's ground was so very trashy that he could not use it, so he (Mr. Summerton) got the use of it all summer.

The tool elicited lots of unfavorable criticism as is usually the case with any innovation. He writes that his land is situated on the Nashville Pike, where sometimes there were as many as a hundred teams passing in a day. He says he could hear very much of what they said. He overheard one man say to another—"Did you see that thing that old man by the toll gate was dragging over the land? I would just as well have my old red rooster by the tail over the land as that d— thing."

However, Mr. Summerton writes that he went over his corn with it until it was about three feet six inches high, and stalks about an inch and a half in diameter. The last time he went over it he only broke off three stalks in seven acres. After he could not use the weeder any longer, he started in with a Planet Junior 12-tooth Cultivator, once in a row until he had gone over the ground twelve times all told, which is about nine times more than is customary in that section.

He says he did not have a plow in the corn during the season, and, as the result of the cultivation given it the new way, he has the best corn in that section of the country.

Also writes that he used the weeder for almost every kind of work on his farm, and was surprised at the number of places he could use it. He says after plowing a plot of ground for late crop he would harrow it once with a spike-tooth harrow, then roll it, then finish with the weeder. States that as the result he had ground in moist shape for his navy beans, which he planted the fourth of July and was harvesting at the date of his letter, October 7th. He says that they were suffering for rain until August 1st, but his beans, those four weeks—i. e., from July 4th until August 1st—although they had no rain, did not seem to need it. He said it was a surprise to farmers how green they looked. He says he was, during the drought, cutting out some weeds from his sweet potatoes near the road. A stranger passing along saw him bring up most dirt with the hoe, and remarked, "You must have had a rain lately," when he replied, "Had only two little showers in May and three-fourths of an inch of rainfall in June."

After setting up his sweet potato slips, he went over them with the weeder several times. Does not remember that he pulled out more than two or three slips on the entire piece. Writes that he certainly considers the tool a wonderful success. Believes there is nothing equal to it for retaining the moisture.

Our readers will find this implement advertised on another page.

ESTABLISHED 1802

# THORBURN'S SEEDS

have been the standard of excellence for a hundred years. In competition with the world they were awarded the

— GOLD MEDAL. —

PARIS EXPOSITION, 1900.  
PAN-AMERICAN, 1901.

We are headquarters for BERMUDA GRASS. Price on application, stating quantity required.

Our 101st Annual Catalogue is now ready. It is the most complete, most reliable and most beautiful Seed Annual published. We mail it FREE. Write for it now that it may be sent you as soon as ready.

**J. M. THORBURN & CO.,**  
36 CORTLAND ST., NEW YORK.

## PEACH and APPLE TREES

Selected stock of fine fruit trees, including the best varieties—Winesap, Black Twig, Albemarle Pippin, York Imperial (J. F. Winter) Apples, and all the well known Peaches, including the Crawford, Champion, Elberta, Foster, Oldmixon Free, Fiequet's, Bilye's Oct. (Comet), Alexander, Hynes' Surprise, Wonderful, etc. Prices very low for stock of this class. Address

**CHAS. F. HACKETT, MGR.,**  
BONAVISTA GREENWOOD DEPOT,  
NURSERIES, ALBEMARLE CO., VA.

## EMPORIA NURSERIES

We are still serving out our LOW PRICE-LIST, though prices are advancing on most kinds of Nursery Stock. Don't delay, but send in orders for spring at once. Address

**EMPORIA NURSERIES, Emporia, Va.**

## ARTICHOKES CHEAP

100 bbls of White or Jerusalem Artichokes at only \$2.00 per bbl. The cheapest Hog Feed known. I raised five hundred bushels on an acre of only fair land. Also offer 25 Pure Bred BARRED P. ROCK Cockerels at \$1.00 each.

**THE IMP. FRUIT FARM,**  
P. H. HEYDENREICH, Prop. STAUNTON, VA.

**RUPTURE CURED** while you work. You pay \$4 when cured. No cure, no pay. ALEX. SPEIRS, Box 998, Westbrook, Maine.

# NITRATE OF SODA

—FOR—

# MONEY CROPS.

## CORN, WHEAT AND FRUIT.

You get *your* share of the profit when you use this

### Standard High-Grade Ammoniate.

Formulas and other valuable information, free

**WILLIAM S. MYERS, Director,**

12 S. P. John Street.

CHILEAN NITRATE WORKS, NEW YORK.

## A CARD.

We invite attention to the advertisement of the CHAS. E. HUNTER IMPLEMENT HOUSE, elsewhere in this issue. As we succeed to his business on March 1st, and do not intend to carry over any Implements NOT NOW SEASONABLE, great bargains can be had. Refer to this advertisement by all means.

AS TO OURSELVES—Our Mr. JAS. G. HENING has been General Manager for the late Chas. E. Hunter since 1892. Our Mr. HOWARD J. NUCKOLS has been Assistant and Bookkeeper since 1895. Under the firm name of HENING & NUCKOLS, we succeed to the entire business, good-will, agencies, etc.

We will carry the same leading line of Implements as the old firm. Among the prominent agencies represented by us are the following:

Genuine Oliver Chilled Plows and Repairs.  
Genuine Farmers' Friend Plows.  
Studebaker and Brown Farm Wagons, Carts and Buggies.  
Land Rollers and Harrows.  
Ross Feed Cutters and Horse Powers.  
Grinders, Wood Saws and Carriers.  
Milwaukee Hay Tools and Corn Huskers and Shreders.

Full line of Brown Walking and Riding Cultivators.  
Farming Implements of Every Description always at lowest prices.  
Champion Mowers, Reapers and Binders. Hay Rakes and Twine.  
Buckeye Iron and Wood Pumps.  
J. K. Wind Mills.  
Superior Grain Drills.

Subsoil Plows.  
Aultman & Taylor and Frick Threshing Machines, Engines and Saw Mills.  
Tiger Disc Harrows and Bement Disc Cultivators.  
A full line of Scientific Crushing and Grinding Machinery.

All Goods Guaranteed First-Class.

We trust to receive the liberal patronage which has been bestowed on the late Mr. Hunter, and wish to assure all of careful attention and liberal treatment to any of their favors.

REMEMBER, we are at the same old stand with the same reliable line of Implements

Very respectfully,

**HENING & NUCKOLS,**

P. O. Box 444.

1436 and 1438 E. Main St., RICHMOND, VA.

The "OXFORD" Cream Separator

Is manufactured under the supervision of E. W. Brinnall well known as an expert in this business, who after many years of careful study and experience, avoiding the mistakes of his predecessors, has produced the "Oxford" Cream Separator with these points of merit to commend it: 1st. It skims clean, taking ALL the butter fat out. 2d. It requires so little power to operate it that the farmer's boys will enjoy the fun of running it. 3d. It is so simple in construction and the material being first-class, it will not get out of order, and, with ordinary care, will last a lifetime. 4th. The "Oxford" is the best separator on the market, considering the fact that it will handle 50 lbs of milk per hour, and do better work than any machine yet offered to the farmer. Agents wanted. Price, \$75. Manufactured by THE OXFORD MFG. CO., Oxford, Pa.

The REID Hand Separator

Is the closest skimmer, as well as the easiest running and most economical separator made. Very Simple and Durable. Capacity 150 to 350 lbs per hour. Prices \$90 to \$100. Hand separator circular and illustrated catalogue of dairy supplies free. A. H. REID 30th and Market St. Philadelphia, Pa.



Sent anywhere on 10 Days' Free Trial

THE OLDEST SEED-HOUSE IN THE SOUTH.

On another page of this issue of our paper will be found the advertisement of J. Bolgiano & Son, of Baltimore, Md. As will be noted from the advertisements, these people are wholesale and retail seedsmen. As this house was established as early as 1818, they are by long years the oldest seed-house in the South. Their reputation is of the very best, and the name Bolgiano on a package of seeds is a guarantee as to their quality and purity. Those of our readers who grow early vegetables for the Northern markets will find the Bolgiano seeds to be selected and grown with a special fitness to their use. Each of our readers should have a copy of their large General Illustrated Catalogue. They will take pleasure in mailing a copy free if you mention this paper in writing. It is among the largest and most comprehensive seed catalogues published, and contains practically every thing which any one could wish for the garden or farm.

PLANET JRS. FOR 1902.

We are in receipt of the 1902 catalogue of S. L. Allen & Co., of Philadelphia, Pa. As most of our readers must know, these people are the manufacturers of the world famous "Planet Jr." garden and farm tools. These tools have been advertised regularly in our paper for the past several years, and undoubtedly many of our readers are now using these splendid tools. We look forward with much pleasure each year to the coming of the "Planet Jr." catalogue. This is so for the reason that it is the very best and most instructive thing of the kind which reaches our table. This new catalogue is the equal of its worthy predecessors, and we do not know how more could be said in its commendation. The seventeen half-page illustrations show the various uses of "Planet Jr" in this and other countries for all kinds of purposes and by all kinds of people. A number of entirely new things are shown for the first time. The book is hand some, instructive and valuable, and if you have not already secured a copy you should write for it at once. For correct address, see the advertisement elsewhere in this issue.

COTTON

COLE'S COTTON PLANTER will save you \$1 on every acre you plant. Send postal at once for proof. We have a COMBINATION PLANTER positively and absolutely without an equal as a money and labor saver. Plants Cotton, Corn, Peas, Peanuts, Sorghum, Soja Beans, as well as even better than any separate special machine ever built. We prove it in your own field at our expense. Full particulars for a postal. THE COLE MFG. CO., Charlotte, N. C.

SEE THE SEED DROP.

In plain sight of the operator. MATTHEWS' New Universal HAND SEEDERS AND CULTIVATORS. These are the most successful gardeners. They do perfect work. Open furrow, drop seed, cover any desired depth. Cultivation, sowing, and weeding. Latest and best. Popular prices. AMES PLOW CO. 58 Market St. BOSTON. For Sale by Griffith & Turner, Baltimore, Md.



TELEPHONES AT \$5.00

We purchased an enormous quantity of telephones that have seen but little service. WE THOUGHT OF BRIDGES, BUSH, and guarantee to ship you one for \$5.00 each, that would ordinarily cost you over TWICE AS MUCH. Write for FREE CATALOGUE No. 166. CHICAGO HOUSE WRECKING CO. Next 35th and Iron Sts., CHICAGO.



**Corn**  
removes from the soil large quantities of  
**Potash.**  
The fertilizer applied, must furnish enough Potash, or the land will lose its producing power.  
Read carefully our books on crops—sent free.  
GERMAN KALI WORKS,  
93 Nassau St., New York.

**Corn Planting**  
must be well and carefully done, as the future crop depends upon it. For all purposes, in any soil, an all kinds of ground nothing equals the  
**SPANGLER CORN PLANTER.**  
It saves time, labor, money and lessens the crop. You know when it is working; you can see the corn plants way to the ground. Made with or without fertilizer attachment. New device for covering peas, beans, melons, etc. Also make the famous Spangler-Lo-down Grate and Fertilizer Drill. Write for catalog and circ.  
SPANGLER MANUFACTURING CO., 501 Queen St., York, Pa.

**RIPPLEY'S COOKERS.**  
Sell from \$5.00 to \$15.00. Made of boiler steel. No flues to rust or leak. Can't blow up. Guaranteed to cook 5 lbs. feed in 2 hours, and to heat water in stock tanks 500 lbs. away. Will heat dairy rooms, Canteens and prices mailed free.  
Rippley Hardware Co.  
Box 208 Grifton, Ill.

**BOSTROM'S IMPROVED FARM LEVEL.**  
Is not a MAKESHIFT, but the best one made for Terracing, Ditching and Drainage. Price \$3.00, including Tripod and Sliding Target Rod. Send for descriptive circular and Illustrated Treatise on Terracing, free.  
J. M. ALEXANDER & CO.  
6 and 8 S. Pryor St., Atlanta, Ga.

**A MOTH-PROOF BEE-NIVE. A SWEET POTATO HOUSE**

That will keep potatoes in good condition for twelve months!  
Persons desiring either of the above, should address for particulars, with stamp,  
**BRYAN TYSON, Carthage, N. C.**  
Please mention this paper.

Mention the Southern Planter when corresponding with advertisers.



THE MOST "GENERALLY USEFUL MACHINE ON THE FARM," THE

**McSHERRY**  
MODEL

**TOBACCO PLANTER**

FOR TOBACCO, CABBAGE, TOMATO AND OTHER PLANTS.

Originators of Modern Improvements. Established 1858.

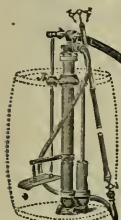
THE McSHERRY MFG. CO., Middletown, O.

McSherry Plain Drills, Fertilizer Drills, Disc Drills, Shoe Drills, Hoe Drills, Low-Down Press Drills, Seeders, Transplanters, Disc Harrows, Rice Drills.

Write for Circulars R and S.

**PROFIT OR LOSS?**

That's the question  
**THE ECLIPSE**  
**SPRAY PUMP**



Will settle that in your orchard. With it you CAN make a profit, without it what do you get? SEND FOR CATALOGUE

**MORRILL & MORLEY,**  
BENTON HARBOR, MICHIGAN.

**DO YOU SPRAY?**

If so, use the best. Our sprayer throws the finest spray and uses less solution. 14 patents on sprayers granted to us. Send for circulars and prices. Agents wanted.

**FLOWER CITY SPRAY PUMP CO.,**  
83 1/2 Cypress St., ROCHESTER, N. Y.

**SPRAY PUMPS**

Save money by buying one of ours. They will do as much work. Being all brass are lighter to handle and are more durable, will generate a higher pressure thereby making them the easiest pump to operate on the market. Write for catalogue and get treatise on spraying free. Agents wanted. J. F. GAYLORD, successor to P. C. Lewis Mfg. Co., Catskill, N. Y.

**SHIP YOUR FURS**  
AND SHEEP PELTS TO  
**MOMILLAN FUR & WOOL CO.**  
Minneapolis, Minn.  
**WRITE FOR CIRCULARS**

**FREE MANUAL ON DISORNER.**

We have just received from our advertiser, Geo. Webster, manufacturer of the Convex Dishorner, whose factory is located at Christiansa, Pa., one of his new catalogues, which is so complete a guide to dishorning, as well as describing fully his device, that it is a practical hand-book on the subject. Any of our readers who are contemplating the purchase of a tool of this kind will certainly do well to send to Mr. Webster for a free copy, which he will very gladly forward. An interesting photographic view of one of the approved methods of dishorning cattle appears on the front cover. The book also contains an interesting indorsement of Mr. Webster, and his methods of doing business, by almost forty of the leading publishers of agricultural papers, which, in itself, should give added confidence in doing business with him.

If you are interested in the above subject, please correspond with Geo. Webster, Christiansa, Pa., and mention this paper in writing.

**THE O.K. LINE.**

There are a great many reasons why farmers prefer to use McCormick machines, but among all the reasons perhaps the most important are that McCormick machines are the easiest to handle, last the longest, and give the most satisfactory work in the field. Hence it has become proverbial among agriculturists that the chief requisites which bring success within reach of the farmer are good business methods, well directed energy and McCormick machines. The McCormick line is the O.K. line. It comprises binders, reapers, headers, mowers, rakes, corn binders, shockers, huskers and shredders, knife grinders and binder twine—the greatest line of harvesting machines in the world. Readers of *The Southern Planter* are requested to write W. K. Bache, Richmond, Va., or the McCormick Harvesting Machine Co., Chicago, U. S. A., for beautiful book, entitled "The World Centre," which is profusely illustrated in colors.

The parcel post is coming in good time. Then look out for the catalogue houses. They can sell goods cheaper than any one else on earth, because they buy in such immense quantities. Some of them, notably Marvin Smith Co., of Chicago, are as reliable as the Bank of England.

**ELMWOOD NURSERIES.**

We invite the attention of our readers to the advertisement of Messrs. J. W. Watkins & Bro., Hallsboro, Va. Their offer this month consists of 100,000 2-year old asparagus roots at a low price, as well as their full line of nursery stock.

**Horse Owners! Use**  
GOMBAULT'S  
**Caustic**  
**Balsam**



A Safe Speedy and Positive Cure

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches of Blisters from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blench. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circular. THE LAWRENCE-WILLIAMS CO., Cleveland, O.

**WATER CLOSET COMBINATIONS,**  
Porcelain Bowl, Hardwood Seat and Tank, Nickel Plated flush and supply pipes, complete, each \$11.00.  
Cast Iron Roll Rim Bath Tubs, length 5 ft. Complete with full set of nickel plated fittings, each \$11.00.  
If you are new goods, ask for free catalogue No. 166 on plumbing and building material.  
Chicago House Wrecking Co., W. 25th and Iron Sts., Chicago

**SPRAYING**  
with the "Incomparable" **BORDEAUX NOZZLE** and our world's best outfit, you are also told inside of the situation. Insects and diseases fall before this all conquering outfit. See the box. It is free. Write for it now. THE DEBING CO., SALEM, OHIIO.  
**SYDNOR PUMP & WELL CO. Inc.**  
BOX 949, RICHMOND, VA.  
—ALSO—

**Steam, Power and Hand Pumps, WIND MILLS, TANKS, TOWERS, GAS, GASOLINE and STEAM ENGINES, Boilers, Saw Mills, Saws and Supplies, IRON and WIRE FENCES.**

**Agents and Dealers Wanted** to sell Rippley's 8 and 5 Gallon Compressed Air Sprayors, also large orchard sprayers. We have the best, and sell them under a guarantee. A card will bring catalogue and terms. Rippley Hardware Co., Box 235 Grattier, Illinois.

**Take Off the Horns.** The quickest, easiest and smoothest way is possible only by the use of the **CONVEX DISHORNER** and the Tucker Rock Holder. Also have a calf dishorner and all appliances for easy dishorning. Write for trade samples from Chicago George Webster, Christiansa, Pa.

**LATEST IMPROVED** **DEHORNER** (Newton's Patent). **Every Dishorner Guaranteed**  
**THOUSANDS IN USE.** Ask your hardware dealer for them or write G. H. BROWN MFG. CO., DECATUR, ILL.

**HAWKEYE STUMP PULLER...** Pulls an ordinary grub in 15 minutes. Pulls either standing Timber or Stumps.  
**Makes a Clean Sweep of Two Acres at a Sitting.**  
A man, a boy and a horse can operate it. No heavy chains or rods to handle. You cannot longer afford to pay taxes on unproductive timber land. Illustrated catalogue FREE, giving prices, terms and testimonials, also full information concerning our I. X. L. Grubber, Iron Giant Grub and Stump Machine, 2-horse Hawkeye and other appliances for clearing timber land.  
ADDRESS MILNE BROS. FOR  
**MILNE MFG CO., 834 8th ST. MONMOUTH, ILL.** SHETLAND PONY CATALOGUE.



**The New Early Fortune CUCUMBER**

In the judgment of ourselves and our customers this is the earliest and best White Spine Cucumber ever offered. It is extremely productive, perfect in shape, attractive deep green color. Specially adapted to market use. Every grower of cucumbers should try it this season. Amount of seed limited and controlled exclusively by ourselves. Write today for our new illustrated, tested Catalog. Free, of all kinds of seeds, plants, bulbs, vines, etc., for the farm and garden. Ask about our "New Century Tomato"—800 bushels per acre—\$6 to the bushel. Established 1874.

**J. BOLGIANO & SON,**  
Dept. P8 Baltimore, Md.

**Garden and Farm SEEDS**

IRISH POTATOES, ONION SETS  
ASPARAGUS ROOTS, STRAWBERRY and CABBAGE PLANTS.

Write for prices; mention quantity wanted.

Our illustrated catalogue for 1902. Write to-day.

**ALEXANDER SEED CO.,**  
ATLANTA, GA.

**GREEN RAPE** costs 25 cents per TON!

Greatest, Cheapest Food on Earth for Sheep, Swine, Cattle, etc.

Will be worth \$100 to you to read what Salzer's catalog says about rape.

**Billion Dollar Grass** will positively make you rich; 12 tons of hay and lots of pasture per acre, so also Bromus, Penna., Spizels (400 bu. corn, 250 bu. oats per acre), etc., etc.

For this Notice and 10c. we will mail catalog and 10 Extra-cord Novels, fully worth \$100 get a start.

For 16c. we will mail 153 kinds of Flower and Vegetable seeds and catalog.

**JOHN A. SALZER SEED CO., LA CROSSE, WIS.**

**HOW MANY MEN** in your neighborhood need wells for home supply or live stock purposes? Just take the time to count them, then, they are sure to pay you could make in drilling those wells.

**Star Drilling Machines** build the work better, more of it and last longer than any other machine of the kind made. Send for our free illustrated catalog, price list, etc. Here is a chance to get into business for yourself.

**STAR DRILLING MACHINE CO., Akron, O.**

**POSITION WANTED**

As working manager, by a single man, age, 38. First class, up-to-date, all round man in farming, marketing, dairying, butter making Jersey cattle, sheep, swine, poultry, incubators and brooders, gardening, flowers, fruits and vegetables.

**E. BAYER, Closter, N. J.**

**WE PAY \$22 A WEEK** and expenses to men with rigs to introduce Poultry Compound. International Manufacturing Co., Parsons, Kan.

**MAGAZINES.**

The leading article in the February Forum is a discussion of "The Settlement with China," by Mark B. Dunnell, who is not very optimistic as to the outcome of the action taken by the Western nations after the Boxer rising. Major J. H. Parker answers the question, "What shall we do with the Philippines?" by recommending their cession to some European or Asiatic power. An account is given by Prof. Kelley Miller of "The Expansion of the Negro Population," with abundant statistical information respecting the present condition and distribution of the colored race in the country. President E. P. Graves, of the University of Washington, emphasizes "The Need of Training for the College Presidency." John T. Buchanan, dealing with the problem "How to Assimilate the Foreign Element in our Population," regards the education of the children of alien immigrants as the only method likely to be effectual. "The Sinking Fund and the Public Debt" is the subject of an important financial article by H. S. Boutell, Member of Congress for Illinois, who traces the history of the payment of the national debt from the establishment of the Government to the present time. Dr. Gilbert Reid contributes a character sketch of the late Li Hung Chang. "The Reformation of Criminals" is discussed by J. Franklin Fort, Justice of the Supreme Court of New Jersey, in a paper which recommends the employment of systems of conditional pardon and parole, and the institution of reformatories for young offenders. Merrill A. Teague, assistant to Admiral Schley's counsel, writes on "Errors Touching the Schley Court of Inquiry," and maintains that the principal error was a "fatal misconception, or, rather, confusion of duty," respecting the function of the Court. Other articles are: "The Young Man with Nothing but Brains," by Truman A. De Weese; "Wanted—An Opposition," by Alan P. Gilmour; and "The Care of Dependent Children in Indiana," by W. B. Streeter.

The February issue of the Ladies' Home Journal opens with the first part of Miss Porter's new romance of the South, "Those Days in Old Virginia," illustrated by W. L. Taylor. This is followed by Joseph Blethen's story of "The Girls of Flat G," a tale of four girls who established "bachelors' hall," and the third installment of "The Russells in Chicago," a clever satire of the way they do things in the Western metropolis. A most interesting and timely contribution is "My Impressions of American Women," by His Excellency, Wu Ting-fang, Chinese Minister to the United States. Clifford Howard describes Madame Modjeeka's paradise of a home in Southern California, and Franklin B. Wiley writes of "The Summer House of Well-Known People," telling and showing where such famous folk as Paderewski and Marion Crawford and a dozen others spend the warm months. For the children are "The Journal's Puzzle School," a new game, and a description of how to make "smoke pictures." The editorial page is given up to the first of the "Mother's

**Soft Harness**

You can make your harness as soft as a glove and as tough as wire by using **EUREKA Harness Oil**. You lengthen its life—make it last twice as long as it ordinarily would.

**EUREKA Harness Oil**

makes a poor looking harness like new. Made of pure, heavy kerosene oil, especially prepared to withstand the weather.

Sold everywhere in cans—all sizes.

Made by **STANDARD OIL CO.**

**SAN JOSE SCALE** and other insects can be controlled by using **Good's Caustic Potash Whale Oil Soap, No. 3.**

It also prevents Curl Leaf. Endorsed by entomologists. This soap is a fertilizer as well as insecticide. 50 lb. kegs, \$2.50; 100 lb. kegs, \$4.50. Half barrels, 270 lbs., at 3 1/2c. per lb.; barrels, 425 lbs., at 3 1/2c. Large quantities, special rates. Send for circular.

**JAMES GOOD, PHILADELPHIA, PA.**

**FRAZER** Best in the world.

**Axle Grease** its wearing qualities are unsurpassed, actually outlasting 3 lbs. of any other brand. Not affected by heat. Get the Genuine.

FOR SALE BY ALL DEALERS.

**AGRICULTURAL and BUILDERS' LIME**

Send for Circulars and Price-List.

**FELLSWORTH LIME WORKS**

REEVES CATT, Agent,  
Bodley, Augusta County, Va.

**Dr. A. C. DANIELS' FEVER DROPS CURE**

Milk Fever in cows. Distemper in horses.

RENOVATING FEVERS prevent aborting in cows, 3 days, any other brand.

Dr. A. C. Daniels, 1 Stamford St., Boston.

Southern Agents:  
Lilly Carriage Co., Wood ward Mfg. Co., Memphis, Tenn. Parkersburg, W. Va.

**DEATH TO HEAVES** Guaranteed.

Newton's Heaves, Cough, Distemper and Indigestion Cure. A veterinary specific for wind, throat and stomach troubles. Strong recommendations. At all drug stores. Dealers, mail or Express. Newton's Heaves Remedy Co. (P. O. Toledo, Ohio).

A Neat **BINDER** for your back numbers can be had for 25 cents. Address the Business Office.

# DOLLARS OR DIMES

The **NEW WAY**—the modern method of making a crop—tilling the soil will make **Dollars**, where the **OLD WAY** makes **Dimes**.

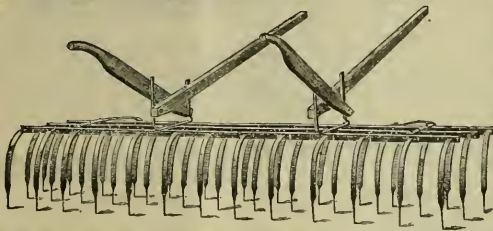
Of course if you are satisfied with **Dimes**, you will keep on the **Old Way**; but if you prefer **DOLLARS**, just write us and we will tell you how

## HALLOCK'S "SUCCESS" ANTI-CLOG WEEDER

WILL MAKE THEM  
FOR YOU. . . . .



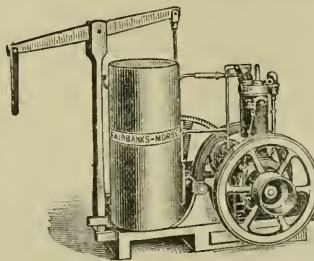
**HALLOCK WEEDER CO.**  
**YORK, PA.**



**WELL! WELL! WELL!** We thought from the number of these engines we have sent out that everybody knew about them, but our advertisement in the last **PLANTER** introduces us to 32 prospective purchasers. Once more then—

# "The Jack of All Trades" Engine

**We Guarantee**  
that a boy of average intelligence, 12 years old, can run it as well as any mechanic can. Costs between 1 and 2 cents an hour to run.



**It Pumps**  
water, shells corn, saws wood, churns butter, runs printing press, and a hundred other things. It has the strength of 15 men.

Will you continue to pump water, saw wood, etc. by hand? Will you and your stock suffer for water because it is hard work to provide it? Have you not yet run water by pipes into your house? Pshaw! Wake up! Any number of testimonials can be furnished from all over Virginia and the Carolinas. There never was one to fail in giving satisfaction. Think over, won't you?

**RICHMOND ENGINE AND PUMP CO., Richmond, Va.**

## ..HOLLYBROOK FARM.. EGGS FOR SETTING

From Thoroughbred Poultry.

In our poultry yards we have the following thoroughbred poultry, all first class stock, originally started from the best stocks in this country, and carefully cross-mated so as to give strong and vigorous stock and the best laying strains of the different breeds that it is possible to obtain:

- BARRED P. ROCK. \$1.00 per setting.
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- SILVER LACED WYANDOTTE. Price, \$1.50 per setting.
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## Choice B. P. Rock Cockerels FOR SALE

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Reference: Bank of Christiansburg.

## FOR SALE 100 Plymouth Rocks

Of Hawkins and other noted strains, at \$1.00 and \$1.25 each. Satisfaction guaranteed. MARVIN P. KLINE, Vaucluse, Va.

Meetings," a new department which will appear at intervals hereafter, and several clever poems and short stories are printed in "Under the Evening Lamp." In the departmental section, Edward Howard Grigg's talks on education continue; Mrs. Sangster has a special page for—"When Days of Illness Come," and all the regular departments maintain the high standard of the magazine. The Valentine cover is by Henry Hutt; and the pictorial features include a page of most attractive pictures of dogs, and a double page showing "The College Girl in Music and Drama." By The Curtis Publishing Company, Philadelphia. One dollar a year; ten cents a copy.

Every month Lippincott's Magazine contains a Complete Novel fresh from a pen which has "arrived," or one which is going to. John Strange Winter (Mrs. Arthur Standard), the author of February's novel, needs no introduction to fiction readers. This latest tale is called "The Standings," after the interesting family of a poor English artist. A wealthy relative comes to their rescue, and one daughter marries a man who loves the other. There is a sharp contrast between these two girls. The one becomes an actress; the other's life is a noble sacrifice. With such a plot, John Strange Winter is in her element, and "The Standings" is one of her best novels.

This Magazine this month sustains its record for striking short stories. One of these, by Charles H. Caffin, is entitled "For the Honor of His Wife." Another, by Percie W. Hart, entitled "The Abacadabra Affair." Owen Hall's tale, "A Dark Night's Ride."

Captain Leslie J. Perry, late of the War Records Office at Washington, writes about "Lincoln's Official Habit" (appropos of the birthday of Lincoln, February 12).

The second part of Sidney Lanier's posthumous essay, "Music of Shakspeare's Time." Part I was published in the January number.

A sympathetic poem by I. Zangwill called "Blind Children." Accompanying this are the poems "In Winter," by Francis Sterne Palmer; "At Ocahd," by Louise Driscoll; "Epitaph," by Clarence Urmay; and "At Winter's End," by Cale Young Rice.

The "Walnuts and Wine" department bristles with fun, or quivers with anecdotes touching and tender.

Apparently, the St. Nicholas has made a change pleasing to its readers in substituting a "long short story" complete in each number for the usual instalment of a serial. At all events, the change has been followed by a gratifying increase in the subscription list, and the new policy will certainly be continued for the present.

In the March number, the long story is a bright bit of fanciful, humorous nonsense by Bennet W. Munson, of Rochester, New York. "Through Fairyland in a Hansom Cab" is the title, and this title strikes the note of incongruity that characterizes the jolly story. Little Gretchen, the heroine, the Giant Gnome,

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Have for sale a limited number of Single Comb Brown and White Leghorn Pullets and Roosters. Best layers known. Prize-winning stock. Price, \$1.00 to \$1.50 each. Eggs in season at \$1.00 for 10; \$5.00 per 100. Satisfaction guaranteed. Address

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Young stock now ready. Cockerels, Laying Hens. Trios not akin. Price according to points. Eggs, \$1.00 per setting.

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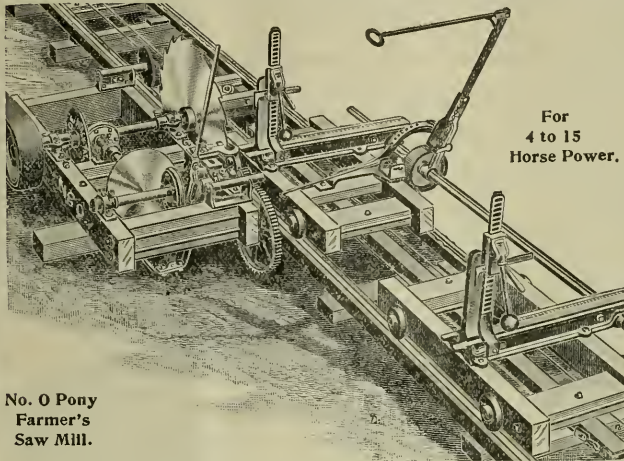
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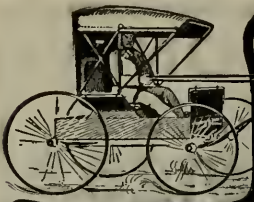
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the Poet and the Objector, are sure to become favorites with lovers of Sharks and Boonjums. It is enriched by Miss Cory's illustrations.

Next to this in length is the story called "An Anglo-American Alliance," which is based upon the adventures of two American boys in the Bermudas. Their friendship with a gunner in the British army leads them to visit Fort St. Catherine, and bring them into trouble with the authorities. The resulting interview with the Governor reminds one (by reversal) of the Boston boy's interview with General Gage when the British soldiers interfered with their alighting on the Common. It is a strong, snappy little story, with illustrations by George Varian.

"Old Strategy" is a story of the hunting of mountain lions—a sport made popular by President Roosevelt's yet recent hunting trip in the West. This story is in praise of some big dogs who had learned to fight mountain lions so skillfully that one of them was known by the name "Old Strategy," and gives title to the story.

Minor features of the number include bright poems by Margaret Johnson, Grace Frazer, and Edwin L. Sabin, and several short articles and stories.

Chief of the numerous high lights of the February Century, the Midwinter number, is a frontispiece wood cut by Cole in the Old Spanish Masters series, "The Daughter of El Greco."

A novel feature of the "Year of American Humor" is a monologue by Beatrice Herford, "The Book-Agent." Miss Herford's first contribution to magazine literature, and decorated by Oliver Herford. A new humorous contributor is introduced to the public in John Charles McNeill, with four negro songs illustrated by Kemble. Other humorous tales are "The Don't Hurry Club" by Albert Bigelow Paine, "A Government of the People," a story of Oklahoma, by J. W. Piercer. There is an account of "Artemus Ward at Springfield, Mass.," besides other sketches and poems—in all ten articles.

A unique paper in the number is a literary "find" in the shape of the diary of a comrade of Kociensko, which has recently been discovered in Poland, and which records conversations with General Washington and impressions of him before and

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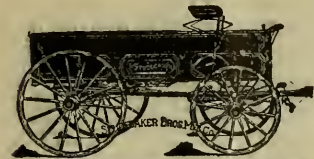
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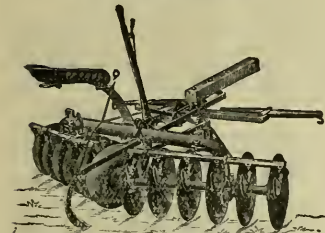
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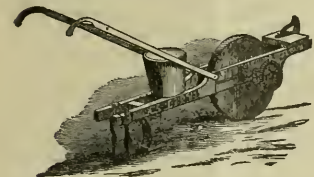
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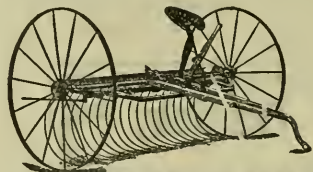


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The frame is made of thoroughly dry hard wood. The joints mortised, tenoned and bolted. The bearings are bolted on to the frame instead of screwed. The iron work is made from the very best material, and every piece is carefully inspected before being put on. This machine is high grade all the way through. It is hand-comey painted, striped and varnished.



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HAVE YOU EVER USED  
**GLEASON'S**  
HORSE AND CATTLE  
**POWDER?**  
TRY A PACKAGE.

during a visit by the narrator to Mt. Vernon in 1798.

The first of the promised material on "The Improvement of Washington City" here appears—authoritative articles by Daniel H. Burnham, the architect, of the Congressional Commission, and Charles Moore, Clerk of the Senate Committee on the District of Columbia, with illustrations.

The West comes in for attention in an article on "Chicago's Great River-Harbor," by Elliott Flower, illustrated by Reuterdahl; in "A Desert Romance," a tale of the Southwest, by Frederic Remington, illustrated by himself; in Mr. Piercy's story of Oklahoma, above mentioned, and in a group of five "Poems of the West."

The Cathedral of St. John the Divine in New York is the subject of an article by Roger Riordan, with illustrations by Vanderhoof, to which Bishop Potter adds an article on "The Uses of a Cathedral."

In fiction, besides the stories mentioned and the two serials, Mr. Brady's "Barbarossa" and Miss Sedgwick's novelette, "The Rescue," there are two pieces, the beginning of a series of "Little Stories," by Dr. S. Weir Mitchell, entitled "A Man and a Woman," and "An Antic of the Ocean," entitled "Captain England," by Gouverneur Morris, author of "Tom Beaulieu."

The Cosmopolitan is fortunate in its fiction for February. Stories of love, adventure and humor from the pens of famous authors make the "Midwinter Fiction Number" vitally interesting. "S. Cohn & Son," by Zang Will, deals with the Anglicization of a Jew and the inevitable tragedy of his love for an English girl whose race prejudice triumphs over her nobler feelings. In "The Valley of the Dead" Thomas A. Janvier pictures the struggle of a dashing young engineer between love and duty. "Mr. MacGlowrie's Widow is the title of a Western story in Bret Harte's happiest vein, and "The Fish" is one of E. W. Kemble's best humorous skits. "Niagara—The Scene of Perilous Feats"—is an article which tells the story of the many who have year after year gone to Niagara seeking notoriety or death. From the earliest days Niagara has been the Mecca of those who valued their lives lightly, and the story of Sam Patch, Blondin, Maria Spelterina, the jealous Ballen's attempt to cut the cable on which his rival was performing over the seething Whirlpool Rapids, Peter Nissen's ill-fated "Fool-Killer," and Captain Webb's last swim, is carried down to Mrs. Taylor, the only survivor of a trip over the great Falls.

The quality of "timeliness," for which the Review of Reviews has made a reputation, was never better exemplified in the pages of a magazine than in the February number of that wide-awake monthly. The subjects treated of in the Review are just the ones that the whole country is talking about—the Cuban and Philippine tariffs, the Panama vs. the Nicaragua route, the "Raines Law" in New York and the Sunday closing of saloons, the South American boundary disputes, the Venezuelan situation, the approaching

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**Chroazura Spectacles** Cure red, inflamed, watery, sore eyes. See January issue Southern Planter.

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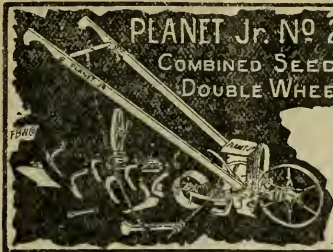
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**DOUBLE WHEEL HOE.**

**YOU WILL LOOK IN VAIN**

for an all-around handy garden tool that will even begin to compare with the "PLANET JR." No. 25 Hill and Drill Seeder and Double Wheel Hoe Cultivator and Plow; made especially for the man who has a good sized garden, and yet who does not want to buy a separate Wheel Hoe. As a drill it compares with our well known "PLANET JR." No. 4. As a wheel Hoe it will do all the work of our "PLANET JR." No. 12. Has 1 1/2 in. wheels; cultivates between rows, hills up, plows, marks out, etc.; can be easily and quickly changed from one to the other. In fact, it is a wonderful labor-saver. We are ready to absolutely guarantee this tool any time. Other "PLANET JR." tools are Seed Drills, Wheel Hoes, Horse Hoes, Cultivators, Harrows, Two-horse Cultivators, Sugar Beet Seeders and Cultivators, etc. All of these are fully described in our new catalogue for 1902. We issue hundreds of thousands of these books, each an art album of interesting views. They are going fast. Write for one now. They are free.

S. L. ALLEN & CO., Box 1107X PHILADELPHIA, PA.  
 Two Gold Medals at Paris Exposition; Highest Award.

**MULES FOR SALE.**



Four growthy young mules, 14 hands high, coming two years old in the spring. Price for the lot, \$375, f. o. b. Address Box 42, Oxford, N. C.



**JACKS FOR SALE**  
 An extra fine lot of JACKS, JENNETS and MULES. Some prize winners. All stock guaranteed and delivered f. o. b. at City of Indianapolis, Ind. Street cars run every hour to within a mile and a half of farm. Address

BAKER'S JACK FARM, LAWRENCE, IND

**FOR SALE!**



**JACKS, JENNETS and**  
**highly bred Jacks a specialty**  
 Enclose 2c. stamp for cat.  
**W. E. KNIGHT & CO.**  
 West End. Nashville, Tenn.

**A BARGAIN IN 63 ACRES**  
**...OF LAND**

In sight of Richmond, Va. Fine large house with modern improvements; fine large barn and other improvements; large orchard; society the best. Will be sold cheap with stock and crops. Would make a fine dairy farm. Address OAK SHADE, care Southern Planter.

**VIRGINIA FARMS**

\$3 PER ACRE AND UPWARDS.  
 EASY PAYMENTS. CATALOGUE FREE.  
**GEO. E. CRAWFORD & CO., Richmond, Va.**  
 Established 1875.

**GO SOUTH.**

For full particulars write A. JEFFERS, Norfolk, Va.

**Virginia Farms**

All prices and sizes. Free list on application.  
**WM. B. PIZZINI CO., Richmond, Va.**

visit of Prince Henry of Prussia, the Schley controversy. These matters are all editorially discussed, but the contributed articles deal with a wide range of topics not less interesting to the reader who cares to follow the day's news with intelligence. Among these are sketches of the new Secretary of the Treasury, Leslie M. Shaw, of Tomas Estrada Palma, President-elect of the new Cuban Republic, and of Dr. Nicholas Murray Butler, who has just been made president of Columbia University, succeeding Mayor Seth Low; an exposition of wireless telegraphy and Marconi's triumph in making it practicable; a description of Oklahoma and Indian Territory, which are now knocking at the doors for admission to Statehood; an exceptionally thorough study of the Turkish situation in its latest phase by one who was born in that land and knows its conditions; an exhaustive discussion of the methods proposed for the treatment of anarchism, with original suggestions; an account of the successful attempt of Kansas farmers to escape from the toils of the grain-buyers' trust; and the history of a Wisconsin experiment which illustrates one phase of the independent telephone movement now assuming so much importance in the Middle West. Other departments of the magazine—cartoons, "Record of Current Events," and "Leading Articles of the Month"—are equally well supplied with fresh and pertinent material bearing on matters of current interest in politics, literature, science, and industry.

Harper's Weekly ably maintains its reputation as a journal of civilization. Each week the current events of the world are discussed editorially, and the illustrations are always timely, interesting, and are up to date.

Harper's Bazaar is always chocked full of interesting articles, patterns, etc., for the women folks. We believe it is the pioneer ladies' magazine, and it is certainly one of the most interesting.

Everybody's Magazine is worth any man's dollar a year. Mr. Wanamaker certainly is keeping up with the procession of 10-cent magazines, if indeed, he is not ahead of some of them.

If Benjamin Franklin were to come to life-to-day, we fear he would not recognize the Saturday Evening Post, which he founded in 1828. Since the Curtis Publishing Company of Philadelphia

**SHORTHORNS**

FOR SALE

Stock of REAL MERIT, that will not disappoint in the production of the BEST BEEF TYPES with an ABUNDANCE OF MILK and BUTTER. Fine lot of BULL CALVES on hand. Come and see the herd in the pastures.

W. W. BENTLEY, Pulaski City, Virginia.

**SHORTHORNS!**

I have for sale some good SCOTCH-TOPPED SHORTHORN BULLS, COWS and HEIFERS, at fair prices for the times. Also one finely bred and thoroughly gaited horse, sound and well mannered, at reasonable price. Correspondence solicited.  
**GEO. CHRISMAN, Chrisman, Rockingham Co., Va.**

**VIRGINIA VALLEY HERD**

Of Registered Shorthorn Cattle. Choice young bull cows and heifers bred. Also Poland-China Hogs and Barred Plymouth Rock Chickens.  
 PRICES REASONABLE  
**HENRY BLOSSER, HARRISONBURG, VA.**

**ELLERSLIE FARM**

**Thoroughbred Horses**  
 AND SHORTHORN CATTLE,  
**Pure Southdown Sheep**  
 and Berkshire Pigs.  
 FOR SALE. **R. J. HANCOCK & SON,**  
 CHARLOTTESVILLE, VA.

**FOR SALE Standard-bred "COBB" STALLION**

Registered in Vol. IX, page 189, Wallace's A. T. R. Very handsome and stylish; deep chestnut color. Sired by Wilkesons, he by Red Wilkes, he by Geo. Wilkes. Dam, Daisy Goldust, by Dusted Goldust. Also two beautiful standard-bred FILLIES, broken to saddle and harness.  
 C. T. SMITH,  
 Croxton, Caroline Co., Va.

**HACKNEY STALLION FOR SALE**

3 years old. A first-class animal and prize-winner. Address  
**Dr. H. H. LEE, Lexington, Va.**

## AN Extraordinary Offer

Open till Feb. 28, 1902.

I will cut \$100 off of prices named on Stallion colts of the PERCHERON breed in the past 60 days. This will give me a small profit, and the buyer a large one. I also have grade

**HACKNEYS, TROTting-BRED and KENTUCKY SADDLE-BRED COLTS FOR SALE CHEAP.**

**Also BERKSHIRE HOGS and SHORTHORN CATTLE.**

Come to the farm and see what I am breeding and selling. All passenger trains stop at Lewis (station on the farm) N. & W. R. R., Va.

**JNO. F. LEWIS, P. O. Lynnwood, Va**

**BRASSMERE STOCK FARM, Glen Allen, Va.**

**TROTting, SADDLE and HIGH STEPPING HORSES**

Educated, bought and sold on commission, and kept by the month or year. High class **POULTRY** and **BELGIAN HARES** for sale at reasonable rates. Write for circulars; no trouble to answer questions. Satisfaction guaranteed.

**CHANDLER QUINTIN, Veterinarian,**  
40 yrs. experience on the best stock farms in America.

**FOR SALE OR TRADE**

**SUFFOLK PRINCE**

**BAY STALLION**, foaled 1883, 15 $\frac{1}{2}$  hands, standard and registered, sired by Manchester; dam, Ella Madden, 22 $\frac{1}{2}$  in. by Hambletonian 10th; sound, kind and sure for lady to drive; is the sire of Prince G., 22 $\frac{1}{2}$  in. and others that would be fast if trained. Will trade for Shorthorn Heifer Calves or Holsteins.

I have for sale some splendid **BERKSHIRES**. Boars from \$10 to \$50, according to age and breeding. All are splendid individuals and bred in the purple.

**R. S. CAMERON, Gloucester, Va.**

**"Feeds and Feeding"**

Prof. Henry's Great Book for

Farmers and Stockmen.

Delivered anywhere for \$2.00  
With the **SOUTHERN PLANTER**, 2.25

**SHORT STORY** Registered and Imp. **COLLIES**, "Workers." It is our business, Pups, \$7.50 up. **MAPLE MONT STOCK FARM**, Albany, Vermont.

have taken hold of the magazine, they have made it one of the most interesting publications in this country. It is hard to understand how they can furnish so much interesting and valuable reading matter from such high-priced writers for the small sum of one dollar a year.

The American Boy, published in Detroit, Mich., at \$1 a year, is a very bright and interesting publication for young America. The current issue is very interesting.

The Youth's Companion easily leads as being the most popular of all the publications published to the interest of the young people, as well as the old ones. At least once a month (it seems to us) they issue an extra large number, full of valuable and interesting matter for old and young, male and female.

### CATALOGUES.

Arthur Cowee, Meadowville Farm, Berlin, N. Y. Gladiolus Specialist.

J. W. Jones & Son, Allen, Md. Spring Catalogue of Strawberry and Lucretia Dewberry Plants; also Early Black Cowpeas. Look up the advertisement of this firm in another column.

J. M. Thorburn & Co., Seedsmen, New York City. One-Hundred-and-First Successive Annual Catalogue. It is beautifully gotten up, and is well worth reading and preserving for future reference. Refer to their advertisement elsewhere in this issue, and send for the Catalogue.

Peter Henderson & Co., Seedsmen, New York City. Annual Catalogue—"Everything for the Garden"—price, 20 cents. As usual, this Catalogue is a work of art, and its contents as useful as the cover is ornamental.

D. Landreth & Sons, Seedsmen, Philadelphia, Pa. Seed Catalogue for 1902. This is the oldest seed-house in America, and fully maintains its record made over a hundred years ago.

T. W. Wood & Sons, Seedsmen, Richmond, Va. Descriptive Catalogue of Wood's High-grade Seeds and Guide for Farm and Garden. This is the largest seed-house in the South, and their rapidly-expanding business is evidence of the quality of goods sold to their customers. Their advertisement is on another page.

The Biltmore Farms, Biltmore, N. C. Catalogue of Annual Brood Sow Sale on February 4th. This sale was advertised in our January issue, and their regular advertisement will be found in another column.

McSherry Manufacturing Co., Middle-town, O. Beautiful and interesting Catalogue of Grain Drills, Broadcast Seeders, Disc Harrows and Transplanters. The implements made by this firm have been used by the farmers for four generations. Kindly look up their advertisement and see what is offered this month, and by all means get the Catalogue.

"Georgia—Historical and Industrial." This is the title of a volume of some 900 pages, sent us by Hon. O. B. Stevens, Commissioner of Agriculture of the State of Georgia. This work was compiled by

**FOR SALE LOW.**



- 1 pair 4-yr. old black horse mules, 15 $\frac{1}{2}$  hands
- 1 three year old black mare mule, 15 $\frac{1}{2}$  hands. All extra fine, blocky and well made.
- 1 pair of 3-year old Brown Hackney-Trotter cross brood mares, weight 1200 lbs., of fine style and action. Both mares with foal by Hackney ztalion.
- 1 pair of 3-year old Hackney-Trotter cross bay mares. Extra fine.
- 1 three-year old black Hackney-Trotter cross mare. Extra fine.
- 1 three year old brown Hackney-Trotter cross Gelding. Extra fine.
- 1 three-year old, pretty tan color, extra fine Saddle and Harness Horse; weight, 1200 lbs. This is a superb family horse.
- 1 four-yr. old registered Aberdeen-Angus oow. Bred to registered bull.
- 1 four-mos. old registered Angus bull calf. Address **W. M. WATKINS & SONS,** Cottage Valley Stock Farm. Randolph, Va

BARCAINS IN

**Reg. Shropshire Ewes.**

From two to five years old, bred to my best ram. These ewes are of the best breeding.

**Aberdeen-Angus Calves.**

Head headed by a winner of five first prizes at State fairs.

**ENGLISH SETTERS** by the prize-winning Count Roda. Fine individuals of the best breeding. Satisfaction guaranteed.

**WARREN RICE,** - Winchester, Virginia.

**Two Aberdeen-Angus Bull Calves**

**FOR SALE,** 9 and 10 months old. Prices reasonable. **WM. B. MacGREGOR,** Aton, Va.

**OAKLAND FARM... DUROC-JERSEY SWINE**

6 selected males, vigorous and healthy, 5 months old at the small price of \$10.

**W. W. STOCKWELL,** So. Boston, Va.

**BERKSHIRES FOR SALE**

1 Brood Sow, reg., \$16.00; to farrow in May.  
1 Young Sow, entitled to reg., to farrow in May \$14.00. 1 Reg. Boar, 18 mos. old, \$13.00. 3 Sow Pigs, entitled to reg, price, \$8.50 each.  
40 bus. Winter Grey Oats, for seed, bags free, 65c per bus. **W. E. HAMMOND,** Goochland C. H., Va

OAK RIDGE FARM

FOR SALE—Pure bred

**RED POLLED CATTLE  
POLAND-CHINA HOGS**

Good individuals and of the best breeding.

**OAK RIDGE, NELSON CO., VA.**



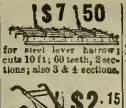
\$18.50

for this team harness, cut from select oak-tanned leather, traces 6 ft. long, 1 1/2 in. wide, with cockers, 18-c. harness; Hook & Terriit pads, pole and breast straps 1 1/2 in. Big Harness. All kind of single and double harness.



17-20

For 12-16 BALL BEARING. All steel disc harrow, cast-iron running & best made. Also, discs 16 or 20 in. diameter. Pay double if you get no better.



\$7 150

for steel mill. Heavy cut 10 1/2; 60 teeth, 2 sections; also 5 & 4 sections.



\$15.05

BUY This 8-ft. steel mill, guaranteed exact running a strong made; pumps and power mill, 5 to 15 ft. also tank pumps, pipe & all pumping supplies. We furnish complete outfits. Prices all reduced. Catalog free. Don't fail to send for it.



\$28.75

for Galumet check row corn planter with automatic reel and 10 rods of wire. Never miss, we challenge the world with this planter. Will ship it on trial in competition with all others. We have 50 styles of Planters and Drills for field and garden.



82 Cts.

Crank Seeder sows wheat, oats, grass seeds, etc. 4 to 10 acres an hour. Works perfectly. Usually retailed for \$2. All kinds seeders. Prices low.



58c for corn planter

for this One-horse corn, bean, pea and Garden Seeder. Drops in hills and drills. 12 ac. a day. Fertilizer carrier. Handles all kinds of seed perfectly. Also Plow, Cultivator, Scales, Hay Tools, Carpenter & Blacksmith Tools, Wash or Washery, Wringers, etc. MARVIN SMITH CO., 55-57 1/2 Jefferson St., Chicago, Ills.

# DORSET SHEEP

My entire flock of Dorsets, registered and eligible,

## FOR SALE.

44 head, exclusive of present crop of lambs. Fine stock; low price.

**WALTER WATSON,**  
SALEM, VA.

# V. P. I.

## Farm Bulletin

Orders booked for

### DORSET RAM LAMBS,

to be delivered in July and August. No more Berkshire hogs, of any age, to offer until Spring.

D. O. NOURSE, Prof. of Agr.,  
Blacksburg, Va.

Breeder of

# HEREFORDS

SINCE 1856.

**FOR SALE** Three 2-yr.-old Reg. Hereford Bulls, two 16 mos. old Reg. Hereford Bulls, two 10 mos. old Reg. Hereford Bulls, two 2 yrs. old Reg. Hereford Heifers, three 16 mos. old Reg. Hereford Heifers, one 10 mos. old Reg. Hereford Heifers at reasonable prices. **HAYFIELDS STOCK FARM,** COCKEYSVILLE, MD.

**HAWKSLEY STOCK FARM**  
BREEDER AND SELLER OF

## REGIST'D BERKSHIRE HOGS

## MAMMOTH BRONZE TURKEYS

## PLYMOUTH ROCK CHICKENS

EGGS IN SEASON.

J. T. OLIVER, - - - Allen's Level, Va.

Mr. Stevens, with the help of Mr. R. F. Wright, Assistant Commissioner, and as its title indicates, gives a complete history of Georgia, together with its present and future possibilities as a farming and manufacturing State. We are much obliged to the Commissioner for the volume, which we will keep on file.

Geo. Ertel Co., Quincy, Ill. General Catalogue of Improved Victory Incubators and Brooders. This firm and its catalogues are too well known to our readers to require any extended notice from us here. Their advertisement and a brief description of the "Improved Victory" will be found elsewhere in this number.

Mr. F. D. Coburn, Secretary of Board Agriculture, Topeka, Kan., sends us the report of the Board for the quarter ending December 31, 1901, which is a treatise on Hereford cattle in Part I, while Part II gives population, crop and live stock statistics.

### FEBRUARY PRICE-LIST.

"CASTALIA" HEREFORDS.

We are in receipt of a copy of the February Price-List of the "Castalia" Herefords, owned by Mr. Murray Boocock, Keswick, Va. This is a neat 8-page pamphlet, which, in addition to prices on Bulls, Cows and Heifers, contains a brief description of same. Mr. Boocock would like to place a copy in the hands of every one interested in this splendid beef breed.

LIMING LAND.

Referring to this article, which appears in the January issue on page 7, we might call attention to the advertisement of Messrs. A. S. Lee & Son of this city, elsewhere in this issue. This old-established firm is a large handler of all kinds of lime, including Oyster-Shell Lime, and the well known Lee's Prepared Agricultural Lime.

Messrs. Lee & Son have their own kilns and burn lime in large quantities and are prepared to offer it at low rates. Write them your wants.

Mr. Alexander Speirs, Box 933, Westbrook, Maine, who advertises a cure for rupture, is one of the aldermen of his city, and one of its ten largest taxpayers. He receives much praise from his patrons.

"We are the oldest Seed House South, and know by experience what seeds ought to be and what suits South best." Write the Mark W. Johnson Seed Co., Atlanta, Ga. Look up their advertisement elsewhere in this issue.

## BS PURE BRED

# Poland-China

PIGS, entitled to registry, from the great prize winners of the United States will be sold at farmers' prices.

## Red Polled Cattle..

FOR SALE; also RIDING AND DRIVING HORSES AND SHEETLAND PONIES.

### ARROWHEAD STOCK FARM

SAM'L B. WOODS, PROPRIETOR,  
CHARLOTTESVILLE, VA.

\* FILSTON FARM. \*

### JERSEY BULL CALVES

selected from the best cows of our herd of 350. Milk a specialty, but average of herd is 5.5 per cent. butter fat.

### BERKSHIRES

all ages. Of imported and best United States breeding. For prices and "Little Book of the Farm," address

ASA B. GARDINER, JR.,  
MANAGER, GLENCOE, MD.

## JERSEYS RICHLY BRED.

HEIFERS : : :  
BULL CALVES.

Send for pedigrees and descriptive circular.

DAVID ROBERTS, Moorestown, N. J.

..OAK HILL FARM..

## Holstein and Jersey Cattle, Biltmore Berkshires.

Wishing to reduce my stock, will sell cheap. Every thing from Oak Hill Farm is guaranteed first-class, and as represented. Address -

Oak Hill Station SAM'L HAINSTON,  
on the Farm. WENONDA, VA.

## For \$50

I will sell a fine registered Jersey BULL . . . . .

Stoke-Poggs stock. Also one eligible to registry for \$35; ages, eight and three years old respectively.

JOHN CAMM, Lynchburg, Va.

## Ayrshires AND Berkshires

Ayrshire cows and calves of both sexes for sale. Also extra fine Berkshire swine. Description and price of stock given on application.

ENOS. H. HESS, Casanova, Va.

**WHOLESALE PRICE ON AGRICULTURAL CHEMICALS AND FERTILIZERS.**

**AMMONIA.**

Nitrate of soda, spot, per 100 lbs.	\$ 2 00
Nitrate of soda, futures, per 100 lbs.	2 00
Cotton-seed meal, per ton, c. i. f. N. Y.	26 00
Sulph. ammonia, spot.	2 85
Sulph. ammonia, shipment.	2 87½
Dried blood, New York, low grade.	2 25
Dried blood, Western, high grade, fine ground.	2 30
Tankage, per unit.	2 25

**PHOSPHATES.**

Acid phosphate, per unit.	60
Bone black, spot, per ton.	16 00
Ground bone, per ton.	17 00
S. C. phosphate rock, ground, per 2,000 lbs.	5 50
S. C. phosphate rock, undried, f. o. b. Ashley River, 2,400 lbs.	3 25
do. do. do. dried.	3 50
Florida high grade phos. rock, f. o. b. Fernandina, per ton.	7 00
Florida land pebble phos. rock, f. o. b. Fernandina, per ton.	4 00
Tennessee phosphate, f. o. b. Mt. Pleasant, domestic.	3 50
do. do. do. foreign.	4 00

**POTASH.**

Kainit, future shipment, per ton.	9 05
Kainit, ex ship, in bulk, per ton.	9 30
Keiserit, future shipment, per ton.	7 50
Mur. potash, 80 p. c., future shipment.	1 83
Mur. potash, 80 p. c., ex. store.	1 90
Double manure salt (48 a 49 per cent. less than 22 per cent. chlorine), to arrive, per lb.	1 12
do. do. do. spot.	1 16

Basis 45 per cent.

High grade manure salt (90 a 93 per cent. sulphate potash), to arrive.	2 14
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Basis 90 per cent.

Manure salt, in bulk, 20 per cent. per unit, O. P.	66
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—N. Y. Jour. of Commerce, Jan. 25, 1902.  
[The above prices are the highest for the day; the lowest being slightly under.—Southern Planter.]

**YAGER'S LINIMENT.**

This splendid Liniment for man and beast is advertised elsewhere in this issue by Gilbert Bros. & Co., Baltimore. Every farmer ought to keep a bottle of this on the shelf, and if his dealer cannot supply him with it, write to the manufacturers for it.

**STUMP PULLERS.**

Messrs. H. L. Bennett & Co., Westerville, Ohio, are advertising their well known Stump-Pullers elsewhere in this issue. If any of our readers have land to clear of stumps and grubs, they should write to the above firm for particulars in regard to their Pullers.

**LEGHORN POULTRY YARDS.**

Mr. A. T. Matthews, Parkley, Va., is advertising his Brown and White Leghorns in another column. Any of our readers wishing eggs or chickens at low prices are invited to correspond with him at once.

300,000

Machines in Use.

Ten Times All Other Makes Combined.

The Standard of All That is Best in Dairying  
in Every Country in the World.

That's the history of the

DE LAVAL

CREAM SEPARATORS

Send for new "20th Century" catalogue.

THE DE LAVAL SEPARATOR CO.

RANDOLPH & CHASE STS., CHICAGO. 1102 ARCH STREET, PHILADELPHIA. 103 & 105 MERRIM ST., SAN FRANCISCO.	General Offices: 74 CORTLANDT STREET, NEW YORK.	327 COMMISSIONERS ST., MONTREAL. 75 & 77 YORK STREET, TORONTO. 248 McDONNELL AVENUE, WINNIPEG.
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C. C. Taliaferro,

NASONS,  
VA.  
1901.

REG. AND GRAD. HEREFORD CATTLE  
BRONZE TURKEYS  
MUSCOVY DUCKS

STOCK FARM.  
REPRODUCED SHROPSHIRE SHEEP  
REPRODUCED POLAND-CHINA PIGS.




NOW OFFERS FOR SALE

**HEREFORD CATTLE.**—Calves, entitled to registration, \$75 to \$100. Grade Calves by "Sir Edward" \$25 to \$40.

**SHROPSHIRE SHEEP.**—Bucks, one year old and over, \$15 to \$20. Ewes, one year to three years old, \$10 to \$12. Buck Lambs, July delivery, \$10. Ewe Lambs, July delivery, \$8.

**POLAND-CHINA HOGS.**—Pigs, six weeks old, \$4.50. Pigs, three months old, \$7.50. Pigs, five months and over, \$9 to \$15.

**BROWN BRONZE TURKEYS.**—Toms, \$3. Hens, \$2.50. Eggs, per sitting of 12, when in season, \$3.

**MUSCOVY DUCKS.**—Pure White Drakes, \$1.25. Pure White Ducks, 75 cents. Pairs, \$3; trios, \$2.75.

**ROUEN GEESE.**—Ganders, \$2.50. Geese, \$2. Eggs, per sitting, \$2.50.

WILLIAM L. JR., No. 21058, half brother of Axtell, will serve a limited number of mares for \$25 the season. Mares boarded at lowest figures per month.



Experience is the great teacher. Experience with the McCORMICK merely emphasizes the fact that it is O. K. The new McCORMICK BINDER for 1902 embodies the latest and best features in binder construction. Buy the McCORMICK. It harvests your crop at least expense.

**DO YOU LIVE ON A FARM?** Are you a farmer, a farmer's wife, a farmer's son or a farmer's daughter? Write and you will receive a beautiful show card, a beautiful illustrated book and "The Farmers' Advance" free by return mail. Address

**W. K. BAGHE, General Agent, McCormick Harvesting Machine Co., RICHMOND, VA.**

#### BIG BUSINESS IN HARROWS.

The Roderick Lean Manufacturing Company, Mansfield, Ohio, have again found it necessary to build a large addition to their works, due to the wonderful increase in business within the last year. For over a quarter of a century, they have been concentrating their efforts upon the manufacture of steel harrows, and to day their reputation is world-wide.

Their harrows, both spring and spike-toothed, are the most efficient and lightest draft tools on the market. They are made from specially forged steel, and so constructed that lightness of weight and draft are combined with greatness of strength and durability. This company also manufactures Steel Land Rollers, which are equally as famous as the harrows.

An illustrated catalogue will be sent on request to all interested persons.

January 16th, 1902.

The January *Planter* is undoubtedly the best paper for the money I've ever seen; the cheapest extant; valuable; its writers No. 1; never stop my paper while I live.

A. B. NOBLES, M. D.,  
Edgecombe county, N. C.

## ST. LAMBERT BULLS

We have for sale a number of YOUNG BULLS from cows with butter tests ranging from 16 to 24 lbs. per week, and yielding from 5 to 6 gallons of milk per day.

We have more high testing ST. LAMBERT COWS than can be found in any herd in the United States or Canada.

## INDIAN GAME FOWLS

We have also for sale a choice lot of INDIAN GAME CHICKENS—male and female. Also some choice WHITE WYANDOTTE COCKERELS. The Indian Game and White Wyandottes are the best general purpose fowls

**BOWMONT FARMS, SALEM, VA.**

## "THE OAKS" HERD 3 Reg. SHORTHORN Bull Calves

2 HIGH GRADE (pure bred) but not eligible to registry. Stock guaranteed as represented or money refunded.

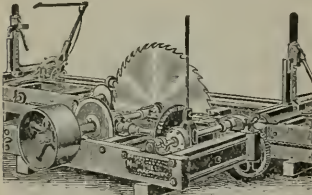
**B. B. BUCHANAN, Bedford City, Va.**

(Formerly at "Rock Hill," Brownsburg, Va.)

## PORTABLE SAW MILLS.

The "DeLoach" is known and recognized throughout the United States and the entire world as the standard for Portable Saw Mills and is the only one possessing all the advantages of accuracy and convenience to be found in large and high priced mills, and there being no complicated parts, a machinist is not required to operate it, which makes it superior to all others for plantation or portable purposes.

For several years past the DeLoach Company have enjoyed the reputation of making more Portable Saw Mills than any other concern in the world, and the DeLoach Patent Variable Friction Feed Saw Mill has the reputation of being the only mill made that is extensively shipped to all parts of the world. Recently a large car load of these mills was shipped to Manchuria to be used on the Russian settlement in China. This order came direct from the Czar of Russia. During the month of December last, sixteen mills were shipped to Mexico alone, while dozens were shipped to Cuba, Porto Rico, Costa Rica, Venezuela, Guatemala, Honduras, Spain, Germany, England, South Africa, and elsewhere.



The DeLoach Patent Variable Friction Feed Saw Mill. Made to suit any power from 4 to 100 h. p.

Their new Farmers' Saw Mill, advertised in another part of this journal, is meeting with great favor all over the country, and as a result of the special offer they are now making, orders are coming in at a rapid rate. Judging from the appearance of this machine and the strong testimonials from parties using them, this is a splendid little mill, and in every way what the manufacturers recommend it to be.

Our readers are invited to write the DeLoach Mill Manufacturing Company, Atlanta, Ga., for their large catalogue, which, by the way, is one of the handsomest and most complete catalogues issued by any machinery house. It tells all about the famous DeLoach Patent Variable Friction Feed Saw Mills and Saw Mill Machinery, Planers, Shingle Mills, Lath Mills, Stave Mills, Corn and Flour Mills, Water Wheels, Drag Saws, Cord Wood Saws, and also contains a vast amount of valuable information and instructions on the care and operation of Saw Mills, Saws, etc., to make them p. y.

When desired and requested, they make prices "freight prepaid" to destination, which eliminates all question of freight charges, and the purchaser knows just what his mill or machine cost him laid down at his nearest depot.

# SCOUR CURE

(Dr. A. S. Alexander's Formula)

Used and recommended by Iowa Agricultural Station; "Uncle John" Lewis, Shadeland, Ind.; Thos. Clark, Beecher, Ind.; Riverside Hereford Cattle Ranch, Ashland, Nebr.; Andrew Thom, Bunker Hill, Ind.; Giltner Bros., Eminence, Ky.; B. C. Rhome, Rhome, Tex.; The Egger Hereford Cattle Co., Appleton City, Mo.; T. J. Wornall & Son, Liberty, Mo., etc.

Price: \$1.00 per bottle, sufficient for 3 or 4 cases.

## "BLACKLEGINE"

Pasteur Blackleg Vaccine, ready for use.

## Pasteur Vaccine Co.,

Chicago - New York City - Omaha - Kansas City,  
Denver - Fort Worth - San Francisco.

## Hill Top Stock Farm OFFERS FOR SALE

..... A LIMITED NUMBER OF

### SOUTHDOWN and SHROPSHIRE SHEEP.

10 large, strong, yearling bucks 6 Shropshires and 4 Southdowns.

### A GRAND LOT OF BERKSHIRE HOGS.

Young sows bred to elegant boars, and young boars ready for service.

Come and see our stock, or write for description and prices to

**H. A. S. HAMILTON & CO., Staunton, Va.**

Parties will be met at train with conveyance, if we are notified in time. We are always glad to show our stock.

## M. B. ROWE & COMPANY, FREDERICKSBURG, VIRGINIA.

YOUNG JERSEYS, male and female; several young GUERNSEY BULLS,  
and a small herd of DEVONS ready this month.

Also a fine lot of BERKSHIRE PIGS. Can send pairs and trios not akin.

A few BRONZE TURKEYS, LIGHT BRAHMA and PLYMOUTH  
ROCK FOWLS.

Several handsome SHEPHERD PUPPIES now ready.

## 50 TAMWORTH AND POLAND-CHINA PIGS

~ FOR SALE. ~

Eligible to registration. A few ready for service. J. C. GRAVES, Barboursville, Va.

# LARGEST COW IN THE WORLD



**WEIGHT 4970 LBS., AGE 8 YEARS. SHORTHORN.** She eats "INTERNATIONAL STOCK FOOD" every day and is crossed by International Food Co., Minneapolis, Minn. "INTERNATIONAL STOCK FOOD" cures Cattle, Horses, Hogs and Sheep to grow very rapidly and makes them Big, Fat and Healthy. Is used and strongly endorsed by over 500,000 Farmers. It is sold on a Spot Cash Guarantee to Refund Your Money in any case of failure by over 50,000 Dealers. It will make you extra money in Growing, Fatening or Milking. Owing to its blood purifying and stimulating tonic effects it Cures or Prevents Diarrhea. It is a safe vegetable medicinal preparation to be fed in small sized feeds in connection with the regular grain. It Fatens Stock in 60 to 90 Days less time, because it aids Digestion and Assimilation. In this way it saves a large amount of Grain. The use of "INTERNATIONAL STOCK FOOD" only costs 4¢ a FEEDS for ONE CENT. Ask your dealer for it and refuse any of the many substitutes or imitations. It always pays to feed the best. "INTERNATIONAL STOCK FOOD" is endorsed by over 100 leading Farm Papers.

## A \$3000.00 STOCK BOOK FREE

MAILED TO EVERY READER OF THIS PAPER.

This Book Contains 183 Large Colored Engravings of Horses, Cattle, Sheep, Hogs, Poultry, etc., and of this Cow. It costs \$400.00 to have our Artists and Engravers make them. It contains a fully illustrated Veterinary Department that will save you Hundreds of Dollars. Gives description and history of the Breeds of Horses, Cattle, Sheep, Hogs and Poultry.

**THIS BOOK FREE, Postage Prepaid, if You Write Us a Postal Card and Answer 3 Questions:**  
 1st—Name this Paper. 2nd—How much stock have you? 3rd—Did you ever use "INTERNATIONAL STOCK FOOD" for Horses, Cattle, Sheep, Hogs, Colts, Calves, Lambs or Pigs. The Editor of this Paper will tell you that you ought to have a copy of our finely illustrated Book for reference. The information is practical and the book is absolutely Free. We won the Highest Medal at Paris in 1900.

We will give you \$14.00 worth of "INTERNATIONAL STOCK FOOD" if Book is not exactly as represented.

Answer the 3 Questions and Write Us At Once for Book.  
 Largest Stock Food Factory in the World.  
 Capital Paid In \$1,000,000.00

**INTERNATIONAL STOCK FOOD CO.**  
 MINNEAPOLIS, MINN., U. S. A.

**3 FEEDS FOR ONE CENT**

**DEALERS SELL THEM** **INTERNATIONAL STOCK FOOD** **INTERNATIONAL WORM POWDER** **INTERNATIONAL GALT DURE**  
**ON A "SPOT CASH"** **INTERNATIONAL POULTRY FOOD** **INTERNATIONAL COLIC CURE** **INTERNATIONAL HEAVY QUIN**  
**GUARANTEE** **INTERNATIONAL LIME RICE** **INTERNATIONAL HORSE GUANO** **SILVER PINE HEALING OIL, ETC.**

The house is an old established one, with a record for thorough reliability, and they pride themselves upon the fact that when once they secure a customer they keep him by treating him right. When writing them, please mention the *Southern Planter*.

### HURRAH FOR CHARLOTTE.

We were very much gratified to learn that the farm of W. M. Watkins & Sons, breeders of Angus cattle, Hackney trotters, Cross Coach horses, Dorset sheep and Belgian hares, had a pleasant and profitable trip to the Raleigh State Fair, where they got premiums on cattle as follows:  
 Best 3-year-old bull.  
 Best 2-year-old bull.  
 Exhibitor's herd, containing four cows and a bull.  
 Best 3-year-old cow.  
 Best 2-year-old heifer.  
 Breeder's young herd, containing four heifers and one bull calf. These were for thorough-bred registered cattle.  
 Following premiums on grades:  
 Best bull under 2 years old. Exhibitor's herd of five head.  
 Best cow 3 years old.  
 Best heifer 2 years old.  
 On horses as follows:  
 Best brood-mare with colt at foot.  
 Best filly over 2 and under 4 years old.  
 Miss Jennie M. Watkins, daughter of W. M. Watkins, rode her saddle horse and received the premium, with eight in the ring contending for it.—*Ch. Gazette*.

How should the soil be prepared so that the crop may be able to resist the dangers and evade the risks and losses to which it is exposed on illy-prepared soil?  
 The universal testimony of the best farmers is in favor of thorough working of the soil, and its exceedingly profitable results. Wherever the culture of the soil is perfect, crops are large, and this thorough culture is the key to successful growth. It costs money to do this work when the common harrow is used; but there is an implement now in extensive and successful use, which does this work in the most thorough and effective manner, and thus brings within the means of

I AM NOW BOOKING  
 MANY ORDERS FOR  
 FANCY

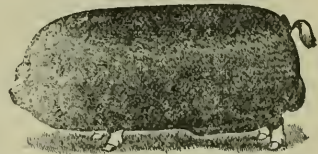
# BERKSHIRE PIGS



for spring shipment. All sired by my famous boars, SIR JOHN BULL and UNCLE SAM. The former imported by me; the latter bred in the purple. I have four strains of registered sows, so I can furnish pigs no akin. Also GILTS and BRED SOWS. FIVE high-bred three-year old (in the spring) COLTS cheap. Fancy stock, but not fancy prices. Three car-loads good TIMOTHY HAY cheap.

THOS. S. WHITE, Lexington, Va.

# POLAND-CHINAS.



TECUMSEH G, 49283.

I have a large number of pigs by my fine boars, "TECUMSEH G," 49283, and "MONARCH," 48705, and can furnish pairs not akin or related to those previously purchased. Sows in pig and young boars and sows of all ages. Send to headquarters and get the best from the oldest and largest herd of Poland Chinas in this State at one-half Western prices. Address **J. B. GRAY, Fredericksburg, Va.**

# CISMONT DORSETS..

CISMONT STOCK FARM offers well developed young Dorsets of the best blood of England and America.

Prices reasonable. G. S. LINDBENKOH, Keswick, Albemarle Co., Va.

every farmer the ability to fit his land in such a manner as to secure a good yield in spite of weather and season. This implement is the Acme Pulverizing Harrow, Clod Crusher and Leveler, which will be sent on trial to any responsible farmer, to be returned at the expense of the manufacturer if not entirely satisfactory. (See advertisement on another page.)

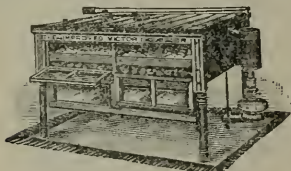
**INCREASE IN POULTRY.**

**THE INCUBATOR THAT HATCHES THE GREATEST NUMBER OF CHICKS AND ENDOWS THEM WITH HEALTH.**

Among the hundreds of incubators advertised broadcast throughout the land, those manufactured by the George Ertel Company, Quincy, Ill., stand preeminent for volume of product and quality of product.

Any chicken-raiser—farmer or poultry fancier—who is not familiar with the advanced theories and successful practice demonstrated in the Ertel incubators, must eventually confess himself behind the times.

The George Ertel Company have issued a finely illustrated 178-page booklet descriptive of the various styles and sizes of incubators and brooders that have made the name Ertel famous in the poultry world. This book any one may have who will write his wants to the George Ertel Company.



ERTEL'S "VICTOR" INCUBATOR.

To those who do not own an Ertel incubator, or who have not seen the book, it will be interesting to know that this book tells how a hatch in almost any machine may be increased, and how any brood may be kept in good health, and hundreds of other things every chicken owner should know.

There is also an interesting chapter on raising ducks, and others on building poultry houses and poultry yards.

The acquaintance with the pleasant business methods of Messrs. George Ertel Company, which will result from application for this book, will not be the least interesting experience.

Write to-day to George Ertel Company, Quincy, Ill.

**SALE OF GREEN RIDGE DORSETS.**

Mr. Walter Watson, proprietor of the Green Ridge Farm, Salem, Va., is advertising elsewhere in this issue his entire flock of Dorset sheep. Mr. Watson will be away from home a great deal in the near future, and will be unable to devote as much attention as he would like to his flock, hence the sale of same.

**Mark W. Johnson Seed Co., ATLANTA, GA.**

Fine selected SEEDS of Acme, Rockyford, Jenny Lind, and Nutmeg Cantelope, also Rattlesnake, Jones, Klecktiege, Dixie, Early Market, Sugar and McIver's Watermelon, mailed at 10c. an oz; 20c., ¼ lb.; 55c., lb. Pearl Millet, 25c. lb. 12 pkts. assorted Garden Seeds, 45c. Chinese Giant Pepper, 10c. pkt. Enormous Tomato, 10c. pkt. New snow white deep grain large early thoroughbred Corn, 40c. lb. CATALOGUE FREE.



**Rocky Ford Musk Melon.**

By far the most popular of the small or basket melons. Fruit oval, slightly ribbed, densely covered with coarse netting. Flesh thick, green, very sweet and richly flavored. We have a fine stock of this and other Melon Seed, also all kinds of Farm, Garden and Flower Seeds, Tools, Garden Implements, etc. Write for our illustrated Catalogue No. 10, describing all of these things. It is FREE. Write to-day. GRIFFITH & TURNER CO., 205 N. Para St., Baltimore, Md.

URY STOCK FARM offers a choice lot of

**HOLSTEIN-FRIESIAN HEIFERS AND BULLS**

Of the richest breeding. Sired by Ury Alwina Count Paul De Kol, Count De Kol Metchilde and Woodland Thomas. Address at once

**THOS. FASSITT & SONS, Sylmar, Md.**

**GASTON STOCK FARM.**

**Holstein-Friesian and Jersey Cattle.**

Having selected my foundation stock from the best I can offer animals of each breed of highest breeding and individual merit, at moderate prices, containing the blood of the best families, and bred with great care.

I am prepared to sell **HOLSTEIN BULLS**, and **BULL CALVES** and **JERSEYS** of either sex.

**JNO. U. DETRICK, Somerset, Va.**

**REGISTERED BERKSHIRE HOGS.**



Boars in Use: **COUNTRY GENTLEMAN** and **GROVE'S CHAMPION.**

**PIGS** from such noted sows as Messrs Leewood, Queen Quality, Grove's Queen, &c.

Registered Holstein-Friesian Cattle of Netherland, Pieterjes and Clothilde families, All rich, heavy milkers and grand individuals

for sale, **Brown Leghorn and Plymouth Rock Chickens**

N. B.—In the stud, the imported Hackney stallion, "The Duke" (registered in E. H. S. B. and A. H. S. B. : fee, \$10.00. Hackney mare in foal to "The Duke."

Address **T. O. SANDY, Burkeville, Va.**

Norfolk & Western and Southern Railways.



**FORTIFY YOURSELF** against any possibility of failure in your next season's hatch. Made of best California Redwood, carefully packed and lined, perfectly heated and regulated, it gives satisfactory results every time. Made in sizes from 24 eggs up. **WE PAY FREIGHT ANYWHERE** in the U. S. It will pay you to get our **FREE** catalogue and prices. **THE PETALUMA INCUBATOR CO.,** Address nearest office, Box 48 Petaluma, Cal., or Box 36, Indianapolis, Ind.

cannot fail.

Beats 'em all.

Messrs. W. M. Watkins & Sons, proprietors of Cottage Valley Stock Farm, Randolph, Va., breeders of Aberdeen-Angus cattle, Dorset sheep and Hackney-Trotter cross coach horses, report their stock sales good. Among recent shipments, are the following:

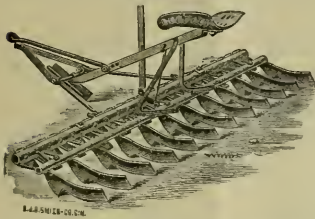
*Cattle.*—W. D. Grimes, of North Carolina, takes one calf; W. F. Baker, of Westmoreland county, Va., one calf; W. R. McKinnie, of Dinwiddie county, Va., six heifers and one bull; J. T. Dick, of North Carolina, one cow and calf; B. L. Gill, of Wicomico Ch., Va., gets one calf.

*Sheep.*—E. W. Farnell, of North Carolina, one buck; Chas. N. Lee, of Prince George county, Va., one buck; W. R. McKinnie, of Dinwiddie county, Va., twelve sheep; R. H. Easley, of Halifax county, Va., thirteen sheep.

The above sales are all the results of Messrs. W. M. Watkins & Sons' advertisement in the *Southern Planter*.

If any doubt existed anywhere about the advantage of thorough preparation of the soil before planting, by pulverizing or otherwise fining it, such doubt has been dispelled by the experience of last summer in those sections where drouth was most prevalent. In such localities farmers who prepared and worked the soil thoroughly were universally more successful in getting good crops than others.

Last summer's experience also demonstrated anew the superior qualities of the Acme Pulverizing Harrow, manufactured



and sold by Mr. Duane H. Nash, of Millington, N. J. Very remarkable results follow its use. This implement has been made and widely advertised by Mr. Nash for a number of years. It does just what its name indicates; it not only crushes all clods and levels up the surface perfectly, but it turns and aerates the soil, thus putting it in ideal condition for the crop, whatever it may be. In fact, we do not know a tool the farmer can have which brings such large returns for its cost and the labor expended in its use as the Acme Harrow. Soil prepared with the Acme retains its moisture longer than if worked with the ordinary appliances; in fact, it leaves the surface like a fine mulch, than which there is nothing better for retaining moisture. It is most durably made and is guaranteed by the manufacturer, and as large stocks are carried at various distributing points prompt shipments can be relied upon. If your dealer does not have a sample Acme in stock, write direct to the manufacturer at the above address and he will see that you are supplied.

YAGER'S LINIMENT CURES PAIN WHEN NOTHING ELSE WILL.

**YAGER'S**  
**LINIMENT**  
 FOR  
**MAN OR BEAST**  
 POPULAR  
 SOOTHING & EFFECTIVE  
 QUICK HEALING POWERS.  
 IN THE TREATMENT OF DISEASES REQUIRING  
 AN EFFICACIOUS EXTERNAL REMEDY.

**BEWARE OF IMITATIONS.**

PREPARED ONLY BY  
**GILBERT BROS. & CO.**  
 SOLE PROPRIETORS  
**BALTIMORE, M.D.**  
 U.S.A.

REGISTERED U.S. PATENT OFFICE

YOUR DEALER SELLS YAGER'S LINIMENT FOR 25 Cts.

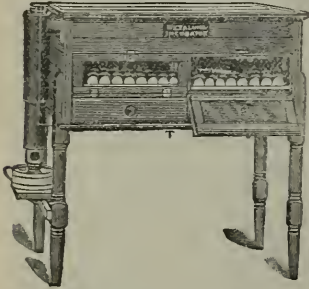
EXACT SIZE OF BOTTLE.

**TAKE NO SUBSTITUTE.**

### OLD BUT GROWING.

One of the oldest and most thriving institutions on the Pacific Coast is the Petaluma Incubator Company of Petaluma, Cal. An evidence of the growth of their business is the opening of an eastern branch at Indianapolis, Ind., where they carry a complete stock of their machines. This, coupled with the advantage their factory enjoys adjacent to the great California Redwood forests, enables them to maintain the high standard of excellence adopted for their machines years ago, without increased cost to the consumer.

A word about the machine: It is the pioneer incubator among those advertised and sold to-day. It was the first machine made of California Redwood selection. All the heaters are copper, the walls are double cased, lined through-



out with heavy jute board, asbestos sheeting deadening felt, and the space between the cases is packed with wool. The machine is self-ventilating and self-regulating, and has a special feature in a self-diffusion of heat. Another feature is that the top of the machine is clear of all regulating mechanism, the lever being located beneath the machine.

The Petaluma Company prepay freight to all points in the United States, and no one need hesitate ordering through any uncertainty on this point. They issue a large and very complete catalogue, which they will mail free to all who write them. One feature of the catalogue is an article entitled "A Bit of Incubator History," that will interest every one. We urge our readers to write the nearest office for a catalogue, which will be sent by return mail.

Address Petaluma Incubator Co., Box 46, Petaluma, Cal., or Box 46, Indianapolis, Ind., and mention this journal.

The McKinley National Memorial Association sends us particulars of the organization formed to erect a National Memorial over the tomb of the late President at Canton, Ohio, and asks us to bring same to the notice of our readers. We gladly do so, as we think President McKinley deserves this recognition at the hands of the people whom he strove so hard to serve. Subscriptions should be sent to Myron T. Herrick, Treasurer, Cleveland, Ohio. Each subscriber will receive a souvenir certificate.

Kindly mention this paper in writing.

## BILTMORE FARMS

### BILTMORE, N. C.

HEADQUARTERS FOR..

Richly Bred and Large Milking Jerseys,  
Early Maturing English Berkshires,  
The Most Useful Standard Breeds of Poultry

We make a specialty of foundation stock; fresh blood, and young bulls selected from the deepest milkers and best individuals in the herd.

The Home of the Pan-American Winners,  
Golden Lad Jerseys and Imported Berkshires

WE BREED THE BEST AND  
SELL THE BEST.

WRITE FOR CATALOGUE.

## HEREFORDS

..BULLS, COWS, BULL CALVES and HEIFER CALVES FOR SALE..

The best cattle at the lowest prices. It will pay you to inspect my offering before buying elsewhere.

MURRAY BOOCOCK,  
Castalia, Keswick, Albemarle Co., Va.

### BACON HALL FARM

**HEREFORD CATTLE**—REGISTERED. "Gold Standard" at head; related to Champions, "Dale," "Perfection," and half-brother to "Wood's Principal," champion steer International Show, Chicago, 1901.

CALVES NOT AKIN.

**Berkshire Pigs, Toulouse Geese, Muscovy Ducks**

E. M. GILLET,

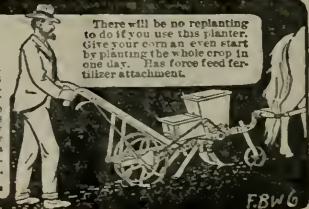
Verona, Balto. Co., Md.

TERMS, "Satisfaction."

### WELL SOWN—HALF GROWN.

You are sure to get a stand of corn—that is if your seed is any good—when you plant with this **Farquhar Keystone Corn Planter**. It puts the grain in with a regularity and surety that inspires confidence. You know that it is planting because you can see each grain as it passes on its way to the ground. Plants field, sweet, fodder or ensilage corn and beans and peas, either in hills or drills. Puts in any desired quantity of phosphate—handles rough and lumpy soil perfectly. Works splendidly on rough, uneven or stony land. His strong, well made and lasting. It is an easy load for a small horse. Send for Catalog of Farm Machinery, Engines, Bolters, Saw Mills and Threshing Machinery. We mail a copy free.

**A. B. Farquhar Co., York, Pa.**



F.B.W.G.

FARMER'S WIVES.

It is generally thought that the life of a farmer's wife is one of unremitting toil and never-ending hardship. She of all womankind has the greatest amount of sympathy, and the average farmer's wife I may as well admit seems to deserve it; and yet, with the advantages offered on a farm, she should be as free as a bird, provided she will assert her rights to be free. The pure air, God's own sunlight, the best the farm produces, of everything at hand, and to be used unstintedly, what better place to live and exercise one's tastes? Free from the turmoil of city life, away from the great busy world's bustle and jostle, out of the noise and ceaseless din of machinery, "near to nature's heart," where one can think out some of life's problems, and possibly plan for the amelioration of some of its woes.

Many women find themselves little more than slaves when once they settle down upon farms to live, simply because they do not assert their individuality. Because a woman finds herself in possession of a home where "the sons of toil" must be very near her, and as a consequence make more or less dirt to be labored with, is no reason she should give up her books, her music or other loved occupation in order to ply the scrubbing brush. There are those whose work it is to make things ready to-day for to-morrow, and in this menial labor finding pleasure, since their minds have not grasped anything higher. Should the mistress of a home, whose life should be the source of all that is bright and good and lasting, take away the occupation of the poor hired girl, and make herself an object of pity by allowing her accomplishments to go to waste while she wears out her strength for those she loves? The dollars saved in this way are saved over the left, as the saying is. A mother should, of course, do her share of management and look to the home culture of her children, but in no case is she justified in neglecting her personal adornment, and least of all the improvement of her mind, whence flows the inspiration which in after years will crown her with joy, through the noble lives she has bequeathed to the world.

MRS. JNO. F. PAYNE.

THE RIGHT WAY TO BAKE POTATOES.

Wash and clean the skins of the potatoes without breaking. Put them on the grate in a moderately heated oven. If the oven is too hot, the skin will at once harden, forming a non-conducting surface, preventing the escape of water. Potatoes baked in this way are heavy and waxy, indigestible and unpalatable. As soon as the potato is soft upon slight pressure of the finger, remove it from the oven. Take it in your hand, which should be protected with a napkin or towel, and carefully work the potato as though you were mashing it in the skin, being very careful not to break the skin.

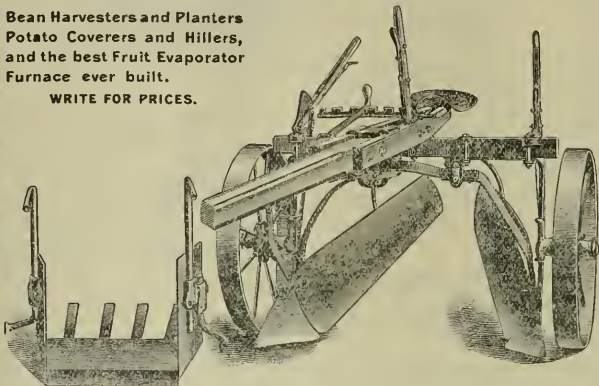
When the potato seems soft and mealy throughout, put it back on the grate in the room; and so continue until all the potatoes have been subjected to this process.—January *Ladies' Home Journal*.

THIS CELERY BANKER AND HARVESTER

Is a great labor saver and money maker for the truck farmer.

Bean Harvesters and Planters  
Potato Coverers and Hillers,  
and the best Fruit Evaporator  
Furnace ever built.

WRITE FOR PRICES.



CALEDONIA BEAN HARVESTER WORKS, Caledonia, N. Y.

F. W. MILLER, Proprietor.



G. & A. BARGAMIN CO

RICHMOND, VIRGINIA.

ESTABLISHED 1817.

PUMPS, RAMS, HOSE, Etc.

Water Pipe and Drain Pipe, Fire  
Clay Pipe, Bonnets, Flue Rings, etc.

Water Closets, Bath Tubs, Wash Stands and  
Sinks. Water Heaters and Tanks. Every-  
thing in the Plumbing and Steam  
Heating line.

BOLTS, NUTS, RIVETS, BELTING, Etc.

A washing machine is as great a necessity in the house as a wringer.

The Richmond Rotary Washer



has too many good points for explanation in an advertisement. Your name on a postal card will bring our booklet, with full particulars of our six different machines and how to get them. One of them will certainly please you. All are made with electrically welded wire hoops sunk in grooves—our patent. Being the largest manufacturers of woodenware in the world, we can make better machines for the money than anyone else. If you want a machine that washes, buy one of ours.

THE RICHMOND CEDAR WORKS, Richmond, Va.



STUMP PULLERS

All Sizes and Prices. Catalogue Free

MOHLAND & COMPANY,

300 Jef Street, BURLINGTON, IOWA.

When you write to an advertiser, always say you saw the advertisement in THE SOUTHERN PLANTER.

**INJUSTICE TO THE SOUTH.**


By MARY WASHINGTON.

Many years ago, in quoting a beautiful poem by Edward Pinkney, of South Carolina, Edgar Poe said that had the latter been born in New England, he would have attained celebrity as a poet. Of late, I have been reminded of these words of Poe's by a signal slight that has been passed upon himself. I mean his exclusion from the "hall of fame" in New York, an oversight truly astonishing, as the "Review of Reviews" remarks. To make the slight more marked, they have admitted into this so called "Hall of fame" Walt Whitman, with his rugged, uncouth writings, devoid of either "rhyme or reason," a man whose sole claim to notice is his rough and startling way of expressing himself, but whose works are devoid alike of the two essentials of poetry, fineness of thought and beauty of expression.

Several of the other persons admitted into "Hall of fame" are so far from being generally known that people of only average information will require a biographical dictionary to assist them in locating these persons.

Several years ago, at a meeting of teachers in Texas, a masterly address on Southern literature was delivered by Mr. T. S. Minter, Superintendent of Public Schools, in Bryan City, Texas, an address which has been printed by a publishing house in Richmond, and which ought to be in every school and every household in the South. As an instance of the injustice that has been done to the South in regard to her culture and literary talent, Mr. Minter quotes some passages from the Encyclopedia Britannica, passages all the more misleading and harmful, because that work has such a high reputation for accuracy. "The attractive culture of the South" says the above-named Encyclopedia "has been limited in extent and degree. The hot-house fruit of wealth and leisure, it has never struck its roots deeply into native soil. Since the Revolution days, when Virginia was the nurse of statesmen, the few thinkers of America, born south of Mason's and Dixon's line, outnumbered by those belonging to the single State of Massachusetts, have commonly emigrated to New York or Boston, in search of a university of training. In the world of letters, at least, the Southern States have shone by reflected light, nor is it too much to say that mainly by their connection with the North, the Carolinas have been saved from sinking to the level of Mexico or the Antilles"!!!

On these extracts, Mr. Minter makes the following comments: "Thinking the South—that section which for the first 64 years of our national life, furnished the President for 52 years, most of the Cabinet officers, and the Chief Justice from 1801 to 1890, classed as a semi-barbarous people, saved only by Northern civilization" And we make so few protests against these misrepresentations that the outside world has come to believe and respect them, to our great injury. The boys and girls should be taught the true history of the South. They should become familiar with the literature of the South, with its songs, its civilization, both old and new, its patri-




**At Factory Cost**

We are giving our customers the benefit of jobbers' prices on Carriages, harness, collars, boots, horse accessories. Factory figures are quoted—dealers profits are eliminated.

**You Get the Profits**

In addition we give you selection from the largest stock in the world of luxury grade vehicles and guarantee satisfaction or money returned. Send for catalogue and see how much you will save.



No. 502 Buggy Price \$39.20

Shipment from Columbus.

**The COLUMBUS CARRIAGE & HARNESS CO. } Write to nearest office ( ST. LOUIS, Mo., P. O. Box 54. COLUMBUS, O., P. O. Box 713.**



**58.20** for this **Ranch or Mountain Buggy.**

Strongest buggy made. Guaranteed to stand the toughest roads.

**DESCRIPTION.** Wheels and gear second growth hickory, forging Norway iron, runs a thousand miles without reeving. Three heavy reaches broad full length. Heavy fifth wheel with rear king bolt. Springs, Concord, 34 inch long, 1 1/2 inches wide. 6 plate hoop on equalizers, front and rear connections solid forged steel. Wheels, 1 1/2 inch tires, 5-16 inch oval discs. Iron rod 18 inches wide, 18 inches long, extra strong and heavy. Plank or Corrug. bent 36 inches wide. 10 inches deep, back curves 22 to be high. Leaf and foot spring castles and back. Trunk 16 lbs. brocade or whip cord. (Leather trimmings extra, \$15.00.)

**WE HAVE NO AGENTS. WE SEND DIRECT TO YOU AT WHOLESALE PRICES.** We will ship subject to examination without any money with your order, you can examine it and if you are not satisfied we have saved you at least \$40.00, send us the money; if not, return the vehicle to us and we will pay freight charges both ways.

**GUARANTEE.** We give you a binding 2 year Guarantee which protects you from poor material and workmanship, which with our guarantee of safe delivery and shipping subject to examination, makes the strongest guarantee ever given.

Send for our Free Vehicle Catalogue, showing illustrations and wholesale prices on the largest and most complete line of all kinds of Vehicles and Harness ever issued. **MARVIN SMITH CO., 56 N. Jefferson St., Chicago, Ills.**

**29 Years Selling Direct.**

We are the largest manufacturers of vehicles and harness in the world selling to consumers, and we have been doing business in this way for 29 years.

**WE HAVE NO AGENTS** but ship anywhere for examination guaranteeing safe delivery. You are not out anything if not satisfied. We make 10 styles of vehicles and 60 styles of harness. Our prices represent the cost of material and making, plus one profit. Our large free catalogue shows complete line. Send for it.



No. 605—Surrey. Price \$75. As bus as sells for \$50 more.

**Eikhart Carriage & Harness Manufacturing Co., Eikhart, Ind.**

CHARTERED 1870.

# Merchants National Bank

OF RICHMOND, VA.

Designated Depository of the United States, City of Richmond and Commonwealth of Virginia.

Being the Largest Depository for Banks between Baltimore and New Orleans, this Bank offers superior facilities for direct and quick collections.

**JNO. P. BRANCH, President.**      **JNO. K. BRANCH, Vice-President.**      **JOHN F. GLENN, Cashier.**

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— ORGANIZED 1832. —

## THE VIRGINIA FIRE AND MARINE INSURANCE CO.

RICHMOND, VIRGINIA.

ASSETS, - - - \$800,000.

**WM. H. PALMER, PRESIDENT.**      **W. H. MCCARTHY, SECRETARY.**

**DIRECTORS:** Wm. H. Palmer, D. O. Davis, E. B. Addison, Wm. Josiah Leake, W. Ohio Nolting, N. W. Bowe.

When corresponding with Advertisers, always say that you saw their advertisement in The Southern Planter.

# If You Want YOUR GOOSE TO LAY "THAT GOLDEN EGG"

FEED HER ON MY GRAIN. You must also use my brain stimulator.

## DURING THIS WINTER SEASON

I am going to offer my friends and customers the most complete stock of GROCERIES, FEED and LIQUORS that has been seen by the purchasing public during the period of their existence. Bargains, gifts and donations—that is what you may properly call them, because we have not taken into consideration the price. Cost cuts no figure with us; all we want is your orders, and you get \$3.00 worth of goods for \$2.00, in cash; here is a sample:

**COTTONSEED HULLS, the finest winter feed known to the dairyman; it is wholesome, pure, fattens stock, and keeps them so; per ton, \$8.00. It is cheap at \$12.00. Order a couple of tons for sample.**

Order your **GOODS THIS YEAR** from D. O'SULLIVAN, Richmond, Va. \$25,000.00 worth of Groceries are on the shelves and in the warehouses to be sold regardless of cost price. Stop paying two prices. You can buy your goods at wholesale prices from us, no matter how much you want or how little you need. Send me your orders. Send for my beautiful price list, showing what you can purchase for a few dollars; we mail it free on application.

## 60,000 bus. Finest Corn, 80c. 30,000 bus. Oats, 57c. SEEDS OF ALL KINDS. Write for Catalogue.

800 sacks Salt, large sacks.....	1.00
Lump Salt for stock, per lb.....	01
Bread Soda, per lb.....	02
200 bags best Laguyra Coffee.....	12
These Coffees are 2 cts. cheaper than the market price. We have a large stock and want to sell.	
500 half barrels White Fish.....	3.25
400 boxes best Ginger Snaps.....	04 1/2
80 bags Navy Beans, bushel.....	2.25
Rock Candy Syrup, per gal.....	30
Sugar-house Syrup, per gal.....	20
Finest New Orleans Molasses, pr. gal	40
Home-Made Blackberry Brandy, per gal.....	60
Fine Old Port Wine, per gal.....	65
Sweet Sherry Wine, per gal.....	70
Catawba Wine, per gal.....	60
Old Northampton Apple Brandy (6 years old).....	2.00
McDermott's Malt Whiskey, large quart bottles, full strength, fine flavor. Sure cure for consumption, coughs, colds, or weakness; cures chills, fever and ague, and nervousness, per bottle.....	85
Tomatoes, 3-lb. cans, per doz.....	1.00
Fine Corn, per doz.....	75
Green Peas, tender and sweet, doz.	70
Family Roe Herrings, per doz.....	18
Sugar-Cured Breakfast Bacon.....	13
Finest Rice, per pound.....	06
Imported Sardines.....	10
Fresh Mackerel in Cans, each.....	05
French Mustard, Jar.....	05
Byrd Island Patent Family Flour, keeps much longer, yields 40 lbs. more bread than any other flour sold; ask for it, and have no other, barrel.....	4.50
Culpeper Creamery Butter. The finest of all Creamery Butter is	

Culpeper Creamery, in any quantity, per pound.....	.18
Gelatine, per package.....	.09
100 Fine Key West Cigars.....	2.10
Only 2 cents for a 10 cent Cigar.	
Plantation Cigars, 100 in a box.....	1.10
Fine Heavy Brooms.....	.25
Carpet Brooms, worth 25c., for.....	.18
Bath Bricks, for scouring.....	.05
7 bars Octagon Soap.....	.25
120 cakes fine Laundry Soap.....	2.50
7 large cakes Tar Soap.....	.25
6 bars highly-perfumed Toilet Soap	.20
Large jars Vaseline, suitable for toilet purposes.....	.05
800 doz. Household Ammonia, quart bottles.....	.07
6 bars Sand Soap, for scouring dishes, pans and tableware.....	.25
6 doz. boxes Matches (72).....	.25
3 cakes Sapolio.....	.23
Electro-Silicon, for cleaning silver-ware, 3 for.....	.25
10,000 large packages Soap Powder, Gold Dust Washing Powder, 4 lbs., Granulated Sugar.....	.05
New Cabbage, crate.....	1.00
Fine, large, fat New Mackerel, weighing a pound each.....	.05
Cotton-seed Hulls, 100 lbs.....	.40
5,000 lbs. finest Green Tea.....	.35
1,000 lbs. finest Black Tea.....	.35
These are the finest goods sold anywhere.	
Order 5 or 10 lbs. for sample.	
Try a 15 lb. kit of our New Imported Mackerel.....	1.25
New Cut Herring, doz.....	.10
New Carolina Rice.....	.05
Flaked Hominy.....	.04 1/2
800 California Hams, 8 to 10 lbs.....	.09
Rollled Oats, per lb.....	.02
This is an exceptionally big bargain.	
80 doz. cans Chipped Beef.....	.07

Large jars French Mustard.....	.10	
Large bottles Catsup.....	.10	
Finest Home-made Cakes.....	.08 1/2	
Fresh Milk Biscuits.....	.08	
French Candy in 30 lb. buckets, lb.	.05	
Royal Baking Powder, box, 1/2-lb.....	.24	
Good Luck Baking Powder, doz. 1 lb.	.88	
Good Luck Baking Powder, doz. 1/2 lb.	.43	
Nutmegs, 5 for.....	.03	
Mustard, large boxes.....	.10	
Ess. Lemon, large bottles.....	.10	
Ess. Vanilla, large bottles.....	.10	
Ess. Cinnamon, large bottles.....	.10	
Macaroni, per lb.....	.07	
Star Lye, doz.....	.90	
8 lbs. Laundry Starch.....	.25	
We are agents for a specially prepared Juniper Gin, a sure cure for kidney troubles. It has cured 100 of our customers. Order a quart at 45¢. \$1.75 gal. No charge for packages.		
Bumgardner's 6-years-old Old Rye Whiskey, gal.....	3.00	
Clemmer's Old Rye, quart.....	.40	
500 bottles 3-Star French Brandy, worth \$1.25, now selling for.....	.75	
Order a quart Malt Whiskey. It is the best medicine for chills and fever, loss of appetite, dyspepsia or indigestion. Makes rich, red blood, builds and tones up the system, restores lost appetite. A sure cure for lung trouble. Per large bottle.....		.85
Medicated Corn Whiskey, 8 years old, thick and finely flavored, fine tonic, gallon.....	2.00	
Angostura Bitters, finest tonic made	.75	
Sweet Sparkling Cider, per gal.....	.40	
50 tons City Made Shipstuf.....	1.35	
8,000 Bushels Finest Oats.....	.69	
10,000 Bales Timothy Hay, hundred,	.80	

D. O'SULLIVAN, Eighteenth and Main Streets, Richmond, Va.

otism, its sufferings during and subsequent to the Civil War, and its rapid recuperation since. . . . We cannot afford to have our histories, encyclopedias and data furnished by Northern writers and publishers. It is our duty to see that our history and literature are properly placed before the world.

Even so excellent a text-book as "American Literature," by Hawthorne & Lemon, gives more space to that ideal crank, Walt Whitman, than to Sidney Lamar, Thomas N. Page, Joel C. Harris, Paul Hayne, John Esten Cooke and Father Ryan, all combined.

"The Columbian Encyclopædia, consisting of 32 volumes, gives more space to the biography of John Brown, the abolitionist, than to Jefferson Davis, the soldier, statesman and President. Another standard encyclopædia gives six lines on Gen. Kirby Smith, the teacher, soldier and patriot, and more than one column on John L. Sullivan, of Boston."

"I am glad, however, that the South is waking up from its lethargy; that men and women of ability, of genuine patriotism and love for the truth, are asking the world, in modest tones, to consider the true history of the South. \* \* \* A very recent work, "The Southern States of the American Union," by Dr. J. L. M. Curry, is a history worthy of enthusiastic support \* \* \* giving in a concise manner the history of the Southern colonies, the part they performed in establishing freedom of thought, of the press, and of conscience for themselves and posterity; their wisdom in council, value in the field, and patriotism everywhere."

In another text-book, gotten up by the Boston school authorities, and entitled "Masterpieces of American Literature," there is not even the most casual mention of any Southern writer, but the thirteen authors from whose works specimens are taken, are all natives of New England, except Washington Irving, who was a native of New York. The book really ought to have been entitled "Masterpieces of New England Literature." I do not deny the existence of high intellectual gifts and great culture in New England, and more especially in Massachusetts—Holmes, Emerson, Hawthorne, Longfellow, Whittier and others sufficiently attest this fact; but I do emphatically deny that all the intellect and culture of our country are confined to New England, and I stoutly maintain that the South has her full and fair proportion of these good gifts.

Why wastes the rain in winter time,  
No corn is growing for the swine?  
Why falls the snow if melts the sun?  
Why live to die, oh! there's a sum  
Ever waiting to be done?  
To live that others still may be  
As the limpet, as the tree.  
To live to ask for daily bread,  
And then to form the planet's dead;  
To live to find a doctrine fade  
As ice that brought from 'neath the shade.  
To live to die, to live again;  
Again! O! tell us where and when?  
Cobham, Jan. 10, 1902. W. M.

When writing mention the *Southern Planter*.

# LEE'S PREPARED AGRICULTURAL LIME

The Old Reliable for COTTON, PEANUTS,  
WHEAT, OATS, CLOVER and OTHER GRASS;  
has stood the test for twenty-five years.

## PLAIN SHELL LIME

Constantly on hand at lowest prices.

## LEE'S EXCELSIOR TOBACCO FERTILIZER.

With it crops as good as any on the market stood the dry hot summer without burning.

## SPECIAL WHEAT AND CORN FERTILIZERS.

Agents for CAYUGA BLUE LAND PLASTER,  
a very superior fertilizer with the best analysis.

General agents for BLACK DEATH—BUG, WORM and INSECT KILLER. Certain death to Tobacco Worms, Potato Bugs, Cabbage Bugs, and worms and all insects that feed on the leaves of fruit or other trees.

Address A. S. LEE & SON,  
Richmond, Va.

\* VIRGINIA DIVISION. \*

## Farmers Mutual Benefit Association.

A Fire Insurance Association, chartered by the State for the farmers of Virginia, under an amended and well protected plan.

Insures, against Fire and Lightning, only country property—no stores or unsafe risks. Average cost per year for three years has been \$3.66 $\frac{1}{2}$  per \$1000, including dwellings, barns, produce, &c.,—about one-third the usual cost of insurance to farmers. Amount of property insured \$325,000. Estimated security in real and other estate, \$600,000.

For further information, address,  
MENTION THIS JOURNAL. CHAS. N. FRIEND, General Agent,  
CHESTER, VIRGINIA.

When corresponding with Advertisers, always mention  
The Southern Planter.

# HAVE YOU SEEN THE WALTER A. WOOD MOWER AND THE HARVESTER ? AND BINDER FOR 1902 ?

Buy some other make if you choose to be talked into it; but you will make a mistake. The improvements are startling. **THE WOOD GIANT** is strong enough to be drawn by an elephant, and the stronger the machine, the fewer repairs needed.

**..HERE'S WHERE WE ARE GETTING IN OUR WORK..**

Not slashing prices; publishing cartoons, and sending herds of men through the country. But taking the money that this sort of thing costs and putting it into the construction of machines. Buy the "WOOD" 1902 machine, if you want to save in repair bills.

**WALTER A. WOOD MOWING AND REAPING MACHINE CO.**

**RICHMOND, VIRGINIA.**

**ANY MAN** who thinks he can secure orders for a few machines in his neighborhood should write us.

## THE STAR CORN PLANTER

Every year improved as each season suggests. In no year has it been equaled by any planter made. **Last season the demand could not be supplied.** But that it might be misconstrued we would name the planters that are represented each year, as "the same thing," "just as good," etc.

### NOTICE CAREFULLY IMPROVEMENTS FOR 1902.

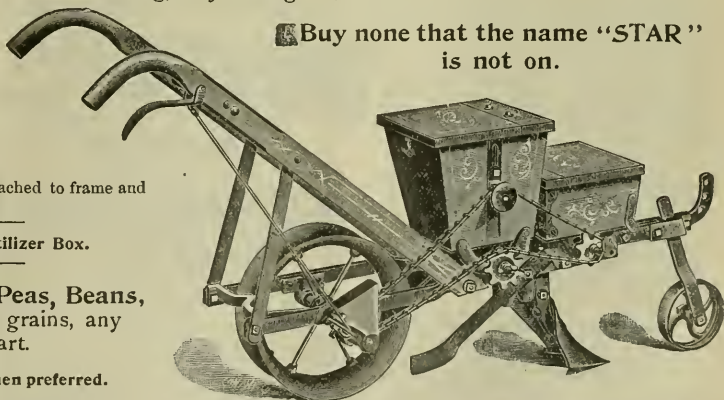
**ROUND METAL GRAIN HOPPER** placed behind fertilizer box that every grain can be seen as it falls, instead of wood box in front as shown. Chain tightener is attached to frame and not to box.

With or without Fertilizer Box.

Drills or drops Corn, Peas, Beans, etc., any number of grains, any distance apart.

With Runner Opener when preferred.

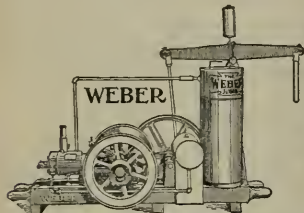
**Buy none that the name "STAR" is not on.**



**ASHTON STARKE IMPLEMENT HOUSE, Richmond, Va.**

### THE WEBER JUNIOR 2½ H. P. WEBER GASOLINE ENGINES AND PUMPS.

This pumping engine was recently put on the market by the Weber Gas and Gasoline Engine Company, Box No. 123, Kansas City, Mo. The exclusive business of this company for the past sixteen years has been the building of gas and gasoline engines, and their "Weber Junior" has a world wide reputation. The "Weber Junior" (which they have christened their little engine), has only been on the market during the past year, and its phenomenal success has caused the company to largely increase their manufacturing facilities at their new plant in Sheffield.



The "Weber Junior" pumping engine is especially designed for pumping, grinding, operating churns, wheat-fanning mills, grind-stones, in fact, all light machinery about a farm or ranch. These little engines are in use from Maine to California, and from the Northwest Territories to Yucatan.

Every farm and every ranch, in this age, should have one of these little engines. They are largely replacing the wind-mills, owing to the fact that a wind-mill is not reliable and the little gasoline engine is.

Full printed matter describing this little engine will be sent upon request to the company.

#### THOUGHTS FOR EVERY DAY.

It is the small leaks that impoverish a household. It is the small economies that lead to affluence.

Work to-day, for you know not how much you may be hindered to-morrow. Recreation is not idleness, but ease to the weary by change of occupation.

If you wish to be as happy as a king look at those who haven't as much as you, not at those who have more.

It has been well said that no person ever sank under the burden of the day. It is when to-morrow's burden is added to the burden of to-day that the weight is more than can be borne.

By holding a very little misery quite close to our eyes we entirely lose sight of a great deal of comfort beyond which might be taken.

Most of the shadows that cross our path through life are crossed by standing in our own light.

If domestic life has its cares and responsibilities—and what life has not?—it also has its sweetness and its consolations, its joys and its benefits, that are infinitely superior to anything that can possibly be obtained in hotels or flats.—January *Ladies' Home Journal*.

# G

## How are Your Eyes?

We are the largest optical establishment South, and give proper adjustment of SPECTACLES and EYE GLASSES. Complete manufacturing plant on the premises. Mail us the pieces and we will from them duplicate your Glasses. Glasses by mail our specialty.

### Our PHOTO DEPARTMENT

is also complete with CAMERAS, KODAKS and PHOTO SUPPLIES. Developing and printing finely executed.

Our line of GRAPHOPHONES, with latest records, OPERA GLASSES, FIELD GLASSES Incubator and Dairy THERMOMETERS, etc., etc., is also complete. Lowest charges in all cases.

THE S. GALESKI OPTICAL CO., 9th and Main Sts., Richmond, Va.

## The Chesapeake & Ohio Railway

EXTENDING FROM CINCINNATI AND LOUISVILLE, AND THROUGH ITS CONNECTIONS

THE BIG FOUR SYSTEM, from Chicago, St. Louis, Peoria, Indianapolis, Sandusky and Cleveland;

THE OHIO CENTRAL LINES, from Toledo and Columbus;

THE CINCINNATI, HAMILTON & DAYTON, from Detroit, Toledo, Lima and Dayton—

FORMS THE MOST DIRECT And from Five to Twelve Hours the Quickest ROUTE.

To STAUNTON, LYNCHBURG, CHARLOTTESVILLE,

RICHMOND, PETERSBURG, NORFOLK,

And Principal Virginia Points

H. W. FULLER, Gen. Pass. Agt. C. & O. Ry., Washington, D. C.

# DON'T BUY A SPRAY PUMP

UNLESS YOU BUY THE BEST.

## "Maryland High Pressure"

BEST IN THE WORLD!

By working Pump a half minute you spray continuously for fifteen minutes with a very fine or coarse spray, narrow or wide spread as you may wish. Four gallons of solution carried easily with shoulder strap, leaving both hands free to direct spray. Saves material and labor. Write for prices and complete description.

FRANKLIN DAVIS NURSERY CO., Baltimore, Md.

# Our Clubbing List.

The following list of papers and periodicals are the most popular ones in this section. We can SAVE YOU MONEY on whatever journal you wish.

DAILIES.	PRICE ALONE.	WITH PLANTER.
The Dispatch, Richmond, Va.....	\$5 00	\$5 25
The Times, ".....	3 00	3 00
The Post, Washington, D. C.....	6 00	6 00

SEMI-WEEKLIES.	PRICE ALONE.	WITH PLANTER.
The Dispatch, Richmond, Va.....	1 00	1 25
The World (thrice-a-week), N. Y.....	1 00	1 25

WEEKLIES.	PRICE ALONE.	WITH PLANTER.
Harper's Weekly.....	4 00	4 00
" Bazaar.....	1 00	1 40
Montgomery Advertiser.....	1 00	1 00
The Baltimore Sun.....	1 00	1 35
Breeder's Gazette.....	2 00	1 75
Hoard's Dairyman.....	1 00	1 35
Country Gentleman.....	1 50	1 75
The Times, Richmond, Va.....	50	65
Religious Herald, Richmond, Va.....	2 00	2 25
Central Presbyterian, ".....	2 00	2 50
Christian Advocate, ".....	1 50	1 75
Turf, Field and Farm.....	4 00	4 00
Spirit of the Times.....	4 00	4 00
Horseman.....	3 00	3 00

MONTHLIES.	PRICE ALONE.	WITH PLANTER.
North American Review.....	5 00	5 00
The Century Magazine.....	4 00	4 25
St. Nicholas.....	3 00	3 25
Lippincott's.....	2 50	2 50
Harper's.....	4 00	4 00
Forum.....	3 00	3 25
Scribner's.....	3 00	3 25
Frank Leslies.....	1 00	1 35
Cosmopolitan.....	1 00	1 35
Everybody's.....	1 00	1 35
Munsey.....	1 00	1 35
Strand.....	1 25	1 65
McClure's.....	1 00	1 35
Puritan.....	1 00	1 35
Review of Reviews.....	2 50	2 75

Where you desire to subscribe to two or more of the publications named, you can arrive at the net subscription price by deducting 50 cents from "our price with the Planter." If you desire to subscribe to any other publications not listed here, write us and we will cheerfully quote clubbing or net subscription rates.

Subscribers whose time does not expire until later can take advantage of our club rates, and have their subscription advanced one year from date of expiration of their subscription to either the *Planter* or any of the other publications mentioned.

Don't hesitate to write us for any information desired; we will cheerfully answer any correspondence.

We furnish no sample copies of other periodicals.

# Seed House of the South.

- RED CLOVER.
- MAMMOTH CLOVER.
- CRIMSON CLOVER.
- WHITE CLOVER.
- LUCERNE CLOVER.
- ALYKE CLOVER.
- BOKHARA CLOVER.
- JAPAN CLOVER.
- RUB CLOVER.



- TIMOTHY.
- ORCHARD GRASS.
- FED TOP or HERDS GRASS
- KENTUCKY BLUE GRASS
- RANDALL GRASS.
- TALL MEADOW OAT GRASS.
- JOHNSON GRASS.
- GERMAN MILLET.
- BUCKWHEAT.
- OATS and CANE SEED.

"Whatsoever One Soweth, That Shall He Reap."

We sell strictly reliable FIELD AND GARDEN SEEDS of every variety at Lowest Market rates, included in which are RAGLAND'S PEDIGREE TOBACCO SEEDS.

WE ALSO SELL

## Our Own Brands of Fertilizers

For Tobacco, Corn, Wheat, Potatoes, &c.

Pure Raw-Bone Meal, Nova Scotia and Virginia Plaster and Fertilizing Materials generally.

Parties wishing to purchase will find it to their interest to price our goods. Samples sent by mail when desired.

**Wm. A. Miller & Son,**  1016 Main Street LYNCHBURG, VA.



# Japan Plums

And all other desirable standard and new varieties of PLUMS, APPLE, PEACH, PEAR and ORNAMENTAL TREES, SHRUBS, ROSES, Etc.

**HEADQUARTERS FOR TENNESSEE PROLIFIC STRAWBERRY.**

The Most Reliable Variety Ever Grown in the South.

Three hundred and fifty acres under cultivation. Write us if you contemplate planting. Catalogues free.

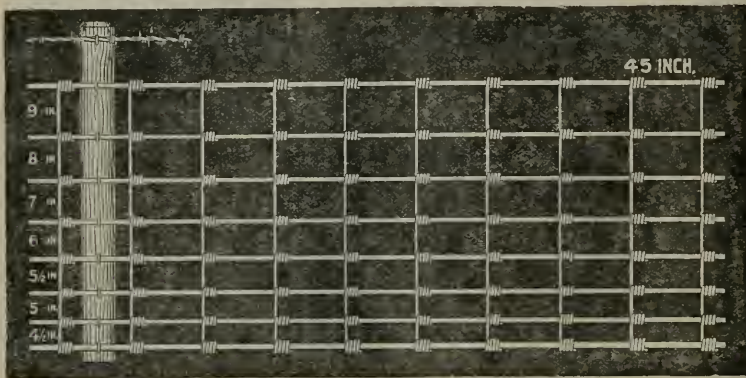
AGENTS WANTED. WRITE FOR TERMS.

**W. T. HOOD & CO.**

OLD DOMINION NURSERY.

RICHMOND, VA.

# AMERICAN FIELD FENCING



Made in many heights and styles for turning the smallest to the largest animal. Just as cheap as Barb wire, and much more desirable.

Write for special catalogue and prices.

**MASTER PLANT SETTER** will Set, Water and Fertilize more plants than three men can do by hand. Don't wait for showers, but plant your tobacco, cabbage, tomatoes, strawberries and sweet potatoes with this setter, and 998 out of every 1,000 will grow. Write for testimonials and prices.

**THE IDEAL TRIPLE-GEARED FEED-MILL AND HORSE POWER** combined is the best for grinding shelled grain, corn and cob into excellent feed. The horse power is very useful for running the other machinery. A full line of Feed-Mills for one or two horses as well as steam power.

For **STRENGTH, DURABILITY** and **RAPIDITY**, the **OHIO FEED-CUTTERS** have no equal. A full line from the smallest hand to the largest power cutters.

Disc and Cutaway Harrows. Land Rollers, Baling Presses (for hand or power), Wagons, Fanning Mills, Imperial, Bissell Chill and other Plows, Pea and Bean Hullers, Engines and Saw Mills. A full line of Solid and Inserted Tooth Saws in stock. WRITE FOR CIRCULARS.

We have the finest and largest stock of

**CARRIAGES, BUGGIES, HARNESS, SADDLES,**

in the State. Send for catalogue or kindly inspect our fine show rooms.

## THE IMPLEMENT CO.

1302-1304 E. Main Street,  
RICHMOND, VA.

## HORSES and MULES

Of all grades and sizes FOR SALE at

**GEO. D. BENNETT'S STABLES,**

1917 East Franklin Street, RICHMOND, VIRGINIA.

Matched Pairs, Fine Drivers, Saddle, Draft and Business Horses. Mules ranging from the largest size down to the small cotton mule. Stock purchased by Mr. Bennett in person on the Western markets and shipped direct. Branch stables at Raleigh, N. C., and Goldsboro, N. C. Correspondence solicited.

N. B.—Mr. Bennett's Western address is

NATIONAL STOCK YARDS, ILL.

James W. White.

Joseph F. White.

## J. W. WHITE & SON,

Carriage Hardware, Coach Colors and Varnish

1902. - IN THE STUD. - 1902.  
**WHALEBONE, 7872.**

Winner of Stallion Stakes at Suffolk, Va., Oct. 20th, 1891, defeating W. A., Modoc, Magnetizer and Dynamite.

W. A. won the first heat, Modoc the second and third, and Whalebone the fourth, fifth and sixth heats and race.

Standard, Registered in Vol. XV., A. T. R.

Sired by Abdallah Wilkes, son of George Wilkes, 2:22. Dam Maggie O, by Abdallah, 15, sire of Goldsmith Maid, 2:14; second dam Viley Filly, by Pilot, Jr., sire of dam of Maud S, 2:08 1/2.

NOTE.—Whalebone is a richly colored bay horse of fine size, handsome and well formed. His disposition is perfect. He has sired Visitor, 2:26 1/2, and other winners.

FEE, \$15, with usual return privilege.

Address

**W. J. CARTER, OWNER,**  
P. O. Box 929, RICHMOND, VA.

Large stock to select from, and orders selected both at wholesale and retail.

Address **J. W. WHITE & SON,**

R. A. CARTER, Salesman.

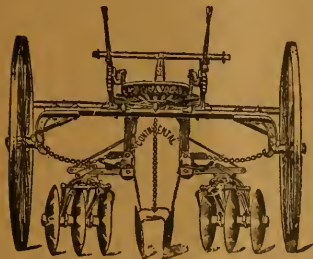
1318 E. Main St., RICHMOND, VA.

# LABOR- SAVING IMPLEMENTS AND MACHINERY



Corn Planter.

SPANGLER Corn and Fertilizer Planter.



The Continental Disc Cultivator and Disc Harrow Combined.



MOWER with Ball and Roller Bearing.



GEISER Thresher.



## CORN PLANTERS.

The Spangler for corn in hills or drilled, peas, sorghum and fertilizer. The Hoozier with shoe and covering wheel. The Eureka, plain. The Hoozier double row.

## CULTIVATORS.

Planet Jr. and Iron Age Cultivators and Horse Hoes. All Steel Three and Four Tooth X. Continental Disc Cultivator and Disc Harrow combined.

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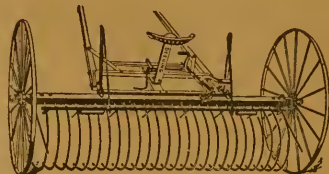
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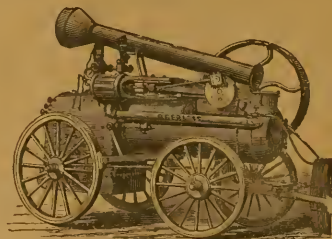
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THE

Sixty-Third Year.

# Southern Planter

A MONTHLY JOURNAL

DEVOTED TO

Practical and Progressive Agriculture, Horticulture,  
Trucking, Live Stock and the Fireside.

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Agriculture is the nursing mother of the Arts.--XENOPHON.  
Tillage and pasturage are the two breasts of the State.--SULLY.

---

63d Year.

Richmond, March, 1902.

No. 3.

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## Farm Management.

### WORK FOR THE MONTH.

The weather since we wrote the article on Work for the Month for the February issue has been of such a character throughout nearly the whole of the South that we might safely content ourselves this month by saying, refer to the February issue and carry out the advice there given during the present month. There has not, we believe, been a day since we wrote that article when a farmer anywhere in the South could have done any of the work in the land which we then advised to be done in February. From every section, yea, even from the Tidewater section of this State and North Carolina, we have the same reports, "hard freezing weather and snow." This is an abnormal condition of affairs in the South, and is bound to cause much inconvenience and loss to farmers. Work is going to be crowded into two months that ought to have occupied four, and however genial the spring may be when it opens up, there is going to be more work to do than there is time to do it in, if anything like the average area of crop is to be planted. Another serious question is also going to confront farmers. From almost every section we have complaint of the destruction of the wheat and winter oat crops. Much of these were sowed late and in very dry ground, and hence failed to germinate before the winter set in or at best only just made a start. The snow did not fall in sufficient quantity to cover the land until we had had much hard frost, and hence we are afraid that very large areas will be found killed. This will impose on the farmer the cultivation of these additional areas of land which he thought he had got out of the way until harvest, and this when time presses is going to seriously handicap him. We have numerous enquiries as to what is best to be done with these

lands—to plow again and re-seed as soon as possible with grain, or to put them in some other crop later? Where the wheat and oats are killed doubtless the grass and clover is killed also. We are inclined to advise that no attempt should be made to re-seed grain largely, but that if during this month the weather moderates early enough that a part only of these lands be re-seeded with Rust-proof oats, and the residue be later put into forage crops, such as peas, soy beans, sorghum and forage corn. Where the land was in good fertility and in fine physical and mechanical condition when seeded we would advise the seeding of grass and clover without a grain crop. These seeds may be put in after only harrowing the land, thus saving the time of plowing, and will be likely, if the spring be a genial one, to make a good catch, and in that event, make a good meadow or pasture before fall. Harrow the seed in and then roll. Grass and clover seeded alone are much more likely to succeed than if sown with a grain crop. If after the seeds have made a good start the fields be top-dressed with 75 to 100 lbs. of nitrate of soda to the acre this will materially help them.

For a pasture on good, loamy soil, sow a mixture of tall meadow oat grass, orchard grass, meadow fescue, red top, Virginia blue grass, perennial rye grass and two quarts of red clover per acre. Sow the grass seeds at the rate of two and one-half bushels to the acre. On rich, bottom land, sow either timothy or Italian rye grass, or a mixture of the two, with two quarts of red clover per acre. For a meadow on good, loamy soil, sow tall meadow oat grass, orchard grass, perennial rye grass and two quarts of red clover to the acre. Sow the grass seeds at the rate of two and one-half bushels to the acre. On light, sandy land

Hungarian brome grass will often succeed where other grasses fail. Johnson grass, notwithstanding the fact that it is so severely condemned by some writers, on account of its persistency of growth and liability to spread where not wanted, is, we believe, a crop likely to prove valuable in the South, and if we had a piece of land which we desired to keep in a fodder crop permanently we should give it a trial. It is not really a grass, but a perennial sorghum, and makes a great yield of feed when established. It should be sown thickly, say at the rate of one to one and one-half bushels to the acre, when the stalks will not be so strong and coarse, which is one of the objections raised to it. It should be cut before it comes into bloom, and thus obviate any difficulty from the spreading of the seed on land where it is not wanted. It makes good grazing, and may be killed out by very close grazing and plowing up the roots afterwards and exposing to frost. Hogs are said to be fond of the roots, and thus may help to subdue it. Sow the seed this month. If the oats seeded and killed out were only intended for hay, this crop may well take the place, and will very likely make a heavier yield of feed before winter than the oats would have done.

Those who followed our advice and plowed their land in the fall and early winter will find the labor of preparing the same for the seed much lightened by the long frost. The land will fall as soon as a harrow is put on it after the frost is out, but do not be in too great a hurry to commence harrowing. Frozen clods buried under the finely broken soil will continue to hold the frost long after it has gone out of the loose soil. Those who have yet to break their land will be much delayed in the work, as for some time after a thaw sets in it will be much too wet to plow. Such a season as we have had ought to be a strong incitement to fall and winter plowing in the future. If this severe weather is followed by the usual drying March winds, with the increasing power of the sun, it will be a difficult matter to conserve the moisture in the soil so as to permit of continuous plowing. If the unbroken land begins to get too hard to plow, the only thing to be done is to run over with a harrow, and thus make a mulch of fine soil on the surface. This will conserve the moisture and allow plowing to go on long after it would otherwise be too hard. The plowed land ought also to be harrowed as soon as possible to prevent too rapid drying. There is going to be none too much moisture in the ground for the needs of a hot summer, unless we should have a very wet spring. The fall was very dry, and the precipitation of rain and snow during the winter has not been heavy. The two great necessities for successful crop growth in the

South are moisture in the depths of the soil and perfect cultivation of the land before the crop is planted. Probably the most potent cause of deficient crop yields throughout the country is poor cultivation of the land before seeding. "Tillage is manure," as old Jethro Tull so strongly insisted a century ago. It is also in the long run the cheapest fertilizer that can be applied, as its benefits are not confined merely to one crop. Plow, harrow and roll repeatedly, even though in so doing you may somewhat delay planting later than you would wish. The subsequent much quicker and more vigorous growth of the crop will soon cause the delay to be made good, and a rapid, vigorous growth of the newly planted crop will tell all through the season. The feeding roots of the plant will permeate the soil in all directions and seize hold of the plant food and thus ensure continuous growth.

Oats should be seeded as quickly as possible. Sow Rust proof. It is too late for Virginia grey winter. An application of 300 lbs. to the acre of acid phosphate will greatly help the crop, and a top dressing of 75 lbs. of nitrate of soda, applied after the crop has begun to grow vigorously, will often ensure a much greater yield. Unless Canada peas and oats can be seeded before the 15th of the month in Eastern and Middle Virginia, we would not advise seeding. In the Western and mountain sections, they may be seeded up to the end of the month with a fair prospect of success.

Grass and clover should be seeded during this month and April. If to be seeded in a grain crop, harrow the crop, then sow the grass and clover and roll or re-harrow. In the early part of this article we have mentioned the best varieties of grass to sow for different purposes.

Meadows intended to be mown for hay should have all stones and trash gathered off. It is a good plan to rake these fields over with a hay rake or with a brush or chain harrow, and thus clean off trash which would otherwise rake up in the hay. Stones are a prolific source of breakages in mowing machines, and should be carefully gathered off in the spring. After cleaning off trash and stones, roll with a heavy roller. This will consolidate the soil around the roots of the grass and ensure better and more vigorous growth. If the lands need helping with fertilizer, it should be applied after raking and before rolling. As a mixture for helping a meadow we have never found anything better than bone meal and nitrate of soda, say, 250 lbs. of bone meal and 100 lbs. of nitrate of soda to the acre.

In the cotton sections no time should be lost in get-

ting the land broken and under cultivation. We are much averse to the planting of cotton in beds, except upon wet land. Level planting and level cultivation are as important for the cotton crop as for the corn crop, if the best results are to be attained. Acid phosphate, kainit, and cotton seed or cotton seed meal can be safely applied to the land a month in advance of the seeding of the crop, and with advantage in the benefit to be derived therefrom, as all these fertilizers require time to become available, and there is no fear of their leaching out of the soil. If nitrate of soda be used to supply the nitrogen it should not be applied until the crop is growing, as it is immediately soluble and available.

The making and sowing of tobacco plant beds has been very much delayed, and in many sections entirely prevented. They should have immediate attention when the weather moderates or plants will be late. Burn well, and do not break deep, but break as fine as possible, and fertilize liberally, with a high-grade tobacco seed fertilizer. The variety to be seeded must, of course, largely depend on the section in which it is grown, but it would seem safe to say that wherever Bright, and the Sun-cured types, like Orinoco and Medley Pryor, can be grown, they should be grown. Sun-cured tobacco has sold this season for prices scarcely ever heard of before, and there is never a season when it does not sell well. The heavy, dark shipping types have not been in so good demand, but, of these, desirable types have sold well. Above all, avoid growing One sucker. It is a mean, poor tobacco, and never sells well.

See to it that you order your fertilizer and seeds at once, if you have not already done so. There will be a great rush of orders when the season opens, and merchants will be unable to avoid delays. Do not buy fertilizers simply on their names. There are hundreds of kinds on the market with long, high-sounding names which are worth little. Look at the analyses on the bags, and take no notice of anything printed there except the *three* items—Nitrogen, Phosphoric Acid and Potash. The rest is all moonshine. Study the requirements of the crop and soil, and meet these as nearly as possible.

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THE GREEN GLOBE ARTICHOKE is a vegetable well worth experimenting with by our truckers and gardeners. It succeeds well in the South, but is not hardy in the North.

## PERMANENT PASTURES.

*Editor Southern Planter :*

The success which farmers have in making pastures permanent on soils not especially adapted for this purpose is varied, and depends upon certain conditions of the soil. We find natural permanent pastures in all countries and at all altitudes, bordering on and almost level with the sea, in valleys of mountains thousands of feet high, in humid and in dry climates. There is, of course, a great difference in the herbage and the feeding qualities of these pastures, but as far as their permanence is concerned they show very little difference. But we also see that these pastures are confined to certain well defined areas, and that the efforts of farmers to turn the adjacent land also into permanent pasture often meets with failure, notwithstanding the very best preparation of the soil and lavish applications of manure and fertilizers.

These failures show that the permanence of a pasture depends upon certain conditions of the soil, and where these do not exist and cannot be provided, the attempt at making a pasture permanent will seldom meet with success.

Water, humus and lime are the three elements, on the presence of at least one of which the permanence of the pasture depends. The heaviest and richest clay soil, if deficient in humus and lime, will make a failure as a permanent pasture if upland soils, but will make the finest pastures if they have a high ground water level, as is shown by the wonderful fine pastures in the countries bordering on the North Sea. In upland soils not so favorably located either lime or humus must be present to give the soil the necessary looseness, as is shown by the fine pastures on our limestone and prairie soils.

The great difficulty which we have to overcome on upland soils neither rich in humus nor in lime is the maintenance of the necessary looseness of the soil, without which the grasses will not thrive for any length of time. Even the very best preparation of the soil, deep and thorough tilling and plenty of manure and lime, will not prevent the soil from becoming packed from the natural settling of the soil, beating rains and the tramping of the stock. Attempts which have been made to loosen the soil with suitable implements have only been partially successful. The loosening was either insufficient or the sod was too much cut and partly destroyed. Top-dressing with horse manure every two or three years has given in some cases good results, in others the improvement was not in proportion to the cost. Especially on farms with mostly light soils, which can only be profitably managed for general farming purposes when they are alternately cropped and laid down in pasture, the leaving out of the pasture in the rotation is attended with con-

siderable cost. The permanent pasture will not only require an additional quantity of manure for top dressing, but the other land deprived of the beneficial effect of being alternately pastured, will also require a large quantity of manure or fertilizers to give the same results. And then it is doubtful if the increased quantities of applied plant-food will not result in a change for the worse of the physical conditions of the light soils through the uninterrupted tillage of the soil, and will not have the same good effect as the pasture had, at least as far as the yield of grain is concerned.

Sometimes the fault of not securing a good stand of grass is due to the sowing of an insufficient quantity of grass and clover seed, or of grasses not suitable for the soil and the purpose. For permanent pastures a variety of grasses and clovers should be sown. When we closely inspect an old sod we find on a single square foot from fifteen to sometimes forty different plants, some more prominent and numerous than others, and some so small that they are hardly noticed. This great variety of plants, with different demands on the plant-food of the soil, with deep and shallow-growing roots, and with different degrees of sensitiveness against dry and wet weather, is one of the main causes of the permanence of these pastures. Sometimes, if the pasture has survived the fourth or fifth year the natural or wild grasses which formerly occupied the soil will put in an appearance. But their taking possession of the soil is, however, doubtful, because the conditions under which they formerly thrived have changed. Sometimes the seeds of weeds will also find their way into the pasture. On soils suitable for permanent pastures the grasses have such a strong hold on the soil that the upcoming weeds are easily suppressed; but on soils not suitable for this purpose, or on pastures not properly taken care of, they may gain such a strong footing and so overrun the pasture that it has to be plowed up.

As a general rule, we can say that wherever experience, if gained even on small spots only, has not demonstrated the advisability of making pastures permanent, experimenting on a small area cannot be too strongly recommended, as the changes which have to take place in the management of the soil and the work and cost connected therewith are usually considerable. There are many other ways of making good the deficiency of the pasturage during dry spells by feeding additional quantities of green crops or small quantities of concentrated feed-stuffs. These will often not only deserve the preference, but will also be found to be cheaper than the forcing of soils into producing a crop for which they are not suited.

District of Columbia.

H. WINKELMAN.

Mention the *Planter* to your friends.

## THE IMPROVEMENT OF WORN-OUT SOILS.

*Editor Southern Planter:*

The best made machines in the world, if kept in constant use, will wear out in a longer or shorter period of time, according to the strength of the materials of which they are constructed and the excellence of the workmanship. They will wear out much faster if they are not kept oiled. Generally, the worn-out parts can be removed so that the machine will run a while longer, but sometimes it is worn out so badly in every part that it will hardly pay to be repaired. In like manner the best farm soils, if kept in constant use without manure, will be worn out in some of their parts, which, if renewed, will produce crops again nearly as well as ever; but sometimes they become so thoroughly worn out, or exhausted of their fertility, that they are not worth reclaiming in a country where new land is obtainable at a low price and farms given away by the government. That was the matter with the abandoned farms in New England and Old Virginia. They were wisely abandoned because it would cost more to restore them than to get good land elsewhere.

The restoration of a thoroughly run-down farm is too costly an undertaking for an ordinary farmer. Fertilizers must be bought and come from other places. Green manuring alone will not do. If the whole farm was planted with clover and cow-peas and turned under, the land would only hold its own. These legumes merely obtain a little nitrogen from the atmosphere, and nitrogen is but one necessary ingredient of a good soil. The trouble with an impoverished field is, that it is next to impossible to get a good growth of these legumes to plow under. Like all other plants on earth, they flourish best in a good soil.

Some writers have told about buying run-down farms and in a few years bringing them up to a high state of fertility by growing clover and plowing it under. I would suggest that the farms were not so badly run down as supposed, or they would not have produced good crops of clover. The writer has had to top-dress a field with rotted manure to insure a good "catch" of clover, to say nothing about a luxuriant growth. Land that was supposed to be barren, has been made to produce fair crops by plowing a little deeper than ever before, pulverizing it more thoroughly than ever before, and giving excellent tillage. Jethro Tull proved that some land, thought to be barren, only needed deeper and better plowing, better tillage and drainage.

There is said to be a slow decomposition going on constantly in the soil, which thorough and frequent tillage assists. Nature will restore the fertility to an abandoned farm in time, but the process is slow. Edmund Ruffin, one of the most distinguished agricul-

turlists our country has produced, when hardly of legal age, was left by the death of his father with the management of an extensive estate in Prince George county, Va. Like many other plantations in the South which were cultivated by slave labor, it was greatly impoverished. He had intelligence, education and capital. He had the enthusiasm of youth and a fondness for farming, but had no practical knowledge of the business he was undertaking. He at once recognized the fact that the exhaustion of the fertility of the soil was the great difficulty with which he had to contend, and set about the business of its restoration with all the information and ability he could command. His land was too poor for clover. He found it impossible to get a crop. The soil was shallow and the hillsides had suffered serious loss by washing. Green manuring was a failure. After six years of earnest effort, he declared that "no part of my poor land was more productive than when my labors commenced, and that on much of it a tenfold increase had been made of the previously large space of gullied hillside."

In reading Sir Humphrey Davy's lectures on Chemistry, he found the following: "If, on washing a sterile soil, it is found to contain the salts of iron, or any acid matter, it may be ameliorated by the application of quicklime. A soil of apparent good texture was put into my hands by Sir Joseph Banks as remarkable for its sterility. On examining it, I found it contained sulphate of iron, and I offered the obvious remedy of top dressing with lime, which converts the sulphate into a manure."

Mr. Ruffin tested his soil for the salts of iron, but found none. He then suspected the presence of organic acids, which acted as a poison to the crops, and his suspicion was strengthened by observing that the vegetation on his worn-out fields consisted largely of sheep sorrel.

He had on his farm extensive beds of shell marl, containing a large proportion of lime, which he applied to his land at the rate of 200 bushels to the acre, and he obtained an increase of 40 per cent. over the crop on similar land untreated. Encouraged by the result, he made more extended experiments, and the result was overwhelmingly in favor of the marl-treated land. In some instances the crops from the marled fields were more than twice as great as from the same fields before marling. He did not expect to build up the fertility of his farm by the use of marl alone. The lime in the marl sweetened the acidity in the soil, and made it respond to the application of animal manures which had been previously used to little effect owing to the sourness in the soil. He had great faith in the value of vegetable manures which supply humus—one of the necessary constituents of a good soil—and

made every effort to add as much organic matter to his land as possible. His experiments were continued for many years, and accurate records kept. Marl was tried with and without manure, and manure was tried alone. The result of a large number of experiments proved that marl was of very great benefit, the lime it contained being the valuable ingredient.

The inhabitants of Flanders (now Belgium) gradually converted a barren sandy soil into a fertile loam, first raising spurry (sometimes called "sand weed") and plowing it under repeatedly to form humus to retain moisture. They also fed spurry to cattle, of which they kept a large number in proportion to the size of their farms—generally maintaining one beast for every three acres. Spurry will thrive well where clover will not grow until the land has been improved by the addition of humus. Although spurry is not so good a forage plant as clover, cattle can be kept on it. It is a vigorous grower, and ripens its crop in about six weeks.

As soon as red clover could be made to grow, the farmers of Flanders relied upon it to feed cattle, and plow under for manurial purposes. Of course, the cattle manure was carefully saved and applied to the land, and when the fertility was fully restored raised large crops.

Apparently, these barren Flemish lands were restored to fertility from their own resources, but it is stated that the soil was full of pulverized fish bones, shells, and the decomposed flesh of sea inhabitants. What it principally needed was humus, which the green manuring supplied. J. W. INGHAM.

## THE LEGUMES AS FERTILIZERS.

*Editor Southern Planter:*

I am a strong believer in the virtues and efficacy of clover, cow peas and the other legumes as soil renovators, fertility increasers, etc., yet I have little patience with some over zealous champions who ascribe to them miraculous or semi-miraculous powers that they, good and invaluable as they are, do not possess, never did possess, and never will possess. It forcibly brings to my mind the truth of the old adage that many a really good and meritorious cause has been irreparably injured by the indiscreet zeal of its advocates.

I have planted legumes, such as red clover, scarlet clover, alfalfa, vetches and cow peas for the last thirty years; in no single instance has the land failed to be benefitted by their use; yet, I have never succeeded in making a piece of poor land rich by their use alone.

Among our other lands, we have some waste places, that are so outrageously poor that even cow-peas cannot be made to grow thereon, alone and unaided, exceeding six inches to a foot in height.

Wishing to build up these lands as economically as possible, regarding them as a nuisance and an eyesore when dotted here and there as they are, in an otherwise comparatively fertile field and not liking to pay taxes annually on dead property, hearing on all sides of the wonderful properties possessed by the cow-peas as a soil restorer, I have, for quite a series of years, been sowing these lands down to cow-peas.

These desert places in the midst of an oasis have obstinately resisted all endeavors toward their amelioration and improvement, whenever and wherever cow-peas alone have been the exclusive reliance as a soil improver.

The places referred to are washed places, galled spots, sides and bottoms of gullies, etc., and though I am actually succeeding in bringing them too, I am compelled to admit that I have the very first instance to see where this amelioration has been brought about by the use of cow-peas alone. I simply believe "it can't be did."

The putting on of a little stable manure here, a coating of chip manure there, sorghum bagasse, refuse hay used to stop washes and even to scatter over the surface, has helped these places considerably; they badly need all of this, as they are utterly destitute of vegetable matter, organic matter, humus or humus making material of any kind or description; yet, strange as it may appear, I can get good results from the use of infinitesimally small quantities of chemical fertilizers when applied to either corn or cotton on these same soils that, as before stated, are utterly destitute of humus, and can also obtain a luxuriant growth of cow-peas, the very first season of application, by the use of 300, 400 or even 500 lbs of a mixture of six parts of acid phosphate to one part of muriate of potash scattered broadcast and plowed in any time during the winter months.

My experience along this line has not had the effect of weakening my faith in the efficacy of cow-peas and the other legumes as fertility restorers, but it has had the effect of causing me to lose confidence in those who ascribe to them virtues they do not possess.

All these deluded and delusive individuals need to convince them of their error is to give them a little piece of this identical exhausted or originally poor, barren and sterile land to cultivate to make a living on and on which to substantiate their theory, they would soon give up their undesirable task and become converted to more stable, wholesome, rational ideas.

There is no way by which something can be obtained from nothing. It is a well established and widely-known fact that each and all of the legumes, while engaged in their highly important task of attracting, abstracting and absorbing nitrogen from the inexhaustible supply contained in our atmosphere,

are greedy feeders on both potash and phosphoric acid, and as there is neither potash nor phosphoric acid to be found in or obtained from the atmosphere, it stands to reason that it must come from the soil. If the soil is deficient in these substances, the legumes fail to grow, and the land is said to be "too poor" to grow them; cavil about it as you may, nothing short of a restoration of the elements in which the soil is deficient will enable any one to obtain a crop of even the legumes.

On the other hand, on even comparatively fertile soil, where the legumes are persistently sown, in the vain hope of still further increasing fertility thereby, the over taxed soil, by reason of the annual abstraction of such large quantities of potash and phosphoric acid, eventually loses its balance and becomes what is termed clover-sick, or pea-sick, and refuses to grow either clover or peas, except the needed supply of both potash and phosphoric acid be replenished from some extraneous source.

In the feeding of plants, the fact should be borne in mind that "an element of food is ineffective if there be absent a single one of the other elements of food which are conditional to its activity." It is with plants exactly as is the case with animals; the process of nutrition, in either case, consisting in the appropriation of food. A plant, like an animal, grows by increasing in bulk, and its bulk increases by the constituents of its food becoming constituents of its frame. Take a young animal that has been prematurely deprived of the phosphate of lime contained in its mother's milk, its frame work or bony portions are decidedly deficient, and no matter how liberally or even prodigally the feed may be piled into it in after life, its limbs refuse to sustain a weight greater than the bones are capable of holding up; hence it will be undersized.

So also, in the case of wheat, the silicic acid and other substances are there to make the stem, but if potash is deficient to strengthen that stem and toughen its fibres, it cannot hold up its own weight, hence the so called lodging is the result.

If a soil is abundantly supplied with potash, phosphoric acid and lime, then it is susceptible to further improvement by the raising of any of the legumes thereon; but if, on the contrary, those substances are lacking, it is only susceptible to improvement but to a very limited extent by them, and even the legumes themselves will be a comparative failure. The more potash and phosphoric acid present in any given soil, the larger the amount of free nitrogen the various legumes are able to draw from the atmosphere, and those substances must be present in sufficient quantity if a full supply of said nitrogen is attracted, and said legumes are permitted to reach their full growth;

falling in this, the maximum amount of benefit that it is possible to derive from their use will never be attained; this is as inevitable as was the ancient laws of the Medes and Persians, or as inexorable as fate itself.

It is generally supposed that clay soils are not deficient in potash, and hence, in the planting of the legumes, that phosphoric acid fertilization alone will be found amply sufficient; but this is not always the case, the good results following potash fertilization may be more pronounced in sandy or peaty or limy soils than in clay soils; yet, in many clay soils, potash fertilization often produces quite a considerable increase in yield. This is the case with almost all crops, but more especially so in the case of the legumes; each and every farmer can and should decide for himself as to the advisability of, or necessity for, applying potash to his soils by experimenting for himself, by putting the question to the soil itself, getting the answer in manner of growth and crop produced.

As a general rule, peaty and sandy soils, sandy loams, soils rich in lime and very often "aluvials," are deficient in potash, while the same invariably holds good in old, well-worn or semi-exhausted soils. I have yet to see the first instance where this class of soils fail to be benefitted by using potash liberally, in conjunction with phosphates; the two should go together, and where one raises the supply of nitrogen at home by means of legumes this is all that it is also lutely essential should be purchased by the general farmer.

Legumes benefit crops by not only furnishing nitrogen and also humus, but also by the potash and phosphoric acid they have pumped up, by means of their long tap roots, from the subsoil below. The fact should be borne in mind that the soil is impoverished, and its fertility actually decreased by the amount of potash and phosphoric acid removed from the soil by said legumes; they should be credited with nitrogen and humus only; so far as potash, lime and phosphoric acid are concerned, they are soil robbers and fertility decreases.

G. H. TURNER.

*Burgess, Miss.*

## HOW MUCH PLANT-FOOD IS LEACHED OUT OF THE SOIL?

*Editor Southern Planter:*

We can hardly pick up an agricultural paper in which some reference is not made to the leaching of plant-food, but without any effort being made, so far as I am informed at least, to determine the loss.

I think it will therefore be of interest to the readers of the *Planter* to learn the results of such an experiment, undertaken in Germany, which throws some light on this question. The results obtained there are

of course not determinative. The amount of plant food leached out of a soil will differ on different kinds of soil, under different climatic conditions, and even on the same kind of soil in different states of cultivation.

The experiment was undertaken by Mr. Creydt, the owner of a large estate, in co operation with Professor Scelhorst and Dr. Wilms.

A field on Mr. Creydt's farm, near his house, of 12 acres, was selected for this purpose. The elevation of the field was from 465-195 feet above sea level. The field was leaning on a ridge of hills, the highest point of which was 741 feet. The field was systematically drained, the lateral drains laid 4 feet deep, 45 feet apart, and were 441 feet long. The rainfall amounted to 506,336 liters per acre, the drainage 852,672 liters, (20 liters = 21 quarts). As the quantity of the latter exceeded that of the former, from the latter part of January until the middle of May, the surplus must have come from the higher land. Due allowance was made for this in the obtained results.

The soil profile showed, as an average, 12 inches of surface soil, resting on 12 inches of loam. The subsoil consisted of a clay loam, mixed here and there with gravel.

The following crops had been grown: 1897, beets; third year after manuring. The soil was fertilized per acre with 30 lbs. nitrogen, in form of sulphate of ammonia; 24 lbs. of Chili saltpetre, and 38 lbs. of water soluble phosphoric acid.

1898. Wheat, with 15 lbs. of nitrogen, in form of sulphate of ammonia.

1899. Beans manured, and 12 lbs. of nitrogen, in form of Chili saltpetre. The soil was plowed for beets September 25 to 27.

1900. Beets, with 300 lbs. of 18 per cent. water soluble superphosphate and 225 lbs. of Chili saltpetre (nitrate of soda).

The taking of the samples of the drainage water was done by Mr. Creydt himself. Nine liters were obtained every day, and of this quantity one liter was sent to the laboratory for examination. At the end of a week, the seven samples were analyzed collectively.

The investigations showed that drainage water contains different quantities of plant-food per liter at different times of the year. This is due to the difference in the rainfall, the taking up of plant-food by the crops, the amount of humus present in the soil, the temperature, and the greater or less solubility of different kinds of plant food in water of different temperatures. Warm weather increases the decomposition of the humus, and hence the amount of carbonic acid which, taken up by the soil moisture, will not only dissolve more lime, but will have the same effect on the other mineral plant-foods. The larger amount of salts in the

drainage water of 1899 against 1900 is due to the mairing of the soil and the thereby increased formation of carbonic acid.

When warm, water favors the solubility of most salts, it decreases the solubility of a few. For instance, calcium sulphate is more easily soluble in cold than in warm water.

The magnesium content of the drainage water shows greater variations than that of lime. The same can be said of sulphuric acid. The large quantities of sulphuric acid in the drainage water in the year 1899 were due, without doubt, to the liberation of sulphate salts from the decomposing manure.

The loss of potash is exceedingly small.

The amount of nitric acid begins to decline with the advancing year, and is at a minimum in winter. Nitric acid ceases at a temperature of + 5 C. (41 F). The large amount of nitric acid in the drainage water in 1900 is due, without doubt, to the fertilizing of the beets with Chili saltpetre (nitrate of soda). From the 16th of June until the 27th of July the loss was 17 lbs. per acre. The loss of phosphoric acid is so small that it practically amounts to nothing.

The total loss of plant-food per acre in one year was in round figures :

561 lbs. Lime.
125 lbs. Magnesia.
162 lbs. Sulphuric acid.
7 lbs. Potash.
15 lbs. Nitric acid.

The investigations show that even on heavy soils the loss of nitrogen is quite considerable, and nitrogen compounds should therefore be applied when the soil is covered with vegetation, and in moderate quantities only. The loss of potash and phosphoric acid is so small that it is of no consequence.

*District of Columbia.*

H. WINKELMAN.

## WHAT INTELLIGENT BUSINESS MANAGEMENT CAN DO ON A FARM.

*Editor Southern Planter :*

We often hear of the young men of the country going to the cities to better their condition, but rarely do we hear of the opposite being the case. The last few years have wrought great changes in this respect, however. All of us love the free, country life, with its quiet and beautiful nature on all sides. The rushing city life, with its nerve killing pace, is telling on the health of our best and most energetic city men. So they are turning to the country for their only relief. In Virginia, we see very little of this, but it is increasing in many of the Northern States ; nearly all the men of moderate means have their country place or camp, where their family can spend the summer months in the

open air. These camps are often very simple, and lucky is the one who can visit one of them. There one can see how thoroughly comfortable one can be with a very small outlay, and how much more healthy it is both morally and physically, than the formal life of the summer resorts. No section of the country needs summer homes in the country like our own South. Our cities are necessarily warm, especially the nights. My country place is only six miles from Richmond, but the temperature at nights is always delightful. The house should be built on the highest hill, so that you can get all the breeze that is passing your way. Trees do not add to our comfort. They have the appearance of coolness, but they really prevent the free passage of the air. I find great delight in looking over my small farm in the evening, after a hard day's work in the city, and it is quite wonderful how soon a city boy can learn the importance of potash, nitrogen and phosphates. I can truly say that in no calling in life, is there greater necessity for system, intelligence and good hard sense than on a farm. I am a city-bred man, love the country life, so have seen both sides in a limited way.

I am trying to raise everything on my twenty five acres that I actually need and use. While I have not yet been successful, I am beginning to see that with perseverance and hard work it is possible. Last summer I had a very good vegetable garden, raising everything my family and that of my manager could use, besides growing a good quantity of winter vegetables. I grow just enough corn for my own use. Have fifteen acres in grass, and have now thirteen cows and heifers, so that I am now putting from four to five loads of manure per week on my land. I have not had to buy any feed this winter, but bran or cotton seed meal. Am selling milk in Richmond at the rate of \$70.00 per month, besides supplying my own house with cream and milk. Next winter, I expect to double this, as the heifers will be fresh by then. There is some money in milk even at low prices, but is necessary to weigh the milk each day, and to insist on the milkers being gentle. No cross words or barking dogs should be allowed.

I recently purchased from Biltmore a very handsome and promising Jersey bull, "Noble General Gordon." He is from a very strong strain of milk producers, and will greatly improve my little herd. My barn is the cellar type, with bright windows, but keeps very warm. Next winter I shall use warm water only, as it greatly improves the flow of the milk.

I also purchased at the Biltmore sale, two Berkshire sows and a boar. One of the sows is "Harlene 58040," imported by the Biltmore farms last year. She has just farrowed and is a very promising sow. It costs no more to keep such stock than the razor back, and it is such a

standards to own the best, and thus assist in raising the standards.

Just one word as to the business end of my plan. Each week, my manager, Mr. R. C. Kelly, sends me a report. It is printed, and easily made out. It shows a complete list of all stock and poultry, and gives the production of milk and eggs each day; all sales and purchases. So the farm is susceptible of business ways like any other business, only it needs it more. Before closing, I must tell you what a great help your paper has been to me; it is so plain and instructive that even a city man can absorb it in helpful doses, and with its aid and timely suggestions, I hope, in a few years, to develop Miniborya Jerseys and Berkshires, and that these will be considered as good as any, for it is not necessary to have the splendid equipment of Biltmore farms to produce the same results.

J. SCOTT PARRISH,

*Miniborya Farm, Chesterfield Co., Va.*

We have the greatest pleasure in publishing the foregoing, as it is a confirmation of what we have so persistently urged, viz.: that what is needed to make farming pay in the South, is intelligent, well directed business management and careful study and application of the principles underlying scientific agriculture. Mr. Parrish is one of the busiest business men of the city of Richmond, conducting a large and successful business, and yet he finds time to give such study to his farming operations as to make them also successful, another illustration of the truth of the saying that "only the busy man can find time to attend to matters outside his own special work.—Ed.

#### A CHAMPION CROP OF TURNIPS.

It is interesting to know what a champion crop of roots is in a country where roots are a staple crop on which much dependence is placed. In Scotland, a valuable prize is annually awarded at the National Show of fat cattle in Edinburgh for the best yield of turnips, competition being open to the whole of the "land o' cakes." The champion prize over all this season was won by Captain Stirling with a total yield of topped and tailed roots of forty-two and one quarter tons to the acre. This crop was fertilized with thirty tons of common barnyard manure, 224 pounds of bone meal, and 1,000 pounds of superphosphates. These rutabagas were of the variety known as Springdale Purple Top, and the yield shows that though Captain Stirling is at the head of his regiment in South Africa the fertility of the old Keir farm is not deteriorating in his absence.

This yield is equivalent to 94,638 lbs. or 1,720 bushels. Why will not some of our Southern farmers endeavor to emulate such a crop? It is quite possible to do it here, and the man who succeeds will be able to realize what a valuable stock food turnips are. His cattle and sheep will show the results of feeding roots unmistakably. We have frequently made 35 tons of turnips to the acre and 55 tons of Mangold Wurtzel beets.—Ed.

#### ENSILAGE AND SILOS.

*Editor Southern Planter:*

In reply to Fred. Drew, D. C., in February number, in regard to Ensilage and Silos, I would say, I have two small silos, one of 15 tons capacity, and one of 30 tons, which I have filled for the last six seasons with great satisfaction to both myself and the five cows that eat the ensilage.

I plant common white Southern corn, rows three and one half feet apart, and one grain every nine inches in the row, planted with a one horse drill; cultivate as if for corn, and when it begins to glaze or get too hard for roasting ears, I fill my two silos. It usually requires about two and one-half acres to fill both. I cut it into one inch lengths, ears and all, with an Ohio Standard Cutter run by a three H. P. Gasoline Engine, cutting and elevating with 26 feet of carrier at the rate of about three tons per hour. We do not rush it, but fill slowly part of a day at a time, to let it settle. Cover with about six inches of plane shavings only.

I begin to feed about November 1st, and usually have enough to last me until about the first of June. I feed all I can get on a bushel basket both morning and night with what clover hay they will eat, which is not very much, besides. I make gilt edge Separator butter for the home market, and have the best trade here.

My silos are made of common inch lumber dressed to a thickness, double boarded, with tar paper between. They are square, with a twelve-inch plank beveled and run up in the corner to cut the corner off, common 2 x 4 frame on the outside built in the corner of my old barn in the hay bay. They are eighteen feet high with lumber, and dug down in the ground inside same size about four feet, to make them that much deeper, as depth is what you want, not surface. Don't build so as to have too large a surface exposed when using so as it will spoil; rather build two, or even three, small but deep silos.

No need to use cement, as a cheap silo will turn out just as good ensilage, and lumber will make a durable silo. Board it up and down, and paint the inside with gas tar, thinned with gasoline.

Build a good silo, fill with corn only; cut it when right, leave all the ears on, and you can't help but have good ensilage.

After using one winter you will see what you are now missing, and you get the gain at a big reduction in cost for feed. You can easily double your number of cows on the same land, as nothing you can grow on an acre of land will make one-half the feed that corn ensilage will, and nothing I ever fed suited the cows so well and made such rich milk and lots of it.

*Surry Co., Va.*

O. D. BELDING.

## THE PREPARATION OF THE LAND FOR THE CROP.

### 1. Plowing.

*Editor Southern Planter :*

The successful raising of crops involves the proper preparation of the soil—the planting, the fertilization, and the cultivation of the crop. It is easy to enunciate the above facts, but difficult even for a trained scientist to execute them properly. To accomplish the above requires a knowledge of every science which underlies agriculture.

Drainage, and the relation of the soil and crops to water, air and heat, belong to the domain of physics. The ingredients of soils, plants and fertilizers are demonstrated by the chemist. The bacteriologist, by the aid of the microscope, reveals the myriads of microbes existing in every fertile soil in good tilth, busily engaged in transferring insoluble matter into available plant food. Physiology teaches how the plant takes in its food and transforms it into, first, the blade, then the ear, and after that the full corn in the ear. Botany differentiates the plants we cultivate, classifies them according to their common properties—of roots, stalks and leaves. It points out the difference between tap-rooted and fibrous rooted plants, between netted vein and parallel veined leaves, between exogenous and endogenous stalks, between monoecious and dioecious flowers, between leguminous plants with nodules on their roots, through which the nitrogen of the air is absorbed and assimilated, and non leguminous plants which must get all their nitrogen from the soil.

Geology tells us of the origin of soils—whether coming from the disintegration of rocks *in situ*, or whether after disintegration the materials have been transported and assorted by moving waters.

Mechanics gives us the laws which assist in the evolution of a plow, and in the construction of the double and triple trees by which the plow is drawn, as well as in the arrangement of the gear by which the mule or horse is hitched, so as to exert the maximum power with the least expenditure of labor.

The grand object of plowing and cultivating is to produce such conditions in the soil as shall conduce to the most rapid development of the plants under cultivation within a given time. Therefore, every factor producing these conditions should be clearly understood, and if possible, made active in our operations. "Why we plow" and "why we cultivate" are questions easier asked than answered, and but few farmers appreciate fully the reasons for the work which he gives his crop.

While every effort should be made to accomplish our work in such a manner as to wring from nature every assistance possible, there is, unfortunately, a practical money getting side to farming, that compels us to do this work in such an economical manner as to leave a balance on the profit side of the ledger at the end of the season. Therefore, the successful farmer or planter must combine the scientific and practical in all of his work. He must first know why he plows, and then how to do it successfully, as well as economically.

Science teaches that there are ever present in nature two active series of forces—the one constructive, the other destructive. They operate alike upon the three great kingdoms—mineral, vegetable and animal.

These forces are perfectly apparent in the vegetable and animal kingdoms. Propelled by the mysterious force of vitality, the plant or animal under suitable environment thrives; constructive forces are at work in both instances just as long as life exists. The vegetable kingdom transforms the minerals into fibre, leaf and fruit. The animal kingdom takes the products of the garden, field and forest, and transforms them into flesh and blood, bone and sinew, hair and hoof—the most complex of organic substances. Remove the influence of vitality, death ensues, and the destructive forces begin at once the work of disintegration and decay. The more highly organized bodies are the earliest to begin dissolution and the quickest to reach absolute revolution into the simple forms of matter. This is evidenced by the rapidity of the decomposition of animal bodies after death. Vegetable matter decomposes more slowly, but is ultimately resolved into the same simple substances.

To the layman the operation of these two opposing forces in the mineral kingdom is not so apparent. The study of geology teaches us, however, that "by ceaseless change all that is subsists"—that the granite rocks of to day may become the fertile soils of to morrow, and the fertile soils of to morrow may by natural forces be converted into rocks of the next geological day.

The forces at work may be classified as gravity, heat, water alone—either as a vapor liquid or solid—water charged with carbonic or other acids—oxygen of the air—chemical affinity, and last, but not least, vitality. Under the head of vitality must be included the ferments and microbes—so potential of wonderful results in their aggregate action. These forces have produced all the changes on the earth's surface, and are still acting with undiminished intensity, causing the shifting scenes in the natural spectacular drama daily exposed to the inquisitive gaze of a transitory humanity.

The internal heat of the earth, the deposition by moving water, of rock material, subsequently solidified or crystallized by pressure and other agents, are constantly producing "rocks." These rocks, whether of igneous or aqueous origin, are assailed at once by the destructive forces, and the work of disintegration begins—preparatory to the support of vegetable life. Soon a few lichens appear, preceded perhaps by microbes, and followed in order by mosses, grasses, weeds, with finally, shrubs and trees. To the unaided eye of the prospective settler, there is finally presented a more or less complete disintegration of rock into soil.

While this decomposition is in progress, the falling rains and moving waters are transporting, assorting and depositing much of this disintegrated material at lower levels, until finally large areas of alluvial soils have encroached upon the ocean's domain and enlarged the territory of cultivable soils. The increasing layers of alluvial material, superimposed the one above the other, will develop by its own weight sufficient pressure to begin again the process of rock making, and if undisturbed will ultimately produce incipient slates, shales and sandstone. An illustration of this is found in the formation of hard pan, which frequently occurs underneath soils which are cultivated with shallow implements.

These preliminary remarks will doubtless throw considerable light upon the "why" we plow our soils. The first and primary object of breaking soils is to

arrest this natural tendency to rock making, to open up the first twelve or eighteen inches of the soil to the disintegrating influences of air, water, carbonic acid, vegetable matter and microbes.

A hard pan forming near the surface is destructive to soil fertility. Bricks are artificial rocks hardened by pressure and heat. If they are finely ground, and seeds be planted in the powder, they will not grow—why not?

Study the decomposition of rocks "in situ." No sign of vegetable life is apparent. Presently, by the forces already alluded to, a thin seam or crumbled rock is completely occupied by the lower forms of vegetable life. By the vital activities of these plants, aided by the microbes, which simultaneously begin their preparatory work, disintegration becomes more rapid, and soon a higher order of plants appear to be in turn supplanted or supplemented by still higher. Lichens give way to mosses, mosses to grasses and sedges, and these in turn to shrubs, until finally the majestic forest, sending its long tap roots down to the now deeply obscured rocks, covers the landscape and announces by its presence the fitness of the soil for cultivation. The woodman's ax clears the forest, and the farmer's work of retaining the conditions which nature has established, now begins. He must plow deeply and frequently. He must rotate his crops, using in the rotation a deep tap rooted plant, so as to maintain the permeability and fertility of the soil which nature through long ages has prepared for him, or else the constructive forces ever present will gradually restore his soil to incipient rocks, and make it unproductive.

Physically, the soil is the home of the roots of plants, and they must have air, moisture and nutrition. Deprived of any one of these, the plant dies. In our homes it is found that space is needed to give an abundance of air and freedom of movement, both essential to health and well being.

The plant, too, in its home, must have room for the movements of roots, and depth and permeability for the supply of atmospheric oxygen and capillary water.

The pulverized brick will not support, at first, plant life; but supply it with air, moisture, micro-organisms and organic matter, and a wonderful transformation in its producing power will be apparent. These are absolutely needed to transform the inert impalpable brick-dust into soluble plant food.

By plowing the soils, air and moisture are admitted, and they go upon their heaven decreed mission of preparing plant food. An important fact must here be emphasized. This soluble food must be at once utilized by a growing plant, else it will be quickly resolved into insoluble forms or washed out by descending showers beyond the reach of plants. It is therefore of the utmost importance to keep our fields occupied as far as possible by some growing crop throughout the year. The amount of plant food available at any one time, even in our most fertile soils, is relatively very small, and is dependent, as will presently be shown, upon "tilth."

The first object, then, in breaking land is to arrest the natural tendency of all soils (some more than others) to make rock, which is accomplished by letting in freely air, moisture, and the roots of plants. In the disintegration of soil particles, which results from the action of the above, plant-food is eliminated.

The second object in breaking land is to destroy the weeds and grasses, and thus relieve it of the foulness which an excess of vegetable growth always produces. This is usually accomplished with a turning plow, which inverts the soil while breaking it. Plowing is, then, a cleansing process. It is nearly always desirable to incorporate vegetable matter with the soil, to make "humus," which subserves a most beneficial purpose both from its physical and chemical effects upon the land. Leguminous crops are highly esteemed for such purposes, but in their absence weeds of any kind may be utilized.

The third object in breaking land is to control moisture. Lands long subject to overflow and which have become water sogged, may be relieved and made productive by drying, which is sometimes accomplished by throwing into high ridges and exposing the largest surface possible, with bare deep middles, giving increased evaporation from lower depths and furnishing channels for the escape of flood waters in excessive rainfalls.

Evaporation is a cooling process, and no soil can be made productive which has an excess of water constantly evaporating from its surface. Therefore wet lands are frequently relieved of their excessive moisture by proper plowing. On the other hand, if the soil be drouthy and the rainfall unequally distributed throughout the year, breaking the land deep and flat, lapping each furrow on the preceding, forming a continuous mass of loose earth eight or ten inches deep, a reservoir is formed for the storage of water for dry periods, and a blanket is spread over the subsoil to prevent rapid evaporation. Sandy and light loamy soils should always be thus treated, while clays, naturally hydroscopic, had better be ridged to dispose of their excessive moisture.

Soils vary greatly in their capacity to hold water. At Audubon Park it has been found that the soils will carry over 50 per cent. of their weight of water without dripping. It has been further determined that growing plants will suffer on these soils when the moisture is reduced to 12 per cent. Sandy soils will rarely hold over 20 per cent. of their weight, and will successfully sustain some plants where the water is reduced to 2 to 4 per cent. These differences are due to the different percentages of clay, silt and sand which these soils contain, and a knowledge of these different capacities frequently, in the absence of irrigation, determines the character of the crop to be grown.

Grasses of all kinds revel in an excess of moisture. Being fibrous rooted, they gather their substance from the upper layers of the soil, and hence this upper stratum must furnish at least 15 to 25 per cent. of moisture in order to render soluble a maximum amount of plant food. Clay lands readily supply this excessive amount, and hence are specially adapted to grasses. Cane is a gigantic grass, and enjoys, in an intensified degree, this love for moisture. Hence it is grown most everywhere upon clay or loamy clay soils.

Whatever the capacity of a soil for holding water, it has been found that 50 to 60 per cent. of this capacity is the amount best adapted to the rapid growth of these plants most suitable to the soil.

At Audubon Park repeated experiments have shown that 25 per cent. of moisture always present in the soils produces the largest and best crops of sugar cane.

Exp't Sta., La.

WM. C. STUBBS, Director.

## ENQUIRER'S COLUMN.

Enquiries should be sent to the office of *The Southern Planter*, Richmond, Va., not later than the 15th of the month, for replies to appear in the next month's issue of the *Planter*.

## Fertilizing the Corn Crop.

I am much interested in your advice to A. T. Tignal, p. 81, as to best method of fertilizing land to be planted to corn. It could be included in the following rotation, which would suit my requirements exactly, and by fertilizing intelligently the land should improve. I therefore submit the following plan, and will ask you to point out errors and to suggest improvements. I would say that no barnyard manure would be available for any of these crops:

First year. May 1.—Cow peas, with 12 lbs. of phosphoric acid and 25 lbs. potash. Cut for hay. September, vetches, with 40 lbs. phosphoric acid and 50 lbs. potash.

Second year.—Graze vetches and plow down for corn. Plant corn without fertilizing. October, rye and grass mixture for hay crop. with 10 lbs. nitrogen, 40 lbs. phosphoric acid, and 20 lbs. potash. Apply lime at rate of 40 bushels per acre during the winter.

Third year.—Harvest rye.

Fourth year.—Apply 75 lbs. nitrate of soda per acre in spring. Make crop of hay.

Fifth year.—Make hay crop and graze. (Should the land be fertilized in the spring of this year with, say, 25 lbs. nitrogen, 15 lbs. phosphoric acid, and 25 lbs. potash?)

Fauquier Co., Va.

H. C. G.

We are of opinion that the rotation suggested would result in improvement of the land and the production of profitable crops. We understand the application of fertilizer suggested to mean that for the pea crop 100 lbs. of 12 per cent. acid phosphate and 50 lbs. of muriate of potash would be applied, and for the vetch crop 300 lbs. of 13 per cent. acid phosphate and 100 lbs. of muriate of potash. We would suggest that probably better results would be obtained with both crops by an equal division of the fertilizers between them. We would advise the seeding of oats or wheat or a mixture of both with the vetches. Vetches are very apt to fall down and be largely wasted except as humus making matter, unless some grain is seeded with them, and the grain largely increases the pasturage value of the crop. Following the corn crop, we would, if we wanted a good grass meadow, seed only grass and clover. The seeding of a grain crop with grass is, in our experience in the South, a mistake. Instead of being a nurse crop it is a robber crop, and the grass, even if not killed out by the sun, as is too often the case when the grain is cut off, is so weak a growth as to make little or no progress until the cool months of the fall. Seeded alone, the grass and clover makes a strong growth, and will usually give a cutting of hay the first year. In any event, we would not seed rye for hay, as it makes the poorest hay of any of

the cereals. Oats, or oats and wheat, seeded together are much better feed. We would apply the lime in the fall after plowing the corn fallow, and harrow in lightly, and then work in the fertilizer with the grass and clover seeds. Lime applied on the top of a grass sod is apt largely to remain there until the land is worked, and makes the hay very dusty. If we applied anything to the meadow in the fifth year, it would only be nitrate of soda. We think it largely a waste of fertilizer, so far as the growing crop is concerned, to apply either phosphate or potash, unless they are worked into the soil, as they are so slowly soluble when unmixed and kept moist. We would reserve the phosphate and potash until preparing the land for the pea crop in commencing the rotation again.—Ed.

## Violet Growing.

Please publish in your next month's journal how and when to plant violets.

Richmond, Va.

M. L. PHAUP & CO.

Violets are usually grown from the offshoots of the old plants. These are plentifully produced during the summer months. Early in the fall the old plants are dug up and all these young plants or offshoots pulled off and set out under cold frames to grow on until winter, when the plants should be strong ones. The soil should be made rich and be kept moist; and whilst the plants should not be rendered tender by being kept close covered, they should be protected from frost. When winter weather sets in, they should be closely covered and kept warm, and will in the early spring bloom freely.—Ed.

## Alfalfa.

Could you give some information about alfalfa clover, when to sow it, and on what kind of ground?

Giles Co., Va.

R. E. LUCAS.

Alfalfa may be seeded either in fall or spring, but in all parts of the South, except the mountain section, is best seeded in the fall, say August or September. It requires rich, deep, well prepared land, free from weed seeds. If weeds are allowed to grow the first year after the crop is sown, it is very doubtful if a stand will be made. It is better to devote a year to cleaning the land thoroughly of weeds before attempting to grow alfalfa. Sow at the rate of 20 lbs. to the acre broadcast, and cover with a harrow and roller. If sown in spring, sow in March.—Ed.

## Diseases of Horses.

Please give me advice through your journal where I can get a good book on horses and their diseases.

Mathews Co., Va.

HERBERT ROCKFELLOW.

"The Stock Owners' Adviser," published by the B. F. Johnson Publishing Company of this city, will give you the information.—Ed.

### Improving Land for Grass.

I have a field that is poor and want to improve it and get a stand of grass for a meadow.

I have been told to sow in cow peas and let them grow up and turn them under with a big plow would be the best way to improve the land, and that I could then sow in wheat and grass seed and raise a good crop of wheat and get a stand of grass. The field raised a good crop of wheat last year, by using 100 or 125 lbs. acid phosphate to the acre drilled in with wheat.

1st. Is the above a good way to improve thin land?  
2d. Would it be necessary to use bone meal and acid phosphate or any other kind of fertilizer with peas or wheat?

3rd. Must peas be sown broadcast or drilled?  
4th. How many peas must I sow per acre?  
5th. When must peas be sown?  
6th. How long must they be turned under before wheat is sown?

7th. Ought they be turned under green or a little ripe?

8th. Is there any particular kind of peas more suitable for turning under to improve land?

Russell Co., Va. JNO. B. FERGUSON.

1. The growing of a pea crop followed by a crop of vetches or Crimson clover in winter and then by a second pea crop and turning these under or turning the stubble of these crops under is one of the best and cheapest methods of improving poor land. It must not, however, be thought that this improvement will be large unless the pea and vetch crops are properly helped with fertilizer. These crops, like all the legumes, gather nitrogen from the atmosphere and place it in the land, whilst the vegetable matter in them makes humus in the soil. But to enable them to do this to any considerable extent, they must make a strong growth, and they cannot do this without the assistance of the mineral fertilizers. They must have phosphoric acid and potash—of these, they are large consumers. Sow 300 lbs. of acid phosphate and 50 lbs. of muriate of potash to the acre, before seeding the peas, and repeat half this quantity of the same fertilizers before seeding the vetches or Crimson clover, and you will probably get a strong growth of each crop. This growth of the first pea crop and vetches or Crimson clover we would plow down. Let the peas become nearly dead before plowing under. The second pea crop we would cut for hay and only plow down the stubble. Leave a long stubble.

2d. If wheat is sown after the peas (which we do not advise if grass is the object), apply 300 lbs. to the acre of bone when seeding the wheat.

3rd. Sow the peas broadcast.

4th. One bushel to the acre.

5th. Sow in May.

6th. If to be followed by wheat, peas should be turned down at least a month before the wheat is seeded, and the land be well cultivated and rolled to

get a good seed bed; unless this is done, they make the land too puffy and light for the best success of the wheat.

7th. Ripe or nearly so.

8th. Black peas or Whippoorwill peas make the best crop for turning under or for hay.

In this issue will be found our opinion as to the impolicy of seeding grass with a cereal crop, where the primary object is to get a good stand of grass.—ED.

### Water Supply for the Farm.

We note in your issue of February an inquiry from L. P. N., Jr., of Culpeper, Va., and we would be pleased to give your subscriber all the information in our power relative to water supply and the best means of securing it, feeling confident that our large experience in this line of business places us in a position to give him advice. It would be impossible, however, to answer his inquiry based upon the information which he gives. We could furnish him, as thousands of other dealers could, a gasoline engine or wind-mill which would pump every drop of water from his well, regardless of the depth and elevation to which it was to be delivered or the distance, as we could furnish wind mills in any diameter from four feet to sixty feet, ranging in power up to as much as forty horse-power in a ten miles' wind which is considered simply a moderate breeze, while we can furnish him with a gasoline engine any power from one-third of a horse to 640 horse-power. If he would advise us the quantity of water that he desired to pump per minute, we could give him an intelligent reply immediately.

The great trouble in the selling of gasoline engines is due to the fact that farmers, as a class, do not take care of them. They seem to consider them as some mysterious force that is obtained by the combination of mysterious devices, losing sight of the fact that a gasoline engine is no more complicated than an ordinary boiler and engine with an injector. We admit that there are a number of engines on the market that are so complicated that they would give an expert mechanic more or less trouble to ascertain the cause and trouble if any trouble existed with one of them. We do not know of a single instance where a gasoline engine has exploded from any cause. There is no more reason why a tank of gasoline should be exploded on the premises than a barrel of kerosene oil. If a man has so little judgment as to go around a gasoline tank with a flame in his hand, there is every reason to believe that the same man would attempt to fill a lamp while burning, and we do not know of any gasoline engine manufacturer who attempts to furnish a supply of brains to such people.

The reason that wind-mills have received such a black-eye in this section of the country particularly is

due to the fact that users of them do not keep the bolts screwed up, and do not oil them as frequently as the occasion demands simply because it gives them a little trouble. While it is reasonable to assume that all wind mills, properly oiled, will outlive the average wind-mill, it is necessary to that end that the bolts should be kept screwed up and all the bolts should have lock nuts on them. The trouble with the wind mill is usually due to the fact that it lacks attention. A man cannot reasonably expect to get a first class wind mill or gasoline engine unless he pays a reasonable price for it. SYDNER PUMP AND WELL CO.

Richmond, Va.

#### Fertilizer for Sorghum.

In growing sorghum for syrup making, is it profitable to use commercial fertilizers? Please give analysis of fertilizer for sorghum for syrup you would advise using on light sandy soil with red or yellow clay sub-soil that has been cultivated in cotton for years and is deficient in vegetable matter? Also for a red gravelly soil that has been pastured for 10 years and was turned early last fall?

Cobb Co., Ga.

A. D. L.

Farm-yard manure is one of the best fertilizers to use for the growth of sorghum. In its absence, a fertilizer rich in nitrogen and phosphoric acid should be applied, whilst potash, especially in light sandy land, is called for in smaller quantity. On heavy clay lands potash will rarely be required. Cotton-seed meal is a good source from which to procure the nitrogen, and acid phosphate for the phosphoric acid. Perhaps the best proportions in which to apply the fertilizer would be about one of nitrogen to two of phosphoric acid. Say use 100 lbs of cotton-seed meal to 100 lbs. of 12 per cent. acid phosphate. Apply 300 lbs. of each to the acre. If the crop is grown after a pea-fallow, which is most desirable, the quantity of cotton-seed meal may be reduced one half. On the pasture land, less meal would be required than on the cotton land, but the demand for phosphate would be larger.—ED.

#### Warbles in Cow's Back.

I have a cow whose back is full of ox warbles. She has fallen off greatly in milk and flesh. If I should use kerosene oil, does it kill them? Would they not cause trouble if they die in her back? Or does the oil cause them to come out sooner?

Rockingham Co., N. C. W. B. WILLIAMSON.

Squeeze out the warbles with the thumb and finger. They usually come out quite easily when squeezed. If a difficulty is found in forcing them out, enlarge the hole through which they breathe with the point of a knife very slightly, and they will then be easily forced out. Kill the grubs as they come out and thus lessen the crop of flies next year. They will not die in the back of the cow, but make their way out later in the spring and subsequently change to flies.—ED.

#### Phosphoric Acid—Nitrogen—Fertilizers for Truck Crops.

1. Is the phosphoric acid obtained from acid phosphate as good as that gotten from animal bone base?
2. Is the nitrogen from dried fish scrap more soluble than from dried blood?
3. Which are the best formulas for cabbage, Irish and sweet potatoes, green peas, pole beans, navy beans, snaps, onions, beets, cucumbers, watermelons, and cantaloupes?

Norfolk Co., Va.

GAMMA.

1. Phosphoric acid is precisely the same substance and of the same value, whether derived from acid phosphate or from bone. When derived from acid phosphate made from rock phosphate it is in its most quickly available condition from being rendered soluble by the acid applied. The same condition exists when derived from animal bone treated with acid. If derived from rock phosphate untreated with acid it is less quickly available than if derived from animal bone untreated with acid, as the bone is more quickly decayed and decomposed than the rock. The reason why animal bone is more valued generally and is higher priced than acid phosphate is that bone has about 4 or 5 per cent. of nitrogen in its composition, whilst the rock phosphate has practically none.

2. The nitrogen in dried blood is more quickly available than the nitrogen in fish scrap, as it more rapidly decomposes in the warm soil.

3. Cabbage, cucumbers, melons and cantaloupes should have for the best growth a fertilizer analyzing 6 per cent. ammonia, 5 per cent. available phosphoric acid, and 7 per cent. potash. Such a fertilizer can be made from 300 lbs. of nitrate of soda, 750 lbs. cotton-seed meal, 700 lbs. acid phosphate, and 250 lbs. muriate of potash to make a ton. Other ingredients can be substituted for these if the proper quantities of each, calculated from their constituent parts, are used.

Irish potatoes require a fertilizer having 6 per cent. ammonia, 7 per cent. available phosphoric acid, and 8 per cent. potash. Such a fertilizer can be made from 300 lbs. nitrate of soda, 600 lbs. cotton seed meal, 800 lbs. dissolved bone black, or acid phosphate (14 per cent.) and 300 lbs. muriate of potash, to make a ton.

Beans and peas require 3 per cent. ammonia, 7 per cent. available phosphoric acid, and 7 per cent. potash. Such a fertilizer can be made from 100 lbs. nitrate of soda, 450 lbs. cotton seed meal, 1,200 lbs. acid phosphate (11 per cent.), and 250 lbs. muriate of potash to make a ton. This mixture will also about meet the requirements of sweet potatoes.

Onions require 5 per cent. ammonia, 5 per cent. available phosphoric acid, and 8 per cent. potash. Such a fertilizer can be made from 200 lbs. nitrate of soda, 750 lbs. cotton-seed meal, 750 lbs. acid phosphate, and 300 lbs. muriate of potash for a ton.—ED.

### Cow and Horse Stable.

Kindly state through *The Southern Planter* your idea of a cow stable and horse stable combined. Is it a good plan to have the cows in the basement where basements is obliged to open on north side of barn with horses above them, but not directly over them? Also, if you have any stable plans, would it be too trouble some to print the ground plan?

*Nottoway Co., Va.*

G. D. B.

We have repeatedly stated in *The Planter* that we are wholly opposed to basement stables, and, indeed, to all stables in a barn. We hold that a barn should be strictly confined to its legitimate purpose of a storage place for the produce of the farm, and that all stables should be in separate buildings. The risk of housing live stock in a barn is exemplified every day in the reports of the destruction of barns by fire. Rarely if ever are the live stock rescued alive. Even if a fire occurs in the day time they are frequently lost, and if it occurs at night, as is mostly the case, they are never saved, as the difficulty of driving them out, even if help is at hand, can seldom be overcome. We would not keep live stock in a barn on any consideration. A good one story building, placed at a short distance from the barn, and well lighted by windows (sunlight is a great element in maintaining the health of stock) and properly ventilated is the place in which to keep either cows or horses in a healthy condition, and they are much healthier when each are kept in a separate building. In case of fire in the barn they then stand a fair chance of being eaved. Kept in such buildings they will eat up their food much better, as it is not tainted with their breath or the odors from the manure, and will pay much better for what is done for them. A basement barn is never a healthy place for live stock. We can supply a book, "Barn Plans and Outbuildings," price \$1.00, which gives full information and plans of all farm buildings.—ED.

### Gasoline Engine for Pumping, etc.

In reply to L. P. N., Jr., of Culpeper Co., Va., I would say I am using a three-horse power gasoline engine, "The Burrell," manufactured by Skillen & Richards, Chicago, and sold me by Stratton & Bragg, of Petersburg, Va., at a cost of \$125, shipped from the factory.

This engine is giving me splendid satisfaction for my work, which is cutting ensilage to fill two silos, running a small thresher, also wood saw, and any other work for which I require power about the farm.

I formerly used a one-horse tread power of the best make, but am now using it to run a cream separator every day, and I much prefer the engine for the other work. I should not consider a wind-mill in it at all, and I have had about ten years' experience with wind-mills. I prefer power that I can control, and not be dependent on wind or weather.

I have my engine mounted on a low, metal-wheel, truck wagon, with cooling tank and gasoline tank all complete. I run it myself while using the other machinery, and do not need any engineer, man to cut wood, carry water, or any of the other work which must be done with a steam engine.

It uses gasoline at the rate of one pint per horsepower per hour. Gasoline costs twelve cents per gallon by the barrel in Richmond. This engine is very simple, easy to understand and run, with very little to get out of order, and no possible danger.

The size of outfit you would require would depend on how many gallons of water you would use on an average per twenty four hours. The manufacturer would answer all enquiries for you without charge.

*Surry Co., Va.*

O. D. BELDING.

### Soy Beans.

Last spring I purchased of a seed house in Richmond Soy bean seed of a cream color, and seeded same about middle of May, twenty eight inches apart, and cultivated several times. The beans grow well and podded freely, but October 15th, when cut, the seed had not fully ripened. Did I get the wrong kind for this locality, if seed was the object? Please advise the desirable kinds for forage as well as seed, best suited to this locality, and the quantity to be seeded per acre, respectively.

*Charles Co., Md.*

PERE WILMER.

The medium yellow Soy beans are the variety usually sown in this State and further South, and this, we take it, was the variety you bought. We have never known this variety to fail to mature its seed in this State, if seeded in May. The plants will continue to grow and make pods almost until frost comes, when they will ripen up all at once. They should be cut when the pods are first turning yellow, and will mature in the straw. There is an earlier variety than the medium yellow—the medium green—which can be grown as far north as Massachusetts, and mature its seed, but it is neither so prolific of seed nor so productive of forage as the medium yellow. We think you should have no difficulty in maturing the medium yellow in your section, seeded in May. If wanted for seed, sow in drills two and a half or three feet apart, and 12 inches apart in the rows. From a peck and a half to two pecks of seed will be sufficient for an acre. If intended for forage, they should be sown in rows just wide enough apart to admit of cultivation, and five or six inches apart in the rows. For forage, some seed broadcast at the rate of a bushel to the acre, but we have always found the crop to do best when cultivated two or three times. Sown in rows two and half feet apart and cultivated, they will cover the whole of the land before the season closes if the soil be in good heart.—ED.

### Seeding Spring Wheat in the South.

I would like to ask some good farmer with experience, through the columns of your most excellent journal, if I could sow spring wheat on the same land that I sowed winter wheat on last fall, as the winter wheat is all dead or frozen out, and I don't want the land to stand idle. I have some of John A. Salzer's seed spring wheat and Twentieth Century spring oats. Do you think they could be raised in my section of the country with good results? If I mistake not, every county in West Virginia raises spring wheat. They say they cannot raise winter wheat at all. I would like to hear from some one that can give me some information on this subject before I risk sowing much of it. Now, don't all speak at once; but if Mr. Farmer seems a little inclined to be slow to speak, Mr. Editor, will you please let me hear from you on this subject?  
*Nelson Co., Va.* O. V. HARRIS.

Whilst we have very little confidence in the success of spring-sown wheat in the South generally, yet we think possibly it might succeed, as spring oats will sometimes succeed in the mountain sections of the Western parts of Virginia and North Carolina. The only report we have ever had of a success with spring-sown wheat in the South was made in this office a few days ago by a farmer who stated that some years ago he commenced to seed wheat in November, but was prevented from finishing the work by bad weather until February. The wheat seeded in February made a good yield. The land was situated in Middle Virginia. We would much rather, however, risk the growing of a pea, Soy bean or sorghum crop on the land than re-seed wheat after this date. In this issue will be found our opinion on the spring oat crop.—ED.

### Red Top.

Please let me know if it would do to sow red top on wheat and harrow or use the weeder, and what time it is best to sow it and sapping clover. I sowed timothy last fall, five quarts. How much clover and red top should I sow, and what time? The land I want to sow grows about thirty to thirty-five bushels of corn per acre. Will red top suit this county? I live on the head waters of New and Holston rivers. Is sapping or red clover the best, with red top and timothy?  
*Bland Co., Va.* LENA E. CRABTREE.

Red top is best suited for seeding on moist or wet land, though it will make a fair growth on dry land for a time. Sapping clover is a stronger growth than red clover, and on land well suited to it sometimes becomes too strong for the best success of the grass. It ought not, when seeded with grass, to be sown so thickly as red clover, say, only two quarts to the acre. Harrow or break the crust with the weeder, and then seed the grass and clover. If you have reason to suppose the timothy is largely killed, we would sow one and a half bushels of red top to the acre. If the timothy is making a stand, sow half this quantity. Sow at once—as soon as the land is dry enough to harrow.—ED.

### Weevil in Cow-Peas.

Please tell me in your March number how to keep the weev out of cow-peas. I had a bushel of seed left over from last season completely destroyed, and have en bushels new seed on hand now, which I fear will be attacked as soon as the weather gets warm.  
*Loudoun Co., Va.* J. V. NICHOLS.

Bisulphide of carbon will kill weevil or any other living thing. Put the peas into a barrel or barrels, and put on the top of each a saucer, which fill with bisulphide of carbon, and then cover up tight with the head with sacks over it. The vapor of the bisulphide is heavier than the atmosphere, and will sink down through the whole mass, and will kill every insect in them in twenty-four hours, when they should be exposed to the air again. It may be necessary to repeat the process once or twice, as all the young weevils do not come out at one time. Bisulphide of carbon can be bought at the drug stores. It is not costly. It is put up in cans. One precaution is necessary in using it—*keep all lights away from where it is being used*, as it is as explosive as gunpowder.—ED.

### Teosinte.

Please be so kind as to publish something telling how to cultivate, cure and take care of teosinte.  
*Dinwiddie Co., Va.* W. P. MCKENNEY.

Teosinte is a crop better adapted for States south of Virginia than for Virginia, though we have known good yields made in the Eastern and Southern sections of this State. It is a crop that stools very largely, and therefore requires plenty of room and rich land. Sow in rows three or four feet apart, and two feet apart in the rows. Two or three pounds of seed will sow an acre. It requires precisely the same preparation for and cultivation as the corn crop. Where grown it is largely used as a green forage crop, and in South Carolina is often cut four or five times in the season. Here it can usually be cut twice. Unless so cut much of its especial value as a heavy feed crop will be lost. It can be cured in the shock like corn, but should be allowed to wilt and partially cure before being shocked, and then not be made into too large shocks, or it will mould and spoil. It will not mature its seed in this State.—ED.

### Mixing Fertilizer.

Will you please inform me if, in making a fertilizer for spring and summer crops (such as tomatoes, cabbage, etc.), it is desirable that blood, fish and tankage, when mixed with acid phosphate and muriate of potash, should be treated with acid to make them more immediately available?  
 T. J. BARLOW.

No; certainly not. The quickness of their availability depends on the moisture and heat of the land.—ED.

### Peanuts and Cotton-Crop Rotation.

The soil in this (Prince George, Va.) county is poor, worn out, I think, by bad farming and renting of the ground, it needs to be nursed to bring it up again, but we must make a living while we are doing that, and furnish forage to what little farm stock we keep. The customary crops raised about here are corn and peanuts, the soil being sandy, and sandy loam, now and then some clay loam. The peanut (Spanish) seems to be the main, if not the only money crop grown here, yielding, if a good crop, about 30 bushels per acre, but I see that peanuts are a poor crop to improve the fertility of the land, as the roots and everything is removed from the ground. A few farmers grow some cotton. I think that by growing cotton the ground at the last cultivation can be sowed with crimson clover, rye, or winter oats, and seed can grow and get well started before winter weather sets in; besides, it covers the ground during winter and can be plowed under in the spring, preparing it for corn or some other spring crop. If rye is sowed on the peanut ground, it is late in the season, and the rye cannot install itself as it would if it were sown earlier, and by turning under early in the spring, getting ready for some other crop, it will not furnish much humus forming matter to the soil. Now, here is the puzzle I cannot solve, for lack of experience, and I might not live long enough to learn by experimenting, since I am not a youth any more. Will you kindly answer the following queries:

1st. Which of the two, peanuts or cotton, requires the most attention and labor to grow? Which of the two requires the richest ground? Which of the two will bring the most money to the farmer? For the farmer needs to make some money to run his farm, and the farm should produce money crops sufficient to run the farm.

2nd. How many bushels of peanuts and how much cotton per acre should the farmer raise to call it a paying crop? Peanuts now are 75 cts. a bushel—price of cotton to me is unknown.

3rd. What fertilizers should be used per acre for a paying crop of cotton, or for one acre of peanuts? What quantity should be used per acre for either crop?

4th. Which of the two do you consider best to grow and improve the fertility of the soil?

5th. If a farmer had but about 12 acres he could cultivate properly, would it be proper, by dividing his 12 acres into two parts of six acres in each part, to plant six acres in corn and the other six acres in peanuts or in cotton, sowing rye or winter oats on the ground in the fall to protect the ground during winter, to be plowed under in the spring, and then plant corn on the cotton or peanut ground, and cotton or peanuts on the corn ground, making a short alternate rotation? Would such short rotation be proper and beneficial to the soil without impoverishing it?

6th. Which of the two—cow-peas (black peas) or soja (soy) beans—will be most productive per acre for forage or hay crop? Which will yield a hay that will readily be eaten by cows and mules, and what fertilizers should be used for such peas and beans, and how much should be used per acre?

*Dinwiddie Co., Va.*

J. A. F. SCHEFFELER.

1. Taking into consideration the picking of the cot-

ton, we should be inclined to think cotton a crop required more attention and labor than peanuts. (Here we would remark that we do not think cotton a crop which should be grown so far north as Prince George. The season is not long enough there for the best return to be made. There are a few counties in Tidewater Virginia, bordering on North Carolina, where cotton can be grown with profit, but east and north of these counties we would not advise its growth in Virginia as a staple crop.) A crop of 30 bushels of peanuts to the acre, with the vines, requires for its production 42 lbs. of nitrogen, 7 lbs. of phosphoric acid, 16 lbs. of potash, and 23 lbs. of lime. A crop of cotton of 200 lbs. to the acre, about the average yield in Virginia, with the seed, leaves, bolls and stalks, requires for its production 30 lbs. of nitrogen, 8 lbs. of phosphoric acid, and 26 lbs. of potash. The peanut crop, therefore, requires more nitrogen, the most costly fertilizer, than cotton, but it can and does obtain much of this from the atmosphere, whilst cotton must have it supplied in the fertilizer. Of phosphoric acid, the demand of both is about the same. Of potash, cotton requires nearly twice as much as the peanut. Reduced to a money value, the peanuts call for \$7.45 worth of fertilizer, whilst the cotton calls for \$6.20 worth. Taking the stated average yield of peanuts at 30 bushels, the crop, at present stated price of 75 cts., would yield \$22.50, to which should be added the value of the vines as hay! A crop of cotton of 200 lbs. of lint, at present price of 8½ cents, would yield \$17.00, to which should be added the value of the seed, say about \$2.00, or a total of \$19.00.

2. From the foregoing it will be seen that taking the average yields in Virginia as stated, there can be little or no profit in producing either peanuts or cotton. The yield ought to be at least double the average to make their production profitable, and there is no reason on earth why this should not be done under a proper system of rotation, and with scientific management. We have reports of yields of 1½ bales of cotton to the acre over a whole plantation, and we have heard of 100 bushels to the acre of peanuts being made, whilst from 60 to 75 bushels are frequently made.

3. Unless the land upon which either crop is to be made is made rich with humus, the addition of fertilizers in any quantity will not result in maximum yields. If the land be full of humus, and in a good physical and mechanical condition, and in the case of peanuts have a good proportion of lime in its composition, then the application of 80 lbs. of acid phosphate, 300 lbs. of cotton-seed meal, and 240 lbs. of kainit, or other fertilizers having the same quantity of nitrogen, phosphoric acid and potash, should be sufficient to produce a maximum yield of peanuts, whilst the application to land, in a like condition of fertility,

of 400 lbs. of acid phosphate, 250 lbs. of cotton seed meal, and 150 lbs. of kainit, should produce a maximum crop of peanuts.

4. If all the stalks, leaves and seed of the cotton are restored to the land, and the vines of the peanuts, or the manure produced from feeding them, are restored to land, there will be a constant but slow improvement of the fertility, which may, in both cases, be made a quick process by the application of 200 lbs. to the acre of acid phosphate and 100 lbs. of kainit each year.

5. Such a short rotation of the crops named cannot be made either profitable or improving. There must be the addition of a leguminous crop as a cover and recuperating crop. The sowing of a pea crop in the corn at the last working, followed by a vetch or crimson clover crop for a winter cover, would help greatly, especially with the application of 250 lbs. of acid phosphate to the acre with the pea vetch or clover.

6. There is very little difference between the yield of these crops for forage or hay on land in good fertility, and they both make a most nutritious and readily eaten feed; 300 lbs. of acid phosphate and 50 lbs. of muriate of potash should be applied as a fertilizer unless the land is in good fertility.—Ed.

#### Hard and Soft Coal Ashes—Old Plaster—Average Yield of Crops—Borers—Avoiding Danger to Fruit from Frost—Wood Ashes—Carbonic Acid Gas and Plants.

1. Give actual amount of potash in both soft and hard coal ashes (unleached). Does it pay to haul these ashes one half mile for the amount of fertilizing ingredients present?

2. Does it pay to haul old plaster one half mile for the lime present—using on swamp land?

3. Give amount of the following crops that can be expected from one acre of land (average fertility), putting five tons barn yard fertilizer per acre: Corn, rye, oats, wheat, sugar cane, turnips, cabbage, teosinte, cow-peas, clover, vetch, cotton, potatoes, grapes, strawberries and currants.

4. Where may I find published statistics for the above?

5. Do you know of any wash—home made or manufactured—that is guaranteed to thoroughly eradicate peach tree borers? If home made, please give directions for making and applying.

6. In case of a freeze in the months of February and March (when sap is beginning to circulate), can the smoke from fat pine stumps be relied upon to save fruit buds from freezing? If not, give best remedy or method by which to save the crop of fruit. Have fifty acres of peaches. How are you to tell when such a freeze is coming, outside of the Weather Bureau Reports? (Can't always get Weather Reports).

7. What is the proper amount of water needed (average sandy loam), for the successful growth of fruit, garden and heavy cereal crops, respectively, for one season? Give average amount of rainfall in inches for one year necessary to successfully raise the

above crops. Please give address to send for published statistics on the above.

8. Can a fruit tree stand a plentiful application of hard wood ashes (oak); *i. e.*, without injuring or burning the cambium layer?

9. Give the difference between carbon and carbonic acid gas, with relation to its use by the leaves of plants. Do plants take in carbonic acid gas as carbonic acid gas, or how? When and where does the union with oxygen take place? Is there such a thing as pure carbon gas? If so, how about the diamond, as it is called pure carbon? F. H. CAEDOZO.

Macon Co., Ga.

1. Neither hard nor soft coal ashes are worth anything as fertilizers. They have neither phosphoric acid nor potash.

2. It may pay to haul the old plaster to apply to land lacking lime, but we doubt whether it will do so to apply to swamp land. This wants caustic lime to act on the vegetable matter and decompose the same, and also to correct the acidity always present in such lands.

3 and 4. The Department of Agriculture, Washington, publishes statistics giving the annual yield of the staple crops of the country, but we know of no reliable statistics published as to the yield of other crops, such as fruit crops. These depend largely on local conditions and adaptability. We could not venture to publish estimates of these crops.

5. There is no wash that will eradicate borers. They must be cut out or killed in the holes with a sharp wire.

6. Smoke made by fires smudged down with damp trash is often used to prevent injury to fruit crops by frost. This would be much more likely to be effective than the smoke from fat pine stumps. The Weather Reports of the Department of Agriculture are the most reliable source of information as to coming frost. Outside of these, we know of nothing more reliable than careful observation of weather conditions.

7. This question of the quantity of water required for the production of crops has received more attention from the Experiment Stations in the arid regions of the West than elsewhere, but even there it has only been confined to a few staple crops. In our last month's issue we quoted from one of the Bulletins issued by the Wisconsin Station on this subject. The Department of Agriculture at Washington could probably give you some information on the subject.

8. Wood ashes are an excellent fertilizer for an orchard, but the place to apply them is not close around the tree, where their caustic character may cause injury to the bark and cambium, but scattered around the tree, where the roots are running, and especially near the extremity of the roots, where the

small feeding rootlets are doing the work of feeding the tree.

9. Carbon is one of the chemical elements that we are not able to separate into other constituents. Carbonic acid is the oxide of the element carbon, formed by the union of carbon and oxygen. The diamond is nearly pure carbon; so is charcoal. Carbonic acid is found in the air. Green plants have the power to take up and form organic compounds from carbonic acid and water. In doing this, they take in through their leaves the carbon and oxygen (carbonic acid gas), and utilize the carbon in building up their structure, and the oxygen so obtained is given off again by the plant in daylight, but not in the dark. The green matter in the plant decomposes and separates the two.—ED.

### Seeding Spring Oats.

1. When is the best time to sow spring oats? What kind of seed, the best and cheapest fertilizer for same on poor sandy land, clay subsoil? Would South Carolina rock do for the crop? Our lands are salt enough naturally without kainit.

2. How should celery be kept, in the absence of a cellar, to prevent it from freezing?  
*Mathews Co., Va.*

B. C. FOSTER.

1. Sow as soon as the land can be got into good order, and not later than the end of this month. We never advise the seeding of Spring oats in the South except as a last resort, as they so rarely make a profitable crop, except it may be in the mountain sections of the States. Oats, to be a success in the South, should be seeded in August or September. If not then sown, Virginia grey winter oats should be sown in February, or Rust proof oats in March. None of the varieties of Spring oats have ever, in our experience, done well in the South. If not seeded in February or the first half of March, we would prefer not to sow oats at all, but rely on making a forage crop of peas, Soja beans or sorghum on the land later in the season. As oats are mainly, if not wholly, grown for a forage crop in the South, it is much more profitable to grow some other forage crop when they cannot be seeded in the fall. Acid phosphate is a proper fertilizer to use when seeding oats, to be followed by a top-dressing of 75 or 100 lbs. of nitrate of soda when the crop has commenced to grow.

2. Cover it thickly with straw, and lay some boards on the straw to keep out the rain.—ED.

### Forage Crops—Broom-Sedge—Fish Ration for Sheep.

We have a long letter from a subscriber asking us to write fully on Kaffir Corn, Teosinte and the forage crops, which she finds more reliable than grass, also asking us to speak a good word for Broom-sedge, and,

*mirabile dictu*, asking us to frame a ration for sheep with fresh or salted fish as a large part of it.

Every spring we write several articles on the various forage crops which we can so successfully grow in the South. We intend to do the same again this spring, and ask our subscriber to look out for them and read them carefully. Had those we wrote last spring and the year previously been carefully studied, there would not have been this query, as we know very many who acted on the advice then given who grew heavy crops last year and the year previous.

We decline to say anything in favor of broom-sedge. It is kind nature's effort to correct the wrongs done the Southland by improvident farmers, and to cover the nakedness of the land and give it some chance of recuperation. No farmer worthy of the name ought to be content to rely upon it as feed. He should seek to improve his land by better means within his power.

We must decline to try to convert herbivorous animals into flesh and fish-eating ones. The Almighty did not intend this, or they would have been differently made. The poor things only eat such feed when forced to do so, or from some abnormal condition. A little dried fish meal or dried blood is sometimes fed in a ration to increase the protein content.—ED.

### Peanuts.

If convenient, please send me the analysis of the Virginia and Spanish peanuts. If you cannot furnish the analysis, please give in your paper a complete manure for this crop.

*Sussex Co., Va.*

G. W. EPPES.

We are unable to place our hands on an analysis of peanuts distinguishing the Virginia and Spanish nuts, but give you the average analysis of the nuts without reference to varieties. We do not suppose there is much difference between them, as we notice there is very little difference between the Tennessee and Spanish nuts. The Tennessee nuts are a little richer in fat but not quite so rich in protein, whilst the carbohydrates are nearly the same. The average analysis is 29.47 per cent. protein, 14.27 per cent. carbo hydrates, and 49.20 per cent. fat. We give you also the analysis of the fertilizing constituents in the nuts and vines (cured) viz., 6.27 per cent. nitrogen, 1.50 per cent. phosphoric acid, 2.25 per cent. potash, 2.21 per cent. lime. The following formulas make a proper fertilizer for the crop per acre: 80 lbs. acid phosphate, 300 lbs. cotton seed meal, 240 lbs. kainit, or 2 tons barn yard manure, 150 lbs. cotton seed meal, 100 lbs. kainit and 50 lbs. acid phosphate, or 100 lbs. acid phosphate, 185 lbs. dried blood and 65 lbs. muriate of potash. Slag-phosphate, often called Odorous phosphate, may be substituted with advantage for acid phosphate, using 120 lbs. in the place of the 80 lbs. named above; 75 lbs. in the place of the 50 lbs. named above, and 150

lbs. in the place of the 100 lbs. named above. It should be borne in mind that lime also is essential to the success of the crop, not perhaps so much as food for the plants but as insuring an alkaline condition of the soil in which the nitrogen forming microbes can work freely, though it should not be applied at the same time as the fertilizer. It should be put on in the fall or winter. See our reply to P. F. Scheffeler in this issue for further information as to the peanut crop.—ED.

#### Fertilizer for Tomatoes.

Please give us in your next issue a formula of a fertilizer suitable for tomatoes, and how it should be applied, and if applied broadcast, how much per acre.

W. S. NELSON.

We know numbers of large tomato growers who insist that no commercial fertilizer can compare with farm yard manure in producing tomatoes. They check out the rows, and then at each check put a good forkful or two of manure, which is then mixed with the soil, covered, and the plants set in the check. One large and successful grower always adds to the manure in each check a good handful of bone meal. If no farm-yard manure is available, the following mixture may be used: 200 pounds nitrate of soda, 700 pounds cotton-seed meal, 840 pounds acid phosphate, and 260 pounds muriate of potash. Apply at the rate of from 500 to 1,000 pounds to the acre. If more than 500 lbs. to the acre is applied, spread broadcast and work in; if less than 500 lbs. be used, it may be applied in the rows, but should be well mixed with the soil before setting out the plants.—ED.

#### Breeding Cows for Milk, Butter and Beef.

I have an Angus bull calf which is claimed to be full blood. My cows I cannot claim above scrubs. With the above bull, can I make a success of milk and butter? If the Angus are not milk stock, what stock is the best for milk, butter and beef? Please answer in March *Planter*.

The Angus cattle are not milk or butter producers. They are purely a beef breed. For cows to produce milk, butter and beef, breed your scrub cows to a Shorthorn or Red Polled bull, and in your section a Red Poll would be better than a Shorthorn, as this breed does better on thin pastures than the Shorthorns.—ED.

#### SELECTING SEED CORN.

*Editor Southern Planter:*

More than a year ago, perhaps, I called the attention of your readers to what may be a recent conception as to seed corn. From tests in the plantings of the last three years, my conclusion is that the small grains at the small end of the ear produce an improved corn, earlier, larger and better than are produced by the plump and fuller grains from the central part of the ear.

This idea came to me from an agricultural publication, but after the first trial it was submitted to Professor Pattison, of the Maryland Experiment Station, and he said corn so planted would quickly deteriorate and become worthless. However well that opinion may be founded in theory, it does not seem to be sustained by practice. In my planting, a dozen rows were designated for the little grain test for three succeeding years, and each time the seed corn for the crop selected from that planted with the little grains from the little end of the ear repeated in a dozen rows, and each time that dozen rows brought the best corn in the field under a fair test. Most farmers shell off the small grains from each end of the cob, and as that is done, it will be very little trouble to mark a few rows and make the test and observe the result.

Garrett Co., Md.

CHARLES M. MILLER.

#### KILLING SASSAFRAS—THE VALUE OF SHEEP ON THE FARM.

*Editor Southern Planter:*

In the February *Planter*, "G. A. G." was pleased to tell how he succeeded in getting rid of sassafras in one of his fields. The method employed was all right, but I would have done it differently, and without labor or expense.

I have had a little experience with the pesky growth of sassafras, but in a forty-acre field on my farm there cannot now be found a living sassafras bush. Sheep did the work for me. If any readers of the *Planter* have fields or lands thickly set with a growth of young sassafras, which it is desired to exterminate, nothing will do the work more quickly and effectually than a flock of sheep turned thereon in the early spring, when the buds begin to swell and the young tender leaves appear.

In this connection, it may not be amiss to state that there appears to be a notion prevailing amongst many Southern farmers that the feeding or grazing of sheep impoverishes land. I have heard otherwise intelligent farmers say that "sheep graze land to death." My experience in handling a small flock is that sheep-raising pays the best annual net profit of any stock the Southern farmer can carry.

A flock of sheep will pay the owner two dividends annually—a crop of lambs and a crop of wool. There is always a ready sale for spring lambs either in the home or city markets, and very early spring lambs sell for quite fancy prices. A good way to manage the flock in order to have ewes drop early lambs, is to separate the ewes from the lambs the latter part of May, or, rather, when the sheep are penned to be sheared. It is best, also, to keep the buck away from the ewes until the latter part of July.

Mecklenburg Co., Va.

J. B. WELLS.

## Trucking, Garden and Orchard.

### WORK FOR THE MONTH.

The work which we laid out in our February issue to be done in that month having been wholly impossible of accomplishment by reason of the severe weather, we would refer our readers to that issue for work to be done this month. This adding of one month's work to the next at this season of the year is going to make March a very busy month if the weather should become genial and spring like, because not only will the earliest crops require to be planted, but the land be got ready for the planting of the main crops of all vegetables. Do not, however, be in too great haste to plow and cultivate your land until it is dry enough to work freely. Land plowed and worked when too wet in the spring never becomes in good crop condition the whole season. Instead of devoting time to plowing and cultivating, give attention to the getting of the manure and fertilizers on to the land and to the spreading of the same. This may be done with farm yard manure and the mineral fertilizers, phosphates and potash, without fear of loss from leaching. They can then be plowed and worked in when the land is dry enough. Do not economize on manure and fertilizers for the garden. Most vegetable crops are gross feeders, and all require to be grown quickly if to be really fine, and this cannot be accomplished without plenty of manure and fertilizer.

Irish potatoes and English peas should be planted as soon as possible, and kale, spinach and early salad crops may be sown later in the month. The great reduction in the production of Irish potatoes last year has made them scarce and high in price all winter, and the market is now being largely supplied with imported ones. This will no doubt induce the planting of a much larger area this year, and for those who are so situate as to be able to produce the early crop, and to get it cheaply on the markets of the North, there is likely to be profit in the crop. Those who are not so situate should not increase the area of the crop materially, as prices will no doubt fall later from a more general production throughout the country. Use a good special potato fertilizer for planting the crop, or make your own mixture, using 300 lbs. of nitrate of soda, 600 lbs. of cotton-seed meal or fish scrap, 800 lbs. of acid phosphate, and 300 lbs. of muriate of potash. A series of experiments made over 7 years in Canada has shown that Irish potatoes planted as soon as they are cut will make a heavier yield than those which are not planted until after they have been cut from 4 to 6 days, therefore cut your sets as you plant.

Fall-planted cabbages should be encouraged to grow by cultivating them as soon as the ground is dry enough, and after they have started a top dressing of 100 lbs. to the acre of nitrate of soda will greatly help them to make up time lost in the hard winter.

Cabbage plants raised in frames during the winter should be hardened off and set out as soon as the weather is mild enough.

Make up hot beds for striking sweet potatoes and raising tomato plants, egg plants, peppers and early canteloupes.

Strawberries should be cultivated as soon as the ground is dry enough, and if not looking thrifty, should have some potash, phosphate, and a little nitrate of soda worked in. After this is done, mulch the ground with pine straw or marsh hay to keep the berries clean.

The pruning of vines and small fruits should be finished before the sap begins to run, and the canes should be tied up to the stakes or trellises.

### SPRAYING.

In this issue will be found instructions for spraying fruit and vegetable crops. This work cannot be done without proper pumps. In our advertising columns will be found the advertisements of the best makers and dealers in these appliances. Give them your patronage.

### MAKING AN ORCHARD PRODUCTIVE.

*Editor Southern Planter :*

Mr. Farmer's statements on page 83, issue of February: "How to Make an Orchard Productive," are absolutely correct.

It is possible, by intelligent pruning, feeding and culture, systematically and regularly performed winter and summer, to bring any fruit trees that are, of course, healthy and not too old, into healthfulness. Regarding Mr. Farmer's suggestions as to summer pruning, that is a very important key to the whole solution of forcing apple trees to form primarily fruit buds, followed—*everything as to climatic conditions, etc., being equal*—by a crop of fruit. In two years, any fruit trees can be made fruitful, if there is any bearing in their nature.

OAKSON.

*Dinwiddie Co., Va.*

Peach Trees affected with "Yellows" should be destroyed and burned. Fire Blight on Pears or Quinces,

SPRAY CALENDAR.

Spraying has become one of the regular operations in horticulture, and the literature upon the subject is scattered and sometimes confusing. This *working schedule* has been arranged in response to requests from our correspondents. It is intended to be kept in a convenient place for frequent reference throughout the year, and shows briefly, and at a glance *what is worth doing* with certain crops which are in danger of loss by fungus or insect depredation. When using a fungicide for a fungus disease mentioned other fungi, if present, will also be controlled. So, likewise, the use of an insecticide will destroy other insects besides those mentioned. Directions which are most important are italicized. In general, these directions are the best which can be given in such compact form; after one year's trial, experience will suggest improvements for individual use. *Preventives* should be applied regularly to insure crops. *Destructives* need not be applied unless the enemy appears. *Provide spraying apparatus before spring arrives. Spray promptly, thoroughly, and faithfully.*

PLANT.	First Application.	Second Application.	Third Application.	Fourth Application.	Fifth Application.	Sixth Application.
APPLE..... (Seed, codlin moth, bud moth.)	When buds are swelling, copper sulphate solution.	Just before blossoms open, Bordeaux. For scale moth, Arsenite when leaf buds open.	When blossoms have fallen, Bordeaux and Arsenite.	8-12 days later, Bordeaux and Arsenite.	10-14 days later, Bordeaux.	10-14 days later, Bordeaux.
BURNING..... (Anthracnose or powdery spot.)	When third leaf expands, Bordeaux.	10 days later, Bordeaux.	14 days later, Bordeaux.	14 days later, Bordeaux.		
CHERRY..... (Worms, aphids.)	When worms or aphids are first seen, Kerosene emulsion.	7-10 days later, if not heading, renew emulsion.	7-10 days later, if heading, hot water, 150° F.	Repeat third in 10-14 days if necessary.	(When plants are small, Arsenites may be used to check worms.)	
CHERRY..... (Red, aphids, slug.)	As buds are breaking, Bordeaux; when aphids appear, Kerosene emulsion.	When fruit has set, Bordeaux. If slugs appear, dust leaves with air-slaked lime.	10-14 days, if rot appears, Bordeaux.	10-14 days later, Ammoniacal copper carbonate.		
CURRENT..... (Mildew, worms.)	At first sign of worms, Arsenite.	10 days later, Hellebore. If leaves mildew, Bordeaux.	If worms persist, Hellebore.			
GOOSEBERRY..... (Mildew, worms.)	When leaves expand, Bordeaux. For worms Arsenites.	10-14 days later, Bordeaux. For worms Hellebore.	10-14 days later, Ammoniacal copper carbonate. For worms, Hellebore.	10-14 days later, repeat third.		
GRAPE..... (Fungous diseases, flea-beetle.)	In Spring when buds swell, copper sulphate solution.	When leaves are 1-1½ inches in diameter, Bordeaux. Paris green for larvae of flea-beetle.	When flowers have fallen, Bordeaux. Paris green as before.	10-14 days later, Bordeaux.	10-14 days later, if any disease appears, Bordeaux.	10-14 days, Ammoniacal copper carbonate. Make later applications of this, if necessary.
NURSERY STOCK..... (Fungous diseases.)	When first leaves appear, Bordeaux.	10-14 days, repeat first.	10-14 days, repeat first.	10-14 days, repeat first.	10-14 days, repeat first.	10-14 days, repeat first.
PEACH, NECTARINE, APRICOT, (Red, mildew.)	Before buds swell, copper sulphate solution.	Before flowers open, Bordeaux.	When fruit has set, Bordeaux.	When fruit is nearly grown, Ammoniacal copper carbonate.	5-10 days later, repeat fourth.	5-10 days later, repeat fourth, if necessary.
PEAR..... (Leaf blight, scab, psylla, codlin moth.)	As buds are swelling, copper sulphate solution.	Just before blossoms open, Bordeaux. Kerosene emulsion, when leaves open, for psylla.	After blossoms have fallen, Bordeaux and Arsenite. Kerosene emulsion, if necessary.	8-12 days later, repeat third.	10-14 days later, Bordeaux. Kerosene emulsion, a p p l i e d forcibly for psylla.	10-14 days later, repeat fifth, if necessary.

now late in September. For Aphides or Plant Lice, use Kerosene Emulsion on all Plants.

and Black Knots on Plums or Cherries, should be cut out and burnt as soon as discovered.

PLUM..... Diseases, (Fungous curculio.)	During first warm days of early spring Bordeaux for black knot. When buds are off in the fall, Kerose emulsion for plum scale.	When buds are swelling Bordeaux for black knot and other fungous diseases. During mild winter Kerose emulsion for plum scale.	When blossoms have fallen, Bordeaux Beetle for trees for curculio every 2-4 days. For San Jose scale, Kerose emulsion when young appear in spring and summer.	10-14 days later, Bordeaux for trees for curculio every 2-4 days. When young plum scale insects first appear in summer, Kerose emulsion in spring and summer.	10-20 days later, Bordeaux for black knot. Later applications may be necessary to prevent leaf spot and fruit rot, use Ammoniacal copper carbonate.
POTATO (Scab, blight, beetles.)	Scab, send for scab in copper carbonate solution (1 lb or 16 gals of water) for nearly a month.	When beetles first appear, Arsenites.	When vines are two-thirds grown, Bordeaux; Arsenites for beetles if necessary.	10-15 days later, Bordeaux if necessary.	10-20 days later, Bordeaux.
QUINCE (Leaf and fruit spots.)	When blossom buds appear, Bordeaux.	When fruit has set, Bordeaux and Arsenites.	10-20 days later, Bordeaux.	10-15 days later, Bordeaux.	10-20 days later, Bordeaux.
RASPBERRY..... } BLACKBERRY..... } DEWBERRY..... } (Anthracnose, rust)	Before buds break, copper sulphate solution. Cut out badly diseased canes.	During summer, if rust appears on leaves Bordeaux.	Repeat second if necessary.	Repeat third if necessary.	Repeat third if necessary.
STRAWBERRY..... (Rust.)	As first fruits are set, Bordeaux.	As first fruits are ripening, Ammoniacal copper carbonate.	When last fruits are harvested, Bordeaux.	Repeat third if necessary.	Repeat third if necessary.
TOMATO (Rot, blight.)	At first appearance of blight or rot, under glass or out of doors, Bordeaux.	Repeat first if diseases are not checked.	Repeat first when necessary.	Repeat third if necessary.	Repeat third if necessary.

FORMULAS.

<b>Bordeaux Mixture.</b>	Copper Sulphate.....6 pounds. Quicklime.....4 pounds. Water.....40-50 gallons.	<b>Ammoniacal Copper Carbonate.</b>	Copper Carbonate.....1 ounce. Ammonia.....Enough to dissolve the copper. Water.....9 gallons.	<b>Paris Green (Arsenites.)</b>	Paris Green.....1 pound. Water.....200-300 gallons.
<p>Dissolve the copper sulphate by putting it in a bag of coarse cloth and hazing this in a vessel holding at least 4 gallons, so that it is just covered by the water. Use an earthen or wooden vessel. Slake the lime in an equal amount of water. Then mix the two and add enough water to make 40 gallons. It is then ready for immediate use, but will keep indefinitely. If the mixture is to be used on peach foliage, it is advisable to add an extra pound of lime to the above formula. When applied to such plants as carnations or cabbages, it will adhere better if about a pound of hard soap is dissolved in hot water and added to the mixture. For rots, molds, mildews, and all fungous diseases.</p>	<p>The copper carbonate is best dissolved in large bottles, where it will keep indefinitely, and it should be diluted with water as required. For the same purposes as Bordeaux mixture.</p>	<p>If this mixture is to be used on peach trees, one pound of quicklime should be added. Repeated applications will injure most foliage, unless lime is added. Paris green and Bordeaux mixture can be applied together with perfect safety. Use at the rate of 4 ounces of the arsenites to 50 gallons of the mixture. The action of neither is weakened, and the Paris green loses all caustic properties. For insects which chew.</p>	<p>If this mixture is to be used on peach trees, one pound of quicklime should be added. Repeated applications will injure most foliage, unless lime is added. Paris green and Bordeaux mixture can be applied together with perfect safety. Use at the rate of 4 ounces of the arsenites to 50 gallons of the mixture. The action of neither is weakened, and the Paris green loses all caustic properties. For insects which chew.</p>	<p>(Young plants not in bearing may be treated throughout the fruiting season.)</p>	<p>(Young plants not in bearing may be treated throughout the fruiting season.)</p>
<b>Copper Sulphate Solution.</b>	Copper Sulphate.....1 pound. Water.....15 gallons.				
Dissolve the copper sulphate in the water, when it is ready to use. This should never be applied to foliage, but must be used before the buds break. For peaches and hickories, use 25 gallons of water. For fungous diseases.					
<b>London Purple.</b>					
This is used in the same proportion as Paris green, but, as it is more caustic, it should be applied with two or three times its weight in lime.					

[FORMULAS CONTINUED ON NEXT PAGE.]

Avoid "Club-Root" in Cabbage, Cauliflower and Turnips by strict rotation of crops, and burn all affected material.

Search for Borers in Fruit Trees in Fall and Spring. To avoid the Hessian Fly in Wheat.

or with the Bordeaux mixture. The composition of London purple is exceedingly variable, and unless good reasons exist for supposing that it contains as much arsenic as Paris green, use the latter poison. Do not use London purple on peach or plum trees, unless considerable lime is added. For insects which chew.

#### Hellebore.

Fresh white Hellebore.....1 ounce.  
Water.....2 gallons.

Apply when thoroughly mixed. This poison is not so energetic as the arsenites. For insects which chew.

#### Kerosene Emulsion.

Hard soap..... $\frac{1}{2}$  pound.  
Boiling water.....1 gallon.  
Kerosene.....2 gallons.

Dissolve the soap in water, add the Kerosene, and churn with a pump for 3-10 minutes. Dilute 10 to 25 times before applying. Use strong emulsion for all scale insects. For insects which suck, as plant lice, mealy bugs, red spider, thrips, bark lice, or scale. Cabbage worms, currant worms, and all insects which have soft bodies, can also be successfully treated.

### THE KITCHEN GARDEN.—No. 11.

*Editor Southern Planter :*

For the earliest plants like cabbage, cauliflower, kohlrabi, beets, tomatoes, etc., the seed is sown in a hot bed made by placing a frame with glass sash upon a pile of horse-manure covered with soil.

The earliest things to be planted outdoors are the "First of All" peas. These may be planted in rows two feet apart, one quart to 150 feet, and covered two to three inches deep, as early as the middle of March in Virginia. These to be succeeded by Nott's Excelsior by the first of April, and for succession plant every two weeks after. This one vegetable alone will be a great treasure, even though nothing else were grown.

Onions sets may be set out in March—one quart to 50 feet of row. Make a shallow trench not more than an inch or two deep, and just barely cover the onions.

Irish potatoes may be planted as soon as the ground is ready. Added to this may be sown in open ground the latter part of March beets, carrots, parsnips, leek, radish, spinach, turnips, cabbages, cauliflower, kohlrabi, lettuce and parsley.

In general, all these seeds may be sown in seed-beds quite thickly and taken up when well started and placed in rows for permanent growth, or pricked out into other seed beds or into rows quite near together, and from which they may be transplanted at a later time.

In hot beds or seed beds, the seed is planted in rows some three inches apart, and the seed quite near together in the rows.

When transplanted or sown in open ground, the soil must be made rich and mellow, with all weeds, roots, sticks or stones and branches carefully raked off, so as not to interfere with tilling the young plants. A light trench or furrow is opened by a cultivator tooth, the seed scattered, and covered about half an inch deep, and the soil pressed down with roller or hoe.

The cultivator should be run between the rows as soon as the plants begin to come up, and the opener the better afterwards. When four to six inches high, the plants should be thinned out for beets, carrots and parsnips, about five inches apart. Peas are not thin-

ned, but all left to stand. First of All and Nott's Excelsior require no sticks or brush to support them.

Lettuce, spinach, cabbage, kohlrabi, cauliflower and tomatoes are transplanted into rows three feet apart and 18 inches apart in the rows, except lettuce and spinach, which may be set six to eight inches apart, and the rows 15 to 18 inches.

In April and May, the more tender plants of beans, cucumbers, melons, squashes and sweet corn, may be planted.

A continued occupation of the ground by rotation and succession crops is desirable. For instance, when the early peas are off, corn may be planted, or cabbage, cauliflower or tomatoes set. So where early Irish potatoes grew, the ground may be followed by beans, tomatoes, etc. It is not a good thing to plant the same crop twice on the same ground the same season. I always purpose to have at least three crops a year, excepting with cabbage, cauliflower, sprouts, parsnips, and salsify. With these two crops an early and a late one, is all that can be expected. Celery may be followed by early cabbage, or late cabbage may follow early crops.

S. S. BOYCE.

### SALT FOR BLIGHT.

*Editor Southern Planter :*

Several years ago, three of our most choice pear trees, which were in full bloom and appeared to be in perfect health, began to die, fading first in the bloom, the blight extending rapidly down until many large limbs were entirely dead. All the information I could gain to save them was to cut below the blight and burn. I believed the trouble was at the root, so I poured salt water around the base of the worst tree, and sowed salt freely around it. I put strong ashes around one of the others, and to the third I gave no treatment at all. That one died. The one with ashes nearly all died, and bore no fruit. The one with salt stopped blighting and bore a good half crop.

Many times in winter I have found the little red and black spotted "lady bugs" packed around the body of fruit trees just as thick as possible just below the surface. If removed, the trees lived; if not removed, the trees died. Last spring a very choice "Early Richmond" peach tree began dying; examining the roots, we found some of the largest full of ants and wood lice; strong ashes and salt water saved the tree.

I would be thankful if some of the gentlemen who write so ably for *The Planter* would try treating the trees with salt and give the result. I think salt retards the buds, thereby lessening the danger from frost.

Campbell Co., Va.

MRS. E. Y.

Scientific investigation has clearly demonstrated that blight is caused by a microbe which attacks the bloom and tender twig ends of the tree. How salt applied to the root can have any effect in checking this is difficult to understand. The best authorities, after years of experimentation, have failed to find any remedy for blight except to cut below the point to which the disease has extended.—Ed.

## Live Stock and Dairy.

### WHAT KIND OF STOCK TO RAISE.

*Editor Southern Planter:*

It is taken for granted that some kind of stock must be kept on the farm, and kept in considerable numbers, in order to prevent it from becoming impoverished and barren. The kind of stock to be kept, whether horses, hogs, cattle, mules, sheep or goats, or all of them, will depend on the nature of the farm itself, the kind of stock which it is most capable of raising, the kind in the greatest demand in the locality in which the farm is situated, and the facilities for transportation.

Cattle are driven long distances from Texas North to find a market; but in the East they cannot be driven far without incurring a loss.

People cannot make markets for their products, they must endeavor to supply the markets already made with the kind of products they require. If I had a rough, hilly farm, I should certainly make sheep-raising a specialty. The native habitat of sheep is a hilly country.

Our domesticated sheep are believed to have descended from the wild sheep of the Rocky mountains of North America, of the mountains of North Africa, and the mountainous regions of Asia. They are evidently designed for the hills, and do better there than on the low lands. It is true they are profitably raised in England on the best level and rich land to be found on the island, and the same is true in America, but it does not prove that a low-lying level country is the best place for raising sheep at a profit.

Sheep kept on low moist lands are subject to more diseases, especially rot, and foot rot, which are the great dread of flock-raisers the world over. "No malady," says Prof. Simonds, "is probably so much feared by agriculturists as rot, and with reason, for it is most destructive to their hopes."

Even on the hills, in wet seasons, when the animals are exposed to the debilitating effects of moisture, the rot spreads among them to a fearful extent. A farmer in England lost 900 sheep in the space of a few weeks from rot.

Tariff or no tariff on wool, sheep well cared for in a location favorable for their health, are as profitable stock as a farmer can raise. They furnish two crops a year—a crop of wool and a crop of lambs. They are more cheaply kept than any other stock, because they are not at all particular about the herbage they eat, and will devour more of the wild grasses, sprouts and weeds (which are nutritious and wholesome to them) than any other animal except goats.

In the great corn-growing States of the Middle West the hog is "the mortgage lifter," and no doubt the

most profitable animal the farmers can raise; and it is my opinion, formed after many years' experience, that hogs can be raised and fattened, on a small scale, as cheaply in the East, and presumably in the South, as anywhere on earth. In the first place, hogs kept in smaller herds, and fed on a greater variety of foods, are more exempt from disease—especially that dread disease, hog cholera—and, consequently, there is a smaller percentage of loss to be deducted from the profits.

On all farms in the East, there is a large amount of products, relished by hogs and conducive to their health, that can be profitably fed to them, and which might otherwise be wasted.

Our potatoes are sorted closely when dug, and all the small unmarketable ones picked up, washed, boiled, and fed to the hogs. They will eat them greedily without meal, but a little meal ground from corn, oats and buckwheat is added to make a "balanced" ration. I think it pays better to feed boiled potatoes to hogs than raw potatoes to cows. Unless potatoes are scarce and dear, they make a cheap food for hogs when fed in addition to grain. Turnips, large and small, are fed the same as potatoes. Pumpkins, the cheapest of farm products, are relished by hogs, and will promote the growth and vigor which are needed before the fattening process begins. Our pumpkins are not broken open, thrown on the ground to be rolled around in the mud, have the seeds eaten, and some of the insides gnawed out; but are cut up into small pieces, put into a clean trough, and have a little meal sprinkled on them. Managed in this way they are eaten up clean, and with apparent relish. The labor is not much, the cost of the pumpkins is small, and their value, when fed in this manner, is considerable. *Sus* (swine) are grass eaters as well as the bovines, equines and *ovis* (cattle, horses and sheep). Hogs, to be raised profitably in any place, East or West, must be kept in a great measure while growing on grass in its season. Hogs will eat some clover hay in the winter if they can get it. I have seen our hogs eat clean straw when given to them for bedding, and they were not starved, nor was the straw only *half threshed*.

Some farmers let their hogs run in their orchards and eat the apples as they fall, but I think this is not the best way. The hogs, unless ringed, will root the orchard up, and unless taken out long before gathering time, their dung will foul the apples that fall. As soon as our apples begin to fall plentifully, they are picked up and drawn to the barn to be fed to the hogs and cows. I have paid boys over a penny a bushel

for picking up. I have fed a bushel of apples to our hogs in the morning, when their appetites were keen, and they were eaten up clean before noon. At noon they received three pecks of mill feed, and when it was eaten up clean they were given another bushel of apples, and at dark three pecks of ground grain. The two feeds of ground grain weighed 51 pounds, worth, at the price feed was then selling, 91 cents. It is not easy to fix the exact value of the apples, because it is not certain the hogs fattened so fast when more than half their diet was apples, as they would have done had their feed been all ground grain; but my opinion was they fattened as fast, if not faster. I know, by trial, that without the apples the hogs would have eaten rather more than 68 pounds of the ground grain each day, or would have required 17 pounds more in place of the apples.

According to this calculation—which I believe to be correct—the apples were worth 15 cents per bushel to feed to hogs that fall.

Western men will laugh at this practice of economical feeding to make cheap pork; but it is the saving in small things that counts in making men rich. It was the boast of the late P. D. Armour, that in his establishment in Chicago every part and particle of the hog—the blood, hair, heads, feet and intestines—was saved and turned into money, and that it was this saving in an extensive business that made him rich.

J. W. INGHAM.

#### "SALISBURY" CALVES AT CASTALIA, VA.

The reverberations of that memorable Sunny Slope sale of imported Herefords have not yet ceased to resound. The slowly awakening cattle breeding industry was startled by the intelligence that Mr. Murray Boocock, Keswick, Va., had paid at auction \$3,000 for a "white face" bull, and the present activity in Herefords takes its date from that sale. The coming of these cattle to America has set in motion a wave of influence that is leaving an ineradicable impress on the breed. The use of these imported bulls in the herds of those fortunate enough to secure them at the sale is producing some of the greatest cattle that have ever been bred in America. At Castalia, Mr. Boocock is reaping the reward of his enterprise, as the calves by Salisbury are measuring up to a very high standard, evidence of which is presented in our plate page illustration. The establishment of this herd with liberal outlay is indicative of the spirit with which the South is approaching the problem of beef cattle improvement. With such leaders, the future is rosy with promise; with such material as that collected at Castalia, a sure foundation is being laid. The valleys of Virginia are famed for their feeding of prime export beef. The breeding of the cattle that are to consume the rich herbage of those beautiful hills is evidently among its industries of the future.—*Breeders' Gazette.*

#### FEEDING GRADES.

*Editor Southern Planter:*

By grades may be meant a cross of thoroughbreds, or thoroughbreds bred on common stock, or it is used with reference to ages.

We will presume a calf out of a common cow by a thoroughbred beef breed sire, owing to the cow being an extra good milker, is at weaning age heavier than a calf from a cross of thoroughbred beef breeds. It would not be unreasonable to suppose that the two calves being the same age at weaning, and getting the same ration, that the tables might be turned, and the thoroughbred cross gain faster in weight.

But, drawing upon supposition again, suppose the two calves, up to weaning time received the same quantity and quality of milk, and still the balance of weight was in favor of the common grade; is there experience to prove, without doubt, that the thoroughbred grade would still, at the feed trough, gain more on the same ration?

If so proved, it would seem to tend to show that there was an inherited faculty of better assimilation of the food. This would be a reason why the beef raiser, with the less purely bred sire and cows, should have recurrence to the fancy or show stock breeder.

I have a friend who is fond of telling the story of his bringing home a young hairy bird bred in the brush, and its refusing to eat until given dry oak leaves—doubtless? rejecting the too stimulating diet for its inherited assimilation.

W. M.

*Albemarle Co., Va.*

There have been claims made that a grade out of a common cow by a pure-bred bull will feed faster than a pure-bred animal, but we have never seen the facts so stated as to justify this claim. We very much doubt it. The inherited tendency to feed fast and profitably by pure-bred beef stock, is too pronounced to be overcome by any grade out of a common cow. Whilst common stock may have greater powers of assimilation by reason of their having had to rustle for a living, and to subsist on feed requiring great powers of assimilation in order to secure even a minimum of support from it, yet this greater power of assimilation would not be likely, in our opinion, to enable such an animal to make greater and faster gains than a pure-bred beef animal fed on like food would make, and it would certainly not put the feed where it would command the best price. It might make tallow, but not beef.—Ed.

#### THE ANGUS BREAK RECORDS.

The Aberdeen Angus cattle have broken several records within the past two years, and recently at Chicago proceeded to smash a few more. The highest average price on record for an Angus sale was made \$650 for eighty head; also highest average on record for imported cattle, \$1,234 on twenty-four head. The highest public sale price on record for a bull, \$9,100, was paid for imported Prince Ito. The highest public sale price of recent years for a cow, \$6,300, was paid for Blackcap Judy, a home bred animal. Both of these also far exceeded top prices heretofore paid for Angus—the highest prices for the breed having been \$3,050 for a bull and \$2,800 for a cow.

## The Poultry Yard.

### BREEDING FOR EGG PRODUCTION.

The Maine Experiment Station has been engaged for several years in carrying on a series of experiments with the hope of increasing the number per year and improving the size of eggs. We quote the following, from a recently issued Bulletin, showing the results so far obtained. At present, these results can only be considered preliminary, as up to the present the effort made has been to make selections from fowls bred from the best egg-producers amongst large numbers. These selected birds are now being made up into pens, and in the future it will be seen what the results are to be. The varieties selected as being the best all the year round layers are Banded Plymouth Rocks and White Wyandottes. The Bulletin states that a study of the monthly records for the past two years not only shows great differences in the capacities of hens, but marked variations in the regularity of their work, some commencing laying early in November and continuing laying heavily and regularly month after month, while others varied much, laying well one month and poorly or not at all the next. All pens were of the same number, and feeding and treatment alike. The highest number of eggs laid by any hen in a year was 208, laid by a White Wyandotte. There were several that laid over 200 eggs, both Plymouth Rocks and Wyandottes. Of the 67 hens carried through two years, 10 laid more eggs during the second year than the first, and 57 laid more during the first than the second year. Eighty Plymouth Rock pullets, tested one year, laid 10,611 eggs, an average of 132 eggs to each bird. Ten of the 80 died, or were stolen during the year, but no deduction is made for this. One pullet laid 211 eggs in the year, and another 208. Eighty Wyandottes laid 9,844 eggs in the year, or an average of 123 eggs each. Ten also of this lot died or were stolen during the year, but no allowance is made for their short work. One of these laid 219 eggs in the first full year she laid. The best work done since the present method of selection was begun was done in 1901. One hen laid her first egg Nov. 29, 1900, and to November 28, 1901, she had laid 251 eggs. During the three years in which the selection-test had been carried on, the Station has found 30 hens that laid between 200 and 251 eggs in a year. Twenty-six of these are now in the breeding pens, and constitute the foundation stock upon which breeding operations are based. Males have been raised from them during the last two years, but care has been taken to avoid inbreeding, as it is doubtful if the inbred hen has sufficient constitution to enable her to stand the demands of heavy egg production. All the other

breeding stock carried are tested hens that have laid over 180 eggs in a year—pullets whose mothers laid over 200 eggs in one year, and pullets sired by cocks whose mothers and grandmothers laid over 200 eggs in one year. We shall watch the results of the further tests with interest.

### POINTS ON POULTRY RAISING.

“A reader of the *Planter*” asks, What are the best breeds for eggs and broilers? What, how, and the cheapest way to feed? Where, and how to market? How to keep 400 or 500 hens together, and keep them healthy and free from cholera?

As layers of eggs (all the year round layers), we believe Plymouth Rocks and Wyandottes hard to beat. The Leghorns will lay more eggs during the spring and summer months than these two breeds, and will lose less time setting, but they are not usually winter layers. As it is the winter layers which bring the money, we think the breeds first named the best. There is, of course, much difference of opinion on this subject, but we give this as our opinion based on a pretty extensive experience. As broilers, to be profitable, must be produced early, it is necessary to raise them from winter-laying hens, and these are also the best, because their larger size gives size to the broilers. We, therefore, think Plymouth Rocks and Wyandottes the best. Feed should be as varied as possible—wheat, corn, oats, mill feed and bran, with a daily supply of fresh meat or dried meat meal and cut bone fed two or three times weekly. Plenty of green feed or vegetables should be fed all the year round, and pure water and grit always be within their reach. The only way to keep 500 hens healthy and in good laying order is to keep them in colonies of not more than 50 each, scattered over several acres of land.

Do not feed young chicks too rapidly when kept in small pens. Avoid feeding hard boiled eggs too freely, or ground meat. Cut clover and cut-roots will always be found excellent substitutes for grain, and bone, roots and clover are cheapest and best foods that can be used. If the hens are supplied with egg producing elements they will give a profit. If does not pay to save fifteen or twenty dollars in the cost of a good bone cutter and lose a hundred dollars or more without its use. The wheat grower must have a harvester and binder, the corn planter must supply himself with plows, harrows and cultivators, and the stock raiser cannot do without feed grinders, fodder cutters and other necessary adjuncts to success. The poultry man cannot succeed without a bone cutter, and he has the advantage of securing an excellent contrivance at a very small cost.

## The Horse.

### NOTES.

Trainer L. K. Bryan, who handles the horses owned by Mr. D. S. Jones, Newport News, Va., writes me that every member of his stable is doing well. He is wintering about a dozen head, ranging in age from two year olds to aged horses, among them being six or eight of the get of the noted Iowa sire, Ellerslie Wilkes, 2:22½. These were purchased from A. A. Kitzmiller, Valley Junction, Iowa, not long since, and Bryan thin's several of them will develop not only speed but high class racing quality. Thus far, the black pacing horse, Buckroe, five years old, is the most promising of the lot. As a two-year old, he *triated* in 2:31, half in 1:08, over a half-mile track. Buckroe's dam was Anna V., by Pilot Median, and she out of the great brood mare, Silky Lambert, dam of five in the list.

At a satisfactory advance on the cost price, three of the two year olds have been sold to gentlemen in Newport News, and will be trained. They are, bay filly, by Ellerslie Wilkes, dam Severn, dam of Red Lady, 2:12½, by Grand Sentinel, bay filly, by Iowa Sentinel, 2:29½, dam Mattie Wilkes, by Brown Wilkes, and bay colt by Ellerslie Wilkes, dam Persistent, by Princes. Bryan's stable also includes the Western bred trotters, Joe Wible, 2:20½, by Silverthorne, dam by Joe Young; Lady Ruth, 2:29½, by Falmont, 2:14½, dam by Archie Dean; Tell, black mare, 5, by Axtell, 2:12, dam Blossom, 2:20, by Pennypacker, and chestnut gelding, 2, by Iowa Sentinel, dam Inheritress, dam of Anna, 2:21½, by Inheritor. The last named is very promising, and the papers give him as having been purchased by Bryan, but the fact of it is that he was really a present from Mr. Kitzmiller, and bids fair to be a most useful one as a bread winner at the races with age and development.

George D. Bennett, one of the best known of Virginia and North Carolina horsemen, died at the National Stock Yards, East St. Louis, Illinois, on Monday, the 16th instant, aged 60 years. His death was due to pneumonia, and came after a short illness. He was born near Greensboro, N. C., and passed the greater part of his life in his native State, his residence, during recent years, having been at Goldsboro. For many years past he had been largely engaged as a buyer and shipper of various grades of horses on the Western markets. Mr. Bennett cherished a strong fancy for trotters, and was regarded as a shrewd judge of form. During the early eighties, with C. A. Pusey as trainer and driver, he took the Blue Bull mare, Loua Guffin, 2:23½, down the Grand Circuit line, and during later years, with William Chatman to do the training, he had out Bird Eye, 2:14½; Great Stakes, 2:20; Rapid, 2:22½; Eliza Ingram, 2:25½, and others, with which he won money in the East and South.

At the time of his death he conducted sales stables in this city, Raleigh and Goldsboro, N. C. Mr. Bennett was a man of quiet, unassuming manners, but a deep thinker, and a man of quite extensive business affairs.

It is said that the leviathan trotter Mosul, 2:09½,

sold by Jas. C. Smith, of this city, at the Fasig-Tipton sale, New York, in January, and purchased by Charles Weiland, is showing sensational speed. Driven by owner, Weiland on the Harlem River Speedway this big son of Sultan is able to hold his own with many of the best horses seen on that famous driveway. Mosul trotted to his record in 1897, at the Grand Circuit meeting at Columbus, Ohio, where he was returned a winner of the race rendered sensational by the expulsion of Oakland Baron, 2:09½.

Time has been when it was not considered to rebound to a man's credit to own good horses, or in fact to be intimately associated with turf affairs in this country. However, the example set by such men as Belmont, Haggin, Whitney, Morris, and others of wealth and stainless reputation, dispel this sentiment. And shortly we shall find that a man of high standing in turf affairs will hold a reputation equally as high as the leading men in the business affairs of the country.

Imported Fatherless, son of Isonomy and Orphan Agnes, by Speculum, second dam Polly Agnes, grand dam of the famous Ormonde, Eon and Aureus, are the stallions offered for service in the Ellerslie Stud of R. J. Hancock & Son, Charlottesville, Va., for 1902. Eon and Aureus are both sons of the dead Eolus, the former being out of War Song, by War Dance, while the latter has for a dam Sample, the daughter of imported Rotherhill.

Mr. B. W. Ford, former proprietor of the Castleton Farm, Lexington, Ky., has returned to this city and taken up his residence here. While at Castleton Mr. Ford bred the trotters Trevilian, 2:08½; Annie McGregor, 2:15½; Keswick, 2:18; Maud McGregor, 2:18½; Tannerine, 2:19½, and others with slower records, and the pacers Castleton, 2:10½; Hannis, Jr., 2:17½, and Dora Martin, 2:19½.

Dr. J. T. J. Battle, Greensboro, N. C., owner of the bay pacing gelding Dong Thomas, 2:16½, by Blue Hal, has shipped him to Gus Macey, Versailles, Ky., by whom he will be campaigned this season. Doug Thomas got his record in 1901, and paced the latter half of a trial mile over a half-mile track in 1:04.

At the regular monthly meeting of the Board of Stewards of the Western Jockey Club on February 3d, trainer William Garth was reinstated to all rights and privileges, and along with him the horses Imperialist, All Saints, Concertina, Gaylida, Fireless, Blacksmith and Arius.

J. T. J. Battle, Greensboro, N. C., has sold the bay mare Mattie Lynn Holt, 2:23½, by Baronet, dam Kellis, by Jay Bird, to parties at Thomasville, Ga., by whom she will be campaigned this season.

BROAD ROCK.

When corresponding with advertisers mention the *Southern Planter*.

## Miscellaneous.

### THE VIRGINIA CONSTITUTIONAL CONVENTION AND THE FARMERS OF THE STATE.

In our last issue we announced that the Agricultural Committee of the Convention had completed its work and reported to the Convention. The report recommended that a State Board of Agriculture should be appointed by the Governor, and that the President and Rector of the Agricultural and Mechanical College of the State should be ex-officio members of the Board, and the President of the Board of Agriculture and the Commissioner of Agriculture should be members ex-officio of the Board of the Mechanical and Agricultural College. The committee also recommended that the Commissioner of Agriculture, and other officers of the Board, be appointed by the State Board of Agriculture.

In our article dealing with this report, we commended the action of the committee, and urged strongly the adoption of the report by the Convention as giving promise of such an improvement over the system at present in force as would undoubtedly lead to great advantages to the agricultural interests of the State by bringing the whole work of the State Board of Agriculture under one authority, the Commissioner being merely an officer, strictly speaking, the secretary and executive officer of the Board, and by bringing into harmonious co operation the Board and the authorities of the Agricultural College and State Experiment Station. We felt and believed that these advantages would be so apparent to the Convention, and came with so much weight from the committee, presented over, as it was, by one of the most influential and intelligent farmers, who, in addition to his practical knowledge of the needs of the agriculturists of the State, had also had years of experience on the State Board of Agriculture, and therefore knew well the defects in its existing organization, that the Convention could not fail to endorse the action of the committee. We regret to state, however, that in this belief we were entirely mistaken. The old leaven of the politicians was too powerful for anything so sensible to receive its approval. The grabbers after the loaves and fishes of office holding quickly decided that at least one office in the Department of Agriculture should be kept within their reach, however the interests of the State and the farmers suffered, and that the Commissioner of Agriculture should be elected by the people, which practically, in this State, means should be under the domination of the politicians. In making this change, the Convention so altered the report of the committee as practically to make the Commissioner of Agriculture not the servant of the Board, to execute

its orders and carry out its desires, but an officer of co-equal authority with the Board; and they failed, so far as we are able to gather from the report in the *Dispatch*, to authorize the Legislature to define the respective powers and duties of the Board and the Commissioner. The effect of this change is absolutely to prohibit all hope of successful and harmonious co-operation and work in the development of the agricultural interest of the State, and to leave us where we have been now for so many years—in the rear-guard of all the States. It is one of the essentials to success in any undertaking that there should be *one* authority responsible, and wherever there is divided responsibility, there is bound to be failure sooner or later. Of all the States in the Union, there is, we believe, only one other which has adopted such a foolish course, and that is North Carolina; and the experience which has resulted from its adoption there is certainly not such as to encourage its adoption elsewhere. For years the work of the Department of Agriculture of that State has been paralyzed by constant changes of the *personnel* of its officers to suit the politicians. We can understand and appreciate the placing of the agricultural interests of a State under the care of a Commissioner of Agriculture alone, either appointed or elected, as is done in a number of States, or under the care of a Board of Agriculture with power to appoint its own officers, as is done in a number of other States; but a policy which endeavors to combine these two systems and thus introduces conflict and divided responsibility, is beyond either our understanding or approval, and we think must be so with any thinking person. The result must be in the future as in the past, that our best men will decline to serve on a Board so hampered in its authority and power, and the State must continue to suffer. For the best interests of the State, a Board of strong, highly intelligent men is needed, aided by a secretary not merely a practical farmer, much less a politician, but one with technical and scientific training and great powers of organization. What possible chance is there of obtaining such a man by popular election under the direction of the politicians? We do not know how far it is possible yet to make a change in the organization prescribed by the Convention, but if possible, we do most earnestly beg reconsideration. We would ask that all who agree with us and desire to see something done to advance the agricultural interests of the State, should write their representatives in the Convention and urge reconsideration.

Mention the *Planter* to your friends.

## HIGHWAY IMPROVEMENT.

Under the stimulating influence of the Governor of this State there appears to be at last a recrudescence of the movement in favor of better roads in the State. The Governor has addressed a message to the Legislature dealing with the subject, and two or three bills have been introduced into the Legislature. The Governor's message and at least one of these bills proposes the creation of a commission to have charge of the subject, and suggests the financial aid of the State should be granted to the counties. The Governor reverts to a suggestion we made probably ten years ago to lend the credit of the State to the counties in order to secure the money needed at a low rate of interest and on long time bonds, and one bill, that of Mr. Lassiter, suggests appropriation by the State of money to build roads approved by the commission. If either of these proposals were within the competence of the State to adopt, we should rejoice to see them put into operation, especially the long time bonds raising money at a low rate of interest on the joint credit of the State and counties, which we believe the only feasible way to secure good roads. So long as the whole burden is sought to be imposed on the farmers of the State nothing will be done, as they positively and justly refuse to carry such a load. Good roads are of equal benefit to the cities as to the counties, and the burden of constructing them ought equitably to be borne by the whole State and not by the counties alone. A careful consideration of the subject made when writing a series of articles in *The Planter* on this subject some years ago convinced us that without an amendment of the Constitution no State aid could be given to the counties, and hence our recent articles urging the Convention now sitting to deal with the road question, hitherto, we regret to say, without any effect so far as we know. It may be that the new Constitution, when it comes out of the crucible, will remove the absurd and antiquated prohibition in the existing constitution against the State borrowing money to advance its material resources or lending its credit for that purpose, and may at least permit the adoption by the State of a policy of lending its credit to counties when indemnified by the cities and counties availing themselves of the assistance. Such a policy would permit of the saving of hundreds of thousands of dollars in the work of supplying the State with a system of good roads, and would neither prejudice the State nor the counties. It is a system which has long been in operation in England, and has resulted in wonderful advancement. This and the creation of the office of State Road Engineer with powers and duties adequate to enable him to do effectual work would result in progress; without these, we fear nothing more will result than resulted when the subject was

agitated years ago by the holding of conventions and meetings and the passing of "resolutions."

## THE FARM LABORER.

*Editor Southern Planter:*

Recently a prominent and successful agriculturist of the neighborhood wrote to one of our city papers deploring the scarcity and the decreasing supply of farm laborers, and complaining of their inefficiency, and he invoked the Constitutional Convention to do something to remedy these evils.

Had the gentleman read the varied reports on suffrage brought in by the Committee on Suffrage, composed of the leaders of the body, and especially the debates of the Convention annex, namely, the conference of the majority members, he would scarcely have called upon the Convention, because he would have seen that that Honorable Body is doing all that is in its power to do what he invokes it to do.

It will scarcely be denied, I suppose, that the way to increase the supply of labor and to improve its efficiency is to make the laborer feel that he is somebody, that he has some part and lot in his country, that he is not a pariah to be constantly called all sorts of ugly names, and to be represented as a menace to the community; that he is one possessing no rights, or if rights, possessing them by so slight a tenure that he may be deprived of them by a counting of noses.

Now, what is more conducive to self-respect, to feeling that one is somebody, or at least that one is not nobody, that one possesses rights that are not dependent upon caprice or prejudice; what more conducive to patriotism, which is the foundation of national greatness; what more conducive to the feeling of manhood, which is the foundation of high character, than to be told day after day, and told all the time, that one is illiterate, and almost always to have illiterate joined with vicious, as if to be illiterate was necessarily to be vicious too; that one is such a menace to society that he must, regardless of character, be deprived of what is regarded as the highest and most sacred right, or privilege if you choose, of the citizen, namely, the right to vote, to accomplish which we have to hide behind grandfathers, or to resort to an understanding clause, which, if impartially applied, would disfranchise the majority of voters; because who indeed can give a satisfactory reason for "the faith that is in him," political or otherwise! Few indeed; for the path of "understanding" would, I fancy, resemble the path of "wisdom," that is to say, "with here and there a traveller," as the saintly Dr. Watts sings.

Now, whenever the question of suffrage is before the Convention, this Honorable Body indulges in such cheerful and encouraging observations upon the farm laborer, thus showing its desire and determination to

increase the supply and improve the efficiency of the same, thereby complying with the request of the agriculturist aforesaid.

But some claim that it is because of these cheerful and encouraging observations indulged in generally by people and politicians, inside and outside the Convention, that the farm laborer feels that he is made an outcast in the laud of his birth, and that therefore many depart the State, and those who remain feel no encouragement to do good service. They are entirely mistaken. The farm laborer likes to hear and to be told these things; they make him feel good, they stimulate him, and, my word for it, when the Convention has done its disfranchising work and the fact becomes generally known, there will be such a rush of farm laborers back to the State, and their efficiency will be so increased, that the direst croaker among the agriculturists will have no occasion to complain of either the quantity or quality of farm laborers. The only trouble will be that agriculturists themselves will forget how, and thus lose the power, to work.

Richmond, Va.

LEWIS H. BLAIR.

#### TIDEWATER (VA.) NOTES.

*Editor Southern Planter:*

We are this day having our first snow for the winter, now drawing to a close. January, 1902, was four degrees colder than the average temperature for January for the past 31 years. The average for the month for the past 31 years has been 41 degrees, and for the January just past the average was 37 degrees. The coldest day in January was 22 degrees above zero on the 4th. The rainfall was 2.15 inches, falling on the 11, 21, 22, 26, 27, 29, 30 and 31. Number pleasant days 22; cloudy and unpleasant days 9.

The rainfall was short and the temperature lower than the average, making the month cold and dry, rather hard on the young cabbages set out in October, November and December previous.

Since January 1st the crop of spinach and kale has been steadily going northward and commanding fine prices, as the North and West went into winter quarters shorter on "greens" and "garden sass" than before for many years. The fine crop of kale is nearly all cut and shipped, and every day during the month of January great quantities of spinach have been shipped. The price of spinach has ranged from \$2.25 to \$3.25 per barrel. It is only the earlier sown spinach which has reached a size to justify shipping, and there is enough spinach in sight to keep on shipping until first to middle of April.

We have visited several fields where the owner reported the yield at 200 barrels to the acre, and which was selling at \$2.75 to \$3 per barrel. The man who has a good large field of spinach has a bonanza this year.

The plows are running every day now preparing the land for the great potato crop to be planted late this month or early in March. Radish fields are being prepared for the seed. On all sides the truckers are beginning to move, and getting ready for the campaign of 1902. This promises to be the best season our truckers have had in years. The potato crop or area will will be larger this year than ever before. Our truckers give notice that from June 10th to July 10th they propose to supply all the East and North and portions of the West with a fine crop of Irish potatoes.

Unless some great drawback interferes we would not be surprised to see our crop reach the grand total of 750,000 barrels. While there has been no very cold weather—16 above the lowest to date—still the winter will pass for a cold one, as February will show a lower average of temperature than usual. It has been a steady sort of cool weather, which has reduced the average rather than cold spells or periods.

Kale has sold well and is about all gone. Spinach has sold well, and the entire crop promises a splendid profit to those who have it. Lettuce has sold well. Cabbages, set out in November and December, are not looking as well as usual, but we hope the crop is not materially damaged, as we shall need a half million barrel crop this spring to keep up the supply anywhere near to the demand. Our trucking outlook is fine indeed.

January was four degrees per day colder than the average January for the past 32 years, as shown by the Government weather figures at this station.

February is likely to show even a greater variation than January. The coldest day in January was one day at 22 above zero. The coldest in February to date been 18 on the 14th. February will show an average of several degrees colder than the average for the past 32 years; but still has been more uniform than usual. It has been a steady cool month.

We give the minimum temperature for February to date. February 1st, 30; 2d, 34; 3d, 26; 4th, 27; 5th, 19; 6th, 21; 7th, 29; 8th, 25; 9th, 22; 10th, 26; 11th, 24; 12th, 27; 13th, 25; 14th, 18; 15th, 28; 16th, 29; 17th, 30; 18th, 28; 19th, 25.

The frost has not been severe, and but little damage has been done to the green stuff standing in the open air, and kale and spinach have been sent to Northern markets every working or every week day in February.

A cool February is good for fruit, as the buds are kept back so that the light frosts of March will not injure them.

The one cold day in December was 16 degrees above zero; the coldest in January was 22 above zero; and the coldest in February was 18. The snowfall has been about four inches.

Our farmers and truckers have a pretty safe guarantee that good prices for all market garden products and vegetables will prevail during the greater portion of the year 1902. A freight rate of 15 cents per barrel on kale and spinach to New York and Philadelphia; a 20 cent per barrel rate on potatoes; and a 15 cent. rate on a 30 dozen crate of eggs (one-half cent per dozen) places our potato patches, truck farms, and hen's nests almost in the suburbs of New York and Philadelphia, while our latitude, altitude, and relation to the Gulf Stream gives us an ideal climate the year around.

Our farmers and truckers are very hopeful, cheerful and encouraged.

Norfolk, Va.

A. JEFFERS.

### GASOLINE ENGINES ON THE FARM.

*Editor Southern Planter:*

In the last issue of *The Planter* I notice two inquiries in regard to gasoline engines on the farm, and would like to make a few observations that may be of benefit to those contemplating the use of such power. To the inquiry of Mr. Smith, "Will a 1½ horse power cut stove wood?" I answer, yes; so also will a man with a good sharp axe, and more economically. It is strange that reason and experience should not teach a person that there is no economy in trying to pull a heavy four-horse plow with a very light two horse team. I believe that rightly applied the gasoline engine is one of the most useful and economical powers ever invented, and I say this after an experience of nearly forty years with various kinds of motive powers. Of course it has not yet attained perfection, but it has come to stay, and will undoubtedly in a short time, in the form of a light traction motor, supersede to a great extent the present expensive and not too convenient horse power. In its present state as a stationary or portable power, it is one of the most economical machines in which a farmer can invest, provided he understands how to apply the power to secure its greatest working capacity. But the great mistake that is oftenest made is in buying a power of less capacity than that required to do the work. Now, while a 1½ horse power engine will be a great labor-saver, yet I think there are few farms where a three-horse power would not be much more economical, and while only double the power, would be adapted to ten times the range of work. My ideal is either a four or four and a-half horse power, as I would much prefer to have one horse power to spare than to lack the hundredth part of one horse power in pulling a load. And if you secure an engine with an automatic exhaust and only wish to do a one-horse power work your four-horse power engine will not consume any more fuel than a one-horse would, and the fuel is the main item of expense in running any en-

gine. With ordinary care in using the gasoline when supplying the engine, I consider any machine sent out by a reliable company as safe, and there are several that are sold with a guarantee to be perfectly safe in every respect. Of course, the actual consumption of gasoline cannot be accurately stated, as it will vary somewhat according to condition, but it is now generally conceded that the average cost of the fuel consumed is about one cent. per horse power per hour, or, in other words, a three-horse power engine, running to its full capacity, would consume about thirty cents' worth of gasoline in ten hours, a trifle more or less, depending on the price of gasoline in the vicinity where used.

One decided advantage that the engine has over the wind-mill is that you always have a chance to ignite the gasoline, but you cannot always "raise the wind," and besides the wind mill is a fixture and you must of necessity take your work to the power, while with the engine you can load on a sled or low down wagon, and take your power to your work, which is in many instances a decided convenience.

If L. P. N., Jr., of Culpeper county, will write me, giving the size of tank he wishes to fill, and the approximate number of barrels he expects to consume daily, together with the diameter of the bore of his well, I could advise him more fully, as in his case as much would depend upon the manner of pump used as upon the style of power. I wish to state incidentally that a wood saw is proportionately one of the heaviest machines you can attach to a power of any sort, and while a light power can be made to literally drag a saw through light sticks there is no economy in it. Any one doubting this statement can call at any wood-working establishment and get reliable information.

Albemarle Co., Va.

W. N. UNDERWOOD.

### VIRGINIA AT THE ST. LOUIS EXPOSITION.

I am glad that some one is agitating the question of Virginia's doing something towards advertising the State's resources at the St. Louis Exposition. I will suggest this move, that the Horticultural Society send circular letters to prominent citizens in the State and ask them to write a personal letter to their representative asking him to support such a bill. In this way, I am sure we will get it. There are thousands of people in the West who want to come here, and if they could only see and know something of our State, they would come. Immigration is what we want to make the old State what she was years ago, "one of the first States in the Union."

I advertised a small tract of land in the *Breeders' Gazette*, and received inquiry from parties as far West as Oregon. I had a gentleman with me last summer from the corn belt of Illinois, where they fatten so many cattle for Chicago and other markets. I showed him a few of our cattle on grass, and he was perfectly astounded to see such fat on nothing but grass.

I often say to our people that we do not appreciate what we have, that we have the best country that the sun ever shone on.

J. C. R. BELL.

Pulaski Co., Va.

**THE  
Southern Planter**

PUBLISHED BY

**THE SOUTHERN PLANTER PUBLISHING CO.,**

**RICHMOND, VA.**

ISSUED ON 1ST OF EACH MONTH.

**J. F. JACKSON,**

Editor and General Manager.

**B. MORGAN SHEPHERD,**

BUSINESS MANAGER.

TERMS FOR ADVERTISING.

Rate card furnished on application.

TERMS OF SUBSCRIPTION.

The Southern Planter is mailed to subscribers in the United States and Canada at 50c. per annum; all foreign countries and the City of Richmond, 75c.

Remittances should be made direct to this office, either by Registered Letter or Money Order, which will be at our risk. When made otherwise we cannot be responsible.

Subscribers failing to receive their paper promptly and regularly, will confer a favor by reporting the fact at once.

The Date on your Label shows to what time your subscription is paid.

We invite Farmers to write us on any agricultural topic. We are always pleased to receive practical articles. Criticism of Articles, Suggestions How to Improve THE PLANTER, Descriptions of New Grains, Roots, or Vegetables not generally known, Particulars of Experiments Tried, or Improved Methods of Cultivation are each and all welcome. Contributions sent us must not be furnished other papers until after they have appeared in our columns. Rejected matter will be returned on receipt of postage.

Address— **THE SOUTHERN PLANTER,  
RICHMOND, VA.**

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**PUBLISHER'S NOTES.**

**Patronize Our Advertisers.**

In this and the last two issues will be found advertisements from the most reliable houses in the country, offering almost everything the farmer can possibly need on the farm or in the house. There will be found a larger number of advertisements than have ever at any one time been published in any agricultural journal in the South. We are very proud of this fact, and feel deeply indebted to our advertisers for their patronage. We desire to help these people in response to the confidence they have reposed in our representations, that we can ensure them profitable returns for their investments with us.

We know, from letters that we have received from many of them, that our representations have been borne out, and that they are doing a good business with our subscribers, and the further fact that very many of our advertisers are with us again this year, after previous trials of *The Planter* confirms our confidence in the ability of the journal to secure business. We would ask that every one of the 50,000 readers of *The Planter*—and we have now more than that number of readers—will read the advertisements as carefully as the other part of the journal, and give their orders to those whose offers they may see of the goods needed. We guarantee the reliability of the advertisers, and will see that no one is defrauded without the guilty party being exposed.

**Whose Money?**

On December 26th last, we received \$1.00 in coin in one of our self-addressed envelopes post-marked "Hampton, Va.," but the sender omitted to sign his name. We shall be very much pleased to credit it to the proper person, provided he will claim same. We have a great number of subscribers at Hampton and in that vicinity, so it is impossible for us to do other than hold it until some one writes for it.

**Wood's Seeds.**

**Va. Second Crop  
Seed Potatoes.**

These are the result of growing two crops in the same year, the first being planted from select Maine Seed Potatoes, and the seed selected from this crop planted again in July or August. They not only make their crop earlier, but they also make a larger yield and much surer crop than Maine or Northern-grown Seed.

Our stock is very superior and we always ship in full-sized double-head barrels. Wood's 1902 Descriptive Catalogue gives very interesting information about Potatoes. Mailed upon request.

We have also large stocks of the best MAINE and NORTHERN-GROWN SEED. Write for special Potato price-list.

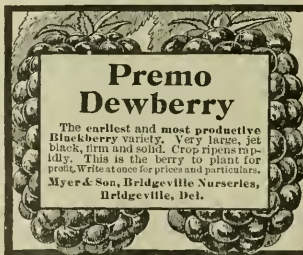
**T. W. Wood & Sons, Seedsmen,  
RICHMOND, VIRGINIA.**



Buy the Best. That Means Ours.

**IDEAL Late Cabbage**  
always heads tied the Ideal. The leaves of the **Brown Flat Dutch** lap thick and tight across the centre, making it the best winter variety grown. Our No. 10 catalogue tells all about All Head Early, Succession, Big Charleston Cabbage, and in fact everything in the seed line, about our big stock of tools, garden implements, etc.

Write for It. 16 1/2 Cents.  
Griffith & Turner Co., 205 Foca St., Baltimore, Md.



**Premo Dewberry**  
The earliest and most productive Blackberry variety. Very large, jet black, firm and solid. Crop ripens rapidly. This is the berry to plant for profit. Write names for prices and particulars.

**Myer & Son, Bridgeville Nurseries,  
Bridgeville, Del.**

**LIVINGSTON'S TRUE BLUE SEEDS**

**WHAT  
10 CTS.  
WILL DO.**

Send us a silver dime. We then mail you 1 pint each Livingston's New Magnum Tomato, Livingston's Ideal Cabbage, Livingston's Emerald Cucumber, Livingston's Tip Top Muskmelon and New Wonderful Lettuce and our 104 page Seed Annual. Send us back the empty bags and we will accept them at 1¢ cents each on any order amounting to 50 cents or over.

**THE LIVINGSTON SEED CO.  
BOX 109 COLUMBUS, O.**

STATE OF OHIO, CITY OF TOLEDO, } ss.  
 LUCAS COUNTY,  
 FRANK J. CHENEY makes oath that he is the senior partner of the firm of F. J. CHENEY & Co., doing business in the city of Toledo, county and State aforesaid, and that said firm will pay the sum of ONE HUNDRED DOLLARS for each and every case of CATARRH that cannot be cured by the use of HALL'S CATARRH CURE.  
 FRANK J. CHENEY.  
 Sworn to before me and subscribed in my presence this 6th day of December, A. D. 1886.

SEAL. A. W. GLEASON,  
 Notary Public.  
 Hall's Catarrh Cure is taken internally, and acts directly on the blood and mucous surfaces of the system. Send for testimonials, free.  
 F. J. CHENEY & Co., Toledo, O.  
 Sold by druggists, 75c.  
 Hall's Family Pills are the best.

MAGAZINES.

The Century for March contains two features in the field of popular science, either one of which would give distinction to a number of the magazine—an authoritative record of Marconi's recent work by P. T. McGrath, with a prefatory note by Mr. Marconi authenticating the paper, and a popular article by Dr. Albert P. Mathews, entitled "The Nature of the Nerve Impulse," setting forth the details of the writer's investigations, the recent announcement of which has stimulated public interest and curiosity.

In the "Year of American Humor" are "The Modern Fable of the Old Fox and the Young Fox," by George Ade, in which the former sets forth sage and entertaining philosophy for the conduct of life and business; "The Strike on the Schlafelplatz Railroad," a Pennsylvania Dutch story—quite a novelty in strikes—by John Luther Long, the author of "Madame Butterfly," contributions by Oliver Herford, Carolyn Wells, Wallace Bruce Ambsary, and others.

In the "Collectors' Series," Philip G. Hubert, Jr., narrates "A Bavarian Bric-a-Brac Hunt," with illustrations.

In the papers on the West are "The Old Regime in the Southwest," recounting the reign of the revolver in New Mexico, by Albert E. Hyde; biographical articles on the late Bishop Whipple and James Jesse Strang, the Michigan usurper, and a paper by Bishop Fitzgerald, of Tennessee, giving his personal recollection of Vasquez, a California bandit.

A second authoritative paper on the proposed improvement of Washington City is contributed by Mr. Chas. Moore, with illustrations; and there are other articles on Samoa, by Mrs. Strong; on "A Marionette Theatre in New York," with curious illustrations by Keller; on Kibelik, by the musical critic, Krehbiel, with a portrait sketch by Cecilia Beaux, besides another of Dr. Weir Mitchell's "Little Stories," entitled "A Consultation." An anecdotal paper of personal recollections of Tennyson is contributed by Captain W. Gordon McCabe, of Richmond, Va. President Gilman, of the Cagnegie Institution, makes an authoritative statement concerning it. There



**OUR WORLD'S FAIR TOMATO**

**The Great Canning Tomato.**  
 A very solid, fine flavored, smooth and attractive tomato of good size and excellent shipping and keeping qualities is our **World's Fair Tomato.**

One of the best for canners, market-gardeners, etc. ever grown, because of its uniformity of size, remarkable solidity, and freedom from rot. Handsome bright red in color and symmetrical in shape. We have seeds of other fine varieties, such as Queen, Stone, B. B., Beauty, etc., a full line of garden and field seeds. Also tools, garden implements, and in fact about anything the truck gardener needs in his work. Write and get our large illustrated catalogue No. 10 It describes all these things perfectly. Mailed free. Write to-day.

**GRIFFITH & TURNER Co.,**  
 205 N. Paca Street, Baltimore, Md.



**SAVES ITS COST ON THE FIRST CROP.**

Do you know of any other piece of machinery for use on the farm of which this can be truly said?

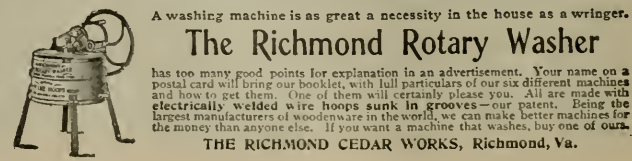
**The Improved Kemp Manure Spreader**

It spreads all kinds of manure, lime, salt, ashes, compost, etc., either broadcast or in rows. Does it better than it can possibly be done by hand.

not only makes easy work of getting out the manure, but by the way in which it breaks it up and makes it fine, it more than trebles the value of the same. It will break up and spread evenly, manure that cannot be handled with a fork. It doesn't matter how hard, lumpy, caked, stony, or stinky the manure is, this machine will spread it. It makes fine, well rotted manure so a long way in top dressing wheat in the spring, meadow lands, pasture, etc. Being mounted on broad faced wheels, it can be hauled on any kind of ground without serious cutting in or rutting. Can spread back and forth, as front wheels turn entirely under. Can be turned on the ground it stands on. 1882 machine has our new **Beater-Freeling Device, Apron-Retaining Device** and numerous other improvements. Send for latest catalogue (free) and read about these and other advantages and also about "How to Grow Big Crops."

Remember that the only original and genuine Kemp Manure Spreader is the one made by ourselves.

**KEMP & BURPEE MFG. CO., Box 28, SYRACUSE, N. Y.**



A washing machine is as great a necessity in the house as a wringer.

**The Richmond Rotary Washer**

has too many good points for explanation in an advertisement. Your name on a postal card will bring our booklet, with full particulars of our six different machines and how to get them. One of them will certainly please you. All are made with electrically welded wire hoops sunk in grooves—our patent. Being the largest manufacturers of woodenware in the world, we can make better machines for the money than anyone else. If you want a machine that washes, buy one of ours.

**THE RICHMOND CEDAR WORKS, Richmond, Va.**

**A Good PLANTER**

should plant all kinds of field seeds, Field, Ensilage and Sweet Corn, Peas, Beans, Sugar Beets, Stock Beets, etc.



**The Eclipse**  
Corn Planter and Fertilizer Distributor

does all this in the most perfect manner. Drops seed from 8 to 15 inches apart. Will distribute from 100 lbs. of fertilizer per acre. They are strongly built of good material and will last indefinitely. Write for free catalogue, circulars, etc.

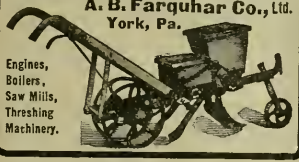
**THE BELCHER & TAYLOR A. T. CO.**  
Box 25 Chicopee Falls, Mass.

**Your Corn Crop**

—all things being equal, depends more largely upon good planting than anything else. If the seed is not put in surely and regularly there can be no perfect germination and "even stand" of plants. If the seed is good, there is no replanting where the

**FARQUHAR**

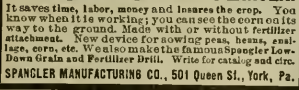
**KEYSTONE CORN PLANTER** is used. Plants 10 to 12 inches deep easily. Drop in balls or drills any desired distance apart. Puts in as much phosphate as you wish just where you want it. Plants field corn, sweet corn, ensilage corn, beans, peas, etc. Made the best that such an implement can be made. Don't buy a planter of any kind until you send for our Large Illustrated Catalogue of machines and implements. We mail it FREE.



**A. B. Farquhar Co., Ltd.**  
York, Pa.

**Corn Planting**

must be well and carefully done, as the future crop depends upon it. For all purposes, in any soil, on all kinds of ground nothing equals the



**SPANGLER CORN PLANTER.**

It saves time, labor, money and insures the crop. You know when it is working; you can see the corn on its way to the ground. Made with or without fertilizer attachment. New device for rowing peas, beans, ensilage, corn, etc. We also make the famous Spangler Low-Burn Grain and Fertilizer Drill. Write for catalog and circular.

**SPANGLER MANUFACTURING CO., 501 Queen St., York, Pa.**



**Krauser's Liquid Extract of Smoke**  
Smokes meat perfectly in a few hours. Made from hickory wood. Delicious flavor. Cleaner cheaper. No smokehouse needed. Send for circular.

**E. KRAUSER & CO., Milton, Pa.**

are poems by Edwin Markham, Winston Churchill, Edith M. Thomas, L. Frank Tooker, and others.

"Wild Oats," the March novel in Lippincott's Magazine, is written by Frances Willing Wharton, whose stories of adventure and sentiment have made her welcome to magazine readers. This is her first sustained novel, and it adds much to her reputation for flashes of light upon social frivolities. The crop of wild oats has been plentifully sown by a college student, and after a brief, inglorious reign at his 'Varsity he returns to a reproachful family, only to find his sweetheart bent on having a few larks of her own. A wily uncle of the wild youth is leading the girl into imprudent situations. She is pretty and young and means no harm, being simply the product of a guardian grandfather's plan to allow girls to follow their own devices. After a particularly daring escapade which results in a broken wrist—almost a ditto heart—she decides she "wants to be good." The brief, sprightly novel is charmingly original, and increases in interest to the last page.

A particularly noteworthy feature of the March Lippincott is a short story by Dr. S. Weir Mitchell, called "The Sins of the Fathers"—an impressive episode told with quiet but stunning effect.

Among short fiction in the March Lippincott is "A Wayside Conflict," by Mabel Nelson Thurston, a touching story of love in the country, which Miss Thurston knows so sympathetically. "The Finding of Martha" is the sequel to Paul Laurence Dunbar's earlier story called "The Strength of Gideon," which won such general approval. A rattling good horse-show tale called "Coals of Fire" is by Alfred Stoddard.

Lippincott's Magazine for March also contains several admirable papers on varied timely themes: One by Professor Felix E. Schelling, whose new book on the "English Chronicle Play" has just appeared, deals with "The Elizabethan Theatre," and carries illustrations of an interesting nature. Another is a seasonal account of "The Isthmian Canal from the Beginning," by Charles Morris. Mrs. de Bubna tells engagingly about her girl friendship with the great prima donna, Adelina Patti. With it the wedding cards of Mme. Patti and Signor Nicolini are reproduced. Eben E. Rexford writes of "Back-Yard Gardens and Window-Boxes," giving full useful instructions. Mrs. Murray-Smith, daughter of the Dean of Westminster, contributes a delightful paper on "Two 'Grandes Dames' Buried in Westminster Abbey." These are Mrs. Gladstone and Lady Palmerston. John Ball Osborne has an interesting article about "The Flemish Home of the Trappist Monks." These queer people always compel attention.

Good verse is as abundant as ever in the March Lippincott, and the "Walnuts and Wine" Department, as always, overflows with humor.

The March number of The Ladies' Home Journal is an admirable example of a real "home" magazine. From the beautiful cover, by Mr. W. L. Taylor, to

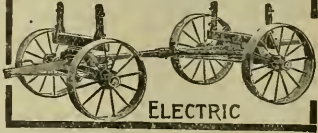
**Wise Man's Wagon.**

The man who has had experience in running a wagon knows that it is the wheels that determine the life of the wagon itself. Our

**ELECTRIC STEEL WHEELS**

have given a new lease of life to thousands of old wagons. They can be had in any desired height, and any width of tire up to 8 inches. With a set of these wheels you can in a few minutes have either a high or a low wheel wagon. The Electric Hanny or Wagon is made by skilled workmen of best selected material—white hickory axles, steel wheels, steel bounds, etc. Guaranteed to carry 600 lbs. Here is the wagon that will save money for you, as it is the best almost ever. Our dealer for the uses of these wheels and wagons sent free. Write for it.

**ELECTRIC WHEEL CO., BOX 146 QUINCY, ILLINOIS.**



**WE'LL PAY THE FREIGHT** and send 1 Grey Wheel, Steel Tire on, \$1.25 With Axles, \$3.85. Rubber Tire Wheels, 15.00 1/2 mile, 50 lbs. to 1/4 in. tread, Top Burles, \$2.75; 1/2 mile, 50 lbs. to 1/4 in. tread, Top Burles, \$3.00. Write for catalogue, ordering instructions. Learn how to buy vehicles and parts direct. Umbrella Free with first order.

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**HERCULES STUMP PULLER**



Clears an acre of heavy timber land each day. Clears all stumps in a circle of 150 ft. without moving or changing machine. Strongest, most rapid working and best made.

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**THE IMPROVED SREW STUMP PULLER**  
Write to Prices.



**Chamberlin Mfg. Co., Olean, N. Y., U. S. A.**

**COTTON**

**GOLE'S COTTON PLANTER** will save you acre you plant. Send postal at once for proof. We have a COMBINATION PLANTER positively and absolutely without an equal as a money and labor saver. Plants Cotton, Corn, Peas, Beans, Sorghum, Sola Beans, as well and even better than any separate special machine ever built. We prove it in your own field at our expense. Full particulars for a postal.

**THE COLE MFG. CO., Charlotte, N. C.**

**Roderick Lean FARM IMPLEMENTS**

IN USE WHEREVER THE SUN SHINES

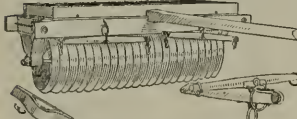


**A POINTER**  
for the careful buyer. Nineteen years and not a cent for repairs.

PHILO, ILL., Jan. 13, 1902  
RODERICK LEAN MFG. CO., MANSFIELD, O.

Dear Sir: Please send me latest catalogue spoke and spring-tooth harrows. For 13 years there has been no one in my father's and grandfather's farm two of your steel-frame, spoke-tooth harrows, four sections each. They have been used continually all these years, and give perfect satisfaction. We never yet had a tooth to break or even come loose, and never spent a cent for repairs, although each has worn out several draw bars. Hoping to hear from you I remain  
Respectfully yours,  
J. E. RAYMOND,  
Our Catalogue tells the rest.  
RODERICK LEAN MFG. CO., Mansfield, O.

**THE CAMBRIDGE**  
Corrugated Land Roller and Pulverizer.



**THE BEST IN THE WORLD.**  
North Carolina College of Agriculture and Mechanic Arts, and Agricultural Experiment Station.  
RALEIGH, N. C.

GENTLEMEN.—In reply to your favor of the 19th I would say that when farming at the Miller School of Albemarle I had in use a corrugated roller, which I have been informed was made at your shops. You ask my opinion of the implement. It takes but few words to give it, for it was without exception the nearest thing to a perfect roller and clod crusher which I have ever used, and I have had a very long and varied experience with these things. I need no here, and intend to have it as soon as my appropriation will allow me to get it.  
Yours truly,  
W. F. MASSEY,  
Horticulturist N. C. Exp. Sta.

Address.  
**R.F. HARRIS & SON, Charlottesville, Va.**

**WROUGHT IRON PIPE**  
Good condition, used short time only, new threads and conplings; for Steam, Gas or Water; sizes from 1/2 to 12 inch diameter. Our price per foot on 1/2 inch is 3c, on 1 inch 5c. Write for free catalogue No. 166.  
**CHICAGO HOUSE WRECKING CO.,**  
W. 25th and Iron Sts., CHICAGO.

the very last page, it is replete with delightful fiction and interesting articles. The number opens with the unique story of "The Sexton Who Ruled New York Society," by William Perrine, and then comes a real treat, another "Lady or the Tiger" story, by the same Stockton who gave us that remarkable tale of mystery. This one is called "My Balloon Hunt," Neltje Blanchan begins a series of unusual articles about birds and their "personalities" and "The Dominic" tells an amusing story of his journeyings in Europe with two companions. Then there is the second installment of Miss Portor's "Those Days in Old Virginia," and page of pictures of "Pretty Country Homes from \$400 to \$3,200." "His Mother" is a touching story by Kate Whiting Patch, and the fourth part of "The Russells in Chicago" shows us some more of the old customs and characteristics of the "Windy City." Mr. Bok's editorial is written under the title "She Doesn't" and deals fearlessly with the woman who is afraid to come out and do things as she thinks they should be done. The special feature of the editorial section is Mr. Hamilton W. Mabie's first "Literary Talk." These talks will appear monthly hereafter. Other valuable articles in the magazine, outside of the regular departments, are: "How to Have a Home Wedding," "Animated Silhouettes and Other Games," and "The Literary Beginner," a column of advice to young writers by Franklin B. Wiley. The illustrations include another of the popular double pages of college girls—this time "At Her Fun and in Her Room." By the Curtis Publishing Co., Philadelphia. One dollar a year; ten cents a copy.

The March St. Nicholas comprises a most varied table of contents—a long story of a boy's military company under the command of a shrewd and humorous one-legged veteran of the Mexican War, short stories about the children of James II of England, Oliver Wendell Holmes, top-spinning, life at a girl's boarding-house, a newspaper beat by a "club-reporter," and the usual brilliant filling in of verse, jingles, pictures and scraps of information. It has been well said that in no way can so little money buy so much education as in paying a subscription to St. Nicholas.

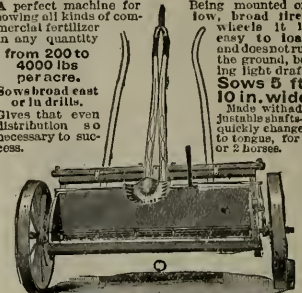
Apropos of the visit of Prince Henry, the Review of Reviews for March comments editorially on Germany's relations with the United States, and especially on what the editor chooses to term "the American-German element" in our population and their loyalty as Americans. There is also a full discussion of the recent Anglo-German amenities and England's attitude toward the United States in 1898. Another international topic of great importance treated in this number of the Review is the recently announced compact between England and Japan.

In a paper on "The Need of Scientific Agriculture in the South," contributed to the March Review of Reviews, Professor George W. Carver, of the Tuskegee Institute, gives much sensible advice to Southern farmers, white and black. This paper is another evidence of the unique value of Booker Washington's enterprise to the people of the Southern States.

**STEVENS Fertilizer Sower.**

A perfect machine for sowing all kinds of commercial fertilizer in any quantity from 200 to 4000 lbs per acre. Sows broad cast or in drills. Gives at even distribution no necessary to success.

Being mounted on low, broad tread wheels it is easy to load and does not rut the ground, being light draft. Sows 5 ft. 10 in. wide. Made with justable shaft—quickly changed to conform to 1 or 2 horses.



Will save enough fertilizer in one season to pay for itself. It should be on every farm but it is indispensable to the potato grower, the tobacco planter and the cotton planter. Circulars sent free.

**BELCHER & TAYLOR A. T. CO.,**  
Box 25 Chicopee Falls, Mass.

**"Rich Soil"**  
can be had more quickly, cheaply and surely by using  
**THE SPANGLER**  
Single Row  
**FERTILIZER DISTRIBUTOR,**  
than with any means known. It distributes all kinds of fertilizer into the open furrow after the ground is prepared for Potatoes, Cotton, Tobacco, Corn, Beans, Peas, etc. It saves fertilizer by putting it on the right spot. Sows 100 to 2000 lbs per acre. We also make the  
**SPANGLER CORN PLANTER**  
with its own fertilizer attachment. The best and most perfect Corn Planting Machine yet made. Circulars sent free. Send for catalogue and circulars.  
**THE SPANGLER MFG. CO.,**  
501 Queen St., York, Pa.



**HENCH'S 20th Century Steel Ball Coupling Cultivator**


Parallel beam movement, pivoted axle, with lateral beam movement in connection with the wheels. This makes it either independent of each other, lateral beam movement operated also by hand lever. Can be used for spreading and closing shovel gangs.

Order immediately and introduce them for best results. Cultivator on the market, having every possible movement of the shovel gangs.

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**\$8.00**  
Buys delivered, an 800 lb. **GOOD SCALE,** On Wheels.

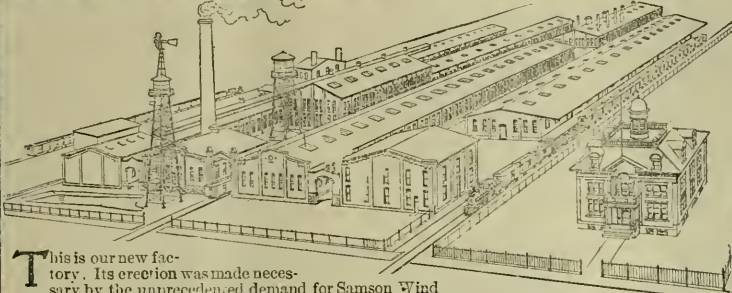
**PLATFORM 19 X 25 IN.**  
Cast Steel pivots, carefully tempered, Accurate, durable, well finished. Other sizes and **WAGON SCALES** same ratio. For circulars address,  
**JONES**  
HEB PAYS THE FREIGHT.  
BINGHAMTON, N. Y.  
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*Galvanized Steel  
Wind Mills...*

**Strongest and Best.**

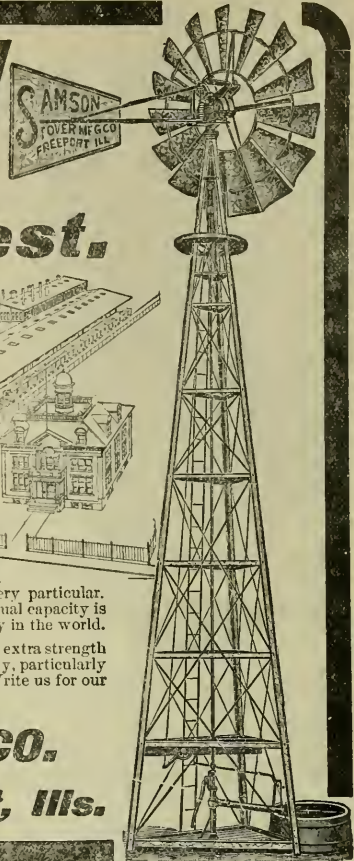


**T**his is our new factory. Its erection was made necessary by the unprecedented demand for Samson Wind Mills. We are hoping that we shall now be able to keep up with the trade. This new factory covers 6 1/2 acres of ground. It is the most modern in every particular. Electrically equipped throughout—light, power, ventilation, etc. The annual capacity is 75,000 wind mills. Undeniably the largest and best equipped wind mill factory in the world.

**Remember.** The Samson is a Samson all over—in the extra strength of all its parts, in power and in lifting ability, particularly in deep well pumping. It is sold under a most positive guarantee. Write us for our handsome Illustrated Catalogue. Mailed Free.

**THE STOVER MFG. CO.**

**581 River Street, Freeport, Ills.**



**INCUBATORS FOR THE UNIVERSE.**

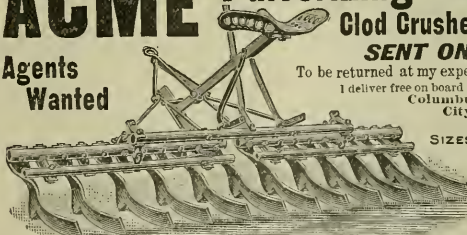
From a Quincy (Ill.) paper we have received, it looks as though the Geo. Ertel Co. of that city are going to supply the whole creation with their well-known "Victor" Incubators. On February 14th, they made a shipment of 1,200 Incubators and Brooders, which, when they reach their destination, will have gone to the uttermost parts of the earth—almost every country in the world. This shipment speaks volumes more for the Ertel Co. and their machines than we have the space or time to say. We simply add, that if you are interested in incubators, you had better get a catalogue and particulars of the "Victor" before you purchase

"The Race Question in the United States," by R. P. Bronrp. This pamphlet deals with the question on a broader principle than the question which pertains to the South exclusively. Price, 15 cents.

## ACME Pulverizing Harrow

**Clod Crusher and Leveler**  
**SENT ON TRIAL**

**Agents  
Wanted**



To be returned at my expense if not satisfactory. I deliver free on board at New York, Chicago, Columbus, Louisville, Kansas City, Minneapolis, San Francisco, etc.

**SIZES 3 TO 13 1-2 FEET**

The best pulverizer — cheapest Riding Harrow on earth. We also make walk-

ing Acmes. The Acme crushes, cuts, pulverizes, turns and levels all soils for all purposes. Made entirely of cast steel and wrought iron—indestructible. Catalog and Booklet, "An Ideal Harrow," by Henry Stewart, mailed free.

**DUANE H. NASH, SOLE MFR., MILLINGTON, NEW JERSEY, and CHICAGO.**  
**PLEASE MENTION THIS PAPER.**

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no matter where located, the first, absolute necessity is an ample supply of good, pure water. Water then being a necessity to both men and animals; have you ever stopped to consider how much money there is in that ideal well, just stop long enough to figure on it for a moment, then send for a catalogue of our



## STAR Drilling Machines.

The investment in one of these will make you more money than you can possibly make in any other way with the same expenditure. Think it over and write us.

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Send for Catalog Describing our Full Line.



**SEE THE SEED DROP.**  
In plain sight of the operator.  
**MATTHEWS' New Universal HAND SEEDERS AND CULTIVATORS.**  
Used by the most successful gardeners. They do perfect work. Open furrows drop seed, cover any desired depth. Cultivate and harrow. Latest and best. Popular price.  
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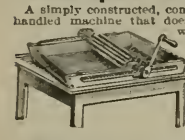
No. 3—four horses for left hand binders. No. 4—for R. H. binders. Positively no double. For ten years the standard in the wheat belt. With a change of irons, works on gang and sulky plows. You run no risk buying these goods. Prices very reasonable.  
**DES MOINES EVERER CO., Des Moines, Iowa.**

## WATER CLOSET COMBINATIONS,

Porcelain Bowl, Hardwood Seat and Tank, Nickel Plated flush and supply pipes, complete, each \$11.00.  
Cast Iron Roll Rim Bath Tubs, length 5 ft. Complete with full set of nickel plated fittings, each \$11.00.  
They are new goods, ask for free catalogue No. 166 on plumbing and building material.  
**Chicago House Wrecking Co., W. 35th and Iron Sts., Chicago**

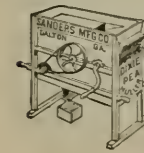
## Philadelphia Butter Worker

A simply constructed, conveniently handled machine that does efficient work.  
Capacities from ten to 150 lbs.  
Send for Illustrated catalogue of supplies.  
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## Dixie Pea Huller

Hulls Cow Peas, 20 bushels per hour clean. Does not break them. Hulls 1/2 of the work them. Mill 1,000 feet daily. \$36.00. Sanders Doolittle & Co. Planters, Iron Fencing for Yards, Lawns and Cemeteries. Catalogue and price card furnished here. Write us. Sanders Mfg. Company, Dalton, Ga.



## REPORTS.

U. S. Department of Agriculture, Washington, D. C. Annual Reports Department of Agriculture, 1901.

Bureau of Animal Industry. Market Milk. A Plan for its Improvement. Dairy Products at the Paris Exposition of 1900.

Division of Statistics. Bulletin 15. Changes in the Rates of Charge for Railway and Transportation Services.

Farmers' Bulletin No. 136. Earth Roads.

Farmers' Bulletin No. 143. Conformation of Beef and Dairy Cattle.

Farmers' Bulletin No. 146. Insecticides and Fungicides.

Arkansas Experiment Station, Fayetteville, Ark. Bulletin 67. Investigation of Swine Diseases in Arkansas. Bulletin 68. Soil Improvement and Forage Experiment.

Cornell Experiment Station, Ithaca, N. Y. Bulletin 198. Orchard Cover Crops.

Delaware Experiment Station, Newark, Del. Bulletin 53. Three Orchard Pests—The Apple Bud Borer, The Fruit Tree Bark Borer, The Periodical Cicada.

Illinois Experiment Station, Urbana, Ill. Fourteenth Annual Report, 1900-'01. Bulletin 66. Individual Differences in the Value of Dairy Cows. Bulletin 67. Apple Scab. Bulletin 68. Important Details of Spraying.

Kansas Experiment Station, Manhattan, Kas. Bulletin 106. The Experimental Apple Orchard.

Kentucky Experiment Station, Lexington, Ky. Bulletin 96. The Hessian Fly. Dangerous Mosquitoes. Poisonous and Edible Mushrooms. Bulletin 97. Commercial Fertilizers.

Maryland Experiment Station. Bulletin 78. The Dehorning of Stock.

New Hampshire Experiment Station, Durham, N. H. Bulletin 64. Forcing Dwarf Tomatoes Under Glass. Bulletin 65. Remedies for the Canker Worm.

Bulletin 86. Growing Watermelons in the North. Classification of Watermelons.

New York Experiment Station, Geneva, N. Y. Bulletin 201. Analysis of Commercial Fertilizers.

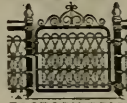
North Carolina State Horticultural Society, Southern Pines, N. C. Bull. The Cow-Pea. This bulletin is neatly bound and illustrated, and discusses the value and uses of this important crop. A copy will be sent free to any one asking.

Columbus Horticultural Society, Columbus, O. Journal of the Society, December, 1901.

Pennsylvania Experiment Station, State College, Pa. Bulletin 57. Methods of Ster Feeding.

Tennessee Experiment Station, Knoxville, Tenn. Bull. Vol. xiv 4. The Early Growth and Training of Apple Trees.

## ORNAMENTAL LAWN FENCE



Buy from manufacturers direct and save the Dealer's Profit of 20 to 25 per cent. We make many designs, and sell more Ornamental Fence than any other two firms in the business. Why? Because we use nothing but the best material money can buy, sell direct in lots as at

**FACTORY PRICES** and guarantee to use 625 erect our fences. We make special prices to Churches, Conventions and large Parks. Send us your address. We will take pleasure in mailing you our large 82 page catalogue on Ornamental Fencing, free. If you are interested in Farm Fencing send for our 42 page Catalogue. Address **Box Q COILED SPRING FENCE CO., Winchester, Ind. U. S. A.**

## HARD STEEL

**WIRE FENCE**  
Heavy lateral wires, heavy hard steel stays, coiled spring wire, Sure Grip Lock. In appearance, and durability, the Hard Steel cannot be excelled. Write for catalogue and prices. **THE HARD STEEL WIRE FENCE CO., Cuyahoga Falls, Ohio.**

## PAGE

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Ranch or Farm stock, stay in PAGE enclosures. **PAGE WOVEN WIRE FENCE CO., ADRIAN, MICH.**

## SENT ON TRIAL

A Fence Machine that will make over 100 Styles of Fence and from 50 to 70 rods a day **AT ACTUAL COST OF WIRE** Horse-bleat, Ball-streem, Pig and Chickens-tight, etc at Wholesale Prices. Catalogue Free. **Kitselman Bros., Box 208, Muncie, Ind.**

## DOW FARM FENCE

**PRICE AND QUALITY WRITE YOU** - PLEASE SHOW - **DOW WIRE WORKS - LOUISVILLE, KY.**

## FENCE! STRONGEST MADE.

Ball-streem. Chickens-tight. Sold to the Farmer at Wholesale Prices. Fully Warranted. Catalogue Free. **COILED SPRING FENCE CO., Box 55, Winchester, Indiana, U. S. A.**

## A REMINDER.

Time to buy that combine or buggy. We make a full line and sell direct on **30 Days' Free Trial.**

We save you dealer and jobber profits. Enough said. Write for 2nd annual catalog. Mailed free.

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*Pioneers of the Free Trial Plan.*

## Round-Tooth DAVISON A-SHAPE Weeder Cuts 8 ft. wide.

The best weeder on the market. Our extensive experience in the weeder line has convinced us that a round-tooth weeder is far preferable to a flat-tooth one. The Davison A-Shape Weeder is anti-clog, light, strong, draws level and handles easily. The teeth are made of best open-heart steel, are securely fastened, easily taken out. Cornell Exp. Sta. recommends level cultivation with weeder. We also make the celebrated Eureka Sectional Weeder and a large line of high grade farm implements. Circulars free. Prices low. **Eureka Mower Co., Utica, N. Y.**



No. 1 Iron Age Double and Single Wheel Hoe.



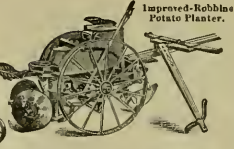
No. 6 Iron Age Combined Double and Single Wheel Hoe, Hill and Drill Seeder.



No. 1 Iron Age Combined Harrow and Cultivator.



Improved Robbins Potato Planter.



Look for the full name **IRON AGE** branded on the tool.

Don't be imposed upon by dealers selling implements made in imitation of the famous Iron Age brand. All the **IRON AGE** tools are **MARKED WITH THE FULL NAME**. The name is for your protection. It is a guarantee of best materials, best ideas, best workmanship, and all the merits that have made Iron Age tools popular with three generations of farmers and gardeners. Write for a **FREE** copy of the **IRON AGE BOOK** for 1902, telling all about these marvelous labor savers, and giving prices on Cultivators, Hoe Hoes, Seed Drills, Wheel Hoes, Riding Cultivators, the Improved-Robbins Potato Planter, etc.

**BATEMAN MFG. CO., Box 167, Grenloch, N. J.**



**SPRAYING**  
with the famous **BORDEUX NOZZLE** and our world's best outfit you are about the master of the situation. Insects and diseases fall before this all conquering outfit. Write for the book. It is free. Write for it now!

**Steam, Power and Hand Pumps**

**WIND MILLS, TANKS, TOWERS, GAS, GASOLINE and STEAM ENGINES, Boilers, Saw Mills, Saws and Supplies, IRON and WIRE FENCES.**

**SYDNOR PUMP & WELL CO., Inc., BOX 949, RICHMOND, VA**

Virginia Experiment Station, Blacksburg, Va. Special Bulletin. Third Report of the State Entomologist and Pathologist on the San Jose Scale and the Administration of the Crop Pest Laws of Virginia.

Circular on Treatment for San Jose Scale.

Special Bulletin. Report on the Inspection of Roanoke County for San Jose Scale.

Virginia State Weather Service, Richmond, Va. Report for January, 1902.

Wyoming Experiment Station, Laramie, Wyo. Bulletin 48. Experiments in Wheat Culture.

Bulletin 49. Alkali Lakes and Deposits.

**EUREKA POULTRY FARM.**

In the February advertisement of Mr. R. G. Hagen, Iris, S. C., his address appeared as Virginia. This, of course, is an error, and we take pleasure in correcting it, and to suggest that parties wishing Barred Plymouth Rock fowls or eggs, to write to the Eureka Poultry Farm, of which Mr. Hagen is proprietor. Look up his advertisement in this issue.

**CALIFORNIA PRIVET.**

*Editor Southern Planter:*

To beautify your surroundings is the desire of all progressive people. Remove the unsightly fences. I have wondered many times why people fenced in their houses in the country, as if they were cattle. It costs money to build fences and keep them up, and unless they are built of good material and well painted they soon commence to decay and get unsightly. People living in the country have many advantages over their city cousins in beautifying their gardens and surroundings. Nearly every home in Virginia could be improved by a little labor and at small expense by planting a few ornamental trees, shrubbery, hedging, etc. Every tree we hear of is not suitable for a yard or lawn tree. One of the most suitable and ornamental trees for lawn or cemetery purposes, and which stands our climate, is Teas' Weeping Mulberry. It is a fast grower. For climbing roses there are none better than the Crimson Rambler and Yellow Rambler. These are perfectly hardy in any part of Vir

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That's the question

**THE ECLIPSE SPRAY PUMP**



Will settle that in your orchard. With it you CAN make a profit, without it what do you get? SEND FOR CATALOGUE.

**MORRILL & MORLEY, BENTON HARBOR, MICHIGAN.**

**DO YOU SPRAY?**

Wormy fruit and leaf blight of apples, pears, cherries and plums prevented; also grape and potato rot, by spraying with the Flower City or Uncle Sam Compressed Air Sprayer. Thousands in use. Full particulars free. Agents wanted.

**FLOWER CITY SPRAY PUMP COMPANY, 88 1/2 Cypress St., Rochester, N. Y.**

**The Lightening Compressed Air Sprayer**



(Pat. 1900.) Holds 4 gal. Pump in a little air with the pump which is attached to the reservoir. No more labor required. Will kill all kinds of insects. Will spray tall trees. Will spray two rows of potatoes at one time and as fast as the operator can walk. Big money for agents, **O. B. SMITH CO., Utica, N. Y.**

**SPRAY PUMPS**



Save your fruit and make your money. "THE DAISY" is 15 yrs. old and 200,000 in use. Has every improvement—rubber hose, perfect nozzles and valves. No. 1, tin, \$1.50; No. 2, iron, \$2; No. 5 all brass, \$4. We pay express. Agents wanted. Catalogue free. **HURRAW & SON, Whitom, O.**

**Agents and Dealers Wanted** to sell Ripley's 8 and 15 Gallon Compressed Air Sprayers, also large orchard sprayers. We have the best, and sell them under a guarantee. A card will bring catalogue and terms. **Ripley Hardware Co., Box 23 Graffia, Illinois.**

**WE PAY \$22 A WEEK** and expenses to men who will fight to introduce the Poultry Compound. International Manuf'g Co., Parsons, Kan.

**Men Wanted \$20 A DAY**

is what one new man has just made. As another has sold and delivered 600 machines and has nearly 100 more sold for later delivery. This new style sprayer has "Kant-Klog" nozzle and sells like hot cakes. We want some one to sell them in your locality at once. Write for circulars telling how to get

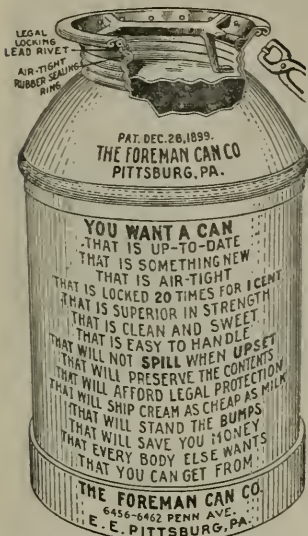
**ONE SPRAYER FREE.**  
**ROCHESTER SPRAY PUMP CO., East Ave., Rochester, N. Y.**

**Barnes New Improved All Brass Spraying Pump**

PERFECTION Simplest and most substantial Pump in the world. Made with seamless brass tubing without threads on either end. Easily taken apart to clean. Does the work required quickly and effectively—a pump that is cheaper in the "long run." Users of Spraying Pumps would have none other after trying Barnes Perfection Pump. Send for free circular of receipts and other valuable information. Send \$2.50 for samples and agency. We manufacture iron pumps of every kind for farm use. Address **THE BARNES MFG. CO., Mansfield, O.**

**SPRAY PUMPS**

Save money by buying one of ours. They will do as much work. Being all brass are lighter to handle and are more durable, will generate a higher pressure thereby making them the easiest pump to operate on the market. Write for catalogue and get treatise on spraying free. Agents wanted. **J. F. GAYLORD, successor to P. C. Lewis Mfg. Co., Catskill, N. Y.**



**The "OXFORD" Cream Separator**

Is manufactured under the supervision of E. W. Broomhall well known as an expert in this business, who after many years of careful study and experiments, avoiding the mistakes of his predecessors, has produced the "Oxford" Cream Separator with these points of merit to commend it: 1st It skims clean, taking all the butter fat out. 2d It requires so little power to operate it that the farmers' boys will enjoy the fun of running it. 3d It is so simple in construction and the material being first-class, it will not get out of order, and, with ordinary care, will last a lifetime. 4th The "Oxford" is the cheapest separator on the market, considering the fact that it will handle 350 lbs. of milk per hour, and do better work than any machine yet offered to the farmer. Agents wanted. Price, \$75. Manufactured by THE OXFORD MFG. CO., Oxford, Pa.

**The REID Hand Separator**

Gets from every milking the greatest quantity of cream available for churning; mixes more and better butter possible. It is the only perfect hand separator. Runs lightest, lasts longest. Sent anywhere on 10 days free trial. Send for our new catalogue and revised prices.

**A. H. REID**  
30th and Market St.  
Philadelphia, Pa.

Sent anywhere on 10 Days' Free Trial

**POTATO PLANTER**

Cheapest Potato Planter on the market. Send for circular. Address J. R. SEITZ, Station D. R. No. 1., Milwaukee, Wis

ginia, and people cannot make any mistake in planting them.

Now, I want to say something about that old yard fence. I want to see a nice hedge in its place, and there is no hedge plant I know of more beautiful and more lasting than the California Privet. It is recognized as the ideal hedge plant, thriving in all soils, situations, and under all conditions, in lowlands or upland, in sun or in shade, under trees, in poor or rich soil. The smoke of factories or railroads does not affect it. In fact, it is just the hedge for every railroad company to beautify their deep grounds with; and lots of them are doing it. It is especially adapted for seashore planting. It luxuriates and grows in vigor and beauty near the sea, the salt air giving the foliage the most vivid green coloring so pleasing to the eye. Many handsome hedges of Privet, pruned in various forms, may be seen along the coast from Cape May to Newport. It is beyond doubt the best hedge plant ever brought to public notice for enclosing parks, cemeteries, lawns, railroad stations or large or small areas, and for use as wind breaks, screens, division lines, and for massing or planting single on the lawn. It can be pruned and sheared in any and all shapes. I am told that in Germany they make it very ornamental. There are miles or this hedging on the north side of Richmond, parties planting it by carloads. The plants are very cheap and can be bought for from three to five dollars per hundred now. Some years ago it was very high, but there is now no need for any more paying extravagant prices. I am sure who ever plants this hedge will be well repaid.


Rio Vista, Va. MARK T. THOMPSON.

**A NEW FIRM.**

It is with pleasure that we call attention to the advertisement of Messrs. Hening & Nuckols, Richmond, Va. This firm is composed of Mr. Jas. G. Hening and Mr. Howard J. Nuckols, both of whom have long been connected with the old Chas. E. Hunter Implement House, which they now succeed. They are located at the old stand, and will carry the same well-known line of implements which they have been selling the farmers of Virginia so long for the late Chas. E. Hunter. In fact, the only change in the business is the name. We bespeak for them the liberal patronage of our readers. They are both young men, and we are sure will earn it, and will sell you goods of the best quality on the best terms, and will, therefore, deserve it. Their regular advertisement will appear in the *Southern Planter* throughout the year.

**THE REID CREAM SEPARATORS.**

In the advertisement of Mr. A. H. Reid, Philadelphia, Pa., in our February issue, the capacity of his Separator was given as being 150 to 350 pounds per hour. Mr. Reid advises us that this is an error, as it should be 150 to 500 pounds per hour. We cheerfully make this correction, and invite those interested in separators to write to Mr. Reid for catalogues and prices. His advertisement will be found elsewhere in this issue.



**Poor Soils**

are made richer and more productive and rich soils retain their crop-producing powers, by the use of fertilizers with a liberal percentage of

**Potash.**

Write for our books—sent free—which give all details.

GERMAN KALI WORKS,  
93 Nassau Street, New York City.

**COMMON GOLF FEEDER**



Prevents scours. Weans perfectly. Makes better veal and more of it. Saves time and temper. Send for literature. PRICE, Single Feeder, \$1.50; Double Feeder, \$2.00. EXH. PAID. Gold Medal Pan-American Exposition.

O. H. MFG. CO., Dept. P, Lyndon, Vt.

**THE EUREKA POTATO PLANTER**

Is light, strong, weighs with fertilizer attachment, 285 lbs.; is 11 1/2 ft draft for one horse; is 35 per cent correct in its drop; will sow from 150 to 700 lbs. fertilizer per acre; plants whole or cut seed; will plant any depth required; is made with or without fertilizer attachment. Every one guaranteed. Write for testimonial circular. Send for our catalogue of all kinds of agricultural implements.

EUREKA MOWER COMPANY, Utica, N. Y.

**STEEL ROOFING**

Strictly new, perfect, Semi-Flanged Steel Sheets, 2 feet wide, 6 feet long. The best roofing, siding or ceiling you can use. No experience necessary to lay it. An ordinary hammer or hatchet the only tools you need. We furnish free with each order, sixth cent paint and nails. Comes either flat corrugated or "C" crimped. Delivered free of all charges at the following prices

TO ALL PORTS IN

INDIANA, ILLINOIS,	PENNSYLVANIA, NEW
MICHIGAN, MICHIGAN,	YORK, NEW JERSEY,
OHIO, IOWA, WEST	MARYLAND, KENTUCKY,
VERMONT,	MISSOURI, MISSISSIPPI,
Per Square, \$2.25,	Per Square, \$2.40.

Prices on other States on application.

A square means 100 square feet. Write for free catalogue No. 166.

CHICAGO HOUSE WRECKING CO., W. 35th and Iron Sts., Chicago

# HERE ARE TWO OF THE MANY

farm implements, garden tools, etc. contained in our large general catalogue. The prices are such as to place them within the easy reach of all, and the quality is of the very best in every instance.

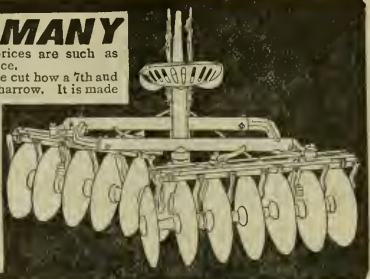
**Our Coring and Overlapping Disc Harrow** works all the ground. Note in the cut how a 7th and overlapping disc completely cut out and works the middle ridges left by the ordinary disc harrow. It is made entirely of Steel except tongue and hitch. Best high test, round steel discs. Polygon

or cut discs at small extra cost when ordered. Strong and convenient levers for regulating. Don't buy till you know more about it. **Our Daisy Single Row Corn Planter** is the best and most easily operated planter made.

Plants beans, ensilage, corn, etc., dropping a single grain at several convenient distances. Made with or without fertilizer attachment, single concave, or double wheels. Equipped like city with tanner for opening seed furrows, or with plow. Adjustable ground wheel controls depth of planting. Learn more about it before you buy. Send for catalogue No. 160-day. We mail it free.

**GRIFFITH & TURNER CO.**

205 N. Paca St., BALTIMORE, MD.



## After Being on the Market TEN YEARS, The ACME Engine Still Leads



For Churning, Cutting & Grinding Feed, Filling Silos, Sawing Wood, Elevating Water, and all Farm and General Uses where Small Power is Required. Fuel, Kerosene Oil. No Skilled Engineer required.

ROCHESTER MACHINE TOOL WORKS.

No. 17 Frank St. Rochester, N. Y.

## The MIETZ & WEISS Kerosene Engines.



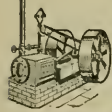
Cheapest and Safest Power Known. For pumping and electric lighting, grinding corn separating cream, sawing wood, and all power purposes. Also sizes from 1 to 6 horse-power from 1 to 6 horse-power.

er. Awarded Gold Medal at Pan American Exposition. Send for catalogue.

A. MIETZ, 128 Mott Street, New York.

**The WEBER 14 H. P. Gasoline Engines** for sawing, grinding, shredders, cutters, threshers, etc. Free catalogue gives all sizes. Weber Gas & Gasoline Engine Co., Box 122 Kansas City, Mo.

## ENGINES, BOILERS AND MACHINERY.



When you want good reliable machinery at bargain prices, write for our Catalogue. No. 165. We carry all kinds of engines (gas, gasoline and steam power), boilers, pumps, and mill supplies in general. CHICAGO HOUSE WRECKING Co., West 56th and Iron Sts., Chicago.

## RIPLEY'S COOKERS.



Sell from \$5.00 to \$45.00. Made of boiler steel. No flues to rust or leak. Can't blow up. Guaranteed to cook 25 bu. feed in 2 hours, and to heat water in stock tanks 500 feet away. Will heat dairy rooms. Catalogue and prices mailed free. Ripley Hardware Co., Box 288 Grafton, Ills.

## CATALOGUES.

T. S. Hubbard & Co., Fredonia, N. Y. Grape Vine Specialist.

J. B. Watkins & Bro., Hallsboro, Va. Nurserymen.

Lewis Roesch, Fredonia, N. Y. Grape Vines and Nursery Stock.

The Bateman Manufacturing Co., Grenloch, N. J. This firm, the maker of the celebrated Iron Age tools and implements, send out a well got up Catalogue, giving full particulars of their various implements, the use of which we have so often endorsed. They make gardening and trucking a pleasure instead of a labor.

Griffith & Turner Co., Baltimore, Md. Farm and Garden Supplies of all kinds.

The Franklin Davis Nursery Co., Baltimore, Md. Well-known Nurserymen in the South.

John W. Hall, Marion Station, Md. Somerset Fruit Seed and Plant Farm. Somerest crop seed potatoes and berry plants specialties.

The Barnes Manufacturing Co., Mansfield, O. Pumps.

Eureka Mower Co., Utica, N. Y. Wide Cut Centre Draft Mowers, Cultivators, Corn Planter, &c.

A. M. D. Holloway, Philadelphia, Pa. Lansing Tubular Silo.

The Goulds' Manufacturing Co., Seneca Falls, N. Y. How to Spray, When to Spray, and What Pumps to Use.

## CENSUS BULLETINS.

No. 125.—Massachusetts. Agriculture.

No. 126.—Manufactures — Turpentine and Rosin.

No. 127.—Maine. Manufacturers.

No. 128.—Louisiana. Manufacturers.

No. 129.—Manufactures — Cotton seed Products.

No. 130.—North Carolina. Manufacturers.

No. 131.—Maryland. Manufacturers.

No. 132.—Nebraska. Manufacturers.

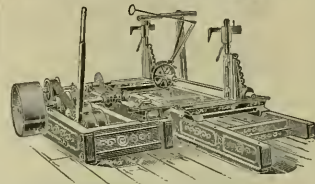
No. 133.—New Jersey. Agriculture.

No. 134.—Kentucky. Manufacturers.

No. 135.—Methods and Results. Methods of Estimating Population.

We beg to acknowledge with thanks the receipt from Senator Thos. S. Martin of the Congressional Directory of the First Session of the Fifty-seventh Congress.

## VARIABLE FRICTION FEED SAW MILLS



A great improvement in Friction Feed Saw Mills. Repair Blue are practically nothing with this feed. Most durable on the market. We build mills with Log Beam or Ratchet Set Works, on tractors or rollers. Also Wood Planers, Engines, etc. Catalogue free. SALEM IRON WKS., Winston-Salem, N. C.

## BAILEY'S HYDRAULIC RAM

Runs 24 hours a day and 365 days a year for 40 years experience. Water for HOUSE; water for STOCK; water for IRRIGATION. Once started costs but ONE CENT per month. As simple as a wheelbarrow and as efficient as a Corliss Engine. Information and instruction in plain terms. Prices on ram or complete outfit by return mail. Address

PRICE W. BAILEY, Experi, Seneca Falls, N. Y.

## CONSTANT FLOW OF WATER

to the house, the barn, the garden or lawn is assured by the

### RIFE HYDRAULIC ENGINE.

Pumps water automatically. Better than any ram, engine or windmill. Sold on 30 day trial. Fully guaranteed. Catalogue Free.

RIFE ENGINE CO., 126 Liberty St., New York.

## THE EUREKA CORN PLANTERS

ALWAYS GIVE THE BEST OF SATISFACTION. Plants corn, beans, peas and beet seed, and drops in hills or drills any quantity, distance apart or depth desired. Fertilizer does not come in contact with the seed. The cut shows our No. 3, a great favorite here and abroad. Our two row planter is easy draft for one horse. Send for descriptive circular. Eureka Mower Co., Utica, N. Y.

**RUPTURE CURED** while you work. You never sit up. No cure, no pay. ALEX. SPEILS, Box 93, Westbrook, Maine.

..ELMWOOD NURSERIES..

# ASPARAGUS

100,000 2-yr.-old Asparagus roots, 5 varieties. A special rate of \$3.50 per 1000 for 2 mos for BARR'S, PALMETTO, CONOVER.

# APPLES

A large general assortment, including WINESAPS and YORK IMPERIALS.

**Splendid Assortment of Ornamental, Shade and Fruit Trees.**

**EGGS** from B. P. Rocks. Light Brahmas, Brown Leghorns at \$1.00 per 13.

WRITE FOR OUR CATALOGUE.

J. B. WATKINS & BRO., Hallsboro, Va.

# SEED CORN

FOR SALE

By W. M. WATKINS & SONS,  
RANDOLPH, CHARLOTTE CO., VA

## Snow White Dent.

This variety has proven the grandest milling corn in the world, and far above all other varieties of white corn in average yield. Last year from one bushel planted on ordinary high land, without fertilizers, we gathered sixty barrels of fine corn. Price, \$2.00 per bushel

## Pride of Cottage Valley.

A large eared, deep grained early white corn with 18 to 21 rows on a cob and stalks 13 to 15 feet high, usually two ears to the stalk and yielding an abundance of fodder. This corn is very productive and makes the best meal. Price, \$1.75 per bushel.

## Early Yellow Variety.

Popularly known as Huron Dent; most perfect shaped ear and most reliable early corn ever introduced. Planted May 10th and cut and in shock by September 10th. It is very productive. Price, \$1.75 per bushel

# PEACH and APPLE TREES

Selected stock of fine fruit trees, including the best varieties—Winesap, Black Twig, Albenarle Pippin, York Imperial (J. F. Winter) Apples, and all the well known Peaches, including the Crawfords, Champion, Elberta, Foster, Oldmixon Free, Piqueut's, Bilyeu's Oct. (Comet), Alexander, Hynes' Surprise, Wonderful, etc. Prices very low for stock of this class. Address

CHAS. F. HACKETT, MGR.,  
RONAVISTA GREENWOOD DEPOT,  
NURSERIES. ALBEMARLE CO., VA.

## BOOKS.

"Insects Injurious to Staple Crops." By V. Dwight Sanderson, Entomologist, Delaware Experiment Station. 295 pages. Illustrated.

This is a carefully prepared compilation of information as to all the known injurious insects gathered from the best authorities, and edited by a gentleman possessed of high qualification for the task. It will be found most useful on every farm and by every gardener and fruit-grower. It is published by Messrs. John Wiley & Sons, of New York. Price, \$1.50. We can supply the book at the publisher's price.

"Agricultural Bacteriology." A study of the relation of Bacteria to Agriculture, with special reference to the bacteria in the soil, in water, in the dairy, in miscellaneous farm products and in plants and domestic animals. By H. W. Conn, Professor of Biology, F. Blakiston's Son & Co., Walnut street, Philadelphia.

This is a book of over 400 pages, bound in cloth, well printed on good paper, and illustrated. Now that the influence of bacteria on the growth of crops, and the development of normal and abnormal conditions in the behavior of the various products of the farm, dairy and other foodstuffs is so well recognized and admitted, it is well for all who desire to be able to control these influences to know more of the subject. This book gives the latest knowledge on the subject in popular form. The price of the book is \$2.50.

## J. W. HALL'S CATALOGUE.

We are in receipt of the Annual Catalogue of J. W. Hall, Marion Station, Md. Mr. Hall is one of our oldest advertisers of strawberries and second crop potatoes, this being his twenty-second year. Look up his advertisement elsewhere in this issue, and send for the catalogue.

## THE LATEST ROMANCE OF THE SOUTH.

In the February Ladies' Home Journal are given the first chapters of a new romance of the South, entitled "Those Days in Old Virginia." The author of this story is Miss Laura Spencer Porter, whose love stories have already attracted wide attention, and who, in this instance, presents one of the most charming pictures of the love, beauty and chivalry of the days before the war which has yet been painted in words. Not only is it painted in words, for Mr. W. L. Taylor, who spent much time in Virginia collecting material and making sketches for the illustrations, has finished a series of pictures to accompany the story which may well be said to be the best of his recent work.

## SPRAYING OUTFITS.

Messrs. Hurraw & Son, Wilmot, O., have succeeded the firm of W. M. Johnston & Son, Canton, O., in the manufacture of Spray Pumps. We invite the attention of our readers to their advertisement elsewhere in this issue. Send for their catalogue and prices before purchasing elsewhere.

# Do You Want a Big Crop

of Peaches, Apples,  
Cherries and Plums



## Then Remember,

Trees, as they live, grow hungry for food, and unless there is phosphorus in the ground, the leaves will grow yellow and curl, while the fruit will get scabby, dwindle and die. Then fertilize your

# Peach Trees

with pure Odorless Slag Phosphate. We warrant every pound of it to be pure plant food. The roots of the Trees will absorb it, the sun will draw it up in the sap and cause it to fatten the Peaches, while the Manganese contained in the Slag will paint the Peaches with the beautiful prismatic colors that the Delaware Peaches possessed before the ground was impoverished.

Send all orders to

JACOB REESE,

400 Chestnut St., Philadelphia, Pa.

**STRAWBERRIES** 38 varieties of carefully selected superior quality plants. Description and prices in my 22d Annual Catalog. Also Second Crop Seed Potatoes, the best and earliest and grow largest crops. These two articles are my specialties and my catalogue is authority. It also describes other berry plants; etc., of best producing varieties. The catalogue is free to all on request. Write for it to-day. JNO W. HALL, Marion Sta., Somerset Co., Md.

# EMPORIA NURSERIES

We are still serving out our LOW PRICE-LIST, though prices are advancing on most kinds of Nursery Stock. Don't delay, but send in orders for spring at once. Address

EMPORIA NURSERIES, Emporia, Va.

# Cheap Artichokes!

The greatest and cheapest of all hog feed; will produce 400 to 600 bushels on ordinary land. Offer limited quantity at \$2.00 per three bus. bbl. Also EGGS from pure-bred BAILED P. ROCKS and S. C. B. LEGHORNS, 75c. setting, or two settings for \$1.25.

THE IMPERIAL FRUIT FARM,  
P. H. Heydenreich, Prop. Staunton, Va.

# ARTICHOKES.

I have about 100 bus. Jerusalem Artichokes for sale at 75 cents per bushel.

H. W. STEVENS, Goochland, Va.

# \$11.17 FOR THIS ONE MAN SAW.

Saws trees down; saws logs into wood.  Bicycle Grindstone \$3.00—small size \$1.50 with one weighing 15 lbs. from 40 to 60 lbs. ONLY \$3.65. Write for new catalog of specialties and bargains. Free. Cash Supply & Mfg. Co., Dept. Y, Kalamazoo, Mich.

# HALLOCK'S "SUCCESS" ANTI-CLOG WEEDER

SENT ON TRIAL to any Farmer.

**WE PAY FREIGHT.**

"Would not take \$25.00 apiece for my Weeders."

T. H. BUSEY, Waverly Hall, Ga.

"Used Weeder on Cotton and Corn with perfect satisfaction. More than paid for itself last season."

S. S. CARTER, Zeb, N. C.

"I would not be without my Weeder for three times the cost."

JUDSON ALLEN, Sylva, N. C.

These are samples of thousands of letters we have received.

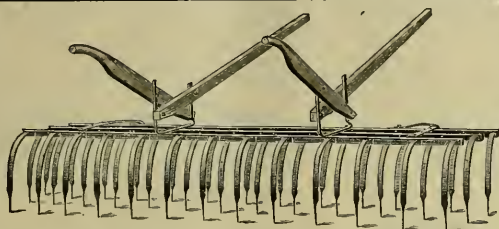
## CAUTION.

All other flat-tooth Weeders infringe our patent. One firm has settled with us. We now have suit pending against Keystone Farm Machine Co., York, Pa.

Right now is the time to buy. Write us at once.

## HALLOCK WEEDER CO.

YORK, PA.

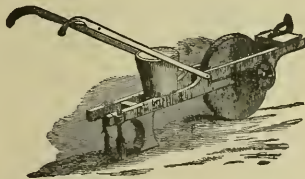


# PLANTERS

CARDWELL'S, EUREKA and CENTENNIAL FERTILIZER ATTACHMENT are the best, therefore they are the cheapest.

They Plant..

**CORN,  
BEANS,  
ENSILAGE  
CROPS.**



And Distribute

## FERTILIZER

any distance apart,  
and any quantity.

We make **THRESHERS, HORSE POWERS, PEANUT MACHINERY, STRAW CUTTERS, WELL FIXTURES,** and all Implements formerly made by **H. M. SMITH & CO. and J. W. CARDWELL & CO.**

**THE CARDWELL MACHINE CO., = Richmond, Va.**

**EVIDENCE!**

Extraordinary Statements Supported by Strong Testimony Offered by People of Four States.

The annual claims made for Yager's Sarsaparilla with Celery, as to its wonderful efficacy in curing the many diseases caused by impure blood and weak nerves, are substantially supported by unsolicited testimony from many States. J. F. BROWN, of Delmar, Del., says: "I suffered greatly with rheumatism last fall and winter, and found no relief until I used Yager's Sarsaparilla with Celery. I am now on my third bottle and hope to be cured permanently."

BESSIE S. STICKLEY, of Oranda, Va., says: "I have been taking Yager's Sarsaparilla with Celery for two years, and can say it is a great medicine; it has been of much benefit to me in restoring health. While taking two bottles I gained 10 1/2 lbs."

E. B. BADLEY, Expert Penman and Teacher of Public Schools, Launa, W. Va., says: "During the summer and fall of 1899 my health was very bad. I would get very hungry but could scarcely eat anything. I was weak and losing flesh all the time. In the latter part of the fall every little scratch on my skin would result in a running sore. I had quite a number of boils. Finally I was so weak and had such bad health I had to stop work. On the recommendation of friends I commenced to take Yager's Sarsaparilla with Celery, which has effected a positive cure. Since taking a course of this valuable medicine I have never been sick. I have as good an appetite as is necessary for any man, and am gaining flesh all the time. I heartily recommend it to those afflicted as I was."

ELLA DIXON, Montford Ave., Asheville, N. C., says: "I have taken only one bottle of Yager's Sarsaparilla with Celery, but it has done me so much good that I shall continue its use until I become a healthy woman, as I feel it will ultimately cure me. I cheerfully recommend it."

These are four statements taken at random from thousands of similar statements recently received. Yager's Sarsaparilla with Celery is sold by leading druggists, 50c. a bottle. Made by Gilbert Bros. & Co., Baltimore, Md.

DON'T NEGLECT, Get a Package to-day of

**GLEASON'S HORSE and CATTLE POWDER,**

Feed it to your stock and note the result—they will improve at once. It is the most reliable and undoubtedly the best Powder for all kinds of stock. It can be had from any dealer, so give it a trial. Prepared by

GILBERT BROS. & CO., Baltimore, Md

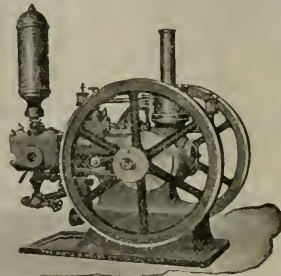
**Honey-Tolu CURES THE CROUP.**

**THE MIETZ & WEISS KEROSENE ENGINE.**

Although it is now more than thirty years since gas engines began to attract public attention, it is only within a comparatively recent period that they have been brought to such a degree of effectiveness as to render them generally and reliably available for industrial purposes. One improvement has followed another, until at the present day there is but little left to be desired in the better class of motors.

Good authorities upon such matters declare that among the very best apparatus of the kind in the world are the M. & W. Gas and Kerosene Engine, as manufactured by August Mietz, iron founder and machinist, of 128-138 Mott street, and 87 Elizabeth street, New York city.

This engine is a machine which embodies all features necessary for the production with perfect reliability of the maximum of power with the smallest consumption of gas or kerosene. It was placed upon the market with a view of introducing a simple, perfectly reliable, strong and compact motor for all purposes. The drawbacks and defects experienced in other engines have been care-



fully avoided and many improvements added. On account of its simplicity, this engine is particularly adapted for the use of common kerosene or lamp oil (150° test) as fuel, and when so arranged, it is absolutely the safest and simplest power producing machine conceivable.

The kerosene engine is the most independent motor where gas is not available, as kerosene or lamp oil can be obtained in any part of the civilized world. The cost of running is considerably less than gas; steam and electricity is out of the question. The M. & W. Engines can be started and managed by any person of ordinary intelligence.

With this engine no engineer or fireman is required, and there is no danger, no handling of coal or ashes. There is no extra fire insurance nor any extra water tax. There is no loss of time in getting up steam. It gives the best and cheapest power in the world, especially for service requiring relatively small power, such as for running circular saws, churns, electric light, thrashing, pumping, separating cream, grinding grain, cutting feed and numerous other purposes. Made in sizes from one to sixty horse power. Send for Catalogue.

**Spring Tooth HARROW On Wheels**

Lightest Draft Harrow made, Saves at least a half horse power over other makes. Adapted to any soil. Seat adjusted without bolts. Used either as walking or riding harrow. Teeth controlled by lever. Easily cleared of rubbish. Made of very best materials. Write for free catalogue. The Hensch & Dromgold Co., Mfrs., York, Pa.



**TELEPHONES AT \$5.00**

We purchased an enormous quantity of telephones that have seen but little service. We thought of overhauling them, and guarantee to ship you instruments at \$5.00 each, that would ordinarily cost you over twice as much. Write for FREE catalogue No. 166. CHICAGO HOUSE WRECKING CO. West 23th and Iron Sts., CHICAGO.

LATEST (Newton's Patent.) **DEHORNER Every Dehorner Guaranteed** IMPROVED THOUSANDS IN USE. Ask your hardware dealer for them or write G. L. BROWN MFG. CO., - - DECATUR, ILL.

**WANTED. HAY, GRAIN and FELD PEAS.**

Correspondence Solicited. J. J. WILSON & CO., Commission Brokers, NORFOLK, VIRGINIA.

**WANTED**

On a small farm near Richmond, white man for farm work; white woman for housework. Family of two. G. M. W., 1105 E. Main St., Richmond, Va.

**WANTED** by strong, sober young man, who does not use tobacco, employment in good nursery in Virginia. Has good education and business training; good hands, grafter and pruner; good packer and shipper. Address "BENERGY," care Southern Planter, Richmond, Va.

**MOTH-PROOF BEE-KIVE. A SWEET POTATO HOUSE**

That will keep potatoes in good condition for twelve months!

Persons desiring either of the above, should address for particulars, with stamp, BRYAN TYSON, Carthage, N. C. Please mention this paper.

**STEM-WIND WATCH, CHAIN AND CHARM**

You can get a Stem-Wind, Nickel-Plated Watch, warrant of also a Chain and Charm for selling 19 packages of Balm of Goshen. Send name and address to me, and we will forward you the Chain and our large Free-Will 11st, patent. No money required. B. L. E. MFG. CO., Inc. 681, Concord Junction, Mass.





THE MOST "GENERALLY USEFUL MACHINE ON THE FARM," THE

# McSHERRY MODEL TRANSPLANTER

FOR TOBACCO, CABBAGE, TOMATO AND OTHER PLANTS.

Originators of Modern Improvements. Established 1858.

**THE McSHERRY MFG. CO., Middletown, O.**

McSHERRY Plain Drills, Fertilizer Drills, Disc Drills, Shoe Drills, Hoe Drills, Low-Down Press Drills, Seeders, Transplanters, Disc Harrows, Rice Drills.

Write for Circulars R and S.

## BOSTROM'S IMPROVED FARM LEVEL.



Is not a MAKESHIFT, but the best one made for Terracing, Ditching and Drainage. Price \$5.00, including Tripod and Sliding Target Rod. Send for descriptive circular and illustrated Treatise on Terracing, free.

J. M. ALEXANDER & CO., 6 and 8 S. Pryor St., Atlanta, Ga.



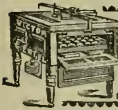
**A Combination of brains, experience and high grade material has made the RELIABLE Incubator**

known throughout the civilized world. If you are after results represented in dollars and cents, you want one of our popular 24th Century Poultry Books. Bright, instructive and worth ten times the price asked. Sent for 10c. As full of interest as eggs. Reliable Incubator & Brooder Co., Box B-11 Quincy, Ills.

## INCUBATORS ON 30 DAYS TRIAL

The only perfect business machines in the world. Our large handsome illustrated catalogue explains it all. Send for a copy. It is absolutely free and worth a dollar to any one interested in artificial incubation. Address Standard F. Inc. Co., Rochester, N. Y.

Mention this paper.



**VICTOR INCUBATORS**  
The simplest, most durable, cheapest first-class hatcher. Money back if not as represented. Circular free. Catalogue for 10c. Write for it. GEO. BETTS, 40 Quincy, Ill.

## IF YOUR LIVER

Is inactive or your DIGESTION out of order, use **Mona Liver Tonic** which is the most preparation known for producing a healthful and continuous secretion from the liver and other organs. It is an absolute cure and preventive of torpid or inactive liver, thus preventing constiveness or curing this condition if it already exists. Of course the consequent troubles of obstinate costiveness, such as sick or nervous headache, restlessness, sour stomach, colic, heartburn, and kindred diseases, are relieved by this most excellent remedy. Blisters, pimples or rough skin, caused by indigestion or costiveness, will be relieved in a few days by the use of **MONA LIVER TONIC**, thus producing a beautiful complexion. It will cure **JAUNDICE** in a few days.

Price, 50 cents and \$1.00.

—PREPARED ONLY BY—

**E. A. CRAIGHILL, Pharmacist, LYNNBURG, VA.**  
FOR SALE BY DRUGGISTS.  
**PURCELL, LADD & CO.,** Richmond, Va. Wholesale Distributors.

## FARMERS AND GARDENERS SAVE!

INCREASED USE OF IRON AGE IMPLEMENTS SHOWS THE SPIRIT OF PROGRESS

If any evidence was needed that farmers are up with the times in increasing their production and decreasing labor by the use of improved mechanism, it is furnished by the statement of the makers of the Iron Age Implements for the farm and garden, concerning their output. The works, at Grenloch, N. J., have just ended their busiest season, a greater number of tools having been shipped than in any one year since the establishment of the works in 1836. A greater number of dealers are handling the Iron Age tools than ever before, and they are being sold over a wider territory, for a wide variety of farming and gardening.

These implements have been imitated so much that the makers have found it necessary to warn buyers to look for the full name, Iron Age, branded on each tool they buy. This is the trade mark, and is a guarantee of steel construction and honest, careful workmanship.



No. 6. Iron Age Double and Single Wheel Hoe, Hill and Drill Seeder.

The Iron Age implements have been chiefly instrumental in overcoming the objection of gardeners in overcoming the faults in the old-style combined tools. The faults in the old-style combined tools have been overcome, and the greatest convenience, economy, lightness and durability that can be found in garden implements are now obtained in the Iron Age Seed Drills, Wheel Hoes, Cultivators, Plows and Rakes, which are made in a great variety of combinations. The larger Iron Age Implements, Horse Hoes and Cultivators, Harrows, Riding Cultivators, both fixed and pivot wheel and the Improved Robbins Planter are saving days of work and hundreds of dollars in time and material for their users every season.

For full information regarding the latest improvements and the whole line of Iron Age implements, write for a copy of the free Iron Age Book for 1902, issued by the Bateman Manufacturing Company, Box 167, Grenloch, N. J.

## RECIPROCITY IN TRADE.

We have been favored with a copy of an Address recently made by Mr. A. B. Farquhar, of York, Pa., the large manufacturer of agricultural implements, on "The Need of Reciprocity from the Point of View of the American Manufacturer." The address is a most able presentation of the subject, and we wish every one who reads this could and would read it. This is a subject of deep importance to farmers as well as to manufacturers. Trade, to be lasting and good, must be mutual and not one-sided. No other system can last, and the farmer will be the first to suffer when trade falls off.



Warranted to give satisfaction.

## GOMBAULT'S CAUSTIC BALM

A safe, speedy and positive cure for

Curb, Splint, Swiveny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lamenesses from Spavin, Ringbones and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a HUMAN REMEDY for Rheumatism, Sprains, Sore Throat, etc., it is invaluable.

Every bottle of Caustic Balm sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

THE LAWRENCE-WILLIAMS COMPANY, Cleveland, Ohio.



Newton's Heave, Cough, Distemper and Indigestion Cure. A veterinary specific for wind, throat and stomach troubles. Strong recommends. \$1 per can. Dealers, mail or Express. Ask for Home Medical Co., Toledo, Ohio.

## Dr. A. C. DANIELS' FEVER DROPS CURE

Milk Fever in Cows. Distemper in horses.

RENOVATING POWDERS prevent aborting in cows and horses. Book free.

Dr. A. C. Daniels, 1 Staniford St., Boston.

Southern Agents: Lilly Carriage Co., Woodward Mfg. Co., Memphis, Tenn.; Parkersburg, W. Va.

## SAN JOSE SCALE and other insects can be controlled by using

## Good's Caustic Potash Whale Oil Soap, No. 3.

It also prevents Curd Leaf. Endorsed by entomologists. This soap is a fertilizer as well as insecticide. 50 lbs. kegs, \$2.50; 100 lbs. kegs, \$4.00. Half barrels, 50 lbs., at 35c. per lb.; barrels, 25 lbs., at 35c. Large quantities, special rates. Send for circular.

JAMES GOOD, PHILADELPHIA, PA.

# FRAZER

Best in the world.

## Axle Grease

Its wearing qualities are unsurpassed, actually outlasting 3 boxes of any other brand. Not affected by heat. Get The Genuine.

FOR SALE BY ALL DEALERS.

## BLATCHFORD'S CALF MEAL.

"Please send me 500 lbs. of BLATCHFORD'S CALF MEAL, as we find nothing like it to raise thrifty Jersey calves."—ASA B. GARDNER, JR., Glencoe, Md. Address

THE BARWELL MILLS, Waukegan, Ill.

## I Can Sell Your Farm

or other real estate for cash, no matter where located. Send description and selling price and learn my wonder, fully successful plan. W. M. OSTRANDER, North American Baudine, Philadelphia, Pa.

**FINE FARMS** In the great fruit, grain and stock section of the **VIRGINIA**. Best climate and water in the U. S. Near great markets, with best educational advantages. For further information, address SAM'L B. WOODS, Charlottesville, Va.

## Virginia Farms

All prices and sizes. Free list on application.

WM. B. PIZZINI CO., Richmond, Va.

## GO SOUTH.

For full particulars write A. JEFFERS, Norfolk, Va.

## VIRGINIA FARMS

\$3 PER ACRE AND UPWARDS.

EASY PAYMENTS. CATALOGUE FREE.

GEO. E. CRAWFORD & CO., Richmond, Va.

Established 1875.

## A BARGAIN IN 63 ACRES ... OF LAND

In sight of Richmond, Va. Fine large house with modern improvements; fine large barn and other improvements; large orchard; society the best. Will be sold cheap with stock and crops. Would make a fine dairy farm. Address OAK SHADE, care Southern Planter.

## ..Magnificent Estate..

Known as the Hamstead Farm, situated on the Pamunkey river, for sale. Contains nearly 1600 acres, 800 of which is river bottom land, the remainder being upland and timber. Large deposits of green sand marl; brick barn with wood stable attached; also houses for sheep, etc. Splendid dwelling said to have cost \$60,000. Property now owned by stock company. Price, \$20 per acre, on easy terms. For further particulars, address

"PAMUNKEY," care Southern Planter.

## HOMES AND THE PLACE TO FIND THEM.

No place in the United States can a man do so well at farming, for the money invested, as in **Virginia**. Lands are cheap; climate good, and the best of markets close at hand. It is the State of all others, for a comfortable all the year round home. The James River Valley Colonization and Improvement Company offer superior advantages to land purchasers. For free 36 page land pamphlet, address

W. A. PARSONS,

819 E. Main St., Richmond, Va.



"SILOS" Yes, now is the time to buy a Silo, and the best kind to buy is the Lansing Perfect Tubular. Made on scientific principles and from good material; made by skilled workmen and improved machinery. Therefore are perfect in construction and the best to be had at any price. For both the best and about this silo and for prices address A. M. D. HOLLOWAY, Builders Exchange, Philadelphia, Pa., U. S. A.

We give to our readers brief extracts from letters received recently from Howard L. Edwards, of South Boston, Va., which will give them some little idea of the value of the comparatively new implement called a weeder.

Mr. Edwards, it seems, bought one of the Success Anti-Clog Weeders, manufactured by the Hallock Weeder Company, of York, Pa. He says he used his weeder last season on corn from the time it showed up to the time it was two feet high. It did the work thoroughly, keeping the ground absolutely free from grass and weeds, and forming such a fine dust mulch that the corn did not suffer at all from the severe drouth they had there last season.

He says a boy thirteen years old worked it from the time it was planted until it was two feet high; then it was cultivated by the same chap with a five-tooth cultivator until it tasseled out. No hoe was used in the field during the season.

He says he also found the weeder very valuable for fining the soil for wheat, grass, etc., and wishes to recommend the implement to all farmers.

Bad plowing is the rule and not the exception—furrows crooked, of irregular depth, balks, etc. Harrowing with spike or spring tooth drags only makes matters worse.

Use an "ACME" Pulverizing Harrow, Clod Crusher and Leveler with sloping coulters, which will cut, lift, turn and pulverize the soil and fill hollows without dragging up sods and rubbish, thus leaving a smooth, perfect seed bed.

The "ACME" will be sent to any responsible farmer on trial, to be returned at the expense of the manufacturer if not satisfactory. See advertisement on another page.

### SPRAY PUMPS.

The Barnes Manufacturing Company, Mansfield, O., are advertising their well-known Spray Pumps in another column. We invite the attention of our readers to it; also request them to send for the general Catalogue "C" of this firm, in which will be found a full description of all kinds of pumps.

The remarkable growth of the mail order business in recent years is largely due to the fact that the better mail order houses are scrupulously careful about always giving customers fair and honest value for their money. Notably the Marvin Smith Co., of Chicago, one of the best and most reliable house of this kind in the world.

The soft answer that turneth away wrath, even when it concerns a rejected manuscript, is good. But the hard truth that saves the literary beginner from making mistakes and wasting time is better. —February Ladies' Home Journal.

Oranges are a most valuable fruit. Orange juice allays thirst, and with few exceptions is well borne by the weakest stomach. It is also a laxative, and if taken at night or before breakfast it will be found most beneficial. —February Ladies' Home Journal.

## LEGHORN POULTRY YARDS.



Have for sale a limited number of Single Comb Brown and White Leghorn Pullets and Roosters, Best layers known. Prize-winning stock. Price, \$1.00 to \$1.50 each. Eggs in season at \$1.00 for 16; \$5.00 per 100. Satisfaction guaranteed. Address

A. T. MATTHEWS, Box 36, Parkley, Va.

## AGRICULTURAL and BUILDERS' LIME

Send for Circulars and Price-List. FELLSWORTH LIME WORKS REEVES CATT, Agent, Bodley, Augusta County, Va.

## S. B. ADKINS & CO.

4 and 6 Governor Street, RICHMOND, VA.

EXPERT BOOKBINDERS and Commercial Printers.

For Drunkenness and Drug Usage. Please write us Correspondence confidential. THE KEELEY INSTITUTE, Dept. P., Greenboro, N.C.

## PALMORE'S Law and Collection Association,

Established 1884. Claims collected in all parts of the United States. No collection—no charge.

P. O. Box 503. '905 1/2 East Main Street, RICHMOND, VIRGINIA.

275 COMPLETE SONGS All the also 25 Art. Pictures from life, and our catalogue of novelties, all for 25c. R. R. SUPPLY CO., Chattoochee, Ga.

# NITRATE OF SODA

—FOR—

# MONEY CROPS.

COTTON, CORN, WHEAT,  
FRUIT, POTATOES.

You get *your* share of the profit when you use this

## Standard High-Grade Ammoniate.

Lately around \$2.20 per ton unit on ammonia basis.

Send postal for formulas and other valuable information, free

**WILLIAM S. MYERS, Director,**

12 S. P. John Street.

CHILEAN NITRATE WORKS, NEW YORK.

# THE BUCHER & GIBBS PLOW CO.,

CANTON, OHIO.

MANUFACTURE A FULL LINE OF

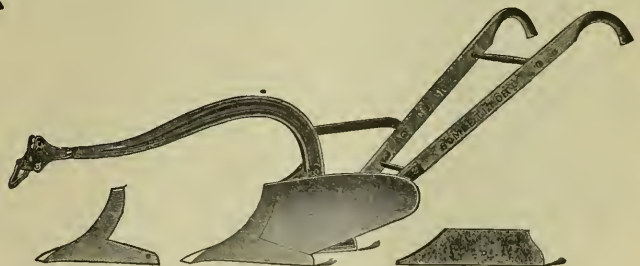
**PLOWS** in all sizes; **SPIKE-TOOTH, SPRING-TOOTH** and **DISC HARROWS**; **ONE-HORSE CULTIVATORS**, and **LAND ROLLERS**.

TELL YOU SIR  
THE "IMPERIAL"  
IS THE BEST PLOW IN THE WORLD  
NO MISTAKE AND YOU KNOW IT.  
MADE AT  
CANTON,  
OHIO.



This popular Plow is made strong and durable. Gives satisfaction to the farmer.

Our full line of goods for sale by



**THE IMPLEMENT COMPANY,**

Catalogue Free.

General Agents, 1302-1304 E. Main St., RICHMOND, VA.

## ..HOLLYBROOK FARM..

**EGGS FOR SETTING**

## From Thoroughbred Poultry.

In our poultry yards we have the following thoroughbred poultry, all first-class stock, originally started from the best flocks in this country, and carefully cross-mated so as to give strong and vigorous stock and the best laying strains of the different breeds that it is possible to obtain:

**BARRED P. ROCK.** \$1.00 per setting.  
**BLACK LANGSHAN.** \$1.00 per setting.  
**BUFF PLYMOUTH ROCK.** \$1.50 setting.  
**LIGHT BRAHMS.** \$1.50 per setting.  
**SILVER LACED WYANDOTTE.** Price, \$1.50 per setting.

**WHITE WYANDOTTE.** \$1.50 per setting.

In addition to careful breeding, we pay special attention to the handling and packing of our Eggs, so as to ensure good fertility and a good hatch.

We have also for sale a few first-class young cocks of **BARRED PLYMOUTH ROCKS**, **SILVER LACED WYANDOTTE**, **BLACK LANGSHAN** and **BLACK MINORCA**.  
Price, \$1.50 each, crated for shipment.

**HENRY W. WOOD,**

P. O. Box 330. Hollybrook Farm, RICHMOND, VA.

## ..VICTOR POULTRY FARM..

**B. P. ROCKS**  
EXCLUSIVELY.

Birds bred especially for meat and eggs. All farm raised stock. Bradley Brothers strain. Eggs, \$1.00 per 15. Having decided to get rid of our S. C. B. LEGHORN stock, we have some very fine cockerels and pullets at \$1.00 each.

**GRAVES BROS.,**  
HIGHLAND SPRINGS, VA.

## ..Eureka Poultry Farm..

**BARRED PLYMOUTH ROCKS**

..EXCLUSIVELY..

Eggs, \$1.50 per 15; \$2.75, 26; \$3.75 for \$9. Abbeville, S. C., money-order office. Address

**R. G. HAGEN, Iris, S. C.**

## WE HAVE LEFT ONLY THREE

**Barred Plymouth Rock**

COCKERELS at \$1.50 each, and 15 HENS and PULLETS at \$1.00. If they are not better than you can get elsewhere, return the order and get your money back; we pay return charges. Eggs, \$1.00 for 15.

**SUNNYSIDE POULTRY FARM,**

Christiansburg, Va.

Reference: Bank of Christiansburg.

**DIXIE POULTRY FARM,**

BREEDER OF

Mammoth Pekin Ducks, S. L. Wyandottes, White Wyandottes, S. C. White Leghorns, S. C. Brown Leghorns, B. P. Rocks.

Vigorous stock, bred for business, with 1st Premium to their credit at the Great Richmond and Newport News Shows. Eggs, 13 for \$1.25.

E. D. MOON, Holly, Va.

First Vice-Pres. of the Va. Pigeon,

Poultry and Pet Stock Association.

**S. C. White Leghorns**

Eggs, settings \$1.50 per 15. Cockerels, \$1.50 and up; good ones.  
C. G. M. FINK, Jr.

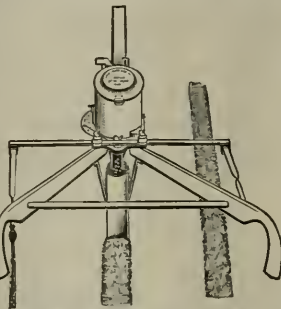
1400 W. Leigh St., Richmond, Va.

## THE KITCHEN GARDEN.

Every farmer and villager who has a plot of ground at all suitable should have a Kitchen Garden, if for nothing else than to supply fresh vegetables for the table. Thousands appreciate the efficiency of the poultry yard as an adjunct to the home table as well as a money earner. The garden plot should go hand in hand with the poultry yard. There is no better garden fertilizer than that coming from the hen house,—but the garden itself, how may it be best attended?

Put in the seed with a drill and every row will be straight and just right for easy after-cultivation with a wheel hoe. You should not be without these most useful tools, even if you cultivate but one-eighth of an acre. With it you can do as much work in a given time as twelve men can do in the same time by older methods.

We advertise in our columns the Matthews New Universal Hand Seeder and Cultivator made by the Ames Plow



New Universal Seeder at Work.

Co., of Boston, Mass. This implement with its various attachments combines in one the Seeder, Wheel, Hoe, Cultivator, Rake, Plow and Marker. It is a wonderful labor saver, and will pay bigger dividends on its cost than almost anything one could think of. These people also make separate implements for all gardening work on large acreage of onions, beets, spinach, etc. Send at once for their 1902 catalogue, describing some twenty-five styles of these implements. Address Ames Plow Co., No. 56 Market Street, Boston, Mass.

## ODORLESS PHOSPHATE.

In this issue will be found the advertisement of Jacob Reese, of Philadelphia, offering Odorless Phosphate. We bespeak a trial of this article from our subscribers. From several of our best and most successful farmers we have had very satisfactory reports as to the results attained from using this phosphate.

One of the essential points in good dressing is the harmony of tones and colors. A mass of coloring in clothes is always a mistake.—February Ladies' Home Journal.

To make cows pay, use Sharples Cream Separators. Book "Business Dairying" & Cat. 335 free. W. Chester, Pa.

## BLUE HILL POULTRY and BROILER FARM

**BARRED PLYMOUTH ROCKS a Specialty.**

Line-bred for ten years; laying qualities cannot be excelled. Eggs and stock for sale at all seasons. Eggs \$1 per set, 15. Mammoth Bronze Turkey Eggs, \$3 per doz. E. F. SOMMERS,  
Phone No. 11, Somerset, Orange Co., Va.  
•ordonsville Exchange.

**EGGS**

Eggs from B. P. Rock, White Wyandotte and Pekin Ducks, \$1 for 15. Eggs from M. B. Turkeys bred from a 45 lb. Tom, beautiful plumage, \$3 per doz. Pedigreed Scotch Collie Pups, extra fine, \$3 to \$5 each. A very fine 2-yr. old female, well-trained and fine breeder, \$10.

C. H. BENNETT, McDonald's Mill, Va.  
(Green Valley Poultry Yard.)

**EGGS FOR HATCHING**

PURE-BRED B. P. ROCK, BLACK MINORCA,  
S. C. B. LEGHORN.

Fine stock, excellent layers. I guarantee eggs to be true to name, fresh and to arrive in good condition. 75c. per 15; \$2.00 per 45; \$4.00 per 100.

MISS S. M. HITER,  
LOUISA CO., VA.

**FOR SALE.**

2-year old PERCHERON FILLY, registered, sound and good style.

POLAND-CHINA PIGS, 3 mos. old, both sexes, sired by Chief Best, by Chief Tecumseh, 2d.

PLYMOUTH ROCK COCKERELS, \$1.00 each.

EGGS, 15 for \$1.00. Good hatch guaranteed.

THOS. R. SMITH, Lincoln, Loudoun Co., Va.

## Cottage Poultry Yards.

**Black Langshans**

..EXCLUSIVELY..

Young stock now ready. Cockerels, Laying Hens. Trios not akin. Price according to points. Eggs, \$1.00 per setting.

M. A. Olney, Coleman's Falls, Va.

**EGGS PURE BRED**  
GOOD STRAINS.

ROSE COMB BROWN LEGHORN, 13 for 60 cts.; \$1.00 per 26. GOLDEN SPANGLED and WHITE WYANDOTTES, \$1.00 per setting. Incubator Eggs, \$3.00 per hundred.

CARSON BROS., Middleport, Ohio.

**ONE DOLLAR**

BUYS FIFTEEN EGGS.

Barred Plymouth Rock, S. C. B. Leghorn. Splendid laying strains. Prompt attention.

Mrs. JNO. F. PAYNE, Clairmont Dairy Farm. UNIVERSITY OF VA.

**Barred Plymouth Rock EGGS**

AT 75c. PER SETTING.

WM. B. LEWIS, IRBY, NOTTOWAY CO. VA.

**SHORT** Registered and Imp. COLLIES.  
**STORY** "Workers." It is our business.  
Pups, \$7.50 up. MAPLE MOUNT STOCK FARM, Albany, Vermont.

THE ETNA LIFE.

The big and very satisfactory figures of the Annual Statement of the Etna Life Insurance Company are printed elsewhere in this issue. The showing is one that the management must take pride in placing before the public. It has, during the year just past, increased its business to an extent that surprises even its best and most sanguine friends. The Etna Life's assets have nearly reached the \$60,000,000 mark, showing an increase of about \$4,000,000 in 1901, with proportionate increases all along the line of the Company's field of labor.

What so large gains mean, not only to the management but to the 181,000 policy-holders, and even to the nation at large, will be apparent from the fact that life insurance is becoming one of the leading and best of forms of investment for rich and poor. For the rich man life insurance is a great convenience; it increases his credit; it secures him against adventurous speculation. For the poor man it is a necessity. The life insurance policy is generally the only asset which most men leave behind them at death.

WEEDERS, POTATO AND CORN PLANTERS.

The Eureka Mower Company of Utica, N. Y., have three advertisements in this issue, to which we invite the attention of our readers. The Davison A-Shape Weeder is one of their principal sellers, and has many features to commend it. The Eureka Planters, one or two row, plant corn, beans, peas, beet seeds, etc., are splendid machines, light and durable. Send for catalogue giving full descriptions of their full line of implements.

To lead men or children, lastingly, we must be utterly frank and honest with them.—February Ladies' Home Journal.

ABERDEEN-ANGUS SALES IN VIRGINIA.

Our subscriber, Mr. I. H. Adams, of Lynchburg, Va., asks us to say that as the result of the advertisement inserted in *The Planter* he has sold all his Aberdeen-Angus Cattle; 5 head he sold to G. A. Creasy, of Mt. Airy, Va.; 5 head to C. I. Johnson, of Wingina, Va.; 1 heifer to J. C. Garnett, Locust Dale, Va.; and 3 heifers to Admiral B. F. Day, Glasgow, Va.

The importation of Aberdeen-Angus stock still continues, and no doubt the high price for which animals of this breed have recently sold will encourage still greater purchases abroad. Messrs. Fisher, Goodwine & Fleming, of West Lebanon, Ind., inform us that they have recently brought over 50 head. Among the lot is "Bion," the former great stock bull of Sir George McPherson Grant, of Ballindalloch, Scotland. The whole herd is made up of fine animals having fine records.

The Southern Realty and Finance Company, of Charlottesville, Va., have got out a small Book, in which they explain their method of doing business, and how they hope to be able to help "land-poor" farmers to sell some of their holdings. Send for copy.

HAVE YOU EVER USED YAGER'S LINIMENT? TRY IT.

**YAGER'S**  
**LINIMENT**  
 FOR  
**MAN OR BEAST**  
 POPULAR  
 SOOTHING & EFFECTIVE  
 QUICK HEALING POWERS.  
 IN THE TREATMENT OF DISEASES REQUIRING  
 AN EFFICACIOUS EXTERNAL REMEDY.  
**BEWARE OF IMITATIONS.**  
 PREPARED ONLY BY  
**GILBERT BROS. & CO.**  
 SOLE PROPRIETORS  
**BALTIMORE, M.D.**  
 U.S.A.  
 REGISTERED U.S. PATENT OFFICE

THERE ARE MANY IMITATIONS, BUT THE GENUINE IS ONLY \$25 CENTS.

EXACT SIZE OF BOTTLE.

**TAKE NO SUBSTITUTE.**



## JACKS FOR SALE

An extra fine lot of JACKS, JENNETS and MULES. Some prize winners. All stock guaranteed and delivered 1, 0. b. at City of Indianapolis, Ind. Street cars run every hour to within a mile and a half of farm. Address

BAKER'S JACK FARM, LAWRENCE, IND

## FOR SALE!



## JACKS, JENNETS and MULES, Durham Calves

highly bred Jacks a specialty  
Enclose 2c. stamp for cat.

W. E. KNIGHT & CO.  
West End. Nashville, Tenn.

## FOR SALE

### Thoroughbred Stallion "Ordway"

By Sprngbok, out of Venora by Lexington. 16 hands high; chestnut, handsome, serviceably sound. Wink O. K. Sure foal-getter. Fast in his day, and a winner in good company in fine condition now and ready for public service. Foaled spring of '91, but no sign of age. Have used him since '95. Can show several handsome colts. Price, if taken at once, \$200.00. Pedigree and performance on application to WALTER RANDOLPH CRABBE, Hague P. O., Northumberland Co., Va.

## FOR SALE Standard-bred "CALEF" STALLION

Registered in Vol. IX, page 180, Wallace's A. T. R. Very handsome and stylish; deep chestnut color. Sired by Wilkesona, he by Red Wilkes, he by Geo. Wilkes. Dam, Dalay Goldust, by Dusted Goldust. Also two beautiful standard-bred FILLIES, broken to saddle and harness. C. T. SMITH, Croxton, Caroline Co., Va.

## BRASSMERE STOCK FARM, Glen Allen, Va.

### TROTTING, SADDLE and HIGH STEPPING HORSES

Education, bought and sold on commission, and kept by the month or year. High-class POULTRY and BELGIAN HARES for sale at reasonable rates. Write for circulars; no trouble to answer questions. Satisfaction guaranteed.

CHANDLER QUINTIN, Veterinarian,  
40 yrs. experience on the best stock farms in America.

## BELGIAN HARES

If you want the best BELGIAN HARES, young or old, from 5 to 10 lbs., bucks or breeding does, write to

A. E. WILLIS, Lynchburg, Va.

## BELGIAN RABBITS..

I have a few fine bucks and does left over, that I will sell to first orders at 2c a pair, to make room for spring breeding.

MIKE COLES, Bedford Springs, Va.

## YEAR OLD COCKERELS FOR SALE.

1 Houdon, 3 Sherwoods, 1 Black Langshan,  
1 W. P. Rock.

DAVIE POULTRY YARDS, Box 19, Mocksville, N. C.

## BEST WAY TO SMOKE MEATS.

KRAUSER'S LIQUID EXTRACT OF SMOKE  
MAKES THE SMOKE HOUSE OUT OF DATE.



Thousands of people in all parts of the country have abandoned smoke-houses and now use Krauser's Liquid

Extract of Smoke for smoking hams, beef, sausages, and all meats that were formerly smoked by fire. The Extract of Smoke is made by E. Krauser & Brother, of Milton, Pa. It is a pure clean extract of hickory wood, containing exactly the same properties of the wood that cure the meat by smoking, only being in a liquid form, it is applied in a few moments instead of requiring days. It is applied with a brush or sponge, and the meats can be hung in a garret where they are safe from the thieves who make raids on smoke-houses. Any one writing to the manufacturers will receive circulars fully explaining the merits of the process.

## PAGE FENCE.

The Page Woven Wire Fence Co., of Adrian, Michigan, have used our columns continuously for over ten years; they have established themselves in the confidence of our readers, and they could never have done so if there had not been real merit in their fences. Their business has doubled up year after year, until (we are credibly informed) they use the entire outfit of wire of their extensive steel mill, at Monessen, Pennsylvania, in their own fences.

They do not claim to sell fence the cheapest, but they do claim that since they make their own steel and wire they have a wire especially adapted for fencing purposes, and one that will sustain the special features in Page Fences.

The Page Fence Company have an enviable reputation among our readers.

## A NEW SPRAY NOZZLE.

Every one who does spraying will be interested in the new "Kant-Klog" nozzle. It gives nine separate and distinct changes, making Bell Sprays, Flat Sprays and solid streams, all of different size and volume, and is provided with a new and novel device to prevent the nozzle from clogging.

If you are using a nozzle that clogs, you should get a full description of this new "Kant-Klog" nozzle from the Rochester Spray Pump Co., No. 24 East Avenue, Rochester, N. Y., who offer to take old nozzles as part pay for the new "Kant-Klog" nozzle.

## EXPORTING AGRICULTURAL MACHINERY.

Five ship loads of agricultural machinery are being sent from New York and Philadelphia to the Black Sea. The McCormick Company alone will send by one boat nearly 9,000 tons of Harvesters. This is the largest cargo of machinery of any description that has ever been sent from this country by one firm.

## FILSTON FARM..

### BULL CALF

152

Nov. 9. 1901.

Stoke Pogis of Filston,  
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Garella's Sally, 140227

Nothing better for a first class Breeder and Dairyman. Beauty, breeding, and best of all, great milk producing stock.

For price and pedigree, address

ASA B. GARDINER, Jr., Manager,  
GLENCOE, MD.

## JERSEYS RICHLY BRED.

HEIFERS : : :  
BULL CALVES.

Send for pedigrees and descriptive circular.

DAVID ROBERTS, Moorestown, N. J.

..OAK HILL FARM..

## Holstein and Jersey Cattle, Biltmore Berkshires.

Wishing to reduce my stock, will sell cheap. Every thing from Oak Hill Farm is guaranteed first-class, and as represented. Address  
Oak Hill Station SAM'L HAIRSTON,  
on the Farm. Wenona, Va.

## BARCAINS IN

### Reg. Shropshire Ewes..

From two to five years old, bred to my best ram. These ewes are of the best breeding.

### Aberdeen-Angus Calves..

Herd headed by a winner of five first prizes at State fairs.

ENGLISH SETTERS by the prize-winning Count Rodó. Fine individuals of the best breeding. Satisfaction guaranteed.

WARREN RICE, - Winchester, Virginia.

## FOR SALE ANGUS BULL

REGISTERED  
3 years old. A strictly first-class individual in every respect. Satisfaction guaranteed. Price, \$125.00. Address R. S. FARISH,  
Box 145, CHARLOTTEVILLE, VA.



## DO YOU FEED SWINE?

For the most practical swine paper, giving up-to-date methods and market reports, send 10 cents in silver for four months trial subscription. Regular price 50 cents a year. Address

BLOODED STOCK,  
Oxford, Pa.

# DORSET SHEEP

My entire flock of Dorsets, registered and eligible,

**FOR SALE.**

44 head, exclusive of present crop of lambs. Fine stock; low price.

**WALTER WATSON, SALEM VA.**

# V. P. I. Farm Bulletin

Orders booked for **DORSET RAM LAMBS**, to be delivered in July and August. No more Berkshire hogs, of any age, to offer until Spring.

D. O. NOURSE, Prof. of Agr., Blacksburg, Va.

# DORSET SHEEP

Have the true Golden Hoof, and make Southern farmers more profit than any other stock. Write the Secretary of the Continental Dorset Club for information and lists of breeders.

JOS. E. WING, Mechanicsburg, Ohio.



**SHEEP MONEY IS GOOD MONEY** and easy to make if you work for us. We will start you in business and furnish the capital. Work light and easy. Send 10 cents for full line of samples and particulars. DRAPER PUBLISHING CO., Chicago, Ills.

# BERKSHIRE PIGS.

I have for sale 40 thoroughbred Berkshire Pigs, from 4 to 6 weeks old. These are fine pigs; will sell in lots to suit. Prices cheap. Address

H. SWINEFORD, - Richmond, Va.

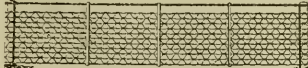
# ESSEX PIGS



ollotted. Address

A choice lot of PIGS. 10-12 weeks old, at \$10 per pair. Ready for delivery in April and May. Your orders L. G. JONES, BETHANIA, N. C.

The Coiled Spring Fence Company, of Winchester, Ind., whose advertisement appears in the columns of this paper, make truly a "Coiled Spring" Fence, very closely woven, of Bessemer Steel, high carbon galvanized wire. It is one of the most closely woven fences on the market, and we readily understand why it is so greatly admired throughout the country. They make broad claims, but they prove their statements by the fence itself. They are exceptional business men, and have already gained a world-wide reputation.



The above cut represents one of the many styles of fence they manufacture. Write for their catalogue, which will be given you for the asking, and in doing so please mention this paper.

### ALMOST A LIFETIME.

If one were to count the manufacturers who have been in business continuously for a generation, they would be found comparatively few in number, and yet among them would be that old and well known house, the Elkhart Carriage and Harness Manufacturing Company, of Elkhart, Ind., whose advertisement appears in this issue. This concern has been in business for twenty-nine years, and during all that time has been selling direct to the consumer at lower prices than many factories charge dealers. The great saving effected by dealing with this advertiser is at once apparent. Their line of vehicles and harness is larger than ever. It embraces many patterns shown at the Pan-American Exposition, where the Elkhart people not only exhibited against some factories noted for their high prices but carried off honors too. Their new catalogue presents the complete line, and a copy will be sent free to any one who mentions this paper in writing. Address Elkhart Carriage & Harness Manufacturing Company, Elkhart, Ind.

### IMPROVING THE ROADS.

The *New York Tribune* offers a series of prizes, the first of which is \$200 in gold, for the best essay on The Necessity for State Legislation for Good Roads. These essays are to be written by High School pupils only. Full information will be given as to terms, &c., on application to A. H. Battey, Editor *Tri-Weekly Tribune*, New York City, N. Y.

The honor of the modern business house, like Marvin Smith Co., of Chicago, is guarded as carefully as a man would guard his personal honor. They have found that it pays, and are careful never to depart from their well known policy of giving every one a fair, square deal.

To keep skirts from wearing out too quickly around the edge put on a bias fold of lining, stitched with many rows, to give it "body," the width varying from an inch and a-half to four inches.—February Ladies' Home Journal.

# HEREFORDS FOR SALE



A few choice registered Hereford bulls, one 2 years old, one 3 years old; excellent condition. Also bull calves. Information and terms upon application to

EDWARD G. BUTLER, Annefield Farms, Briggs, Clarke Co., Va.

### FOR SALE.

# HEREFORD

Herd bull, "IRELAND," No. 79482; age, 4 yrs.; bred by West & Duncan, Windsor, Ill. Sire, "The Orphan"; dam, "Miss Joe." Also GRADED CALVES by "Ireland."

Also "GAZETTEE," No. 104764; age, 2 yrs.; bred by Murray Bozock, Kee- wick, Va. Sire, "Gazettee." No. 75100; dam, "Daisy"; sire, "Wilton Chief"; dam, "Curly Lass."

W. J. McCANDLESS, Brandy, Va.

# Breeders of HEREFORDS

— SINCE 1856. —

**FOR SALE** Three 2-yr.-old Reg. Hereford Bulls, two 16 mos. old Reg. Hereford Bulls, two 10 mos. old Reg. Hereford Bulls, two 2 yrs. old Reg. Hereford Heifers, three 16 mos. old Reg. Hereford Heifers, one 10 mos. old Reg. Hereford Heifer at reasonable prices. HAYFIELDS STOCK FARM, COCKEYSVILLE, MD.

# PUREST BLOOD.

(Ancestors of direct importation.)

# RED POLLED CALVES

ONE 7 MONTHS OLD HEIFER.  
ONE 5 MONTHS OLD BULL.

Both Eligible to REGISTRY and BEAUTIES. At a bargain price. W. S. SOUTHALL, Elkton, Virginia.

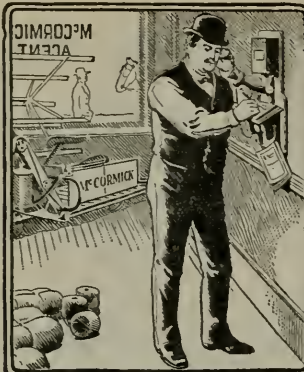
# "Feeds and Feeding"

Prof. Henry's Great Book for Farmers and Stockmen.

Delivered anywhere for - - \$2.00

With the SOUTHERN PLANTER, \$2.25

A Neat BINDER for your back numbers can be had for 25 cents. Address the Business Office.



**An order by phone**

"Hello! Is this Mr. Wise, the McCormick agent?"

"Yes, who is this?"

"This is Bright of the Brookdale Farm.—Say, have you any more new, right-hand McCormick binders like the one Wilson bought?"

"Yes; just unloading our third car to-day."

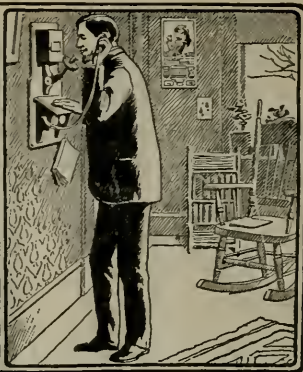
"Have these binders got the folding divider, new needle, hardened knoter parts, reversible trip hook and new pitman shield?"

"Yes, sir; all of 'em."

"Well, set aside two binders for me. Guess I'd better have 500 pounds of McCormick twine, too; Manila brand.—Aod, say, Wise, send me one of McCormick's World-Centre books."

"All right, Mr. Bright. The binders will be ready for you any day, and I'll mail the book. Thank you; good-bye."

"Good-bye."



If you are interested in harvesting machines, write for the "The World Centre." Address

W. K. BACHE, Gen'l Agent, McCormick Harvesting Machine Co., Richmond, Va.

**FOR SALE LOW.**



One pair 4 year old black horse mules 16 hands high.

One 8 yr. old black mare mule 15 1/2 hands high All extra fine animals, quick, blocky and well-made.

One pair 8 year old brown Hackney-Trotter cross brood mares, weight 1200, of fine style and action. Both mares with foal by Hackney stallion.

One pair of 4 year old Hackney-Trotter cross bay mares of fine style and action.

One 3 year old brown Hackney-Trotter cross gelding, extra fine.

One 8 year old pretty tan color saddle and harness horse, weight 1200. This is a superb family horse, and a premium winner under the saddle.

One 4 year old registered Aberdeen-Angus cow bred to reg. Angus bull. Price, \$120.

One 7 months old registered Aberdeen-Angus bull calf. Price, \$75.

Address W. M. WATKINS & SONS, Radolph, Charlotte Co., Va.

**SHORTHORNS!**

I have for sale some good SCOTCH-TOPPED SHORTHORN BULLS, COWS and HEIFERS, at fair prices for the times. Also one finely bred and thoroughly galled horse, sound and well manured, at reasonable price. Correspondence solicited.

GEO. CHRISMAN, Chrisman, Rockingham Co., Va

**EAST RIVERSIDE**

**SHORTHORNS**

Property of Jas. F. Clemmer, Summerdean, Va

Choice Young Bulls and Heifers for sale.

Prices right and satisfaction guaranteed. Address JAS. F. CLEMMER, Summerdean, Va.

**THE FARMERS' MUTUAL BENEFIT ASSOCIATION.**

The Virginia Division, Farmers' Mutual Benefit Association, advertised else where in this journal, is an association of the farmers in the State of Virginia for mutual protection against loss by fire and lightning. Originally it had a defective charter and plan, like some other mutual fire associations chartered at the same time by inexperienced adventurers in the State. This association, after three years' experience, was remodeled on a Michigan plan of forty years' test, under an amended charter from the State of Virginia, with amended by-laws, policies, and strictly legal contract application forms. Under the amended plan, the Virginia Division has been in successful operation for three years, and has in active operation policies covering \$315,000 of property insured, with an estimated security of over \$600,000, making its policies perfectly safe. The average cost of insurance for the three years of its organization, under its amended charter, has been \$3.66 2/3 per \$1,000 per year, including dwellings, barns, produce, stock, etc., and has been a great saving to its members. It seeks no territory covered by other mutual companies of the State, and is an enemy of no other plan, yet will admit to its membership any reputable owner and property within the bounds of its territory, after proper inspection and recommendation. It has paid all its losses promptly, and is in favor with the people. For further information, you are referred to the advertisement on another page of this journal.

The Armour Company, of Chicago, Ill., send us copy of their Farmers' Almanac for 1902. It is finely got up and beautifully illustrated. Send for a copy and say you saw this notice in *The Planter*.

Studebaker Bros., of South Bend, Ind., the great wagon-makers, send us copy of their Farmers' Almanac for 1902. It is a good one, and will be sent to any farmer on application who mentions *The Planter*.

**VIRGINIA VALLEY HERD**

Of Registered Shorthorn Cattle. Choice young bulls, cows and heifers bred. Also Poland-China Hogs and Barred Plymouth Rock Chickens.

PRICES REASONABLE  
HENRY BLOSSER, HARRISONBURG, VA.

**ELLERSLIE FARM**

**Thoroughbred Horses AND SHORTHORN CATTLE, Pure Southdown Sheep and Berkshire Pigs.**  
FOR SALE. R. J. HANCOCK & SON, CHARLOTTESVILLE, VA.

**HAWKSLEY STOCK FARM**  
BREEDER AND SELLER OF

**REGIST'D BERKSHIRE HOGS MAMMOTH BRONZE TURKEYS PLYMOUTH ROCK CHICKENS**  
EGGS IN SEASON.

J. T. OLIVER, - - Allen's Level, Va.

**FARMERS' LIBRARY!**

- SOUTHERN PLANTER, - 50
- FERTILITY OF THE LAND, \$1.25
- FEEDS AND FEEDING, - \$2.00
- FOOD FOR PLANTS, - - 10
- \$3.85

All for \$3.25.

**THE SOUTHERN PLANTER,**  
RICHMOND, VA.

## FARM NOTES.

Have a standard in your farm work, and live up to that standard; do nothing simply for the sake of having it off of hand, regardless of the manner in which it is done.

As to what you must do on the farm in any special line is governed by the seasons. You will remember that in the olden time it was said that there is a time for all things, and experience teaches that everything must be done in its season.

Always labor to have only one thing at a time on hand. If many things are crowding you promiscuously at the same time there is something wrong in your arrangement. One thing at a time, and that always to be thoroughly done, is a good motto.

Always strive to keep your growing crops in advance of the weeds, for if they get the upper hand the plants will be "choked out." Of the two, the weeds are the better growers.

■ In the matter of feeding your farm stock, see to it that it be not done in a wasteful, slovenly manner. I do not mean that you are to stint the animals, but give them what they will eat closely and with a satisfied relish.

FRANK MONROE BEVERLY.

## SCOURS.

Scours is a troublesome disease among young animals, and particularly among calves. A reliable remedy is therefore of considerable value. Alexander's Scour Cure has been very successfully used during the last three years, and is strongly recommended by a number of well-known stock-raisers. Our old friends, the Pasteur Vaccine Company, are selling agents for Alexander's Scour Cure, and their advertisement will be found in another column. The remedy is cheap, and every stock-raiser should buy a bottle, or see that his dealer has some in stock ready for immediate use when required. The Pasteur Vaccine Company will, upon request, send interesting literature with a long list of valuable endorsements. The Pasteur Vaccine Company also furnishes 'Blacklegine, both for single and double treatment, "Blacklegine" being Pasteur Blackleg Vaccine ready for use as sold.

## A GIRL'S LETTERS ARE PRIVATE PROPERTY.

"Do you think a girl's letters should be the common property of the whole family? The letters other girls write her read aloud, commented upon, and made fun of because she is only sixteen?"

Indeed I do not think so. Every one has a right to open and read her own letters, and parents, brothers and sisters should respect this right.—Mrs. Sangster, in February Ladies' Home Journal.

To be constantly pulling up the seeds of life to see if they have sprouted is a serious menace to the health of the plants.—February Ladies' Home Journal.

Wealth does not make a home. It takes thoughtful, sympathetic comrades to make a home.—February Ladies' Home Journal.

# DE LAVAL

## Cream Separators

ARE SO MUCH BETTER THAN

## Other Cream Separators

**BECAUSE.**—They are constructed after the "Alpha" Disc and "Split Wing" patents, which cannot be used by any other manufacturer and which enable De Laval machines to skim cleaner and produce a more even and more thoroughly churnable cream than is otherwise possible, at much less speed and wear, and much greater ease of operation.

**BECAUSE.**—The De Laval makers have ever been first and foremost in the manufacture of Cream Separators throughout the world—have ever led where others follow—their factories being among the finest machine shops in the world, and their knowledge of Cream Separators far greater and more thorough than that of any comparatively inexperienced would-be competitor.

**BECAUSE.**—The one purpose of the De Laval makers has ever been the production of the best Cream Separator possible regardless of cost, instead of that mistaken "cheapness," which is the only basis upon which any would-be competitor can even make pretense of seeking a market.

**BECAUSE.**—The vastly greater sale of the De Laval machines—ten times all others combined—enables the De Laval makers to do these things and much more in the production of the perfect Cream Separator that no one else could attempt.

A De Laval catalogue explaining in detail the facts here set forth may be had for the asking.

### THE DE LAVAL SEPARATOR CO.

Randolph & Canal Sts.,  
CHICAGO.

1102 Arch Street,  
PHILADELPHIA.

103 & 105 Mission St.,  
SAN FRANCISCO.

General Offices:

74 Cortlandt Street,  
NEW YORK.

327 Commissioners St.,  
MONTREAL.

75 & 77 York Street,  
TORONTO.

248 McDermott Avenue,  
WINNIPEG.

## A VIRGINIA WOMAN'S WISDOM—

HER RULES GOVERNING HER CHILDREN'S  
HOURS AND METHODS OF STUDY,  
AND THE RESULTS.

"For twelve years I have had the following rules in my family of five children: No child under eight years of age is allowed to enter a schoolroom; from eight to twelve years, three hours' work daily; from twelve to fifteen years, four hours' daily. No lessons are prepared at home; no school book is allowed to be brought home under any circumstances. All lessons that cannot be learned and recited properly in from three to four hours remain unlearned. To demonstrate that four hours' time in school, properly applied, is sufficient, I give an outline of the work actually accomplished last session by my little daughter of thirteen years:

Hours: Daily, from 10 A. M. to 2 P. M.  
Daily: Geography and Spelling.  
Alternate days: Arithmetic, Writing, Latin, French, Grammar, History.

In addition, there is a music lesson of half an hour twice each week, and one hour's practice daily. When this is over, she goes outdoors and plays in any manner suitable for a girl of her age.

Results: Good reports; pleasure in attending school; steady advancement; the highest commendation from teachers; mutual satisfaction—and no doctor's bills!"—A. R. F., Virginia, from "Mothers' Meetings," in the February Ladies' Home Journal.

## NEVER TOUCHED HIM.

"Pat" was assistant cook on one of the dining cars on the Great Western road running into St. Paul. He was obstinate and ill-tempered. The chef was equally so; and as a result, constant warfare waged between them.

One day last summer Pat was making ice cream, and in spite of the chef's warnings, insisted upon sitting in the door-way of the pantry while he turned the freezer.

The train, going up grade, made a sudden lurch, and Pat and his pan of ice cream fell out the door, as his superior officer had predicted.

Frantic with fright, the chef in his white cap and apron tore through the train, looking for the conductor.

"Mon Dieu, Monsieur Conducteur!" he cried, wringing his hands, when he found that person, "ze ice cream freezer, be fall off, and Pat go wiz heem; stop the tram-way, or we will haf pas dessert pour le diner. Trouble, trouble always wiz zat Irish man."

The conductor pulled the bell and stopped the train, but it had already gone two miles past the spot where Pat had rolled out.

They backed the train, fully expecting to find Pat's mangled body beside the track. Instead, they saw him coming over the ties on a run, carrying on his back the ice cream freezer.

He climbed on the train, looking foolish, but all he ever said of his miraculous escape was, "Be Gosh, it jarred me some, it did that!"—CAROLINE LOCKHART, in February Lippincott's Magazine.

## St. Lambert JERSEYS

We have for sale a number of YOUNG BULLS from cows with butter tests ranging from 16 to 24 lbs. per week, and yielding from 5 to 6 gallons of milk per day.

We have more high testing ST. LAMBERT COWS than can be found in any herd in the United States or Canada.

## INDIAN GAME FOWLS

We have also for sale a choice lot of INDIAN GAME CHICKENS—male and female. Also some choice WHITE WYANDOTTE COCKERELS. The Indian Game and White Wyandottes are the best general purpose fowls

BOWMONT FARMS, SALEM, VA.

\*\*\*\*\*  
WE  
OFFER  
\*\*\*\*\*  
YOUNG JERSEYS

Male and female; several YOUNG GUERNSEY BULLS; BERKSHIRE PIGS, pairs and trios not akin. A few pairs of BRONZE TURKEYS, PLYMOUTH ROCK and BROWN LEGHORN fowls.

## EGGS FOR HATCHING

From Bronze Turkeys, Plymouth Rock, Brown Leghorn and Light Brahma fowls ready now.

M. B. ROWE & CO., Fredericksburg, Va.

Hill Top Stock Farm OFFERS FOR SALE  
..... A LIMITED NUMBER OFSouthdown and Shropshire Sheep  
A Grand Lot of Berkshire Hogs

Young Boars ready for service.

Come and see our stock, or write for description and prices to

H. A. S. HAMILTON & CO., Staunton, Va.

Parties will be met at train with conveyance, if we are notified in time. We are always glad to show our stock.



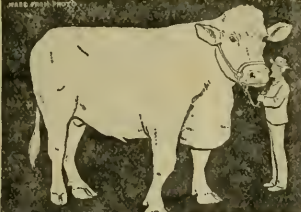
Works on either standing timber or stumps. Will pull an ordinary Grub in 1 1/2 minutes. Makes a clean sweep of Two Acres at a Sitting. A man, a boy and a horse can operate it. No heavy chains or rods to handle. The crop on a few acres the first year will pay for the Machine. Send postal card for Illustrated Catalogue, giving prices, terms and testimonials. MILNE MFG. CO., 834 8th St., Monmouth, Ill. (Address Mine Bros. for Shetland Pony Catalogue.)

When you write to an advertiser, always say you saw the advertisement in THE SOUTHERN PLANTER.

# LARGEST THREE YEAR OLD STEER IN THE WORLD

WEIGHT 3100 POUNDS, AGE 3 YEARS.

**SHORTHORN.** Owned by International Food Co., Minneapolis, Minn., U.S.A. We feed "INTERNATIONAL STOCK FOOD" every day to our four Stallions, Brood Mares, Cows, etc. "INTERNATIONAL STOCK FOOD" causes Horses, Cattle, Hogs and Sheep to grow very rapidly and makes them Big, Fat and Healthy. It is used and strongly endorsed by over 20,000 Farmers. It is sold on a Spot Cash Guarantee to Refund Your Money in any case of failure by over 20,000 Dealers. It will make you extra money in Growing, Fattening or Milking. Owing to its blood purifying and stimulating tonic effects it Cures or Prevents Disease. It is a safe vegetable medicinal preparation to be fed in small sized feeds in connection with the regular grain. It fattens Stock in 30 to 60 days less time, because it aids Digestion and Assimilation. In this way it saves a large amount of Grain. The use of "INTERNATIONAL STOCK FOOD" only costs. It always pays to feed the best. "INTERNATIONAL STOCK FOOD" is endorsed by over 100 leading Farm Papers.



Answer the 3 Questions and Write Us At Once for Book.

Largest Stock Food Factory in the World.  
Capital Paid in \$1,000,000.00

## A \$3000.00 STOCK BOOK FREE

MAILED TO EVERY READER OF THIS PAPER. This Book Contains 163 Large Colored Engravings of Horses, Cattle, Sheep, Hogs, Poultry, etc., and of this Steer. It costs us \$3000 to have our Artists and Engravers make them. It contains a finely illustrated Veterinary Department that will save you Hundreds of Dollars. Gives description and history of the Breeds of Horses, Cattle, Sheep, Hogs and Poultry.

**THIS BOOK FREE, Postage Prepaid, if You Write Us a Postal Card and Answer 3 Questions:**  
1st—Name this Paper. 2nd—How much stock have you? 3rd—Did you ever use "INTERNATIONAL STOCK FOOD" for Horses, Cattle, Sheep, Hogs, Cows, Calves, Lambs or Pigs. The Editor of this Paper will tell you that you ought to have a copy of our finely illustrated Book for reference. We will give you \$14.00 worth of "INTERNATIONAL STOCK FOOD" if Book is not exactly as represented. \* \* \* \* \* Won the Highest Medal at Paris in 1900.

INTERNATIONAL STOCK FOOD CO.,  
MINNEAPOLIS, MINN., U. S. A.

3 FEEDS FOR ONE CENT

DEALERS SELL THESE ON A "SPOT CASH" GUARANTEE. INTERNATIONAL STOCK FOOD. INTERNATIONAL WORM POWDER. INTERNATIONAL GALL CURE. INTERNATIONAL POWER FOOD. INTERNATIONAL COLIC CURE. INTERNATIONAL HEAVE CURE. INTERNATIONAL LOUSE KILLER. INTERNATIONAL HAWKISH SOAP. SILVER FINE HEALING OIL, ETC.

### FARMER DOBS' NAN. A TRUE STORY.

Farmer Dobs had always thought that he was a most unfortunate man in having a family of five daughters and no sons. He often wished he could don these buxom "gals" of his in men's trousers and put them to work on the farm; but all they seemed fit for, as he thought, "was to strut upon the pianer, go to dances, and ride his horses." So Farmer Dobs was always in an ill humor with his family, and they were brave enough to "sass back" at the "old man," and have their own way, especially as they were backed by "dear mama," who said they must have a "good time" while they were young.

Well, as the spring work and hot summer weather came on, old Dobs became worse than ever, growling and fussing continually, until Mrs. Dobs up and said, she would take the four girls and clear out for a month's visit in a distant State.

"An' what will I do, with nobody to housekeep?" asked Dobs in astonishment.

"Oh, I'll leave you Nan," replied the good woman.

Now, Nan was the youngest and giddiest of the lot; just about sixteen, full of fun and frolic, and always after a good time, with little thought of household affairs.

"Well—I'll swar!" exclaimed Dobs. "Why, Nan don't know how to cook a pone of corn-bread!"

"Well, she's all you'll have, and you must do the best you can."

Dobs saw his wife and merry daughters leave next day, with rather a disturbed mind, causing him to repent a little of his scolding; but his pleading was of no avail, and off they went.

The house was very quiet with only Nan, who at once dived into the kitchen, while old Dobs sought his field with a sorrowful heart.

He was surprised, after a few days, to see his meals were as plentiful and as regular as ever; indeed, he smacked his lips over his nice coffee and rolls, saying

### I AM NOW BOOKING ANY ORDERS FOR FANCY



for spring shipment. All sired by my famous boars, SIR JOHN BULL and UNCLE SAM. The former imported by me; the latter bred in the purple. I have four strains of registered sows, so I can furnish pigs no akin. Also GILTS and BRED SOWS, FIVE high-bred three-year-old (in the spring) COLTS cheap. Fancy stock, but not fancy prices. Three car-loads good TIMOTHY HAY cheap.

THOS. S. WHITE, Lexington, Va.

## BERKSHIRE PIGS

Now Offered Hereford Cattle, Muscovy Ducks, Shropshire Sheep, Poland-China Pigs.

# C. C. Taliaferro,

NASONS,  
VA.  
1901.

REGISTERED STOCK FARM.



### NOW OFFERS FOR SALE

- HEREFORD CATTLE.**—Calves, entitled to registration, \$75 to \$100. Grade Calves by "Sir Edward" \$25 to \$40.
  - SHROPSHIRE SHEEP.**—Bucks, one year old and over, \$15 to \$20. Ewes, one year to three years old, \$10 to \$12. Buck Lambs, July delivery, \$10. Ewe Lambs, July delivery, \$8.
  - POLAND-CHINA HOGS.**—Pigs, six weeks old, \$4.50. Pigs, three months old, \$7.50. Pigs, five months and over, \$9 to \$15.
  - M. BRONZE TURKEYS.**—Toms, \$3. Hens, \$2.50. Eggs, per sitting of 12, when in season, \$3.
  - MUSCOVY DUCKS.**—Pure White Drakes, \$1.25. Pure White Ducks, 75 cents. Pairs, \$2; trios, \$2.75.
  - ROUEN GESE.**—Ganders, \$2.50. Geese, \$2. Eggs, per sitting, \$2.50.
- WILLIAM L. JR., No. 21054, half brother of Axtell, will serve a limited number of mares for \$25 the season. Mares boarded at lowest figures per month.

they were "first-rate"—a word of praise he had not spoken for many a day. His room was kept neat and in order, and he felt delighted how easy and comfortable he was getting along without Mrs. Dobs.

A few nights afterward, however, during a heavy wind and rain-storm, he was aroused by Nan in the middle of the night, who said she heard the bell of a stray cow, which sounded very near the corn-field. Dobs was in a stew; he holered for Nan to bring the lantern, wondering, "how in the mischief he would get that cow out such a dark night." But Nan had disappeared; so Dobs fumbled around, getting his boots, overcoat and lantern, after much growling, and was just going out into the yard in search of the cow, when Nan rushed in, all wet and muddy, and said, "You needn't go, pap—the cow is in the stable lot all right."

"What?" exclaimed old Dobs; "an' who put her thar?"

"I drove her in myself; she can't get out before morning, so you can go to bed again."

"Well, I'll swar!" exclaimed Dobs in astonishment; "the idea of that gal getting in that stray cow by herself sich a night as this!" and Dobs would hardly believe it until he tramped to the stable lot, and saw the cow safely fixed as Nan had said.

So the next morning he smiled at his daughter proudly and said, "You must take a horse and go to the dance to-night, Nan."

The days continued to pass pleasantly, and Farmer Dobs felt that he never had things to go on so smoothly before; Nan did everything—she's a number one housekeeper, an' knows how to cook, too," he said gleefully to himself.

But one day Dobs had to leave her all alone to go to a distant saw-mill for a load of lumber; he told Nan that he would be away all day, and hoped she would not be afraid to be alone.

"Oh no, Pap, I can stay and take care of things," replied Nan with a merry laugh. So old Dobs and his hired man set off early the next morning. It was late in the afternoon before they began their homeward trip with a heavy load of lumber.

As they drew near, Dobs saw in the direction of his house, a thick cloud of smoke arising as if a field or woods were on fire; he remarked uneasily to his man that it looked as if it was one of his fields which was very near the house. So whipping up the team, they hurried along as fast as possible, and as they drew nearer, he saw that his fears were realized, the woods and field adjoining the house being all on fire. But, to Dobs' astonished gaze, there he saw Nan, all by herself, fighting the fire with a pine brush, keeping it back from encroaching further into the field. Sending his man hastily to her assistance, Dobs tied the team to the fence and also hastened to the scene.

Nan having whipped out the fire in the field, had leaped the fence and was fighting it in the woods. At last, by the efforts of the three, the fire was subdued, and Nan, almost exhausted, reluctantly returned to the house, after seeing that all danger was over.

"Well, I'll swar!" exclaimed Dobs as

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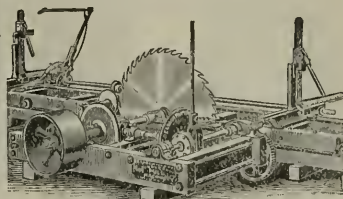
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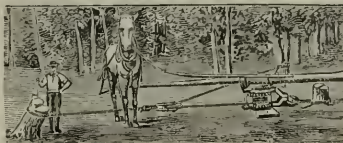
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he viewed the narrow escape of his house. "How did this happen, Nan? Why, gal, you've saved the whole field and the house!"

"Well, some men were hunting in the woods and set fire to the leaves; I happened to see it just in time and ran down to put it out myself, for there was no use in calling for any one a mile off; but it was fortunate you came just in time, for the fire in the woods was getting ahead of me."

"An' you fight it all by your little self! Why, Nan, you're a trump, and have done better than a man could have done."

So old Dobs sat down and wrote his wife how Nan had saved the house, and all her heroic deeds, and wound up by saying—

"You can stay as long as you choose; Nan is a treasure of a gal, an' worth her weight in gold; I will grumble no more; for I see all the girls are doing their best. So they shall have a good time an' ride the horses, for I'm proud of 'em."

So now Dobs brags about his Nan, and says he is glad he has no boys, who, as soon as they grow up, think they are men, get married, and leave; but the one who wants to get his Nan will have to fight for her.

January 1, 1902.

E. C. M.

### THE FARM TELEPHONE.

Traveling through the farming districts, one becomes more and more impressed with the manner in which agriculturists are keeping pace with progressive ideas and improvements. This is especially true in regard to the number of farm telephones in daily use. With one of these installed, the farmer has merely to call up any number he may desire and he can transact business, give orders, get market quotations on all of his products, keep thoroughly informed, etc., without going to town. In the busy season he is enabled to save valuable time and facilitate movements all along the line. He gives orders on the telephone for up-to-date machines, implements and tools of all kinds. The farmer's time is money, and he saves time and money by using the most improved machines and facilities at his command in this age of improvements. The use of the telephone on the farm is aptly illustrated on another page of this issue, where the farmer is shown ordering new McCormick Binders and twine from the dealer.

When writing mention the *Southern Planter*.

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## SOME SUPERIOR CAKE RECEIPTS.

BY MARY WASHINGTON.

Shortly before Christmas, one of the readers of the *Southern Planter* applied to me for a receipt for marsh mallow cake. I did not possess such a receipt at the time, but having taken pains to obtain a good one since, I will now subjoin it for publication, so that other housekeepers, besides the one referred to above, may have the benefit of it.

## MARSH MALLOW CAKE.

The batter is made as follows:  
Whites of 8 eggs, stiffly frothed.  
2 cups of sugar.  
1 cup of butter.  
1 cup of milk.  
3 cups of flour.  
2 teaspoonfuls of baking powder.

*The Filling.*

Whites of 4 eggs, stiffly frothed.  
4 cups of sugar.

Boil the sugar as if for candy, but don't stir it. Drop a little in water, and if it hardens take it off. Pour the sugar very slowly on to the frothed whites, stirring it in: flavor with vanilla. Take a pound of marsh mallows. Break them up, and drop them in the icing, letting them dissolve. Reserve a few, however, to lay on top of the cake. The above proportions are for a layer cake. If you bake the batter all in one mould, half the above amount of icing will probably answer.

Next I will subjoin a new receipt for chocolate cake, obtained from a housekeeper in far-off California. To the best of my knowledge, this receipt has never been published before. At all events, I have never seen it in print.

## CHOCOLATE CAKE, WITH CHOCOLATE IN THE BATTER.

*Part First.*

1 cup of scraped or grated chocolate.  
1 cup of dark brown sugar.  
 $\frac{1}{2}$  cup of sweet milk.  
Place in the stove. Heat thoroughly, but do not boil.

*Part Second.*

1 cup of brown sugar.  
 $\frac{1}{2}$  cup of butter, creamed with the sugar.

Yolks of 3 eggs.  
 $\frac{1}{2}$  cup of sweet milk.  
2 cups of flour.  
1 teaspoonful of soda.  
1 teaspoonful of vanilla.

Add part 1st while warm to part 2nd. Stir all the ingredients well together. Bake in jelly pans. Put the layers together with white icing and cover the top with the same.

When a housekeeper makes a cake that calls exclusively for either the whites or yellows of eggs, it is desirable for her to make, on the same day, some other dish that will utilize the unused half of the egg. As the receipt given above requires only 3 yolks for the batter, the whites can be used for the icing; and when you make a white cake, you can use the yellows of the eggs for lemon pudding or "gold cake."



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COFFEE CAKE.

1 teacupful of molasses.  
 1 teacupful of good liquid coffee.  
 1 cupful of sugar and one of butter,  
 creamed together.  
 4 cupfuls of flour.  
 1 teacupful of powdered cinnamon  
 and one of cloves.  
 1 teacupful of cream of tartar and  $\frac{1}{2}$   
 teacupful of soda.  
 1 pound of raisins,  $\frac{1}{4}$  pound of citron.  
 3 eggs,  $\frac{1}{2}$  wine glass of brandy.

SPONGE CAKE WITH LEMON FILLING.

Make a batter as for ordinary sponge  
 cake, using 3 cups of lightly sifted flour  
 3 cups of sugar and 10 eggs, but bake  
 the batter in jelly cake pans instead of in a  
 large mould. The filling is prepared as  
 follows:

Beat up 3 eggs, yolks and whites sepa-  
 rately. Add a large teacup of white su-  
 gar to the yolks, the juice and grated rind  
 of 2 lemons and a heaping table-spoonful  
 of butter. Put the mixture in a sauce-  
 pan inside a larger vessel filled with hot  
 water. Keep it on the stove until it be-  
 comes as thick as honey. Then take it  
 off, let it cool, and spread it between the  
 layers of sponge cake.

DELICIOUS LADY CAKE.

1 pound of sugar, 1 light pound of flour  
 $\frac{3}{4}$  pound of butter, the whites of 14 eggs—  
 1 pound of powdered almonds (blanch-  
 ed).  
 1 teacupful extract of bitter almonds.  
 1 glass of brandy.  
 Bake in a mould or in cups. Cover  
 with white icing. The above cake will  
 be still more delicate if you substitute  
 corn starch for flour.

THE POINT OF VIEW.

Much in this life depends upon the  
 point of view. Here is a story which  
 aptly illustrates this:

At one of the reunions of the Army  
 of the Cumberland, several ex-officers of  
 the Union army fell to discussing the  
 wounds they had received during the  
 Civil War. At last one of their number  
 turned to Colonel B—, a tall, fine,  
 soldierly looking man, who had re-  
 mained silent during the discussion, and  
 said:

"Well, Colonel, you seem to be the  
 only one of the party who escaped unin-  
 jured."

"Oh, no, I didn't," answered the Col-  
 onel quickly; "I was shot at Antietam.  
 A bullet went through my nose, taking  
 the gristle out." He wiggled his nose  
 from side to side to prove the truth of his  
 statement.

"Ah, well, you were quite fortunate,  
 after all," said Major M— consolingly;  
 "if the bullet had struck a half inch  
 farther in your soul would have been  
 launched into eternity."

"Yes," said the Colonel, "and if the  
 blamed thing had gone a half inch far-  
 ther out it wouldn't have hit me at all."  
 —V. F. HOWARD, in January Lippincott's  
 Magazine.

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Notwithstanding all arguments as to purity and the like, what the buyer of paint wants is protection and beauty for his property, and the better and the longer a paint will give him these for a given outlay the better is for the buyer. To beauty, durability and economy it is now generally acknowledged by all disinterested authorities, zinc white is essential in paint. Good paint—good, as above defined—cannot be made without it; but, on the other hand, it must be admitted, plenty of bad paint is made with it. The whole question then resolves itself into a matter of honor among paint manufacturers. People do not acquire a reputation for honesty, nor do goods acquire a reputation for quality without substantial reason. Reputation is nothing but accumulated evidence become current.

It follows that the paint buyer can safely bank on the paint-makers' reputation. If a house have the reputation for making superior paints it is safe to accept that reputation as evidence of a fact. With such paint usually goes a guarantee of quality and service such as cannot be had with any other paint materials. It is thus possible to buy paint without "buying trouble."


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**PURE COCOANUT CANDY FOR CHILDREN.**

Take one pint of sugar, a quarter of a pint of desiccated cocoanut, and a quarter of a pint of milk. Boil these ingredients in a granite-ware or porcelain-lined sauce pan for five minutes. Remove from the fire, set the sauce pan in a dish of cold water, and stir briskly until the mixture is creamy. Pour on a lightly buttered dish and mark in squares while warm, so that it may be easily broken when cold. Cocoanut cakes are very easily made, and would be a variety. Beat the whites of two eggs to a stiff froth; add gradually a small cupful of sugar, the same quantity of cocoanut, either desiccated or freshly grated, and one table-spoonful of flour. Drop on a buttered tin in small round cakes and bake for five minutes in a quick oven.—January Ladies' Home Journal.

Never forget that what is good for one person may not be good for another. And always use as goodly a share of common sense in the decision of any question concerning your health as you would in any of the other problems of your life.—January Ladies' Home Journal

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A statement has been going the round of the press to the effect that nearly all the comb honey on the market is manufactured by a "cute machine," that the combs are filled with glucose and capped over by a mechanical process. The facts are, there is no such thing as manufactured comb honey anywhere in the United States, and in proof of this the publishers of leading bee journals of undoubted responsibility offer one thousand dollars for evidence to show that comb honey is manufactured, or that such an article is for sale in the open market. Although this offer has been out for fifteen years and has been duplicated by other responsible persons connected with the industry of bee-keeping, no one has ever seen fit to take it up.

The United States Department of Agriculture has put out several published statements denying the existence of manufactured comb honey, and the American Grocer, the leading trade organ of its class, assures its patrons that all the comb honey on the market is absolutely the product of the bee.

Excepting chickens, more people own swine than any other farm animal. The hog has come to be one of the great factors in the financial world, as the prices of hog products affect a long line of other commodities. On the farm, Mr. Pig is either kept to furnish the family meat supply or is bred in large numbers for market. The readiness with which money can be realized from this source has greatly stimulated the swine industry, and to day the hog is the most profitable animal kept on the farm. Every swine-grower needs a practical, up-to-date swine paper. Blooded Stock, Oxford, Pa., is a practical monthly swine paper, and should be in the hands of every reader of this journal. It is adding thousands to its subscription list because of its common-sense business ideas. Blooded Stock is making special inducements in their advertisement on another page. Write to-day for trial subscription or sample copy.

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**Our PHOTO DEPARTMENT** is also complete with CAMERAS, KODAKS and PHOTO SUPPLIES. Developing and printing finely executed.

Our line of GRAPHOPHONES, with latest records, OPERA GLASSES, FIELD GLASSES, Incubator and Dairy THERMOMETERS, etc., etc., is also complete. Lowest charges in all cases.

THE S. GALESKI OPTICAL CO., 9th and Main Sts., Richmond, Va.

WHOLESALE PRICE ON AGRICULTURAL CHEMICALS AND FERTILIZERS.

AMMONIA.

Nitrate of soda, spot, per 100 lbs.	\$ 2 00
Nitrate of soda, futures, per 100 lbs.	2 00
Cotton-seed meal, per ton, c. i. f. N. Y.	26 00
Sulph. ammonia, spot.	2 85
Sulph. ammonia, shipment.	2 87½
Dried blood, New York, low grade.	2 25
Dried blood, Western, high grade, fine ground.	2 30
Tankage, per unit.	2 25

PHOSPHATES.

Acid phosphate, per unit.	60
Bone black, spot, per ton.	16 00
Bone bone, per ton.	17 00
S. C. phosphate rock, ground, per 2,000 lbs.	5 50
S. C. phosphate rock, undried, f. o. b. Ashley River, 2,400 lbs.	3 25
do. do. do. dried.	3 50
Florida high grade phos. rock, f. o. b. Fernandina, per ton.	7 00
Florida land pebble phos. rock, f. o. b. Fernandina, per ton.	4 00
Tennessee phosphate, f. o. b. Mt. Pleasant domestic.	3 50
do. do. foreign.	4 00

POTASH.

Kainit, future shipment, per ton.	9 05
Kainit, ex-ship., in bulk, per ton.	9 30
Keiseret, future shipment, per ton.	7 50
Mur. potash, 80 p. c., future shipment.	1 83
Mur. potash, 80 p. c., ex. store.	1 90
Double manure salt (48 a 49 per cent. less than 24 per cent. chlorine), to arrive, per lb.	1 12
do. do. do. spot.	1 16
Basis 48 per cent.	
High grade manure salt (90 a 93 per cent. sulphate potash), to arrive.	2 14
Basis 90 per cent.	
Manure salt, in bulk, 20 per cent. per unit, O. P.	66
-N. Y. Jour. of Commerce, Feb. 25, 1902.	

A man going by train selected a comfortable first-class compartment, put his bag and stick in one of the corners and went to buy some papers. When he got back he found his things had been removed, and that a lady occupied the corner he had chosen. He requested her to move, but she would not; he asked her again, and she refused, so he stormed and raged, and so did she, but he insisted on having his corner. At last the lady said: "Sir, do you know who I am? I am one of the director's wives." "Madam," he replied, "I should not mind if you were the director's only wife!"

LIFE, ACCIDENT AND HEALTH INSURANCE.

52nd ANNUAL STATEMENT

(CONDENSED)

**Ætna Life Insurance Company,**  
HARTFORD, CONN.

MORGAN G. BULKELEY, President.

Assets, January 1, 1902.	\$ 59,609,691.17
Premium receipts in 1901.	9,219,773.26
Interest receipts in 1901.	2,689,878.34
Total receipts in 1901.	11,909,651.60
Payments to Policy holders in 1901.	6,052,721.21
Reserve, 4% Standard on Old Business, and 3½% on Policies issued in 1901, and all claims.	52,270,264.92
Special Reserve, in addition to Reserve above given.	2,016,345.00
Guarantee Fund in excess of Requirements by Company's Standard.	5,323,081.25
Guarantee Fund in excess of Requirements by Standard of Conn. and other States.	7,367,332.25
Life Insurance issued and revived in 1901.	25,141,075.00
Life Insurance in force January 1, 1902.	201,278,283.00
Accident Insurance in force January 1, 1902.	182,998,619.33

Paid Policy Holders since organization, \$126,015,874.20

W. W. HARDWICKE, Gen. Agt. Life Dept.  
J. B. MOORE & CO., Gen. Agt. Accident Dept.  
RICHMOND, VA.

\* VIRGINIA DIVISION. \*

Farmers Mutual Benefit Association.

A Fire Insurance Association, chartered by the State for the farmers of Virginia, under an amended and well protected plan.

Insures against Fire and Lightning, only country property—no stores or unsafe risks. Average cost per year for three years has been \$3.66½ per \$1000, including dwellings, barns, produce, &c.,—about one-third the usual cost of insurance to farmers. Amount of property insured \$325,000. Estimated security in real and other estate, \$600,000.

For further information, address,  
MENTION THIS JOURNAL.

CHAS. N. FRIEND, General Agent,  
CHESTER, VIRGINIA.



17-20  
**BALL-BEARING.**  
All steel disc harrow, earliest running & best made. Fits the Steel Beam sows, discs 18 or 20 in. in diameter. Pay double, you get no better.



\$7 150  
for steel beam sowing machine, cuts 10 ft.; 60 teeth, 2 sections; also 3 & 4 sections.  
\$2-15  
Buy the Steel Beam sowing machine, plain, with 2 sections. Sprays to 33 ft. 20 styles cultivators.



\$6-50  
For Garden Drill. Man weight garden tool drills or plants in hills all kinds of garden seed, corn and beans. Furnished complete with 10 cultivator attachments only \$7.90. Send for free catalog.



\$28.75  
for Calumet check row planter with automatic reel and 50 rods of wire. Never misses, drops in hills and drills. We challenge the world with this planter. Will ship it on trial to anyone for grading all kinds of seeds. Also the sharp-pointed Drill for field and garden.



\$2-80  
The Champion grinder grinds feed, sickle in 10 minutes. Grinds feed and pointstems in 10 minutes. With one stone for sickle, \$2-80; with two stones for grinding all kinds of feed, \$3-50. Also the sharp-pointed Drill for field and garden.



\$1.75  
for this Farm Bell. All steel. We have all kinds of scales, steel bearings, brass bearings, steel accop. We arranged accurate. We have all kinds of scales, steel bearings, brass bearings, steel accop. We arranged accurate. We have all kinds of scales, steel bearings, brass bearings, steel accop. We arranged accurate.



\$8.65  
for 40 ft. 11ay Carrier outside. One carrier, 1 foot, 13 ft. 1/2 in. rope, 5 floor books, 3 pulleys. Wood, steel and cable track outside any length. All warranted.

\$1.15  
Farm Bell. All steel. We have all kinds of scales, steel bearings, brass bearings, steel accop. We arranged accurate. We have all kinds of scales, steel bearings, brass bearings, steel accop. We arranged accurate.

Marvin Smith Co., 55-57-59 N. Jefferson St., Chicago.

# Seasonable AGRICULTURAL IMPLEMENTS



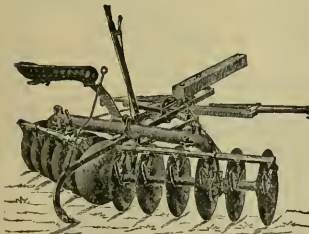
Special prices given on Studebaker and Brown Wagons, Buggies and Carts.



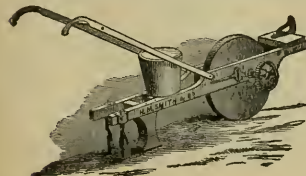
Studebaker Buggies, all styles, Studebaker Carriages, Studebaker Carts, Studebaker Runabouts.



One and Two-Horse Planters, Plain or with Fertilizer Attachment.



TIGER DISC HARROWS—all sizes, and styles—one or two levers.



Among the prominent agencies represented by us are the following :

- Genuine Oliver Chilled Plows and Repairs.
- Genuine Farmers' Friend Plows. Subsoil Plows.
- Studebaker and Brown Farm Wagons, Carts and Buggies.
- Land Rollers and Harrows.
- Tiger Disc Harrows and Bement Disc Cultivators.
- Full line of Brown Walking and Riding Cultivators.
- A full line of Scientific Crushing and Grinding Machinery.
- Ross Feed Cutters, Horse Powers, Grinders, Wood Saws and Carriers.
- Milwaukee Hay Tools and Corn Huskers and Shredders.
- Champion Mowers, Reapers and Binders, Hay Rakes and Twine.
- Buckeye Iron and Wood Pumps.
- I X L Wind Mills.
- Superior Grain Drills.
- Aultman & Taylor and Frick Threshing Machines, Engines and Saw Mills.

All Goods Guaranteed First-Class.



The SCIENTIFIC Grinding Mills.

Are unequalled for grinding Ear Corn, shucks on or off, Corn, Oats, Wheat and all other grains, singly or mixed. Power mills in five sizes 2 to 30 horse power. Sweep mills in 2 styles. Geared mills in 4 styles.



LITTLE GIANT CORN SHELLER.

The frame is made of thoroughly dry hard wood. The joints mortised, tenoned and bolted. The bearings are bolted on to the frame instead of screwed. The iron work is made from the very best material, and every piece is carefully inspected before being put on. This machine is high grade all the way through. It is handsomely painted, striped and varnished.

We trust to receive the liberal patronage which has been bestowed on the late Mr. Hunter, and wish to assure all of liberal treatment and careful attention to any of their favors.

REMEMBER, we are at the same old stand with the same reliable line of Implements

## DISC HARROWS AND DISC CULTIVATORS.



50-Tooth, Folded for the Road.



40-Tooth, Ready for the Field.

Write For Our New Illustrated 1902 Catalogue and Prices.



## ROSS

Fodder Cutters, Fodder Shredders, Cutters for all purposes, Corn Shellers, Grinding Mills, Horse Powers and Wood Saws.

**HENING & NUCKOLS,**  
Successors to CHAS. E. HUNTER,  
1436-38 E. Main St., RICHMOND, VA.

## WHEN ABROAD, SPEAK ENGLISH.

HE WHO ATTEMPTS A FOREIGN TONGUE  
MAY GET INTO A PREDICAMENT  
SIMILAR TO THIS.

The English-speaking tourist who wastes half an hour of time, temper and energy in trying to make some dweller in a foreign land understand his bad French or Spanish, only to be shocked at length by some such a question as "Can't you speak English?" is almost as common nowadays as the track-walking tragedian. This is a little story of his experience in Spain, as told by "The Dominic," in the March Ladies' Home Journal:

"One day we all entered a little shop in Madrid and 'The Captain' began to speak in Spanish to the girl who was behind the counter. She failed to understand, and he tried again. Once and again he tried and tried, and summoned up his whole vocabulary. At last in his attempt to make his meaning plain by illustration he drew from his pocket-case a card, and with it stroked his chin. The girl fell into fits of laughter, and in perfect English said, 'Oh! what you want is a fine-tooth comb.'"

ENGLISH SPARROWS ARE  
MISJUDGED.

WE ATTRIBUTE THE RESULTS OF OUR OWN  
SHORTCOMINGS TO THESE LITTLE  
BIRD-GAMINS.

A great deal of nonsense is talked about sparrows driving away other birds. Like the downtrodden Italian and other peasants from the Old World, the sparrows are prepared to live here where others would starve. They kill no birds. We are too wont to attribute the results of our own misdeeds or shortcomings—the barbarities of millinery fashions, wanton slaughter masquerading as sport, the lack of good bird laws and the enforcing of them where they quarrelsome little feathered gamins. Fitted to survive after centuries of competitive struggle, they cannot be exterminated. As well try to eliminate that other triumphant European immigrant, the daisy, from our fields.—Neltje Blanchan, in the March Ladies' Home Journal.

## ALL PROVISION MADE.

"A man has just dropped dead in the ready-made clothing department," said a new clerk in the big department store, running up excitedly to the floor-walker.

"Have him taken to the cemetery-lot department with the undertaking annex, fourteenth floor front," he replied briskly.—March Lippincott's Magazine.

"De reason some of us does n' git along," said Uncle Eben, "is dat we sits down dreamin' of automobiles when we order to be pushin' a wheelbarrow."

If a Western person meets you anywhere on this small globe, and likes you, he always asks you to come and see him if you ever happen to be within a thousand miles of his house.—March Ladies' Home Journal.

# LEE'S PREPARED AGRICULTURAL LIME

The Old Reliable for COTTON, PEANUTS,  
WHEAT, OATS, CLOVER and OTHER GRASS;  
has stood the test for twenty-five years.

## PLAIN SHELL LIME

Constantly on hand at lowest prices.

## LEE'S EXCELSIOR TOBACCO FERTILIZER.

With it crops as good as any on the market stood the dry hot summer without burning.

## SPECIAL WHEAT AND CORN FERTILIZERS.

Agents for CAYUGA BLUE LAND PLASTER,  
a very superior fertilizer with the best analysis.

General agents for BLACK DEATH—BUG, WORM and IN-  
SECT KILLER. Certain death to Tobacco Worms, Potato Bugs,  
Cabbage Bugs, and worms and all insects that feed on the leaves  
of fruit or other trees.

Address A. S. LEE & SON,  
Richmond, Va.

ORGANIZED 1832.

# THE VIRGINIA FIRE AND MARINE INSURANCE CO.

RICHMOND, VIRGINIA.

ASSETS, - - \$800,000.

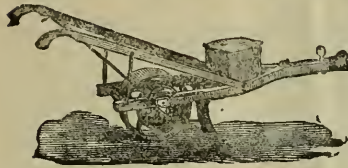
WM. H. PALMER, PRESIDENT.

W. H. McCARTHY, SECRETARY.

DIRECTORS: Wm. H. Palmer, D. O. Davis, E. B. Addison,  
Wm. Josiah Leake, W. Otto Nolting, N. W. Bowe.

When corresponding with Advertisers, always mention  
The Southern Planter.

# The EVANS Corn Planters



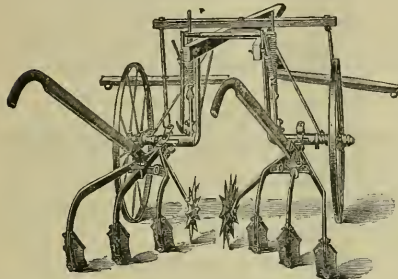
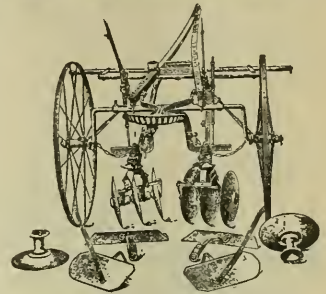
Are noted for their **SIMPLICITY** of **CONSTRUCTION** and **ACCURACY OF DROP**. Plates are furnished to plant any desired distance and fertilizer drilled in any quantity. Extra plates for P-as, Beans, etc., furnished at small cost.

**THE TWO-ROW PLANTER** is made entirely of steel, and after ten years of test is acknowledged the best made. A special feature

of this year's machine is the arrangement for preventing the distribution of fertilizers when not needed, by use of a foot lever.

**THE DISC CULTIVATOR** is receiving its share of attention from farmers who know the economy of buying the greatest labor saving implements.

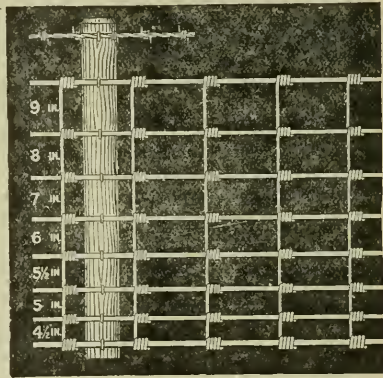
**THE TIGER DISC CULTIVATOR** with its ball bearing, pivot tongue, staggered spoke wheel (compare these wheels with the cheap wheels on other makes), and gangs that can be changed almost instantly to throw either to or from the center, is the most desirable made. Middle discs are furnished to change into Disc Harrow.



**THE PENN SIX SHOVEL STEEL WALKING CULTIVATOR** for cultivating crops in rows, and with the seventh or middle shovel is very useful for preparing land as well. This harrow furnished also with Spring Teeth instead of shovels.

**AMERICAN FIELD FENCING** made in many heights and styles for turning the smallest to the much more desirable.

largest animal. Just as cheap as Barb Wire and prices. Write for special catalogue and prices.



**IMPERIAL CHILL PLOW.** If you have never used one try it and be convinced that it stands without an equal. Territory given to good agents.



this setter, and 998 out of every 1,000 will grow. Write for testimonials and prices.

**BISSELL PLOWS.** We have sold them for many years, and they have given splendid satisfaction. We are overstocked on several sizes, and are going to offer special inducements for the next thirty days. Write for catalogue and prices.

**MASTER PLANT SETTER** will set water and fertilize more plants than three men can do by hand. Don't wait for show-ers, but plant your tobacco, cabbage, tomatoes, strawberries, and sweet potatoes with

Disc, Cutaway, Lever, and Spring-Tooth Harrows, Land Rollers, Baling Presses (for hand or power), Wagons, Fanning Mills, Pea and Bean Hullers, Engines and Saw-Mills, a full line of solid and inserted tooth Saws in stock. Write for descriptive catalogue.

**CARRIAGES AND BUGGIES, HARNESS AND SADDLES.** Our stock is acknowledged by all who have inspected it to be without a rival in the South. Do not waste time elsewhere, but come where you can rely on being suited, or write for illustrated buggy catalogue.

## THE IMPLEMENT COMPANY,

1302 and 1304 East Main Street, - RICHMOND, VA.

# Our Clubbing List.

The following list of papers and periodicals are the most popular ones in this section. We can SAVE YOU MONEY on whatever journal you wish.

DAILIES.	PRICE	WITH
	ALONE.	PLANTER.
The Dispatch, Richmond, Va.....	\$5 00	\$5 25
The Times, " " " " " " " " " "	3 00	3 00
The Post, Washington, D. C.....	6 00	6 00

SEMI-WEEKLIES.	PRICE	WITH
The Dispatch, Richmond, Va.....	1 00	1 25
The World (thrice-a-week), N. Y.....	1 00	1 25

WEEKLIES.	PRICE	WITH
Harper's Weekly.....	4 00	4 00
" Bazaar.....	1 00	1 40
Montgomery Advertiser.....	1 00	1 00
The Baltimore Sun.....	1 00	1 35
Breeder's Gazette.....	2 00	1 75
Hoard's Dairyman.....	1 00	1 35
Country Gentleman.....	1 50	1 75
The Times, Richmond, Va.....	50	65
Religious Herald, Richmond, Va....	2 00	2 25
Central Presbyterian, " " " " " "	2 00	2 50
Christian Advocate, " " " " " "	1 50	1 75
Turf, Field and Farm.....	4 00	4 00
Spirit of the Times.....	4 00	4 00
Horseman.....	3 00	3 00

MONTHLIES.	PRICE	WITH
North American Review.....	5 00	5 00
The Century Magazine.....	4 00	4 25
St. Nicholas " " " " " " " " " "	3 00	3 25
Lippincott's " " " " " " " " " "	2 50	2 50
Harper's " " " " " " " " " "	4 00	4 00
Forum " " " " " " " " " "	3 00	3 25
Scribner's " " " " " " " " " "	3 00	3 25
Frank Leslie's " " " " " " " " " "	1 00	1 35
Cosmopolitan " " " " " " " " " "	1 00	1 35
Everybody's " " " " " " " " " "	1 00	1 35
Munsey " " " " " " " " " "	1 00	1 35
Strand " " " " " " " " " "	1 25	1 65
McClure's " " " " " " " " " "	1 00	1 35
Puritan " " " " " " " " " "	1 00	1 35
Review of Reviews.....	2 50	2 75
Leisure Hours.....	1 00	1 25
Blooded Stock.....	50	50

Where you desire to subscribe to two or more of the publications named, you can arrive at the net subscription price by deducting 50 cents from "our price with the Planter." If you desire to subscribe to any other publications not listed here, write us and we will cheerfully quote clubbing or net subscription rates.

Subscribers whose time does not expire until later can take advantage of our club rates, and have their subscription advanced one year from date of expiration of their subscription to either the Planter or any of the other publications mentioned.

Don't hesitate to write us for any information desired; we will cheerfully answer any correspondence.

We furnish no sample copies of other periodicals.

# Seed House of the South.

- RED CLOVER.
- MAMMOTH CLOVER.
- CRIM'ON CLOVER.
- WHITE CLOVER.
- LUCERNE CLOVER.
- ALSTKE CLOVER.
- BOHARA CLOVER.
- JAPAN CLOVER.
- RUB CLOVER.



- TIMOTHY ORCHARD GRASS.
- BED TOP or HERDS GRASS.
- KENTUCKY BLUE GRASS.
- RANDALL GRASS.
- TALL MEADOW OAT GRASS.
- JOHNSON GRASS.
- GERMAN MILLET.
- BUCKWHEAT.
- OATS and CANE SEED.

"Whatsoever One Soweth, That Shall He Reap."

We sell strictly reliable FIELD AND GARDEN SEEDS of every variety at Lowest Market rates, included in which are RAGLAND'S PEDIGREE TOBACCO SEEDS.

WE ALSO SELL

## Our Own Brands of Fertilizers

For Tobacco, Corn, Wheat, Potatoes, &c.

Pure Raw-Bone Meal, Nova Scotia and Virginia Plaster and Fertilizing Materials generally.

Parties wishing to purchase will find it to their interest to price our goods. Samples sent by mail when desired.

**Wm. A. Miller & Son,** 1016 Main Street LYNCHBURG, VA.



# Japan Plums

And all other desirable standard and new varieties of PLUMS, APPLE, PEACH, PEAR and ORNAMENTAL TREES, SHRUBS, ROSES, Etc.

**HEADQUARTERS FOR TENNESSEE PROLIFIC STRAWBERRY.**

The Most Reliable Variety Ever Grown in the South.

Three hundred and fifty acres under cultivation. Write us if you contemplate planting. Catalogues free.

AGENTS WANTED. WRITE FOR TERMS.

**W. T. HOOD & CO.**

OLD DOMINION NURSERY.

RICHMOND, VA.

# THE STAR CORN PLANTER

Every year improved as each season suggests. In no year has it been equaled by any planter made. Last season the demand could not be supplied. But that it might be misconstrued we would name the planters that are represented each year, as "the same thing," "just as good," etc.

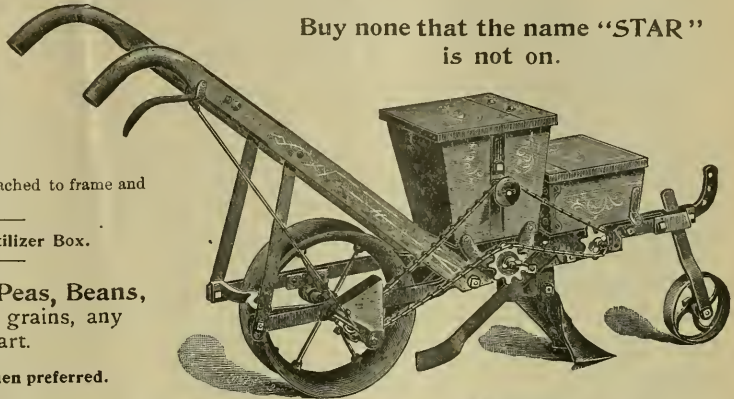
## NOTICE CAREFULLY IMPROVEMENTS FOR 1902.

**ROUND METAL GRAIN HOPPER** placed behind fertilizer box that every grain can be seen as it falls, instead of wood box in front as shown. Chain tightener is attached to frame and not to box.

With or without Fertilizer Box.

Drills or drops **Corn, Peas, Beans,** etc., any number of grains, any distance apart.

With **Runner Opener** when preferred.



Buy none that the name "STAR" is not on.

## ASHTON STARKE IMPLEMENT HOUSE, RICHMOND, VA.

1902. - IN THE STUD. - 1902.

**KELLY, 22283. Record, 2:27.**

(See American Trotting Register, Vol. XV.)

**Bay Horse; Foaled 1889.**

Sired by Electioneer 125. First dam, Esther, dam of Expressive 3, 2:12½; Express, 2:21, etc.; by Express. Second dam, Coliseum, by Colossus.

(For further extension of pedigree, see Stud Book.)

**NOTE.**—Kelly is not only richly bred, but he represents the highest type of a trotter, having grand size and the form and finish of a thoroughbred. He is the sire of McChesney, 2:16½.

**FEE, \$25 the season, with usual return privilege.**

Address

**JAMES COX, OWNER.**

Belgravia Farm, Mt. Jackson, Shenandoah Co., Va.

1902. **WHALEBONE, 7872.** 1902.

Winner of Stallion Stakes at Suffolk, Va., defeating W. A., Modoc, Magnetizer and Dynamite.

**Standard, Registered in Vol. XV., A. T. R.**

Sired by Abdallah Wilkes, son of George Wilkes, 2:22. Dam Maggie O., by Abdallah, 15, sire of Goldsmith Maid, 2:14; second dam Viley Filly, by Pilot, Jr., sire of dam of Maud S., 2:08½.

**NOTE.**—Whalebone is a richly colored bay horse of fine size, handsome well formed and with the purest of trotting action. His disposition is perfect. He has sired Visitor, 2:26½, and other winners.

**FEE, \$15, with usual return privilege.**

Address

**W. J. CARTER, OWNER,**

P. O. Box 929, RICHMOND, VA.

Pedigrees traced and tabulated. Catalogues compiled and circulars prepared. Special attention given registration matters pertaining to thoroughbred and trotting horses

..BY..

**W. J. CARTER (Broad Rock,)**

P. O. Box 929, RICHMOND, VA.

Correspondent of

RICHMOND TIMES, Richmond, Va.  
SOUTHERN PLANTER, Richmond, Va.  
SPIRIT OF THE TIMES, New York.  
KENTUCKY STOCK FARM, Lexington, Ky.

**REFERENCES.**—Mr. A. B. Gwathmey, Cotton Exchange, New York; Mr. W. N. Wimer, of Wilmer & Canfield, Lawyers, 49 Wall St., New York; Col. K. M. Marchison, Banker, Wilmington, N. C.; Mr. L. Banks Holl, Proprietor Onelda Cotton Mills and Alamance Farm, Graham, N. C.; Col. B. Cameron, Fairntosh Stud Farm, Stagville, N. C.; Maj. P. P. Johnson, President National Trotting Association, Lexington, Ky.; Mr. Thos. N. Carter, President Metropolitan Bank, Richmond, Va.; Mr. Jas. Cox, Belgravia Stock Farm, Mt. Jackson, Va.; Capt. John L. Roper, Foxhall Stock Farm, Norfolk, Va.; Capt. E. J. Hancock, Ellerslie Stud Farm, Charlottesville, Va.; Sam'l Walton, Walton Farm, Falls Mills, Va.

James W. White.

Joseph F. White.

## J. W. WHITE & SON,

1318 E. Main St., RICHMOND, VA.

### Carriage Hardware, Coach Colors and Varnish

Large stock to select from, and orders solicited both at wholesale and retail.

R. A. CARTER, Salesman.

# If You Want YOUR GOOSE TO LAY "THAT GOLDEN EGG"

FEED HER ON MY GRAIN. You must also use my brain stimulator.

**DURING THIS WINTER SEASON** I am going to offer my friends and customers the most complete stock of GROCERIES, FEED and LIQUORS that has been seen by the purchasing public during the period of their existence. Bargains, gifts and donations—that is what you may properly call them, because we have not taken into consideration the price. Cost cuts no figure with us; all we want is your orders, and you get \$3.00 worth of goods for \$2.00 in cash; here is a sample:

**COTTONSEED HULLS, the finest winter feed known to the dairyman; it is wholesome, pure, fattens stock, and keeps them so; per ton, \$8.00. It is cheap at \$12.00. Order a couple of tons for sample.**

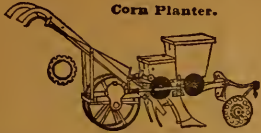
Order your **GOODS THIS YEAR** from D. O'SULLIVAN, Richmond, Va. \$25,000.00 worth of Groceries are on the shelves and in the warehouses to be sold regardless of cost price. Stop paying two prices. You can buy your goods at wholesale prices from us, no matter how much you want or how little you need. Send me your orders. Send for my beautiful price list, showing what you can purchase for a few dollars; we mail it free on application.

**60,000 bus. Finest Corn, 80c. 30,000 bus. Oats, 57c.**  
**SEEDS OF ALL KINDS. Write for Catalogue.**

800 sacks Salt, large sacks.....	1.00	Culpeper Creamery, in any quantity, per pound.....	.18	Large jars French Mustard.....	.10
Lump Salt for stock, per lb.....	.01	Gelatine, per package.....	.09	Large bottles Catsup.....	.08
Bread Soda, per lb.....	.02	100 Fine Key West Cigars.....	2.10	Finest Home-made Cakes.....	.03
200 bags best Laguayra Coffee.....	12	Only 2 cents for a 10 cent Cigar.		Fresh Milk Biscuits.....	.05
These Coffees are 2 cts. cheaper than the market price. We have a large stock and want to sell.		Plantation Cigars, 100 in a box.....	1.10	French Candy in 30 lb. buckets, lb.	.05
500 half barrels White Fish.....	3.25	Fine Heavy Brooms.....	.25	Royal Baking Powder, box 4-lb.....	.24
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80 bags Navy Beans, bushel.....	2.25	Bath Bricks, for scouring.....	.05	Good Luck Baking Powder, doz. 1/2 lb.	.43
Rock Candy Syrup, per gal.....	.30	7 bars Octagon Soap.....	.25	Nutmegs, 5 for.....	.03
Sugar-house Syrup, per gal.....	.20	120 cakes fine Laundry Soap.....	2.50	Mustard, large boxes.....	.10
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Old Northampton Apple Brandy (6 years old).....	2.00	6 doz. boxes Matches (72).....	.25	8 lbs. Laundry Starch.....	.25
McDermott's Malt Whiskey, large quart bottles, full strength, fine flavor. Sure cure for consumption, coughs, colds, or weakness; cures chills, fever and ague, and nervousness, per bottle.....	.85	3 cakes Sapollo.....	.23	We are agents for a specially prepared Juniper Gin, a sure cure for kidney troubles. It has cured 100 of our customers. Order a quart at \$5. \$1.75 gal. No charge for packages.	
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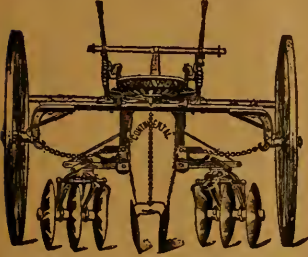
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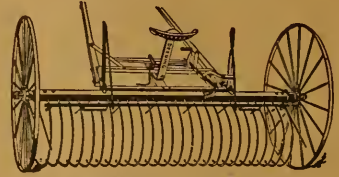
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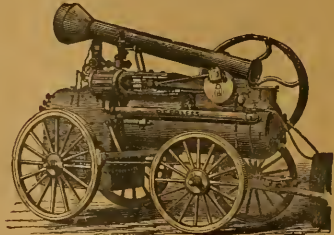
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# Southern Planter

A MONTHLY JOURNAL

DEVOTED TO

Practical and Progressive Agriculture, Horticulture,  
Trucking, Live Stock and the Fireside.

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J. F. JACKSON, Editor and General Manager.

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Agriculture is the nursing mother of the Arts.--XENOPHON.

Tillage and pasturage are the two breasts of the State.--SULLY.

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63d Year.

Richmond, April, 1902.

No. 4.

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## Farm Management.

### WORK FOR THE MONTH.

The month of March has up to the date of this writing (21st), been like those of December, January and February, cold, dry and unseasonable, and work in preparing for the seeding of crops and actual seeding is nearly a month behind what is usual at this time of the year all through the South. It has been almost impossible, except upon high dry land, to do anything at all until within the last few days, when some plowing and seeding of oats and grass and clover became possible. Upon lowlands it has been possible so far to do nothing except in very limited sections. We have letters from all over this State and North Carolina making complaint of the lateness of the season and of the serious destruction of wheat, winter oats, grass and clover. These conditions seem also to apply largely in other sections, as we notice from our exchanges that much land seeded with wheat in the fall is in the Middle and some of the Western States being replowed for corn. It is too early yet to say what is the condition of the wheat crop in the North Western States, as it is still covered with snow. We apprehend, however, that as a whole the area and condition of the winter wheat crop is not going to be a satisfactory one in comparison with the past two or three years.

Whilst many of our friends write us that they still intend to seed oats, and are re-seeding grass and clover, we confess that we doubt very much the policy of this action. It may be that the lateness of the season is

going to persist into May or June, and if so, there will still be time for oats seeded now to make sufficient root growth to withstand the hot weather and make a crop, but should May be as warm as we have often known it the chances will be greatly against the making of a satisfactory crop. As the oat crop is largely grown in the South merely as a forage crop, we are of opinion that policy would dictate the substitution of some other and later crop for this purpose. There is no section of the country where a greater variety of forage crops can be grown than in the South, and very many of these are not only in themselves more nutritious than the oat-hay crop, but will give a much greater yield per acre, whilst at the same time they can be produced without depleting the fertility of the land to the extent to which the oat crops depletes it, for oats have the power to secure plant-food where other crops would fail to do so, we would urge that it is not wise at this late season to persist in seeding oats. Let the land that was intended to be in oats rest until the corn land is got ready and the crop sown, and then break the oat land and fit it well and put it into sorghum, soy beans or cow-peas, or a mixture of sorghum and cow-peas, and out these crops for hay when partially grown, and follow with another crop of cow-peas and sorghum. In this way much more fodder can be made and delay will not injure the possibility of making a good corn crop. In a recent circular Mr. Coburn, the Secretary of the Kansas State Board of Agriculture, shows how the growing of Kaffir

corn and sorghum for forage has helped the farmers of that State to tide over the failure of their corn crop last year, and has added millions to the wealth of the State. We can easily make good the failure of the winter oat crop in the South by the same means, and do it with increased profit to our farmers.

The work of preparing the land for and planting the corn crop should now engage the constant attention of farmers. One great cause, probably the most potent cause, of the small average yield of corn throughout the South where not more than an average of twenty bushels to the acre is made in Virginia and much less in North and South Carolina, is poor preparation of the land previous to the planting of the crop. This and not lack of fertilizer or of natural plant food in the soil is the prime cause of failure to make a profitable corn crop. Too often the only preparation for the crop is a partial plowing of the land. A couple of furrows are plowed and the seed planted on this ridge, and the middles of the rows are left to be plowed after the crop is growing. Corn, so planted, is not going to pay for even this small modicum of labor. The corn plant is one with a wide spreading root system, and if it is to be grown profitably, must have the land so deeply and finely broken that this root system may not only be able to extend in all directions but be invited to do so by the finely broken condition of the soil. In land prepared as it ought to be for a corn crop, the roots of each plant will extend, frequently, nine feet in every direction from the plant by the time the tassel forms and the ear shoots. In some cases experiments have shown that it will even extend beyond this limit. Consider, for a moment, what an enormous feeding ground this wide extension of the root growth affords to the plant, and then it will be easily possible to understand how greatly the yield of the crop must be hindered by a system of preparation of the land which makes it almost impossible for the roots to extend more than three or four feet at most. It will not do to say that this preparation of the land for the extension of the roots can be made after the crop is planted. This is an impossibility without doing injury to the plant. A plow or a deep-running cultivator has no place in a corn-field after the crop is planted. Shallow, level cultivation is the only system under which great yields can be made. The object of cultivation is not, or should not be, the deep-working of the land, but the prevention—not the killing of the weed-growth—and the conservation of moisture by keeping the surface covered with a fine mulch of soil. Many who will read these lines will say, but what object can be served in giving to the plant the opportunity of thus extending its root-growth, when the land is wanting in

fertility, and we have no fertilizer to apply over so large a surface. These men little realize how much inherent fertility there is in land which the plant can get for itself if only the soil is finely and frequently broken and stirred. A series of experiments made at the Cornell Experiment Station, New York, in growing Irish potatoes, well illustrates this fact. This experiment commenced in 1895. It was carried on on a piece of gravelly land, which analysis has shown is carrying little more than half the potential plant-food found on average soils. *It has not been manured or fertilized since the fall of 1893*, and has produced heavy crops of grain, forage, or roots, each season till planted in potatoes. In 1895, the plats produced an average yield of 352 bushels of potatoes to the acre. In 1896, the plats produced an average yield of 319 bushels per acre. In 1897, the yield was 322 bushels per acre. In 1898, the yield was 292 bushels per acre. In 1899, the yield was 195 bushels per acre. In 1900, the yield was 116 bushels per acre. In 1901, the yield was 250 bushels per acre. The average yield of Irish potatoes in New York State generally was not, in any one of these years, in excess of 122 bushels, and ran down as low as 62 bushels to the acre. The explanation of the continuous high yield of the experimental plots, notwithstanding the absence of manure or fertilizer, is thus stated:

1. *By thorough preparation of the land before planting*, thereby developing in the soil an abundant supply of readily available plant food, and securing the storage of a large amount of water.

2. *By deep planting*, followed by frequent and prolonged tillage of the crop, thereby preventing waste of moisture by evaporation from the surface of the soil or transpiration from the leaves of weeds, and at the same time bringing more plant-food into available condition.

3. *By maintaining healthy and vigorous foliage on the plants throughout the season.*

The same principles applied to the growing of the corn crop will produce like results. Just give this a trial, even though it should necessitate the curtailment of the area you desire to plant. It will pay better to make 50 bushels of corn on one acre than on three, which is pretty nearly the average yield of the Southern States. This can be done easily, and nearly four times that quantity has been made in this State several times, and that without the use of any commercial fertilizer. Plow, re plow, subsoil where the subsoil is a hard pan or compact clay, harrow, roll and re harrow until the seed bed can be made no better, and then plant. The question of the fertilizer to be applied to the crop is, in our opinion, a very secondary matter compared with the proper and perfect preparation of the soil, and yet we are compelled to

say something on the subject, as we are constantly asked the question what to apply. The result of experiments made in nearly every section of the country go to show that with the exception of farm yard manure there is no fertilizer which can be applied which may reasonably be expected to be profitable. We do not mean by this that the application of a fertilizer will not result in increasing the yield of the crop, but that such a yield will not be produced with profit when the cost of the fertilizer is taken into account. When applying a costly fertilizer to a staple crop like corn, which has a low value in the market, the increase to be produced must be very large if the result is to be profitable, and this can rarely be obtained. An average crop of corn of 30 bushels to the acre removes from the soil 40 pounds of nitrogen, 41 pounds of potash, and 13 pounds of phosphoric acid. This would indicate that a fertilizer, to meet the requirements of the crop, should be rich in nitrogen and potash, and yet some of the heaviest crops have been grown with the application of fertilizer with only a low percentage of these ingredients. The explanation of this seeming anomaly, so far as the nitrogen is concerned, would seem to be that corn makes its growth and yield during the hottest part of the year, when nitrification is naturally the most active, and with its great root system the crop is able to gather all the nitrogen needed, even if there be only a comparatively small quantity of nitrogen in the soil in each foot of the land. The plant searches for it and reaches out its roots and seizes it as it is developed in the soil by the heat. The potash needed is in like manner usually found in the lands east of the Blue Ridge and the Alleghanies, from the natural resources of the soil washed down in past ages from those mountains which are rich in rocks of which potash is a large constituent, and which, whilst often unavailable to crops with a small and delicate root system, can be utilized by the powerful and wide spreading roots of the corn plant. Barn yard manure almost always conduces to a profitable crop, and this should be used wherever possible. In its absence we would apply a complete fertilizer with a fair percentage of all the elements, giving preference to one with a high percentage of phosphoric acid, which, whilst the element least called for by the crop, is yet the one most likely to be deficient in the soil. In some sections where vegetable matter is largely deficient in the soil cotton seed meal has been found to give good results. If applied in excess of 200 pounds to the acre, spread broadcast. The wide spreading roots of the plant will soon find it, and at the same time in the search for it will make available plant-food in the soil, which would otherwise not be reached. If used in less quantity than 200 pounds to the acre, apply in the drill, mixing well with the soil over as large a width of drill as possible.

Do not be in too great haste to plant. Corn will not grow in cold soil, and if when planted there is lacking that degree of warmth required to germinate the seed at once and push on the growth, the crop will show the effects all through the year. Corn once stunted in growth never makes such a crop as it would do if it had grown right away from the start. Check planting has an advantage over planting in continuous rows in the drill in that it permits of cultivation both ways of the rows and thus obviates the necessity for hand labor. It, however, takes more time in planting. If the rows are set out straight and care used in running the planter, there should be no difficulty in cultivating the crop with machines. The cost of hoeing should be saved, even if extra time is spent in planting. Let the first two or three cultivations be with a harrow or weeder, commencing as soon as the corn appears above ground. In our next issue we will say more on this subject of cultivation.

If cut-worms are to be feared poison them before planting the corn. Mix Paris green with bran and moisten the mixture, and drop a handful at short distances apart over the field. The worms will eat this, and thus end their mischief, or bunches of Red clover may be dipped in Paris green mixed in water, and be dropped over the field at frequent intervals, and the worms will be poisoned. These remedies are of little avail if not used before the corn appears above ground, as the worms will prefer the young, tender corn shoots.

Push on with the planting of the cotton crop as fast as the land can be got ready and the weather will permit. Cotton responds more readily and profitably to the application of fertilizer than corn, and there are few crops of cotton to which it would not be profitable to apply a good dressing of a complete fertilizer. The application of only 150 or 200 lbs. of fertilizer to the acre is practically, however, of little good. A crop of 300 lbs. of lint per acre calls for 20 lbs. of nitrogen, 50 lbs. phosphoric acid and 15 lbs. of potash. The amount of phosphoric acid applied in the fertilizer determines the amount of nitrogen and potash that can be profitably applied. If, then, phosphoric acid is applied liberally, and the crop calls for a liberal supply, the other two ingredients may also be applied liberally with profitable results. If you apply 1 lb. of nitrogen, you should apply 2½ lbs. of phosphoric acid and three fourths of a pound of potash. The results of experiments made in South Carolina, North Carolina and Georgia, would seem to show that from 500 to 700 lbs. to the acre of a fertilizer analysing 9 per cent. phosphoric acid, 3 per cent. potash, and 3 per cent. nitrogen, can be profitably applied, and with

greater profit the better the land to which it is applied. On thin, poor land a less quantity should be used. Plant always after a pea fallow if possible, and have the land as finely and deeply broken as can be done. Plant level and work level unless the land be wet or liable to flooding.

Land intended to be planted in tobacco and forage crops, should be plowed and worked as opportunity offers during the work of preparing the land for the corn crop, so that by the middle of May it may be ready for planting. The better and more frequent the working of the land, the greater will be the probability of a successful crop. Especially is it necessary for tobacco land to be well prepared, as the tobacco is a plant with a delicate and small root-system, and cannot forage for its existence. All the plant-food it calls for should be made as available as possible within a small area of the plant.

In the *Esquire's* column, both this month and last will be found much information as to fertilizing crops, and to these we refer our readers.

### CULTIVATING CORN.

*Editor Southern Planter.*

Most of our old farmers think a man is a fool who does not cultivate his corn in ridges as high as he can get them with a turn plow, and especially so if he has wire grass to contend with.

The best plan to make a crop of corn is first to plow your land as deeply as possible with two horses, and three are better still, and if the land has a good clay subsoil a two-horse subsoil plow to follow the surface plow is desirable. After plowing the land drag it both ways, or cut it up with a disk harrow one way, and then draw cross ways until you have a fine seed bed. If there is much wire grass, check the rows and plant. As soon as you can see a hill of corn up, drag the land again, and when the corn is four or five inches high, take a double shovel with narrow hoes, and work it as deep as you can; and if checked, as soon as you have finished one way work it the other. When the plants are from ten to twelve inches high, take a disk cultivator and set it to throw a little dirt from the corn, and work the crop thoroughly, and keep that up until the corn gets too high to run the disk over it. In working the second time with the disk set it to throw a little dirt to the corn, but never throw the land into high ridges. Work the corn every time the rains and sunshine crust the land. By keeping the soil loose and soft, it will soak up the rain instead of its running off. Corn land should never be allowed to get hard after it is planted; never work it deeper than two or three

inches after the first time. If you haven't a disk cultivator use an Iron Age Cultivator, and by keeping your land loose it will work easily with any tool. Crops are often ruined with turn plows. I have seen corn sowed closely with a turn plow, and allowed to stand so for weeks and turn yellow, and then have one furrow thrown to it, and after weeks another furrow thrown to it, which, in "Old Virginia" style, lays by or finishes the working the crop. If any man who follows that plan fails to make a crop it is his own fault. I saw a man fail to make a crop last year that way, and we never had a much better season. I worked my corn last year with a disk entirely, and I have considerable wire grass to contend with. Wire grass does not hurt the crop if you keep it stirred, but covering it up with a turn plow helps it to grow. I once saw twelve barrels of corn (60 bushels) to the acre made on the worst wire grass land I ever saw without using a turn plow at all. It was planted in checks, and worked first one way and then the other until it was as high as a mule's back, with a Malta or double shovel plow.

Ridging corn land causes it to wash badly, and leaves it in such bad shape that when you want to use the land for another crop it requires much labor to get it leveled down again. I would say to those who will persist in using turn plows, as fast as you side your corn with the plow follow it with a cultivator at once, and when you have laid it by take your cultivator and put a weight on it and run it twice in every row. That will mend the matter some. One man can work and care for 50 acres of corn with a disc cultivator.

*Henrico Co., Va.*

COUNTRY.

### THE PLANT-FOOD BALANCE.

*Editor Southern Planter:*

Plant food consists of ammonia, potash and phosphoric acid. All crops need all three, and no superabundance of one or of any two will help out a shortage of any one. This is an important point to keep in mind. It is natural to use such manual substances as can be produced on the farm itself. All sorts of farm roughage, manures, etc., are valuable; they supply all three of the elements of plant food, and somewhat in the proportions needed; in fact, they are the crops which took plant-food from the soil, and in returning them as manure we are simply giving it back. At the same time, the potash and phosphates of this roughage and farm made manure is slowly available; the nitrogen (ammonia), however, quickly takes an available form, and is often wasted simply because there is no mineral plant food (potash and phosphoric acid) to go with it.

Another source of farm made plant food is the ammonia taken from the air by leguminous crops. Clo

vers of any kind, cow peas, Canada peas, alfalfa, etc., when grown in rotation, add very large quantities of ammonia to the soil, taken from the air. This ammonia stands alone, however, there is neither potash nor phosphoric acid in the air. We have here the beginning of irregularity in plant food balancing—a steady accumulation of nitrogen or ammonia (both words mean the same in the plant-food sense), but no corresponding accumulation of potash and phosphates. Unless these latter are present in the soil or are supplied the ammonia thus accumulated is without value to the soil.

This is the point where commercial fertilizers come in. They consist mostly of phosphates, and with their use the phosphoric acid is supplied. Most packing house fertilizers are largely bone, or tankage products rich in bone material. That is, high in phosphoric acid as compared with ammonia, and no potash at all. We have also in this country enormous beds of mineral phosphate, which is pulverized and treated with sulphuric acid to make acid phosphate. Again, phosphoric acid but no potash. The only source of potash we commonly find is wood ash, and the potash in that is so much used for soap making that very little finds its way to the soil as plant-food. The ash of wood contains but a small per cent. of potash, and therefore will not bear a long freight haul.

Thus we observe that the plant food balance in the soil is easily kept reasonably even, except in the form of potash. Potash is supplied cheaply in the form of German potash salts. However cheap these may be, they must be bought, and for this reason alone are too commonly neglected. When a farmer finds his old time methods failing he should try a little potash. If the crop fail to grow the trouble is usually that the plant food balance is upset, and this is often caused by a lack of potash.

G. K. WILSON.

#### KILLING SASSAFRAS.

I have read the article on killing sassafras from "Mr. G. A. G." in the February issue of the *Southern Planter*, and I thought I would give the readers of your paper the benefit of my experience.

I found grubbing to be a useless expense. I have successfully killed it in two ways. One was by using barn yard manure on the field and then planting in sweet potatoes two or three successive years. Of course the first year necessitated a little grubbing to get rid of the larger bushes. Another and simpler way is to pasture your cows in the field for two successive years, and you will find at the end of that time you are entirely rid of sassafras. Cows are very fond of the buds, and their continually nipping it causes it to bind itself to death.

W. S. D. F.

Worcester Co., Md.

#### LEGUMINOUS MEADOWS.

*Editor Southern Planter :*

It has been known for centuries that a crop of clover, alfalfa, or other legume, improves the soil for a wheat, corn or a root crop. It has only recently been discovered how the legume improves the soil. It does so by adding to the soil nitrogen, taken from the atmosphere. Grasses, grain, plants and root crops generally depend upon the soil for their entire supply of food. These add nothing of much value to the soil which they did not take from it before. But legumes, while depending upon the soil for lime, phosphoric acid and potash, take nitrogen in large quantities from the atmosphere. When the roots, leaves or stems of legumes decay in the soil, or are returned to the soil in the form of stable manure or animals' droppings, the nitrogen is given up to the soil in the form of ammonia. Exact experiments have shown that one acre of alfalfa can in one year's growth draw down from the atmosphere \$161.00 worth of nitrogen. That is to say, as much nitrogen as \$161.00 would buy in the form of nitrate of soda. The cow-pea will, during four month's growth, draw down nitrogen which would cost to buy over \$50.00. Red clover, soy bean, vetches, and other legumes act in the same way. The manurial value of legumes is in addition to their feeding value. By plowing under the entire growth of a leguminous crop we return at once all the mineral feed—lime, phosphoric acid and potash—which the plant absorbed from the soil. We add in addition to this the nitrogen which the legume took from the air. This may be worth \$50.00. But we lose the feeding value of the crop, which for four tons of good clover or cow pea hay is about \$50.00. If, instead of plowing under the entire growth, we feed it and return the droppings of the animals which ate the hay, we get back in the droppings about four fifths of the plant-food contained in the hay. By combining the feeding and fertilizing value we may under the theoretically most favorable circumstances make every acre of clover, cow peas or alfalfa pay from \$100.00 to \$200.00 annually. This may appear over stated, but it is not. In other words, if we had to buy the feed and the fertilizer at market prices, we would have to pay for them the sums just named. In practice a farmer may waste the feeding value of the crop upon animals which neither grow nor fatten; and waste the fertilizer by allowing it to leach into some stream or pond. But this is not the fault of the theory. The best farmer is he who in practice most nearly obtains the theoretical value of his crops.

Legumes add largely to the value of the land upon which they grow and at the same time yield a great deal of valuable and nutritious forage. Grasses and

grains add nothing to the soil upon which they grow. The forage they yield is less valuable and nutritious than that of legumes. It is, therefore, certain and reasonable that it is better and more profitable for the land owner to grow legumes than grasses or grains. Grains must, however, be grown for human consumption because the public taste and custom demands them. But there is no reason why grass hay, oats, and other animal foods should not be wholly replaced by legumes. There are many reasons why this should be done. There is no reason but the force of habit why farmers should continue at a loss to lay down land to grass when a large profit can be made from legume meadows and pastures.

It must always be remembered that though legumes can draw abundance of nitrogen from the atmosphere they depend wholly upon the soil for their mineral food—lime, phosphoric acid and potash. Without plenty of mineral food the plants will be unable to draw to their fullest capacity upon the atmospheric nitrogen. The exact amount of mineral food necessary to supply any particular leguminous crop upon any particular field can be determined only by special trials upon the field and crop in question. These trials are best done by means of trial plots of 1–10 acre each. The three mineral foods above named can be tried upon these plots alone and in various combinations until the most profitable combination is discovered. In practice, however, we should not be particular about the lowest limit of plant food. The best rule is to give the plants more mineral food than they can assimilate, and to repeat the dose every year. The excess fertilizer is not lost but remains stored up in the soil. When after a number of years the leguminous turf is broken up and grain or roots grown on the field all the plant food stored in the soil by previous fertilization will be recovered in the new crops. Mineral plant food is comparatively cheap. Lime costs about \$5.00 per ton. Phosphoric acid as acid phosphate about \$12.00 per ton. Potash as muriate of potash about \$45.00 per ton.

A good general formula for all legumes is given below, but this is to be increased as many times as tons of the legume are expected. In other words, the food given is sufficient for one ton of growth only.

Muriate of potash.....	80 pounds.
Acid phosphate.....	100 "
Lime.....	75 "

GERALD MCCARTHY, M. S.

## NITRAGIN, AND HOW TO APPLY IT.

[Nitragin is the chemically-prepared form of the bacteria required to inoculate land with bacteria necessary for the successful growth of leguminous plants.—Ed.]

*Editor Southern Planter :*

The following is abstracted from a publication of the Hatch Experiment Station and from Nobbe & Hiltner, Germany :

*Hatch Experiment Station.*—Leguminous crops, such as clover, vetches, beans, lupines, etc., do not usually require to be manured with nitrogen (in the form of nitrate of soda or other ammoniacal compounds), and yet, under favorable conditions, yield rich harvests, whilst the soil is even enriched with nitrogen.

The reason of this peculiar behavior for many years remained unexplained, but the onward march of modern science has now demonstrated the ability of leguminous plants to abstract nitrogen from the air, only however, by the aid of a specific kind of micro-organism, a bacterium that resides in the characteristic nodules on the roots. If these bacteria are not at the disposal of the plant then it loses its ability to utilize the atmospheric nitrogen, and hence it is found that not every leguminous plant is able to flourish luxuriantly without nitrogenous manure; many remain small and stunted under conditions otherwise favorable, and evidently suffer from the lack of nitrogen. The wide bearing of this newly discovered principle has already been taken into practical consideration, and fields are now inoculated, that is to say, strewn with earth in which legumes have already flourished. This method, however, apart from its great cost and the loss of time and labor entailed, also involves the danger of disseminating injurious as well as useful bacteria. This disadvantage is, however, now completely overcome by the pure patent germ fertilizer, nitragin, which consists of a pure cultivation of the specific bacteria of legume nodules in a suitable medium. For convenient handling and safe shipping the nitragin is put up in bottles, each bottle containing sufficient for the inoculation of five eighths of an acre.

If the contents of the bottle have already become liquid, they are used as described below for the direct inoculation of the seed. If solid, the contents can be easily liquefied by warming the bottle gently for a few minutes; for instance, in the trouser's pocket, in tepid water, or in a warm room. Exposure to temperatures above the heat of the body, which is amply sufficient to melt, or to direct sunlight, must under all circumstances be strictly avoided.

The liquid contents are poured into a vessel containing one to three pints of clean water (carefully washing out the whole contents of the vessels with a little water), and then shaken or stirred until the fertilizer is equally distributed throughout the vessel and the bacteria are well mixed in the water.

The inoculated water thus prepared is poured over the seed and worked with the hands (or the shovel) until every seed has been moistened. If the quantity of water is insufficient more must be added, but usually for small seed a pint and a half will suffice, and for large seeds two or three quarts. The moistened seed is then reduced to a condition suitable for sowing by mixing with some dry sand or fine earth, and if ne-

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ecessary allowing it to stand, turning it over from time to time; too great dryness is deleterious. The sowing and turning in is carried out in the manner usually practiced. If possible, however, avoid sowing in glaring sunlight.

Instead of inoculating the seed, the same, and in some cases better, results are obtained by inoculating the soil by means of inoculated earth. For this purpose for every five eighths of an acre 50 lbs. of earth are inoculated in the above described manner, using a proportionately larger quantity of water; the inoculated earth is then dried in the air or mixed with dry earth, scattered equally over the field, and worked in three or four inches deep.

For larger surfaces a corresponding number of bottles must be used (eight bottles to five acres). Attention is specially directed to the fact that the germ fertilizers should only be used for the species of leguminosæ marked on the label of the bottle. For greater distinction the bottles bear differently colored labels. Nitragin is manufactured in Germany, and can be obtained from the American agents, Victor Koechl & Co., 79 Murray street, New York city.

*Nobbe & Hiltner, Germany.*—Besides the genuineness and the vitality of the bacteria the success in its use depends upon the quantity used.

Bacteria with a good vitality preserve their effectiveness for several months. But notwithstanding this, a speedy application must be recommended, because there is a possibility that in some of the bottles, however well they are sealed, other bacteria have found their way and destroyed the nitragin bacteria. It may also happen that the gelatine in the bottles has commenced to get dry, which would injure the vitality of the bacteria. Observations have shown that as long as the sides of the bottles are covered with minute drops of water, the air in the bottles is sufficiently moist for the unimpaired vitality of the bacteria. For the inoculation of the soil the quantity of applied bacteria must be so large as to provide at least some of the roots of each plant with bacteria. The contents of one bottle are sufficient for five eighths of an acre. Distilled water will kill nitragin bacteria; well water, too great dryness and direct sunlight are also harmful. The time between the application of the bacteria and the formation of roots by the sprouting seed is critical. During this time the nitrogen bacteria, raised on artificial food, are exposed to all kinds of harmful influences, to certain injurious chemical conditions of the soil, and attacks of other and stronger bacteria. For instance, no living nitragin bacteria could be found on somewhat moldy seradella seed after ten days of the inoculation. As soon as the bacteria can adhere to the developing roots, they are safe; they begin to multiply and remain in the soil for years.

As there is a possibility that the nitrogen bacteria may be attacked by stronger bacteria, everything which will assist to shorten the drying time between the sprouting of the seed and the formation of the roots should be resorted to. The inoculated seed should not be sown immediately, at least not until it has commenced to swell. Very slow swelling seed should be kept from two to three days in moist soil before it is sown. If by this time the seed is a little sticky and not suitable for sowing, the mixing with dry earth will improve it.

If the soil, instead of the seed, is to be inoculated it will be advantageous to inoculate a mixture of soil and fine cut hay or straw of leguminous crops, and scatter it over the field after the seed has sprouted and the plants begin to appear. A rainy day is most favorable. The rain water in penetrating the soil will carry the bacteria with it, and bring them in contact with the roots. The best results have been obtained wherever this method was carried out.

H. WINKELMAN.

## POTASH AS A FERTILIZER IN TIDEWATER VIRGINIA.

*Editor Southern Planter :*

I notice in the Enquirer's Column, March *Planter*, B. C. Foster says "his land is salt enough naturally without kainit." Is that sound argument for us Tidewater farmers? Do we sow kainit for the salt that is in it? Or does the salt atmosphere furnish our lands all of the potash we need? Which is it? I am very much interested in this potash question. The agricultural papers are full of it. If the writers are right, the desideratum of all our land is potash. Especially is it needed they say in our tidewater lands. Now, I will give my experience with potash on land in Essex, near the Rappahannock. I have used kainit and muriate of potash on light land and on stiff, applied to corn, oats, clover, English peas, cow-peas, tomatoes and potatoes. Have yet to see any benefit to any crop to which it was applied, or to any subsequent crop grown on the land. The only effect, if any, that I could discover, was that where used the crop was not quite so good. Now, what am I to believe, my own experience or the opinion of all the farming world (B. C. Foster excepted)?

I do not like to disbelieve what so many say is true. Perhaps I was cheated, and did not get kainit and muriate of potash, but only *plain salt*. They look and taste very much alike, do not think that I could tell the difference. Perhaps Mr. Foster has bought some salt also.

Please let some of our Tidewater farmers give their experience on this potash salt question, that if our lands do not need it we can dispense with that part of our fertilizers and save some money.

C. C. WARNEE.

We do not think it at all likely that you were sold salt for kainit or muriate of potash. Both contain a large percentage of chloride of sodium (salt), and especially is this the case with kainit. We never found salt of any value as a fertilizer for any crop except asparagus. You certainly need not add to what nature gives you in your atmosphere. Dr. W. C. Stubbs has fully satisfied himself that his land in Gloucester county, Virginia, does not need potash.—Ed.

Mention the *Planter* to your friends.

## THE PREPARATION OF THE LAND FOR THE CROP.

### II. Cultivation of Soils.

*Editor Southern Planter :*

If the work of breaking the soil has been intelligently performed, subsequent planting and cultivation are simple processes. If badly done, then subsequent cultivation must be directed, not to cultivation proper, but to the securing of tilth, that is, obtaining the best conditions for the growth of crops.

Tilth should always, if possible, be obtained before planting, and then the after cultivation is purely one of culture, that is, the maintenance of tilth.

Unfortunately, such a happy condition does not always prevail with our planters. It too frequently happens that furrows of clods are thrown hastily together, and the seed deposited among the clods. Weeds and grass appear with the belated crop and contend for the mastery. Turn plows and hoes are used to remove the weeds. The young plants, already stunted, are left alone in the clods, surrounded by environments by no means conducive to rapid growth and development. Cultivation should have no such object in view as the destruction of weeds and grass. Sometimes our variable seasons fill our fields with grass and weeds in spite of our best efforts, and when filled must be removed by the plow and the hoe; yet the universal experience everywhere is that the crop is never improved by such treatment. It is simply a necessary evil, often brought about by neglect of overcropping, but sometimes by such extremely wet seasons as almost to defy human effort to prevent it.

True cultivation should look only to the preservation of tilth which a proper preparation of the soil has established. It involves *only two principles*. First, the maintenance of such conditions as will promote the most rapid and beneficial chemical changes in the soil, and, second, the conservation of the proper amount of moisture.

The chemical changes in a soil are most complex. Until recently, every soil was looked upon as a mass of inert matter, utterly devoid of life, and was treated with a view of reducing to a powder the material composing it, in order to release as much plant food as possible. To annihilate weeds and grass was the object of cultivation. To day an up to date agriculturist knows that every well cultivated and fertile soil is filled with living beings. The mineral portion of such a soil is simply the environment of living micro organisms, furnishing them with a portion of their sustenance. While air, water and mineral matter furnish the materials of plant growth, they must all be digested before they can be assimilated. The animal matter must suffer disintegration before assimilation, and the only forces so far known capable of accomplishing this work, are the secretions of the plants, the vital activity of the rootlets, organic acids, soil ferments and micro organisms.

Micro organisms are intimately connected with the rootlets of leguminous plants, and hence these plants are selected for soil improvement.

Again, every fertile, well tilled soil is swarming with other classes of microbes—some useful to vegetation, others positively noxious—Some prepare plant

food directly, and are frequently accompanied by others whose chief function seems to be to destroy the work performed by the former.

Science is engaged in an earnest effort to discover a plan by which the former may be multiplied and the latter destroyed.

While there is a lurking suspicion that all plant-food is perhaps the resultant of the action of micro organisms, bacteriologists have only so far succeeded in isolating and determining the character of those germs engaged in the preparation of nitrogen for plants. The process by which this nitrogen is thus prepared is called "Nitrification," and the process by which this preparation is destroyed is called "Denitrification." The importance of "Nitrification" can hardly be overestimated, when the relatively high prices of *nitrogen* are considered. It is the most important ingredient of fertilizers. It is also the most fugitive. The largest supply comes from organic matter, which by the process of nitrification is converted into nitric acid, the most soluble form of nitrogen and the form in which it enters into plants. The salts of nitric acid (called "nitrates") are extremely soluble, and if not at once appropriated by growing plants are washed out by heavy rains. Hence a gradual development of nitric acid during the entire period of growth of plants seems extremely desirable and a cessation of "Nitrification" even in a fertile soil rich in nitrogenous matter is fatal to the plant growing therein.

In the process of Nitrification three distinct genera of micro-organisms are recognized: First, those which convert nitrogenous matters into ammonia; second, those which convert ammonia into nitrous acid, and third, those that convert nitrous acid into nitric acid. All are necessary to the complete transformation of nitrogenous matter into nitric acid, the form of nitrogen available for plant food. These ferments work together synchronously, each waiting on the other.

It should be the aim of every planter and farmer to establish and maintain in all of his fields conditions most favorable to the development and multiplication of these micro organisms, upon whose activities the abundance of his harvest so intimately depends. The following are the prescribed conditions:

1st. They are most abundant and active near the surface, diminishing in numbers and vitality as one descends. Hence the *importance of surface cultivation* for all crops when maximum yields are desired.

2d. An abundance of air in the interstices of the soil. Hence the necessity of thorough drainage and a deep preparation of the land to insure a complete aeration.

3d. A high temperature. The maximum activity is developed between 85 degrees and 100 degrees F. Plants grow rapidly when both days and nights are warm, while a fall in temperature frequently checks the growth.

4th. Absence of light. While the parts of plants above the ground require sunlight for their full development, these microbes diminish in activity even to the vanishing point as the sunlight increases. Shading the ground enables them to work near the surface, and warm nights are more propitious for their multiplication and work than warm days.

5th. A certain amount of moisture. Excessive moisture, as already remarked, excludes air, a needed fac-

tor in nitrification, yet a certain amount of water present is indispensable to the existence of these germs. Experience has shown that one-third to one half of the capacity of a soil for moisture is the proper amount for most rapid work.

6th. An alkali, usually lime, to be present in small quantities. The final action of nitrification is nitric acid. Unless there be a base present with which this acid can unite, it would accumulate in the soil and destroy the germs; a soil deficient in lime will support neither the microbes nor the crops.

7th. Presence of organic matter containing nitrogen. This condition is of first importance, and if the soil be deficient in it, must be supplied artificially in some form, as stable manure, cotton seed meal, tankage, dried blood, fish scrap, etc.

The use of stable manure or a compost containing it carries with it a double action, and therefore has a double value. It not only supplies nitrogen, but also the organisms for nitrifying it, and when incorporated in the soil, the latter exercise their activity also upon the inert nitrogen already in the soil, when the more nitrifiable portions of the manure are exhausted.

Hence stable manure frequently produces results far beyond the analytical contents given by the chemist.

Beneficial bacteria are often accompanied by others inimical to agriculture. These decompose nitric acid as fast as formed. A study of "denitrification" has developed the gratifying fact that under favorable circumstances the denitrifying bacteria are not propagated in alarming numbers, and therefore cannot be very destructive.

From the above it will be seen that frequent cultivations, provided no roots are cut, are favorable to rapid nitrification. It has also been demonstrated at this station that soils cultivated daily give a larger nitrification than the same soils cultivated weekly, and the latter more than those cultivated less frequently.

The second object in cultivation is to conserve moisture, and here, as with the other object already described, a shallow cultivation for the best results is required; in fact, necessary, since it has been shown elsewhere that deep plowing will frequently relieve wet soils of their excessive moisture.

On the approach of a drought, cultivators should be run very shallow and almost continuously. By so doing, a thin layer of earth removed from the great mass of soil is laid as mulch on the surface and the continuous upward movement of the water through the soil into the air is checked just below the surface and the roots of the plants can then appropriate it. The continuity of capillary pores is broken and the water is arrested just below the surface, and is there retained for the use of the plant. By cultivating continuously during dry weather the mulch is restored as fast as the capillary action of the water in the soil destroys it. Again, finely divided soils have the power of absorbing hygroscopic moisture from the air, a not insignificant property in a prolonged drouth in a climate like lower Louisiana with heavy dews at night.

These are the reasons we plow and cultivate.

WM. C. STUBBS,

Experiment Station, Audubon Park, La.

## SMUT IN GRAIN—REMEDIES PROPOSED.

*Editor Southern Planter:*

Smut is the popular name given to a parasitic fungus which attaches itself to the grains and grasses at the period of their flowering, and causes great loss to farmers. It belongs to the natural order of microscopic plants that constitute mold or mildew. There are two kinds of smut that attack wheat. The species most common is called by botanists *ustilago segetum*. It is the burnt or stinking smut. The kernels which are attacked do not usually burst, as is the case with corn and rye, but retaining their natural shape and size, become filled with poisonous black dust instead of white, nutritious flour.

If the wheat is harvested when very dry, these smut kernels can be blown out by the fanning mill and smut machine without much injury to the flour. If the wheat is threshed when damp, some of the smut kernels will get broken and the dust will stick so fast to the kernels of sound grain that the smutters in the grist mills cannot beat it loose and blow it out, and the flour will inevitably be dark colored.

The writer saw a grist of damp, smutty wheat ground at the Sugar Run Mill, which when it came from the smut machine into the hopper looked as black as if it had come down the chimney.

It would have been better to have been put through a fanning mill instead of the smutter, as the fanning-mill would have blown out the smut kernels without breaking them.

Generally, the embryo of the seed when attacked swells until it greatly exceeds the proper size, and on rye, sometimes attains the length of an inch and a half, and is frequently curved. The smut on rye is called ergot.

Smut, as every farmer knows attains its greatest growth on corn, where some ears have every kernel burst, and the husks spread to the dimensions of two common ears.

It was once supposed to be a disease occasioned by wet seasons or other climatic causes, but it is now fully ascertained that it is a disease produced by the presence in the flower of the plant destined to destruction of the mycelium of the fungous plant, the spores or seeds of which may have been carried to the flower through the juices of the plant, and that in a field of grain it may be produced by infected seed.

Although the germ spores (or seeds) may live in the soil for a time, my experience proves that the disease is usually communicated to the new crop by smutty seed. I have more than once chopped a woodland fallow in May or June, got a good burn in August (which would surely have destroyed the smut germs had any been present), cleared off the fallow and sown wheat in September, and the next harvest

had smutty wheat because there were smutty particles of the poisonous dust adhering to the seed. Most of my neighbors have had the same experience. It may seem incredible, but there is no mistake about it. Farmers used to think that soaking smutty seed in lime water would kill the smut germs and render it fit for seed. No doubt it did some good, but micologists of the present day declare it requires something stronger than lime water to be effective, and recommend soaking the seed in a solution of sulphate of copper (blue vitriol).

The following extract is from a published letter of Prof. E. W. Hilgard, of the University of California:

"As regards the bluestoning of seed wheat, the solution used is as strong as it can be made at ordinary temperature. Such a solution contains about three pounds of bluestone to five gallons of water. The time of immersion should last for at least three minutes, and the grain be stirred several times to insure wetting it thoroughly. When a weaker solution is used, the grain may be left until it begins to sprout. In general, I would favor the strong solution and short immersion."

The following treatment for the burnt smut, or stinking smut, is given by Walter H. Swingle in the Year Book of the U. S. Department of Agriculture for 1894:

"Immerse the seed wheat twelve hours in a solution made by dissolving one pound of commercial copper sulphate (blue vitriol) in twenty-four gallons of water, and then putting the seed for five or ten minutes into lime water, made by slaking one pound of good lime to ten gallons of water. This treatment is only for the stinking smuts of wheat and covered barley smut."

This treatment, if effectual, requires much less blue stone, and consequently is cheaper than Prof. Hilgard's. The loose smut of wheat and oats is very different from the burnt or stinking smut. It has no disagreeable odor, attacks both the kernel and the chaff, ripens when the healthy wheat is just flowering, is composed of a loose dusty mass of spores, which are usually blown away by harvest time, leaving only the naked stalk where the head should be. It occurs in many parts of the United States, and no doubt will in time be present in all. It does not usually destroy so large a proportion of the crop as the stinking smuts, but often causes a loss of 10 per cent. Loose smut is to be dreaded, because if once introduced into a field it is difficult to eradicate it by any method that will not injure the germination of the seed.

Smut causes more damage to oats than any other grain. It is estimated that the loss by smut on oats in the United States is more than \$18,000,000 per annum. It is claimed that the loose smut of wheat and oats can be destroyed by a solution of potassium sulphide without injuring the vitality of the grain.

Professor Swingle says: "The potassium sulphide should be of the fused form, known as 'liver of sulphur.' It can be obtained at any druggists for from 25 to 50 cents per pound. It should be kept in a tight glass vessel, protected from the air until ready for use. Dissolve 1½ pounds in 25 gallons of water in a wooden vessel—a tight barrel is very good for the purpose. The lumps of potassium sulphide dissolve in a few minutes, making the liquid a clear yellow brownish color. After thoroughly stirring, put in about three bushels of oats, and agitate well to insure the wetting of every grain. The solution must completely cover the grain and be several inches above it, as the grains soak up some of the liquid. Leave the oats in this solution twenty four hours, stirring several times during the day to be sure every kernel is wetted. Then spread out to dry."

Professor Swingle says hot water will destroy both kinds of smut on grain; the seed grain to be immersed in the hot water for ten minutes. The temperature of the water to be maintained at 132 or 133 degrees by adding a little boiling water, and stirring; and in no case have the water hotter than 135 degrees, lest the germ of the grain be injured.

J. W. INGHAM.

[We would add one word to the foregoing. For smut on corn, no remedy has yet been discovered. All smutted ears should be gathered as soon as seen and burnt and the stalks be pulled and fed or burnt to prevent extension of infection.—ED ]

## CORN AND COW-PEAS.

*Editor Southern Planter :*

If corn be planted sufficiently thick to yield a full crop there will be no room for cow-peas, nor anything else, while the corn is growing, especially if they be planted in the drills with the corn; all farmers of experience know this is true.

But if the corn be planted early—for this climate about the first of April—and from six weeks to two months thereafter cow-peas be drilled midway between the corn rows, a joint crop can thus be grown that will yield very nearly a full crop of each. One writer claims that peas are an advantage to corn; but no person will say that corn, owing to its rank root system, is any advantage to peas. Hence the necessity for planting corn early in order that it may go into decline at a proper time for the peas to flourish during the latter part of the season.

When practical, a corn and cow-pea crop should be preceded by a clover or cow-pea crop that was properly supplied when seeded with potash and phosphoric acid and turned down at maturity; if we expect good yields, the land must be properly nourished.

The corn drills may be from six to six and a half

feet apart. A suitable narrow plow should be run several times in the bottoms of the drills, thus forming loose beds of proper width and depth. This deep preparation will exert an immense influence in resisting the effects of drouth. The corn can also be planted much thicker than with ordinary plowing, thus paying well for the extra work. Even if the land has recently been subsoiled, this deep preparation will still pay well.

When practical, a good dressing of stable manure—preferably fresh from the stable—may be applied in the loose beds. In addition to the stable manure, 250 to 500 lbs. per acre of a fertilizer containing nitrogen 2 per cent., phosphoric acid 6 per cent., and potash 7 per cent., may also be applied to the loose beds. Instead of the above, the following materials may be mixed and used:

*For Nitrogen Use.*—Nitrate of soda, 30 to 60 lbs., or sulphate of ammonia, 25 to 50 lbs., or dried blood, 50 to 100 lbs.

*For Phosphoric Acid Use.*—Acid phosphate, 130 to 260 lbs., or dissolved bone, 110 to 220 lbs., or bone meal, 150 to 300 lbs.

*For Potash Use.*—Muriate of potash, 35 to 70 lbs., or sulphate of potash, 35 to 70 lbs., or kainit, 150 to 300 lbs.

If stable manure be used, 30 lbs. of muriate of potash and 50 lbs. of acid phosphate should be added, independent of the above fertilizer, thus correcting the excess of nitrogen in the stable manure. Stable manure is desirable for the humus it contains, the action of the above fertilizer being thereby much improved. But in the absence of stable manure, the larger quantity of fertilizer alone will answer a fairly good purpose, especially if the soil has been properly supplied with humus by a green crop previously turned down.

The fertilizer should be well mixed with the soil by shallow plowing—preferably a few weeks before planting—low ridges thrown up thereon, and the corn planted for single stalks twelve to eighteen inches apart; the former distance will require frequent and thorough cultivation.

The ground will require similar preparation for peas, except the fertilizer. From 250 to 500 lbs. per acre of a fertilizer containing the following may be used for peas: Nitrogen, 1 per cent.; phosphoric acid, 8 per cent., and potash, 8 per cent. In lieu of the above, the following materials may be mixed and used:

*For Nitrogen Use.*—Nitrate of soda, 15 to 30 lbs., or sulphate of ammonia, 13 to 25 lbs., or dried blood, 25 to 50 lbs.

*For Phosphoric Acid Use.*—Acid phosphate, 143 to 286 lbs., or dissolved bone, 114 to 228 lbs., or bone meal, 172 to 344 lbs.

*For Potash Use.*—Muriate of potash, 33 to 65 lbs., or sulphate of potash, 33 to 65 lbs., or kainit, 135 to 270 lbs.

Wonderful peas are considered the most suitable for the above wide rows, especially for bearing purposes, and where the season is sufficiently long, they should be planted, for this climate, about the middle of May. These peas, for bearing purposes, require fully as much distance as corn; some experiments may be tried with double and treble this distance.

Last season I planted Wonderful peas June 15th that matured well, but the fall was unusually late.

A joint crop, planted as above and properly cultivated until the pea vines become too large (people generally cease work too soon), ought to yield of corn and peas at least one hundred bushels.

The corn stalks (if not cured for feed, which is the proper way) and pea vines, should be turned down soon after frost, thus greatly improving the land.

Moore Co., N. C.

BRYAN TYSON.

### JOHNSON GRASS.

*Editor Southern Planter:*

I am a subscriber to and constant reader of your journal. Am benefitted by the letters from your numerous correspondents writing about agricultural affairs; but am disappointed to see nothing or very little said in favor of "Johnson grass."

This grass is bound to come to the front and take the place of others. The old fashioned grasses have played out in most sections. The land is worn out, and crops will not grow as they once did. So something must be introduced.

"Johnson grass" will grow on any soil—improving every year—and, of course, improving the soil. This grass will hold its own against everything else. It makes the very best of hay; a good winter pasture for all stock. Even hogs thrive and grow fat on the roots during the winter months; the yield of milk is increased when this hay is fed to cows, and horses, when eating it, need but little grain. Only one sowing is necessary.

Better by far would it be if every Southern farm was sown in Johnson grass. Then cultivation would cease, and our farmers would soon be supplying the cities with meat, and the South would be shipping hay to the West.

B. B.

Bleak Hill, Va.

### Spurry—Pencilaria.

Please tell me all you can about "Giant spurry" and "Pencilaria," through the Enquirer's column.

Pine Bluff, N. C.

GEO. E. WELLS.

Let them alone. They will do you no good. Spurry is a very poor substitute for clover. Pencilaria is a variety of millet.—Ed.

## CAN WE AFFORD TO OMIT NITROGEN AND POTASH FROM OUR FERTILIZERS?

One of the fertilizer experiments of the Ohio Experiment Station is located on a tract of thin, clay land, which had been reduced to a very low state of fertility by exhaustive cropping. In this experiment corn, oats and wheat are grown in rotation, followed by two years in clover and timothy, making a total rotation of five years. Five sections of thirty plots each are used in the test so that each crop is harvested each season. Eight crops each of corn, oats and wheat have been grown in the test thus far, with seven crops of clover and six of timothy.

Plot No. 2 in this test receives no fertilizer except acid phosphate, which is applied to corn and oats at the rate of 80 lbs. per acre, and to wheat at the rate of 160 lbs., making a total of 320 lbs. applied in five years.

Plot 8 receives the same quantity of acid phosphate, together with 260 lbs. of muriate of potash, distributed over the three cereal crops.

Plot 11 receives the same quantities of acid phosphate and muriate of potash as Plot 8, with the addition of 480 lbs. of nitrate of soda, distributed likewise over the cereal crops.

At the average market prices for fertilizing materials and farm produce, the cost of the fertilizers and the value of the increase of crop from these dressings has been as follows:

Plot.	Cost of fertilizer.	Value of increase.	Profit.
2	\$ 2.40	\$ 9.66	\$7.26
8	8.90	16.44	7.54
11	20.90	26.61	5.71

Taken as they stand, these figures indicate that it has not been profitable to add nitrogen to the fertilizers; but other experiments made at the Station show that the cost of the nitrogen might be materially reduced by substituting tankage for nitrate of soda, and they also indicate that the quantity of both nitrate of soda and muriate of potash used in these tests has been larger than was required to produce the most economical result. This is illustrated by Plot 30, which for six years received a mixture of tankage and acid phosphate, carrying the same quantity of phosphoric acid as that given to Plots 2, 8 and 11, but much smaller quantities of nitrogen and potash. The increase from this plot has been practically equal to that from Plot 8, while the cost of the fertilizers has been but \$3.75, thus showing a very much larger net profit than that given by acid phosphate alone.

The lesson taught by these experiments is that clover alone will not furnish sufficient nitrogen for maximum crop yields in long rotations like this, and that, while it is not profitable to add as much nitrogen and potash as would be indicated by the composition of the crops, yet we cannot afford to dispense with them altogether.

CHAS. E. THORNE, *Director.*

When corresponding with advertisers, kindly mention the *Southern Planter*.

## ENQUIRER'S COLUMN.

Enquiries should be sent to the office of *The Southern Planter*, Richmond, Va., not later than the 15th of the month, for replies to appear in the next month's issue of the *Planter*.

### Cow Failing to Breed.

I have a very fine Holstein cow of uncertain age, say, twelve or thirteen years old, which has been served a number of times by different bulls, good ones, too, and fails to breed. Can you suggest treatment for her, also a reason for her failure? Her last calf is three years or more old. She is a fine milker, and I would hate to butcher her. She is ready for service almost every month.

D. E. M.

*Georgetown Co., S. C.*

Failure to breed after service by a reliable bull or bulls is in young cows either a result of natural barrenness or a specific disease called nymphomania. In old cows the cause is past bearing age, which varies with each animal. If naturally barren, nothing can be done to remedy the condition, nor can anything be done for a cow past bearing age. There is a remedy which we have heard good reports of for use in other cases. It is prepared by Moore Bros., of Albany, N. Y. We have not used it ourselves, and cannot therefore speak from personal knowledge of its effectiveness, but have seen testimonials from reliable persons as to its value. In your case, we should fear that the cow was past calf bearing, but the remedy suggested might be tried.—Ed.

### Thrush—Crop for Silo—Drainage.

1. What is the best cure for "thrush" in horses' feet? I have a good mare almost worthless from this trouble.

2. Would you prefer corn alone without any other mixture for ensilage, and is a late crop better?

3. Can I dig a secret well down to sand and fill with oyster shells or rails set on ends to drain water out of low places or basins on my farm, where I can't ditch?

W. GRAY BROCKENBROUGH.

*Richmond Co., Va.*

1. Thrush is usually caused by standing in filthy stables or running in a filthy barn yard. The first step towards curing it must be removal to a dry, clean stall. Then clean out the feet thoroughly, and especially the frog in which the disease is usually found. Take pure carbolic acid and apply freely to the diseased part; next apply sulphate of zinc, and then dust over with calomel. Take time to thoroughly work in, and mix these three applications. Then take pieces of absorbent cotton, dust well with calomel, and press into the diseased cracks and crevices so as to effectually fill them. One dressing thoroughly done is usually effectual, but a second may be needed. There is no necessity to keep the horse from working.

2. Corn alone makes excellent silage; so also do corn and Soja beans or corn and cow peas. The addi-

tion of either of the two latter crops will make the ensilage almost a complete ration. They should be mixed as they are put into the silo—not first one and then the other be run in.

3. The success of a blind well as a means of draining a basin depends upon the striking of a vein of sand or strata of pebbles at the bottom of the well. If this can be assured, then the well can be made to effectually drain the basin.—Ed.

#### Cultivation of Corn and Cotton.

Please give me, through the *Planter*, the best method of cultivating corn and cotton on sandy land by which improved machinery may take the place largely of manual labor. With use of sulky plow, up to date corn and cotton planters, weedeers, etc., is it possible to do without hoe work in corn, and, except in putting to a stand, cotton? If you think it would be of interest to the *Planter* readers, I should be glad to see the above discussed fully by some of its practical readers.

L. B. ENNETT.

Carveret Co., N. C.

This question of the cultivation of corn and cotton without the use of hoes will be dealt with in this and the following issue of the *Planter*. We would only say here that we know numbers of large farmers who for years have never used a hoe in the corn crop, and only in cotton to bring it to a stand. With the weeder, the disc, Iron Age and riding cultivators, there is no necessity, when the corn and cotton has been properly planted, ever to use a hoe or a plow in a field after the crop is planted, except to thin cotton to a stand. The weeder and cultivators should be kept so regularly at work, that no weeds should be allowed to grow sufficiently large to require a hoe for their destruction. This constant cultivation means increased productiveness of the crops, as each time it is done plant food is made available for the crop.—Ed.

#### Rotting of Apple Tree Roots—Lady Bugs.

Can you tell me in the April *Planter* what causes the roots of some apple trees to rot, and give me a remedy?

I notice a great many lady bugs on my trees. Are they beneficial or injurious?

Fauquier Co., Va.

F. H. M.

In the February *Planter* we inadvertently stated that F. H. Moss had an orchard of 100 trees. We intended to say 1,000 trees.

We cannot say why the roots of some apple trees rot sooner than others. It may be that the growth is more tender or that soil conditions are not favorable. We can find no explanation of the trouble in the books, except when caused by root galls or the injury caused by the root louse.

Lady bugs are not injurious insects, but are, on the contrary, great helps in getting rid of other insect pests.—Ed.

#### The Micro-Organisms or Bacteria of the Legumes.

I have been interested in the various articles in the *Planter* on the legumes, especially the Hairy vetch, but have to confess that I do not understand some things about it. You say Hairy vetch will not grow unless the ground contains the right bacteria. How are the right bacteria to be produced? You say that sowing a few bushels to the acre of soil taken from where English peas have grown, will supply the want. This is indefinite. Will one crop of English peas produce bacteria with which to inoculate ground for Hairy vetch? How do the English peas procure the bacteria necessary for their own well being?

Memphis, Tenn.

H. MARTIN.

In this issue our correspondent will find an article dealing with the question of supplying bacteria to the land by artificial means in the form of nitrugin. Each species of legume has its own peculiar form of bacteria. The bacteria of all the kinds of peas, of which vetch is one, seem to be so nearly alike, if not exactly the same, that soil inoculated with them will cause the other varieties to grow luxuriantly. Hence, soil taken from where English peas have been grown for some time, will inoculate the soil for the vetch. How the legumes get the bacteria in the first instance is uncertain. It is thought that some of the seed is inoculated with them. When once introduced into the soil, they multiply with each succeeding leguminous crop.—Ed.

#### Improving Pasture—Potato Bugs.

1. I have all my meadows, hills and what land I can spare from cultivation, fenced off for a standing pasture. The best part of it is now taken in broom grass, which I burn off every spring. My cows do not give as much milk as they did when I first adopted this plan. Is there any way to improve this pasture, grazing it at the same time? Is there any kind of grass seed that I can sow on the sod that will improve it?

2. Last year the bugs attacked my potatoes as soon as they peeped out of the ground—before they were large enough to use Paris green to kill the bugs. It was a source of great expense to me, as I had to go over the patch and pick them off each hill with the fingers, getting as many as thirty or forty bugs from a hill. Is there anything known that can be used on the land to keep them off.

3. Please give me the name of a white seed corn best adapted to this part of Virginia.

Westmoreland Co., Va.

F. E. OMOHUNDRO.

1. Sow some Virginia blue grass and some Japan clover in the pasture. These will gradually take hold and spread amongst the broomsedge and improve the grazing.

2. We know of nothing except Paris green and Danforth's Bug Death which are effective in destroying potato bugs. There is nothing you can apply to the land itself which will destroy them.

3. We should suppose that Hickory King or Virginia White Dent would grow well in your county.—Ed.

### Utilizing Bones on the Farm.

1. Will animal bones, put in unleached hard wood ashes, become soft enough to grind in a mill that will grind steamed bones?

2. If so, how long will they have to remain in the ashes?

3. Will the bone be as valuable for fertilizer as steamed bone? H. D. AYRE.

*Bradley Co., Tenn.*

1. Yes.

2. They will require to be kept in the ashes for some weeks, possibly a month or two. The ashes should be kept moist and the mass be turned over two or three times during the softening process.

3. Steamed bone is more valuable as a fertilizer than bone in any other form, though not so immediately available as dissolved bone. The reason for this is that the steaming process has extracted from the bone the fat which delays decomposition, and is in itself of no value as a fertilizer.—Ed.

### Hay Presses and Power.

Please advise me, through your valuable journal, what steam hay press you consider best for baling oats or pea hay; also what power required to work one suitable for baling a crop of about 250 tons.

*Jefferson Co., Ala.*

W. S. LOVELL, JR.

The Eli press, made by the Collins Plow Co., of Quincy, Ill., and the Dederick press, made by P. K. Dederick Co., of Albany, N. Y., are both good presses. There are, no doubt, others equally as good, but we know these two to be effective. The best power to use to run a press is a gasoline engine. One of four horse power would be sufficient for either of the presses named and for the work to be done.—Ed.

### Rape.

Will you kindly advise in your next issue what rape is good for—hay, pasture or what purpose—and about what amount of hay per acre will it produce, and will it do to pasture hogs or any kind of stock; how much and when ought it to be seeded per acre, and how soon after seeding will it do to turn in, or could it be seeded in corn at plowing, or would it be injurious to the corn or rape seed sown in this manner? A SUBSCRIBER.

Rape is not a hay crop. It is grown simply as a forage crop for hogs, sheep and young cattle, and especially for sheep and hogs. It will make mutton and bacon with very little corn. It is not fit for milk cows, as it is liable to taint the milk and is apt to cause bloat. It should be sown broadcast in the early spring or in the early fall, and will be ready to graze in six weeks. It does not grow well in the hot weather. Two or three pounds will seed an acre. The Dwarf Essex is the variety to sow. It might be seeded in corn, but this is not advisable.—Ed.

### Restoring Fertility in Worn Land.

Will you kindly answer the following questions? I have recently leased (for five years) a farm of 300 acres that has been rented for the last twenty years, and has been very much worn. Originally, it was fine blue grass land, and in the sugar tree orchard and other spots where it has not been continually cropped in corn and wheat has a fine blue grass sod. I wish to know the best, quickest and cheapest way to bring it to a paying basis and get it back into grass. I was thinking of sowing some of the legumes. What do you think of soy or soja beans? If soja beans be used, what fertilizer would suit best? I have some spots that would suit for cabbage; would leached or unleached wood ashes be a good fertilizer for cabbage? Please suggest a good rotation. B. E. WATSON.

*Pulaski Co., Va.*

1. The cheapest and quickest way to bring the farm back to fertility will be to grow the leguminous crops summer and winter, using acid phosphate at the rate of from 300 to 500 lbs. to the acre with each crop. Either cow-peas or soja beans should be grown during the summer, and Hairy vetch or Crimson clover or both during the winter, thus keeping the land covered all the time. If the land is badly in need of vegetable matter, as we judge will be the case after the treatment it has had, we would grow cow peas this year in preference to soja beans, and would let them nearly mature and then plow down, say in August or September, and follow at once with Hairy vetch and wheat, or winter oats sown together. This would make a crop to turn down in April or May, or to cut for hay in May or June, to be followed with soja beans if cut in May, or with cow peas if cut in June. This crop of soja beans or cow-peas can be cut for hay when in green pod; or if beans, be harvested for the beans when mature. This crop can be followed with wheat or winter oats, fertilized with bone at the rate of 300 lbs. to the acre. Follow the wheat or oats with cow-peas again with 300 or 400 lbs. of acid phosphate as fertilizer. Cut this crop for hay in August and prepare the land well and seed to grass and clover, without a grain crop, in September with 300 lbs. of bone-meal, and you should get a good stand of grass.

2. Cabbage requires a fertilizer rich in potash, therefore, wood ashes will be a proper thing to use, and may be supplemented with even more potash in the form of muriate of potash at the rate of 50 lbs. to the acre. You should apply with the potash, cotton seed meal, dried blood, or muriate of potash and some acid phosphate. In our March issue you will find a formula for a fertilizer for cabbages.—Ed.

### Gasoline Engines.

In reply to my inquiry, Gasoline Engines vs. Wind Mills: Don't know how much water would be consumed per day. Would have about eighty head of stock on farm. Would have to have a storage tank for either.

L. P. N., JR.

*Culpeper Co., Va.*

### Japan Clover—Planting Sweet Potatoes.

1. In the report of the Virginia State Board of Agriculture I notice a clover called Japan clover very highly spoken of, said to grow in gulleys or anywhere. If you know anything of this clover I wish you would kindly tell me your experience with it in your next issue, and also where I can obtain it, as I have failed so far to find it in any seed catalogue.

2. When planting sweet potatoes is it best to mix the commercial fertilizer with the compost and use it in the drill, or apply the compost and sow the commercial fertilizer down the drill at time of planting?

Worcester Co., Md.

W. S. D. F.

1. Japan clover was introduced into this State some fifteen or twenty years ago from the extreme Southern States. Here it never makes more than a pasture. It is now widely spread over the State in places where never a seed has been sown by man, growing wild in the edges of the woods and the roadsides. It is spread by birds carrying the seeds and in the dung of cattle which have grazed on the plant. It is valuable in that it grows on poorer land than any of the other clovers and persists in constantly re seeding itself and coming every year. It appears late in spring and dies with the first frost. Like the rest of clovers and legumes it gathers nitrogen from the atmosphere and thus improves land. We do not recommend it except for sowing on brome edge fields and waste lands, because of it only making grazing, and that not of the best. We once saw it in Southside Virginia near the border of North Carolina some ten or twelve inches high, but hereabouts it does not grow more than four or five inches tall at the best. In the far South it makes a heavy hay crop. You can buy the seed from T. W. Wood & Sons, of this city.

2. Mix the fertilizer with the compost, and use it in the drill.—ED.

### Wood Ashes.

I have some 30 to 40 bushels of unleached hard wood ashes which I want to use, part by themselves, and part of them in connection with the cow manure as a fertilizer on corn and vegetables (my soil being mostly a red clay). Please inform me in your next issue of the Planter on which crops they will be most beneficial and the best mode of applying them.

Abemarle Co., Va.

DAVID APT.

Wood ashes are valuable for the potash they contain and therefore may always be used with profit on the crops making a large demand on that element of plant-food, such as tobacco, Irish potatoes, and vegetable crops. They are also valuable as a fertilizer for orchards and for clover and grass crops. Do not mix the ashes with the manure until ready to apply the mixture to the land, and then apply broadcast or in the drill or hill, according to the quantity used. If applied in the drill or hill, mix well with the soil before sowing the seed, or the causticity of the potash may injure the germ of the seed.—ED.

### Grass for Pasture Hay.

1. I own a farm in Surry county, Va., which for some years past has been devoted to the culture of peanuts. Soil is low upland, consists of sand with reddish clay subsoil a few inches below the surface. I want to turu it largely into grass and keep stock. Which kind of grass would you advise to sow for pasture, and which for hay?

2. Would Bermuda grass grow and do well on this kind of soil?

3. If the soil is left without cultivating one season it grows over with a thick mat of what the inhabitants call wire grass. Is not this Bermuda grass, or if a distinct species, what is its value as a pasture grass?

Brunswick, O.

F. C. F.

1. The grass you mention is Bermuda grass and you cannot have a better pasture grass for summer for your section. You should dig up a quantity of the roots and shake them free of soil and then run them through your fodder cutter. Plow the land you wish to put in pasture and let a boy follow the plow and drop in the furrow a few of the cut roots every foot or eighteen inches. These will grow and soon cover the whole field. Bermuda grass does not produce seed in this country and the imported seed is not very reliable.

2. For hay sow a mixture of Orchard grass, Tall Meadow oat grass, perennial rye grass, and Fescue grass, with a little red clover (say a couple of quarts to the acre). The grass should be sown in August or September at the rate of three bushels to the acre. Prepare the land well and apply 350 pounds of bone meal to the acre before seeding the grass. Harrow in the grass seeds and the bone meal and roll. Do not sow a grain crop with the grass.—ED.

### Alfalfa—Irish Potatoes.

1. Would you advise sowing alfalfa on wheat this spring, or follow wheat with peas and sow alfalfa this fall?

2. Do you think alfalfa would grow well on land about six feet above water level? Soil light, medium fertility, and filled with finely broken oyster shells (relics of the Indians). Subsoil porous. Clover grows well on it, except lightest part.

3. Will Irish potatoes deteriorate if second crop seed is planted, and seed from second crop continuously?

4. Would it be better to buy Northern grown potatoes to raise second crop seed from each year?

5. Would you subsoil or plow deep, light land that has a porous subsoil?

C. C. WARNER.

Essex Co., Va.

1. We would not advise sowing alfalfa on wheat in the spring. Alfalfa should be seeded alone in the fall. Follow the wheat with peas, and then alfalfa, taking care to prepare the land well, and have a fine, rich seed-bed. An application of 300 lbs. of acid phosphate to the acre before seeding the peas would greatly help to ensure a stand of alfalfa.

2. We think alfalfa would be likely to succeed on this land, if free from weeds. Weeds are the greatest

hindrance to the successful growth of alfalfa in the South. If not killed out before the alfalfa is seeded, they will kill it out.

3. There is considerable diversity of opinion on this subject. Our own experience has convinced us that the crops will deteriorate unless seed is changed every two or three years.

4. We do not think it necessary to recur to Northern seed each year.

5. We would plow such land deeply, but not subsoil it.—Ed.

#### Percentage of Constituents in Fertilizer—Tobacco Fertilizer.

I have several pamphlets from the German Kali Works, New York, which suggest formulas for making fertilizers for different crops; for instance, they recommend for tobacco from 750 to 1,500 pounds of fertilizer, analyzing nitrogen, 4 per cent., available phosphoric acid 6 per cent., potash, 10 per cent., and claim that the following materials will furnish equivalent quantities of nitrogen, phosphoric acid and potash, respectively—

Nitrogen.	}	180 to 360 lbs. nitrate soda, or
		130 to 300 lbs. sulph. of ammonia, or
		300 to 600 lbs. dried blood.
Avail. Phos. Acid.	}	400 to 800 lbs. acid phos., or
		350 to 700 lbs. dissolved bone, or
		500 to 1,000 lbs. bone meal.
Potash.	}	160 to 320 lbs. sulph. potash, or
		320 to 640 lbs. sulphate potash magnesia.

I do not see how different quantities of a given material could give a uniform per cent., kindly advise me which of the several constituents you would use, proper quantity of each, also quantity per acre, probable cost per hundred pounds, where I could buy to best advantage, and particularly *how to mix the material* so as to admit of uniform distribution.

Louisa Co., Va.

B. S. FRANCISCO.

Your difficulty arises from a misapprehension of the meaning of the formulas. The smaller quantity is intended to be used to make the lighter application (750 lbs.), the larger quantity for the heavier dressing (1,500 lbs). Each one used in this way will give a fertilizer with the percentages named. We have several times given our views as to the proper constituent parts of a tobacco fertilizer. We repeat them again. They are founded upon a series of experiments made by Major Ragland several years ago, and he was one of the most experienced growers in this State and a most diligent student of the tobacco plant and its requirements. He found the most profit in using 160 pounds of dried blood, 120 pounds of sulphate of potash, and 114 pounds of acid phosphate to the acre. This mixture gives 4½ per cent. nitrogen, 15½ per cent. potash, and 3½ per cent. phosphoric acid. Probably on light land, if the object is to produce a heavy shipping type, it might be well to increase the nitrogen somewhat by the addition of more dried blood or some farm-yard ma-

nure, both of which have a tendency to thicken the leaf. You can purchase these fertilizers from the fertilizer makers advertising in the *Planter*. You will find no difficulty in mixing the articles. Spread first a thin layer of one and then of the other on a clean barn floor and turn repeatedly with a shovel until thoroughly mixed. Running the mixture through a siddle after mixing will make a still better mixture.—Ed.

#### Watermelons.

I have about an acre of ordinary sandy land which I propose to plant in an early crop of watermelons. Last year this same lot was planted in melons and a rainy spell struck them, causing them to not have the proper work, and was a failure. Now I can use a limited quantity of stable manure, cotton seed meal, oak ashes, kainit and phosphoric acid. Will you please advise me through the *Planter* which of the above fertilizers are best to use, and what quantity to use for the best results; also how it should be applied (in the water furrow or in a hill).

Kershaw Co., S. C.

A SUBSCRIBER.

We would make a compost of the stable manure and cotton seed meal, and then just before using add the ashes and kainit and phosphate. We would prefer to apply in the hill, using three or four good shovelfuls to each hill and mixing in the soil. Add cotton seed meal at the rate of 300 lbs. to the acre, kainit at the rate of 100 lbs. to the acre, and acid phosphate at the rate of 150 lbs. to the acre.—Ed.

Please let me know, through your valued columns, if pigeons, in a barn, will cause stock to be lousy.

Rockingham Co., N. C.

W. B. WILLIAMSON.

There cannot be any possibility of the transference of the dermanysus to horses. It is a very different animal from the louse that infests horses. One who is not skilled in entomology, however, might be liable to suspect that there was some connection between the parasites of a pigeon and those of horses, as there is a parasite commonly found on pigeons, a species of *lipenrus*, that has a general resemblance to the *trichoctes* of the horse. The pigeon parasite, however, is more slender. It has never been known to infest anything but pigeons, not even poultry.

L. O. HOWARD.

Division of Entomology, Dept. of Agri., Washington.

#### Lice on Cattle.

My cows have an itching on their neck, and they scratch and rub themselves until the hair comes off. Will you be so kind as to let me know through your journal what is the cause of it, and the cure for it?

W. H. T.

No doubt the cattle have some lice on them. Use Laidlaw, Mackill & Co.'s tobacco dip, which you will find advertised in this issue.—Ed.

## Trucking, Garden and Orchard.

### WORK FOR THE MONTH.

The cold, hard weather of the past three months has been trying to all fall planted crops, and prevented the preparation of the land and the early planting of the usual area of English peas and Irish potatoes in the Tidewater section of this State and of North Carolina. The frosts of the past month are said to have done considerable damage to the spring-sown crops, even as far South as Florida, and some fear is felt as to the fruit crop in parts of Georgia. At this writing (22d March) the weather is dry and much more seasonable than for a long time, and progress is being made in getting the land ready for cropping. No time should be lost in doing this, as the season is already late, and take care that the work is well done. It is no use trying to grow good vegetables on poor, badly prepared land. To be of fine quality, all vegetables require to be grown quickly, and this cannot be done unless the land is made rich and worked to a fine seed bed. Use barnyard manure with liberality, and supplement it with 500 lbs. to the acre of a high-grade trucking fertilizer, or with a fertilizer made up of 300 lbs. of acid phosphate, 100 lbs. of cotton seed meal, 50 lbs. of nitrate of soda, and 50 lbs. of muriate of potash. If no manure is applied, double the quantity of the fertilizer. Let this be applied to the land now, and be well worked in, so that it may be in a condition to be available when the crops are planted.

Do not be in too great hurry to sow seeds or plant out crops. We are not yet safe from frost. English peas and Irish potatoes may be planted at once, and later in the month lettuce, radishes, onions, and other salads, may be sown for early crops, but the full crop of these should not be put in until the last week in the month or the beginning of May. Plants in cold frames should be hardened off by exposing them when the weather is mild, and gradually be fitted for planting in the open ground. Tomatoes, egg-plants, peppers and cantaloupes should be sown in hot beds, and as fast as fit be transplanted into cold frames to grow on and harden. Take care the plants are not drawn by being grown in too high a temperature. The best producing plants are short, stocky ones with good roots. Transplanting helps to secure these requirements.

The winter has, we learn, done much injury to fall-planted cabbages—many of the plants being killed outright, and the living ones badly stunted. As soon as the land is dry enough run the cultivator between the rows of plants, and stir the ground between the

plants with a hoe. New plants from the cold frame, or, better still, from an outdoor bed, which has had slight protection in hard weather, should be set out wherever needed to complete a full stand. Break the land with a hoe very thoroughly in the place where the plant is to be set out, or it will not be likely to make a growth to keep pace with those planted in the fall. As soon as the plants begin to show that they are growing, apply a dressing of nitrate of soda down the side of each row—say, at the rate of 75 or 100 lbs. to the acre—first cultivating the crop with an Iron Age or Planet Jr. cultivator as close to the row as can be done without disturbing the plants. This application of nitrate will help the crop very much, but should not be made in rainy weather, or it will be washed too deep into the soil very quickly.

Sweet potatoes should be bedded for sprouting. In this issue will be found an article dealing with this question and discussing the relative advantage of sprouts and cuttings as a means of producing a crop.

Strawberry beds should be worked over, and if they appear to have suffered much from the hard winter and to be late in starting growth, should have a dressing of fertilizer made up of 100 pounds of nitrate of soda and 50 pounds of muriate of potash to the acre, applied after working down each side of the rows. After this apply a mulch of pine tags or clean litter to conserve moisture and keep the berries clean.

Do not neglect the spraying of the orchard and vine yard. In our last issue will be found full instructions on this subject.

Let the lawn and flower garden have attention this month before work presses so much on the farm. Too often this, which should be the most attractive spot about the home, is so badly neglected as to be a disgrace to the owner and a source of perpetual worry to the ladies of the house. Take time to thoroughly clean up all the trash and leaves and rake the lawn. Dig over the flower beds and give the same a good dressing of manure. Prune back all straggling growths and give the place an air of tidiness and neatness which, even in the absence of many flowers, will make it attractive. Keep the grass cut short and have at least a few flower seeds sown and a few bedding plants set out in May.

Asparagus, once established, will, with proper care, last for twenty years; the first outlay, therefore, brings a continuous source of income.

## THE VIRGINIA STATE HORTICULTURAL SOCIETY.

We are informed that the committee charged with securing rates for shipping from the various distributing points has been in conference with the different railroads, and that as the result of this a more satisfactory schedule of rates has been promised than was in operation last year, which rates will be announced in time for the early shipments. Mr. Whateley, the secretary, has given very much of his time to this work during the winter months and deserves the thanks and support of the members and of all fruit growers.

## SWEET POTATO CULTURE.

*Editor Southern Planter:*

When potatoes are bedded there is one of two things they will do—either sprout or rot. Therefore, when bedded early, for this climate, say the last days of March, some mode for producing an artificial heat should be employed. I have found the following plan very effective; it can be used in lieu of a hot bed, but a hot bed will be earlier:

Place in a box or barrel fine stable manure to the depth of about eighteen inches, and apply water as the manure is added; the water will cause the manure to heat. I have found stable manure and cotton seed mixed, half and half, to answer an excellent purpose. The box, or barrel, should have a proper number of holes in the bottom for drainage purposes, or both may be bottomless.

Put straw, old cloths, or something of the kind on top of the manure, and then place thereon the potatoes to the depth of six or eight inches. It will be well to soak the potatoes in water pleasantly warm, for a few hours before placing them.

Care must be taken not to let the heat of the manure get too great, reducing same with water as occasion may require.

It will be well to place the manure five or six days before the potatoes are placed; in the meantime the heat can be properly regulated, thus preventing any damage to the potatoes. A gentle warmth only is required. The potatoes should be covered with straw and capped with wet cloths of any kind, thus retaining the heat and moisture.

The potatoes should be kept moist by an occasional application of tepid water.

In a few days, say three or four, the potatoes will develop a growing state, when they may be removed and bedded. To do this, construct a narrow bed, say two feet broad and of proper length, slightly raised above the surface. A sufficiency of stable or other manure should be used for fertilizing purposes. Place

the potatoes thereon lengthwise in two parallel rows about twelve inches apart and cover to the depth of from one and one half to two inches.

If the ground be dry when the potatoes are bedded, water should first be applied to the soil; after it gets in working order bed as aforesaid.

During wet weather the bed should be kept covered, which may be done with a few planks placed lengthwise. During fair days the bed should remain uncovered, but should receive no water until needed. The growing state having been developed, as aforesaid, sprouting will continue to advance gradually.

### CUT VINES VS. DRAWS.

The object of placing the potatoes in two rows, as aforesaid, is to develop vines for cutting purposes. The vines should remain until they run from two to four feet. Then cut them, preferably with shears, leaving a few leaves, say five or six on each stub. The vines can be cut into lengths of two or three leaves each. If the leaves are close together, cut into lengths of three leaves; otherwise, into two. These cuttings should then be rooted as follows:

Construct narrow beds a few inches broad in fairly rich soil. Then stick the cuttings therein, leaving a little space between. One leaf or joint should remain above the surface. Give the plants a thorough watering, which will settle the soil. Then draw loose soil around them; they will need no further watering. Cover for a few days until roots form, when they will be ready for transplanting. When thus rooted, cuttings will live better and grow off more readily than draws, and old potato growers say they will produce more and better potatoes.

In a few days suckers will start above the leaf on the stubs, the sucker from the top leaf generally leading. When this sucker runs out about one inch cut the stub below the joint, thus removing one leaf and from one to two inches of the stub. Continue until all the suckers are removed. These cuttings are to be arranged for rooting as aforesaid, leaving the tops of the buds above ground. When ready for transplanting, the plants should be dug up, not pulled up, thereby preserving the roots.

In order to develop strong vines I suggest that the principal portion of the sprouts be pulled off the beds early in the season, leaving only a few of the larger sprouts to develop into vines for cutting purposes. The sprouts pulled off can be transplanted for early potatoes, but it may be better to pull off the principal portion of them before they get sufficiently large to transplant. The sprouts left will draw the substance from the potatoes, and thus prevent any more new sprouts from coming.

### DRAWS VS. CUTTINGS.

The following experiment will show the compara-

tive value of draws, or sprouts, and vines cut into lengths of three leaves each :

1. Four short rows planted with draws from Perbatis potatoes, after the upper halves had been removed, yielded 5¼ lbs. potatoes.

2. Four rows planted with the bud ends of (1) yielded 108½ lbs.

3. Four short rows planted with draws of proper size yielded 79½ lbs.

The above shows that if plants somewhat overgrown be divided into two parts and the stubs be set immediately and the bud ends be first rooted and then set, the latter will beat the stubs nearly two to one, and will also beat draws of proper size over 33½ per cent.

#### ANOTHER EXPERIMENT.

Plants from the Pierson (New Jersey) potato were here used—a stronger growth and much more productive than the Perbatis.

In this experiment the vines ran about three feet before they were cut, leaving usually one or two leaves on the stubs. The vines were then cut into lengths of three leaves each; if the leaves are far apart two will answer. The cuttings were then set close in a trench, but not touching, one leaf above ground, and well-watered to settle the soil. Loose soil was then drawn around the plants, and a covering for a few days provided to protect from the sun. Roots soon started, when the plants were dug up (not pulled up) and transplanted.

The stubs remained on the bed until they suckered well, when they were drawn and transplanted.

The following is the result :

1. One short row planted with stubs yielded 5 lbs. potatoes.

2. Two short rows, bud end of vines, yielded 30½ lbs.

3. Two short rows, miscellaneous cuttings (no bud ends), yielded 27½ lbs.

1 and 2 had a slight advantage over 3, not being shaded by an adjacent house to so great an extent.

The rows of the above two experiments were respectively equal in length and received the same treatment.

1 had abundant roots when transplanted, but the plants started slowly and finally yielded but little except strings; 2 and 3 lived better and grew off much more readily than 1.

It is evident that cuttings will yield more and better potatoes than either draws or stubs, and it is generally conceded that they keep much better. Why then should not the draw system be generally abandoned, except a few for early use?

Moore Co., N. C.

BRYAN TYSON.

Mention the *Planter* to your friends.

#### GROWING STRAWBERRIES UNDER CLOTH.

I have used thin muslin, what is known as tobacco plant bed cloth, as protection for strawberries with great success. The natural habitat of the wild strawberry is along hedgerows where the deep weeds and grass give considerable protection from frost. These conditions are very closely duplicated by a covering of thin cloth, which allows free passage of sunlight, just as the overhanging weeds and grass do, but which, by lessening radiation at night, retains enough warmth to count.

My experiments with cloth protection go back as far as 1886. They were exhaustive and conclusive of its effectiveness. Within the past year or two others have arrived at the same conclusion. Mr. A. T. Goldsborough grew his huge strawberries, breaking the world's record as to size, under cloth.

My experience is that the berries not only grow larger, but that there are also more of them. I was at first fearful lest pistillate varieties would not then be sufficiently pollenized. I found just the opposite to be the case. Pollenization was absolutely perfect, even where only every fourth row was planted in a staminate variety. It far surpassed anything that I had observed in the open field. Why this should be puzzled me for a time. Fewer bees got to the blooms than would have done otherwise. The cloth, which had to be hung low to stand, lay limp close over the blooms. Finally, happening to visit the field on a breezy day, the cause of such perfect pollenization was clear to me. The field of cloth was as billowy as the ocean. The faintest breath of wind entering one edge of the covering would pass under it the whole way, heaving and rippling it as it went, but evidently not escaping till it reached the farther side.

This showed that the cloth, thin as it was, yet had the power to measurably confine the volume of air pouring under it, causing it to pass as a current among the plants and blooms. This current flowing amid the staminate blooms, of course becomes heavily laden with pollen, pollenizing not only every pistillate blossom, but fructifying it so thoroughly that no part of it failed to be reached. All growers have observed worthless, deformed berries; these are usually the effect of insufficient pollenizing which reaches only a part of the pistils of each blossom, perfect fruit being possible only when each separate one is impregnated.

However, perfect pollenization was by no means the only good result of cloth protection. Even the slight increase of warmth served to give just the conditions that the strawberry needed to attain the highest excellence. The fruit, even of staminate varieties, was much larger and the yield greater than it would otherwise have been. The crop ripened fully a week earlier. The muslin cover, especially if a kind treated by a solution of tar was used, protects the blooms from any frost short of a heavy freeze, something most unlikely to come in blooming time. I have known the heaviest "black frost," the most harmful kind, to freeze the soil half an inch deep, to come, and kill scarcely a protected bloom, while all in the open air was destroyed as well as most of the buttons.

Taking the years as they come, I estimated that protection adds from 50 to 100 per cent. to the yield of

berries, making them larger and more reliable, and ripens them earlier.

Care must be taken not to use a cloth too thick and impervious to sunlight. I doubt if a heavier quality, even if drawn off in the day and on at night, would do so well. The tar treated kind, made in large quantities for tobacco plant beds, is just right. It should be put on about the time that plant growth begins in the spring, and remain till picking begins. I never found it profitable to pull it off and on to allow picking to be done, but always removed it for good at that time. Nor do I think it would be advisable to do this, even if practicable, in other respects. The berries would probably not color so well with part of the sunlight cut off. As it is, the plants run up much taller than usual and are of a lighter shade of green.

I found the proper fastening of the cloth to be somewhat of a problem, but finally solved it for all practical purposes. March is a month of both wind and snow. Therefore, the canvass must be anchored low, so that even the heaviest snow fall would only press it closer but not tear it from the hooks, and the fastenings must be strong and close together, so as to enable your field of canvass to weather even a hurricane.

I used small riven pine stakes sawed off to eighteen inches in length. One end was sharpened so that the stake could be easily driven in the ground to a depth of one foot, leaving six inches of the stake above ground. A gimlet hole was bored in the upper end and a six-inch piece of small soft wire was run into the hole and secured by twisting one end around the stake. The other end of the wire was bent into a hook to hold the cloth. The top of the stakes was also rasped off smooth so as not to tear the thin cloth when the wind rubbed it to and fro across them. The stakes were, of course, prepared indoors and provided with the wire hooks, ready to be driven down when needed.

After many tests I found that they should be in straight rows an inch or two under three feet apart, the width of the cloth, and that they should not be more than fifty four inches, one and a half yards apart in the rows. The stakes driven, the cloth is strung on smoothly, but not too tight, and the soft wire hooks twisted so that the wind cannot flap it loose.

The original cost of this protection was \$150 an acre. But the cloth lasts three years, and then has some value as a covering for tobacco plant beds, which being small, are usually in protected places, do not require a cloth as strong as strawberry fields exposed to all the blasts of March. The stakes, if pulled up and hosed at once, will last from five to ten years.

This reduces the average annual cost to about fifty dollars an acre or a little less.

Vance Co., N. C.

O. W. BLACKNALL.

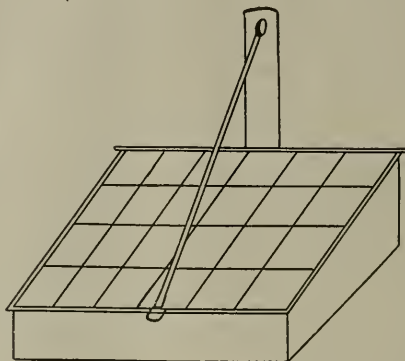
## PLAN FOR MAKING EASY THE ELEVATION OF THE HOT-BED SASH.

*Editor Southern Planter :*

Hot-beds, if possible, should have been made and seeded some time ago. It is not too late, however, if not heretofore done, to arrange for facilitating the elevation of the sash, which should be done as often as

the weather is propitious, as aeration for plants is absolutely essential.

Hot-bed sash, as generally made and placed, are cumbersome, and the airing of the plants is too often neglected by reason of the trouble and labor. I have for several years been using the following plan for raising at any angle my hot-bed sash. The cost of the expedient is light, and any child or delicate female can perform the service of raising or lowering the sash.



To the rear of the bed, at midway, fasten an inch board, five or six inches wide, six or seven feet high, proportionately braced. At the proper height impose an ordinary window sash pulley. Through this pulley pass a sash cord, one end attached to front side of sash frame, to the other end weights of sufficient weight to balance at any angle the elevation of the sash. Sash hinged to rear board of bed frame. Now, this plan is for single sash operation: where a continuous line of sash is to be arranged for, a row of posts should be planted (six feet out of ground) in rear of sash line; upon the top of these posts a 3 x 4 inch scantling, securely fastened. Opposite the centre of each sash a screw pulley (costing three to five cents) should be inserted from the under side of the scantling, through which the sash cord may work, as in above plan in single sash. Thus arranged, each sash is worked independently. Cover the scantling with a strip of tin and it will last for a number of years.

Franklin Co., Va.

G. W. B. HALE.

## A GOOD LATE IRISH POTATO.

*Editor Southern Planter :*

Some few of the small farmers and truckers here in Claremont have been growing a late winter Irish potato for some ten years past, and in all that time have not failed to make a crop, some years as many as 250 bushels per acre.

This potato is strictly a late one-crop potato; it will

do nothing planted early, as it must have the cool moist weather of fall to mature a crop.

We plant from July 1st to August 1st. Most of us prefer to plant before the 10th of July, but good crops are made planted in August, if frost holds off late.

In this season of few potatoes, Claremont has potatoes to ship, and they are large, fine ones. If this potato was grown all over the State, Virginia would not need to buy potatoes from the North, for we can keep them without trouble till the early crop is dug.

No need for going North for seed, as we have grown it here for over ten years, and it is a better potato in every way now than when we first grew it. It is a local potato, called the Claremont Peach Blow, as it resembles the old Peach Blow in color of skin when first dug.

Surry Co., Va.

A. F. AMES.

### TOMATO GROWING.

*Editor Southern Planter :*

In your publication for March an article appears bearing upon the best method of setting out tomato plants.

A few years back a well trained gardener explained to me his mode of culture of the the tomato plant, and after adopting his practice I can commend it as a successful one.

With a two horse plow of average size run a straight row east and west. Fill the row even to the surface with stable manure; then run the same plow each side, so as to lap the soil all the way over the centre of the manured row. When ready to plant take a narrow hoe and cut down from the middle of the list to a level with the ground as far apart as the plants may be desired, drawing the opening to the south, which will leave the plant walled in on the north, east and west, protected from wind and convenient to be covered from late frost. As the crop is worked the remaining list will be leveled, and but slight work will be necessary.

Garrett Co., Md.

CHAS. W. MILLER.

Beets are largely used, both early and late, for late crop seedings are made in June and July. Mangel or stock beets are most nutritious cattle food. Every farmer should grow a liberal supply.

Late or winter cabbage can be successfully grown and marketed by farmers as well as truckers. In case of a glut on the market, cabbage makes a very satisfactory hog and cattle food.

Snap beans usually prove profitable, both to gardeners and truckers. The white seeded varieties will often yield a larger crop of dried beans than the White Navy beans, making a desirable crop to grow for shelled beans for winter use, even though they should not sell well as snap beans.

### NECESSITY OF CHANGING POTATO SEED.

Potatoes may be grown fairly well on nearly all kinds of soil. Sand and muck lie at the two extremes of soil composition. On a field of drifting sand, which neither mortgage nor deed could hold, potatoes to the value of more than \$100 per acre have been grown in a single season, while upon muck of a well drained swamp in northwestern New York, potatoes have been profitably grown 19 years in succession, the 9th year producing a moderate crop of the old fashioned Early Rose in 1897. The potato thrives best on a light, loamy soil, neither too dry nor too moist. The most agreeably flavored potatoes are almost always from newly broken pasture ground not manured, or from any new land where soil is suitable. They delight in frequent showers. No amount of skill can produce heavy crops without plenty of water, but the soil must be well drained.

Late spring frosts and early frosts of autumn tend to prove that the potato properly belongs to climates milder than most of the Canadas, but in warm climates it degenerates rapidly and soon fails. Seeds of all cultured plants are known to fail so often that the necessity of an occasional change of seed is almost everywhere recognized. In 1840, on the banks of the Tyne, England, Scottish potatoes brought a higher price for seed than those of native growth, and to the lowlands of Southern Scotland came seed potatoes from the highlands further north.

In this country, tubers grown in latitude 42 to 44 degrees seem to produce plants of greater vigor. Those of the same variety grown in latitude 45 to 47 degrees produce plants which mature their crop of tubers earlier, but these plants are weaker and shorter lived, because the parent plant has striven to mature within too short a season and the habit of early ripening is carried over into several succeeding crops. Best authorities seem to agree that there are considerable differences in potatoes of the same varieties grown on different soils in the same neighborhood, and that varieties most advantageously cultivated in certain particular soils which degenerate slowly if at all, often degenerate rapidly in different soils not far distant.

Naturalists say that one of the principal causes of the exhaustion of the vegetative powers of the plant is due to propagation from tubers or cuttings from tubers, since this process is not reproduction, but one plant is divided and subdivided into a multitude. The whole analogy of nature seems to show that by changing from one soil to another, year by year, the potato may live longer and more healthfully than if grown continuously in the same spot where the seed first grew from the seed ball. Naturalists also say that the species can only be preserved by reproduction from the seed ball. While farmers must plant tubers or cuttings of tubers in order to supply the wants of their respective markets, trusting that like may produce like or nearly so, except that the stock seed will lose vigor, let us hope that some means may soon be found by which the vigor of the plant may be maintained, and if possible increased.—C. W. Ford, in *American Agriculturist*.

Mention the *Southern Planter* when corresponding with advertisers.

## Live Stock and Dairy.

### COMPARATIVE SKIMMING QUALITIES OF JERSEY AND HOLSTEIN MILK.

We have received the following letter commenting on the article under this caption which appeared in our February issue, from our subscribers, Messrs. Fassitt & Sons, of Sylmar, Md., who are Holstein breeders, and asked Mr. Hoxie, Superintendent of Advanced Registry of the Holstein-Friesian Association, his views on the subject, with a request that we publish the same :

YORKVILLE, N. Y., February 25, 1902.

Thos. Fassitt & Sons, Sylmar, Md.:

The copy of *Southern Planter* and letter you kindly send me are received. I have not the slightest doubt that the milk of the Jersey breed creams more easily than the milk of cows of the Holstein Friesian, the Ayr-hire and all other breeds, with the exception of the Guernsey breed. As early as 1875, this fact was discovered by E. Lewis Sturtevant, who was afterwards made Director of New York State Experiment Station. His explanation of this fact was based on the theory that the fat in milk existed in the form of globules, and that the larger the globules the more easily they were separated from the milk. He found that the size and appearance of these globules varied in different breeds, and that they varied in milk from the same cow at different periods from calving and in different conditions of health. In writing of the Jersey breed, he says: "The milk globule of the Jersey breed is larger than the corresponding globule of the other breeds here considered (Ayrshire and Holstein), and there are fewer granules." \* \* \* "From the large size of the Jersey globule, and the comparatively small number of granules, the Jersey cream rises with considerable rapidity, and so completely as to leave a very blue skim milk." \* \* \* "The conclusions to be gleaned in reference to the Jersey milk are: First, that it is unfitted for the retail dealer on account of the rapidity with which the cream rises, and the difficulty of again mixing this cream with the milk, and on account of the absence of granules, the inferior quality of the skim-milk. Second, that on account of the completeness of the separation of the cream, it is an excellent milk for the butter-maker, separating but little waste, and, with quick churning capacity, supplies a butter of excellent appearance and quality. Third, that on account of the physical qualities described, it is not an economical milk for the cheese maker. Fourth, from the presence of nitrogenous matter in intimate mixture with the butter, the indications are that this butter is better fitted for the daily sending to market than for the purpose of winter packing."

Referring to his experiments, he says: "Of the three breeds we are considering, the American Holstein presents the smallest globule in its milk. The globules are more uniform in their size than in the Ayrshire milk, and there are fewer granules. The cream, on account of the uniformity of size of the globule, rises completely, and on account of their

small size, mixes again with the skim-milk with considerable readiness. The absence of granules as a predominant feature makes the skim milk appear blue, and renders this milk less fitted for the cheese-maker than Ayrshire milk. The quality it possesses of the cream and skim milk being readily miscible, may offset in some degree the absence of the granules. The butter made from this milk, so far as determined by a single experiment, was fine in grain, light in color, and displayed remarkable keeping quality."

He also made experiments to determine the keeping qualities of butter of several different breeds. I quote: "One sample of Dutch ('Holstein') butter, one of Guernsey butter, seven of Jersey butters, and three of Ayrshire butters, were placed in a cupboard adjoining a steam heater. A few days later another pot of Ayrshire butter was added." "The Guernsey butter was very high colored, melting point 99°, had an oily rather than a waxy look, but was very attractive. *It moulded in spots in about a month.*"

"In seven weeks the Jersey butters were all rancid, and one had lost its color in spots, the white spots reminding of tallow—no butter flavor."

"The Ayrshire butters were not rancid, but had lost flavor and were poor."

"The Dutch (Holstein) butter was well preserved, being neither rancid nor flavorless."

At the Pan American Exposition last fall, I had a conversation with Prof. H. H. Wing, of Cornell University Experiment Station. He said to me: "If the fat is not got out of the milk of the Holsteins, or of cows of any other bred, it is the fault of the butter-maker. With modern appliances he can get it out, and it is his business to do so. If he does not, it is not the fault of the breed."

I quote from an editorial in the *Jersey Advocate*: "The work of the six months in the Pan American Model Dairy set this question ('Churnability of milk of different breeds') at rest. It was conclusively proven that there was no more escaping butter fat in the skim-milk of one breed than there was in that of any of the other breeds, if each was churned at its proper temperature."

I have taken the liberty of underscoring several of the above quotations. You are at liberty to publish this letter if you desire to. Very possibly the *Southern Planter* would accept it.

S. HOXIE.

### IMPROVEMENTS IN STOCK RAISING AND FARMING DURING THE LAST ONE HUNDRED AND TWENTY-FIVE YEARS.

Editor *Southern Planter*:

Charles Darwin, the great naturalist and philosopher, was of the opinion that our domestic animals were not created so perfect as we now see them. He says, "We cannot suppose that all the breeds were suddenly produced as perfect and useful as we now see them. Indeed, we know that in many cases this has not been their history. Nature gives successive variations; man adds them up in certain directions useful

to himself. In this sense he may be said to have made for himself useful breeds.<sup>1</sup>

It is probable that the work of creation was perfect, "as God saw it was good," and that mankind afterwards allowed the animals to degenerate to such an extent that they could be greatly improved.

The Teeswater, Holderness or Durham cattle (by whatever name called), were wonderfully improved in size and symmetry by the Collings' and others, and became the lordly Shorthorns of the present day. The aim of the early breeders was not only to increase the size of the animals, but to make the flesh grow in places where the most valuable meat could be cut by the butcher, and they succeeded amazingly well. Bakewell said, "They thought all is useless that is not beef."

The Herefords were made to assume blockier forms and larger proportions by the Scudmores, Tompkinses, Gallierses and Prices, and became the powerful rivals of the Shorthorns as a beef breed.

Watson and McCombie improved the black, hornless cattle of Aberdeenshire, until they took most of the prizes in competition with the Shorthorns and Herefords as a beef breed, and bore away the highest honors and prizes from the International Exhibition, at Paris, in 1878.

About one hundred years ago Thomas Bates endeavored to change the Shorthorns from a beef to a dairy breed, and met with considerable success—just how much, we do not know. He said, "My cow, Duchess, calved in 1807, kept on grass only, in a pasture with nineteen other cows, made in butter and milk for some months above two guineas a week."

It is a pity he did not tell us how many pounds of butter or milk she produced in a week, then we could judge more intelligently of her merits as a dairy cow. Unless he got extravagant prices for milk and butter, she must have been an extraordinary good cow. The improvement of cattle for dairy purposes commenced much sooner than for beef. The cows in Holland and on the Channel Islands had become famous for milk and butter more than one hundred and fifty years ago, and they have been improved in size and the milk-giving property during the last fifty years by breeders in the United States.

*Hale's Husbandry*, published in London, in 1758, nearly one hundred and fifty years ago, says of dairy cows. "The fine kinds are the Dutch and Alderneys. The Dutch will yield two gallons at a milking, and the Alderney is equal to her in the quantity and quality of her milk."<sup>2</sup>

About one hundred and fifty years ago, Aytoun described the Ayrshire cows as follows: "A puny, unhappy race, few of the cows yielding more than one half to two gallons of milk in a day in the height of milking season."

Let us examine the records of some superior cows of modern times, raised by American breeders. The tests were made under the supervision of disinterested persons, and their reports are as reliable as any facts established by human testimony.

The Holstein cow, Princess of Wayne, gave 20,469 lbs. of milk in a year. Her milk made 91 lbs. of butter in thirty days.

The Holstein-Friesian cow Mercedes (723) made 99 lbs. 6½ ozs. of unsalted butter in 30 days.

The Jersey cow Oxford's Kate gave milk that made 38 lbs. 2 ozs. of butter in seven days.

The Jersey cow Mary Anne of St. Lambert made 35 lbs. 8½ ozs. of butter in seven days.

These cows, and many others nearly their equal, were tested at about the same time, and under circumstances that did not admit of fraud, and it is doubtful whether ancient history can furnish any dairy records to equal them.

A century ago a horse that could trot a mile in three minutes was regarded as a prodigy.

Since then, by judicious breeding and training, breeders have produced many "flyers" that can cover the distance in about two minutes. Goldsmith's Maid, Dexter, Jay I See and Maud S were not sports of nature, but the result of systematic breeding for a particular purpose.

The Conestoga horses of Pennsylvania, the Percherons of France, and the Clydesdales of Scotland were bred to obtain size, and are the giants among horses as the Shetland ponies are the dwarfs.

The improvement of sheep in the United States has been greater than the improvement of cattle and horses. According to the census of 1840 the average weight of wool per head was only 1.84 lbs.—not quite 2 lbs. per sheep. In 1850 the census figures give an average weight of 2.42 lbs. per head; 1860, 2.73 lbs. per head; in 1880, 4.42 lbs. per head; 1890, 5.15 lbs. per head. The weight of carcass was increased in the same proportion.

In America, one hundred years ago, agriculture was in a backward condition. Buildings, stock, implements and farm tools of all kinds were inferior, and there were prejudices against any innovation in the established routine of practice. The wet meadows were left undrained, and the exhausted fields bore scanty crops, and were frequently abandoned to weeds under the mistaken idea of letting them rest to recuperate. The main dependence of farmers was in clearing new land to raise good crops. Rotation was but little practiced. Fields were kept under the plow as long as they would raise paying crops. Clover and legumes were seldom raised, manure was but little regarded, labor-saving machines unknown, and the under-sized cattle, horses and sheep were so badly

cared for during the winter they resembled shadows in the spring.

Neither cattle nor sheep were sheltered in the winter, nor fed grain of any kind, and it was considered inevitable that they should be "spring poor" in the spring.

Previous to 1795 agriculture was in a backward state in Great Britain also, but during the period from 1795 to 1815 a great improvement took place. The introduction of under drainage, the use of ground bone, superphosphates and mineral fertilizers came rapidly into favor. Greater quantities of stable manure obtained by keeping more cattle; better tillage implements and better tillage, the rotation of crops, the more general use of clover and green manure were the means by which the productiveness of the soil was immensely increased.

Great improvement in plows, harrows, drills, cultivators, threshers, mowers and reapers have been made since the beginning of the nineteenth century in this country and Great Britain.

The improvements in farm practice in the United States have, during the nineteenth century, advanced with rapid strides, but there is still room for more.

J. W. INGHAM.

Referring to the Shorthorns as a dairy breed we would say that we had a Shorthorn cow that gave 4 gallons of milk per day and 23 lbs. of butter per week for two or three months after calving.—Ed.

## RESULTS OF FEED AND CARE IN IMPROVING THE INDIVIDUALITY OF COWS.

*Editor Southern Planter :*

There is no doubt but that good care and feeding of cows, systematically carried out from year to year, will change their individuality and cause many cows to take a place among good and even extraordinary animals that are now occupying places of indifference and obscurity simply because they do not have a proper chance. The force of this is illustrated by the following records given of cows Nos. 7 and 15. Further details of similar results with many other cows have been published in Bulletin No. 69 of the Maryland Station.

Cow No. 7 was purchased by the Maryland Experiment Station from a herd of average cows for the State, and, as far as could be judged, she was no better than the average of the herd. Her ability at that time is shown by her first year's record at the Station, as she produced but 258 pounds of butter, which is likely better than she had been doing before as she was much better fed. She was at this time in what might usually be called the prime of her life for dairy purposes. In the five years she has been owned by the Station her yearly butter yield has constantly increased to 268

pounds the second year; 337 pounds the third year; 362 pounds the fourth year; and 442 pounds the fifth year. She is a high-grade Jersey, decidedly not of the beef type. She is a very dainty and comparatively light feeder, which is her serious fault, and, while she does not produce a large quantity of milk, it is very rich in fat.

No. 15 was purchased by the Maryland Experiment Station from a Baltimore consignment of Western cattle. When she was purchased she was of a decidedly beefy tendency, and the record of her first year's butter yield at the Station shows her to have been a very poor cow from the dairy standpoint at that time. The first year she was owned by the Station she produced 183 pounds of butter; the second year 286 pounds; the third year 359 pounds; the fourth year 338 pounds; and the fifth year 386 pounds. Hereford blood is very likely the predominant strain in her breeding, as when she is bred to the most prepotent Jersey or Guernsey bulls her calves invariably are colored like the Hereford breed, without any markings whatever from the sire. Since owned by the Station, No. 15, has lost all of her tendencies to lay on flesh.

The sketches sent by the Station are of cows which were selected as being average animals for this State, and it is doubtful if they had remained under the same conditions as that from which they were taken whether their best yearly yield would have been any better than their records for the first year they were owned by the Station. It simply shows what can be made from a great many average cows found on dairy farms if they are given the proper treatment.

H. J. PATTERSON, *Director.*

*Experiment Station, College Park, Md.*

## MARY MARSHALL, THE NOTED GUERNSEY, SOLD FOR ONE THOUSAND DOLLARS.

Probably no cow has received more attention in any public trial than did Mary Marshall, the leading Guernsey in the Pan American Model Dairy Breed Test at Buffalo this last summer. Not only was she the leading Guernsey cow but she made the greatest profit of any cow in the entire herd, which comprised five animals, each of ten different breeds.

Mary Marshall calved at her home, in Bucks county, Pennsylvania, on April 15, 1901. Ten days later she was shipped by freight to Buffalo, and on May 1st entered upon her work as a member of the Model Dairy Herd. All summer long she maintained her rank as leading cow for butter production. Thousands of people watched her work, and it was a common remark from those who were interested in the test as they entered the barn, "Where is Mary Marshall, I must see her."

She was an attractive cow. Large, angular and of dairy build, she well exemplified the Guernsey characteristics of contentment and business. Never aroused when her blanket was removed so that some admirer might better see her individuality. Ever ready to reciprocate any attention her care taker might give her. Always ready to be milked or looking for her meals. Thus she passed the trying stabling on the Exposition grounds during the hot summer.

When the final balance was taken November 1st, it was found that Mary Marshall had during the six months eaten 1,010 pounds hay, 4,456 pounds silage, 1,285 pounds bran, 45 pounds oats, 795 pounds gluten, 47 pounds corn meal, 89 pounds cotton seed meal, 3,577 pounds green clover, at a cost of \$29.14. In return for this she had given 5,611 pounds of milk with an average test of 3.6 per cent. butter fat. This showed she had given 330.13 pounds butter fat, and the record of churned butter credited her with 354.26 pounds. The value of her butter fat was \$88.57, leaving a profit of \$39.43. This was the largest profit for butter production of any cow in the herd, and \$7.65 greater than that of the second best cow. From the standpoint of milk production it was seen that she had produced milk worth (in accord with the test rules) \$75.49, leaving a profit of \$46.35.

Mary Marshall was bred and has been owned by Mr. Ezra Michener, Carversville, Bucks county, Pa. She was dropped April 29, 1891, making her just ten years old at the beginning of the test. She has had six calves, the last being a heifer which Mr. Michener sold when young for \$200. He has just sold Mary Marshall for \$1,000 to Mr. Albert C. Loring, of Minneapolis, Minn. Mr. Michener has long been a pains taking breeder of Guernseys, and he finds reward for his efforts in the satisfaction of raising and developing this cow. This alone would be worth to him all his trouble, but he has been successful with many others. Mr. Loring, the President of the Northwestern Consolidated Milling Company, is just starting a herd of Guernseys. He has recently joined the American Guernsey Cattle Club, and his determination is to have a choice herd, and all numbered in the Advanced Register for Guernseys. He is to be congratulated in securing such a grand cow as Mary Marshall around which to gather his herd.

Peterboro, N. H. WM. H. CALDWELL, Secretary.

## THE CHAMPION DAIRY COW OF THE WORLD.

Editor Southern Planter:

The largest milk record known to the world is that of the Holstein Friesian cow Pietertje 2nd. Her yield was 30,313 lbs. 8 oz. in 12 months, which is thoroughly well attested. Her largest day's yield was 112 lbs. 7 oz.

Patney, Vt.

F. L. HOUGHTON.

## GRADING UP A FLOCK OF SHEEP.

We take the following from a report of the results of experiments made at the Wisconsin Experiment Station:

*Crossing.*—Good flocks of mutton sheep have been built up from a pure Merino foundation by using a pure Shropshire ram. When the grade ewes of the first cross were again crossed with a pure Shropshire ram the progeny closely resembled the pure Shropshires. The form was well filled out in all its parts and many of the better grades could hardly be distinguished from pure Shropshires. The third and fourth crosses were good mutton sheep in all respects.

*Dorset Crosses.*—Experiments in crossing grade ewes with a pure Dorset ram indicate that the characteristics of the Dorsets to breed fully three months earlier than other breeds is transmissible through the male line to the first cross and more strongly still to the second cross of the Dorset on the first cross ewe. This suggests an economical and commendable way of establishing a flock for breeding early lambs.

*Breeding and Feeding.*—Shropshire grade lambs taken from flocks where little attention had been given to the selection of good rams and the culling of the flock, were fed in comparison with average lambs of the well kept flock of the station. On the same feeds the scrub lambs gained 2.27 pounds per head per week and the station lambs 3.6 pounds. The cost of 100 pounds of gain with the scrub lambs was \$4.58 and the profit 65 cents per head. With the station lambs the cost per pound of gain was \$4.08 and the profit per head \$1.13. Care and attention to the flock in this case practically doubled the profit. Stated in another way, lambs were got by a good ram that returned as great a profit as two lambs gotten by an inferior ram.

## SHROPSHIRE SHEEP.

Editor Southern Planter:

I have seen and owned many different breeds of sheep, but have never yet found one that comes as near being an ideal farmer's sheep as the Shropshire. He thrives where others will die, brings as good lambs as any I ever saw or heard of, and never fails to furnish enough wool to more than pay for his feed, no matter how low the price of wool or how bad the crop. The worst crop of Shropshire wool is generally better than that of any of the other so-called mutton breeds. The propensity of the Shropshire is away beyond that of any sheep I ever saw. Breed a common grade ewe to a purebred Shropshire buck, and I warrant the result will surprise you. On the worn-out broom sedge field, the rock ribbed mountain, or the verdured valley, the Shropshire is at home and a money maker. He has been with us for a long time, and I think is "likely to remain when others have fled."

D. F. JONES.

Fairfax Co., Va.

## The Poultry Yard.

### FEEDING THE CHICKS.

Many people have asked on seeing the healthy growing, well feathered young chicks, what food we were using. The winter's experience, in which a variety of grains were used, indicates that it is not so much what food is as how the food is supplied, provided there is plenty of starchy, albuminous and green matters. In nature small seeds, insects and grass furnish food for chickens. These are most abundant in the spring and summer months, and it is at this time that the chickens thrive. To secure the best results foods simulating both the composition and the mechanical character of these should be supplied. For instance, in the summer the tips of grasses are young and tender and easily broken by the chickens. For green stuffs to be easily assimilable some plant should be supplied which may also be easily broken. We have found hanging a head of lettuce in the brooder by a string to exactly furnish the desired want and be greedily, even crazily, eaten by the chickens. We have found that sifting the cracked corn, scraps and cracked wheat through sieves, so as to remove both the meal and larger pieces, gives favorable results. Millet seeds, broken rice, rolled oats and other things of this character were greedily eaten and well digested. For meat for the youngest chickens we have given the sterile eggs boiled hard and ground through a sausage machine. While it is preferable, if one has time, to chop the egg fine and mix with bran, or even feed it a little at a time to the chickens, we found it satisfactory to mix it with the bran until it was crumbly and feed it in bulk, a sufficient quantity being given for the number of chickens in the brooder. Mixing the eggs with cracker did not succeed with us well for very young chicks, although it is fed by others apparently without harm. As the chickens grew older meat scraps were substituted. These were equally sifted, added to the grain ration and strewn upon the floor of the brooder. Boiled liver and animal meal were also used, but there was very little difference in the gain of the different chickens when fed upon the animal meal, meat scraps and eggs.

One mixture of seeds was made as follows at the suggestion of the poultryman:

For chicks from one day to six weeks old: Mix four parts cracked oats, one of fine cracked wheat, two of rolled oats, one-half of millet seed, one-half of broken rice and two of fine scraps.

For the first two weeks we have added one pint of millet seed, leaving out scraps during the first week. Boiled eggs, three for each fifty chicks, have also been fed.

After six weeks, and up to ten weeks, feed the following mixture: Mix four parts cracked corn, two of fine cracked corn, one of rolled oats, one-half of millet, one-half of broken rice, one of grit and two of scraps.

For chicks kept in the colony system give for grain three parts of wheat and four of cracked corn. Also give the following mash three times a week and daily after ten weeks: Mix one part ground corn, one of ground oats and one of brown shorts.

To feed the meat scraps we made the seed feed into

a mash with boiling water, mixed the scraps with it and covered the mass until it was well steamed. This mash seems to hasten the growth of the chicks. While it seemed necessary to feed the young chicks rather often, those ten days old were fed mash in the morning, green food at noon and dry seed at night, allowing them to fill their crops. When fed often they seemed to get satiated and had no desire to eat.—*Rhode Island Experiment Station.*

### THE COUNTRY'S WEALTH IN FOWLS.

A census report just issued shows that of the 5,579,637 farms in the United States, 5,096,252 reported poultry. The total numbers of fowls, three months old and over, reported were as follows: Chickens, including guinea fowls, 233,598,085; turkeys, 6,599,367; geese, 5,876,863; ducks, 4,807,358.

The number of nearly all these classes of poultry are smaller, as reported in 1900, than in 1890, owing to the fact that in 1890 they reported all fowls, of whatever age, while in 1900 only those three months old and over were reported.

The eggs reported in 1890 were 1,293,819,186 dozens, against 819,722,916 dozens in 1889.

The value of poultry on hand June 1, 1900, was \$85,794,996; the value of poultry raised in 1899 was \$136,891,877, and the value of eggs produced in 1899 was \$144,286,158.

The total income derived by the farmers from their poultry industry in 1899, representing the total value of eggs produced, as well as the poultry raised, was \$281,178,035.

This total makes the poultry industry one of the largest connected with agriculture.

### WHAT A FLOCK OF HENS CAN DO.

"Here is what we did with our hens last year: January 1, 1901, we had 200 White Leghorn hens and eleven Plymouth Rocks for sitters. We sold 1,506 dozens of eggs, which brought \$298.87. We have sold seventeen roosters for \$7.30, which makes the sales amount to \$306.17. The eggs used in the family is eighty four dozen; calling them worth 18 cents a dozen makes them worth \$15.12. You will see that the eggs sold brought almost 20 cents a dozen, only lacked a fraction of a cent. The chickens used for meat are fifty at 30 cents each; this is the lowest price that we have sold any for; it makes them worth \$15. January 1, 1902, we have our number of fowls that we had January 1, 1901, and ninety-five extra pullets worth 50 cents each, which is \$47.50; and twenty four extra roosters worth 40 cents each, which is \$9.60—which, by adding what we have sold and used and the extra fowls, is \$393.39. The cost of feed for the year is \$159.73—a profit of \$233.66. If they had had more room they would have done better. I have had them do better than this. I shall continue in the poultry business as long as they do as well as they have the past year."—Mrs. Fillmore Billings, Avoca, N. Y.

## The Horse.

### ELLERSLIE STUD FARM, VA.

Vigilant, a well known English writer on turf topics, had the following on this farm in a recent issue of *The Sportsman*, a leading English horse paper :

In all the bustle and excitement of a flat racing season there is little time or opportunity to do more than deal with current sports. During the four dreary months which elapse between the fall of the curtain at Manchester and the welcome call to arms at Lincoln things are very different, and a turf writer is often sorely pressed for material to make his article fairly interesting. I need not apologize, therefore, for devoting the greater portion of my space to day to an account of one of the most flourishing stud farms in America. I think that anything relating to the breeding of thoroughbred horses abroad must always be of considerable interest to English breeders, for we well know that, however successful equine visitors from abroad may be over here, the stock must be constantly replenished from this country, or there is a slow but certain falling off in the qualities of the animals produced. The Ellerslie Stud Farm was established in 1841 by Mr. John O. Harris, of Albemarle county, Va. It takes its name from the home of Sir William Wallace, of Scotland, which it is said to resemble in a marked degree. For four and twenty years it was solely used as a grain and tobacco farm, and then it passed into the hands of Capt. R. J. Hancock, who had followed Lee and Jackson from the beginning to the end of that disastrous war between the Northern and Southern States. When the end at last came, Capt. Hancock sheathed his sword, and began to rebuild the waste places, the results of a long and cruel war, and turned Ellerslie into a stud farm. The place contains about 1800 acres of undulating land, with the finest mountain air and eighty everlasting springs. There is not a field nor paddock but has running water through it, whilst there is an abundance of blue grass, orchard grass, clover, timothy, and red top or herds grass. The proprietor has mills, worked by everlasting water power, and from this gets any kind of ground food for his live stock.

There are at present five stallions at Ellerslie, the chief of them being Charaxus, by Distin, out of Sappho, by Kingston. Distin, some of my older readers may remember, was an own brother to Lady Elizabeth, whom I shall always regard as the most wonderful two year old that ever lived, but, though he could race a little, his form never approached that of his marvelous sister. Charaxus is sire of many winners, including Charentus, who holds the record for the fastest mile and a quarter (2 min. 5 sec.) ever run on a circular course. The horse was originally purchased at the suggestion of Mr. Lyles, and is now twenty six years of age, so that Fatherless, by Isonomy, out of Orphan Agnes, by Speculum, has been secured, and will ultimately take the chief place at the stud. Fatherless will be remembered as having won the Great Metropolitan and other races. He has been in America for more than a year, is thoroughly sound, a good doer, and very sure with his mares. Another of the stal-

lions is Eon, by Eolus, out of War Song, by War Dance, who was a son of Lexington. Eon was a cast iron horse whilst on the turf, having taken part in sixty-six races, of which he won thirty four, and was placed in twenty nine of the others, thus only failing to finish in the first three upon three occasions. Eolus, the sire of Eon, was one of the gamest horses ever saddled, and his own brothers, Eole, Eolist St. Saviour, Eolo, and also Eon, shared the characteristics. It may be remembered that Eole finished third to St. Gatien in the Gold Cup at Ascot, after he had been only three or four weeks in England. He also beat Ironquois twice, and defeated every noted race horse in America except Hindoo, whom he ultimately broke down. The remaining stallions are Aurus and Aureus, by Eolus, out of Sample, by Rotherhill.

At the present time the Ellerslie Stud contains forty-two brood mares. I wish that considerations of space would allow me to give a list of them in full, for it furnishes extremely interesting reading, but I must only allow myself to mention some of the most famous. I notice Cerise, dam of that remarkable performer Morello, who, if I remember rightly, carried off the first of the Futurity Stakes. She is by the imported Moccasin, out of Lizzie Lucas. Then there is Eola, by Eolus, out of War Song, and therefore sister to several of the famous horses that I have just mentioned. Ethie, by Eolus, out of Calash, has bred Hammie, Resnante, Ethies, and other winners; whilst Clash, by Eolus, out of Calash, is dam of Charina, whom we have often seen performing in this country. Sample, the dam of Aurus and Aureus, is still alive and flourishing. Another notable mare is Guara, by Locohatchee, the sire of Caiman, out of Guava. A mare that must not be forgotten is Ninone, by Eolus, out of Ninon, for her dam belongs to one of the best of the old Tennessee strains, and is bred from a stock that have taken part in many a race of four mile heats. Lizzie H. is an own sister to Morello, and Monrie, by Charaxus, out of Jennie Kune, belongs to one of the oldest families in the English Stud Book, as she can be traced back to the dam of Dodsworth, a mare belonging to Charles II. These appear to be the pick of a very valuable stud, and as, in the words of my correspondent, "Captain Hancock is working on the same lines as did the late Lord Falmouth," I sincerely trust that he may have the best of good luck, and breed even more winners in the future than he has done in the past.

### HIGH-PRICED ROCKINGHAM HORSES.

A dozen extra fine horses left Harrisonburg recently consigned to Washington and Philadelphia. They brought prices which a few years ago would have seemed fabulous. Two of them were a hack team—handsome bays—sold by John E. Altaffer to a Philadelphia buyer for \$600. They made a beautiful pair, and were bought low enough in the opinion of those conversant with the city demand for that class of horses. The other ten horses were sold by S. O. Bowman to a Washington brewery for \$2,300.

## NOTES.

A Virginian himself and to the manner born, the landed interests of Mr. William N. Wilmer are still centered in the Old Dominion, albeit his residence for years past has been in New York city, where as the head of the well known law firm of Wilmer & Canfield he is engaged most of the time, but diversion is sought in trips to the Albemarle County Farms, Plain Dealing, Springfield and Englewood, which are near Scotts ville, the Chesapeake and Ohio railroad station. Plain Dealing was formerly the home of Mr. Wilmer's father, that learned divine, the Right Rev. Joseph Wilmer, so widely known as Bishop of the Diocese of Louisiana. These three estates comprise over 1,500 acres of land. Manager Chas. S. Huffman directs affairs at Plain Dealing and Springfield, while E. L. Redmon has charge at Englewood. The trotting bred horse Virginia Chief, by Kentucky Prince, dam Nina, by Messenger Duroc, second dam the great brood mare Hattie Hogan, by Harry Clay, and the chestnut horse Hercules, thoroughbred son of Panique and Nenetzin, by imported Mortemer, are the sires in use at Plain Dealing. Virginia Chief has fine size, the best of manners, and is sound, while few thoroughbreds have such impressive action as Hercules, and their services are sought after. The young stallions Aebineer and Plain Dealing are kept at Englewood. They are by Virginia Chief, the former's dam being Aebina, by Alban, and that of the latter was Barbara, daughter of the famous sire Alcantara. The good brood mare Flora Jefferson, by Elk Nutwood, dam Flora Diamond, in foal to Virginia Chief, is owned by Mr. Wilmer, as is her daughter, the chestnut filly, Flora Allerton 2, by the great Allerton, 2:09½, and both are highly prized.

At a recent meeting of the Richmond Horse Show Association, Mr. W. O. Warthorn was elected secretary to succeed Mr. Leigh R. Page, Jr., who filled the position in 1901. The other officers of the association are President, J. T. Anderson; Vice President, Harry C. Beattie; and treasurer, J. S. Crenshaw. Mr. C. W. Smith, of Warrenton, who so successfully managed the last show, has been re engaged for the forthcoming one, which will take place the third week in October, a week later than that of 1901 was held. The remodeling of the big Auditorium Building at the Exposition Grounds is now under way and big improvements are being made. Thousands of dollars will be spent on this alone, while decided changes will be made in other directions, such as increased premiums and a revision of the prize list. The plans now being carried out provide for 6,000 seats besides the boxes. The Richmond Horse Show has come to stay, and the 1902 show promises nothing short of being the most successful affair of its kind in the South.

The affairs of the North Carolina Agricultural Society are in a most prosperous condition, and the management is in high feather. The Hon. John A. Long, of Roxboro, one of the leading bankers, farmers and manufacturers of the "Old North State," is President, while Mr. Joseph E. Pogue is Secretary, and Mr. C. B. Denson, Treasurer and Assistant Secretary. The two last named gentlemen reside at Raleigh, the State Capital, where the annual fairs and

race meetings are held. Mr. Denson, who has become a veteran in the service of the Society and is widely known, writes me that the fair in 1901 was the best ever known in North Carolina, and that the management was enabled to pay interest for nearly three years back right up to 1902. This year's fair and races will begin on October 27th and continue through the week.

At the Annita Stud Farm, Charlottesville, Va., on March 18th, Counterbreeze, thoroughbred daughter of Eolus and Countersign, by War Dance, foaled a bay colt by imported Water Level. Mare and colt the property of General William T. Townes, of 111 Fifth Avenue, New York. General Townes will ship Counterbreeze to H. P. Headley's Beaumont Farm, Lexington, Ky., and breed her to Ornament, the famous son of imported Order and Victorine, by Onandaga.

W. H. Nelson, of this city, has sold to Edward King the bay pacing mare Fern, 2:21½, by Petoskey, dam Mannie, by Ajax. Fern was not in training in 1901, but was campaigned the previous year, and generally secured a part of the purse. She will be raced again this season.

Subscribe to the *Southern Planter*, and get your neighbors and friends to do likewise. The price is merely nominal, and it is brimful of interesting reading matter, while there is no better advertising medium in the country, as numerous patrons will cheerfully testify.

Tournament, Blackcock, His Grace, King Artem II, Mills and Harper, are the thoroughbred stallions in use during 1902 by Marshall and Thompson, of Warrenton, Va. Tournament, son of imported Sir Modred and Plaything, by Alarm, won over \$100,000 during his turf career, and has sired some good winners. Like Tournament, Blackcock, King Artem, Mills and Harper are all richly bred, and should prove a success.

Miss Thompson, 2:20½, and Kitty B., 2:24½, both of whom raced well, are among the trotting bred mares in the stud of T. M. Hewitt, Weyanoke, Va. He has several foals from each by Whitby, 2:18½, and will continue breeding them to that handsome son of Hanis, 2:17½.

R. C. Broadbuds, Manchester, Va., has sold to James Nunnally, same place, the bay filly Mand Alpine, 4, by Egwood, 2:18½, dam Lucy Alpine, by Clan Alpine, son of Aberdeen, and Odin Alpine, bay gelding, 3, by Toodles, Jr., dam Lucy Alpine.

The bay mare Faustina, by Eolus, dam Warlass, by War Dance, the property of W. K. Mathews, this city, foaled on March 15th a bay filly; marks, right hind foot white, by Blitzen, "The Iron Horse."

BROAD ROCK.

When corresponding with advertisers mention the *Editor Southern Planter*:

## Miscellaneous.

### THE VIRGINIA STATE DEPARTMENT OF AGRICULTURE AND THE VIRGINIA AGRICULTURAL AND MECHANICAL COLLEGE AND EXPERIMENT STATION.

In the discussion before the introduction of the bill to the Legislature on the proposed State exhibit at the St. Louis Exposition, it was insinuated that there was rivalry between these two State institutions as to which should have management of the project, and in the city press it was stated that there was "a standing antipathy between the two," which it was urged should not be allowed to prejudice the project. On the part of the Faculty of the College and Station, we desire to emphatically deny this antagonism or antipathy so far as the College and Station is concerned. We regret to say that we cannot do the same on behalf of the Department of Agriculture, for to our own knowledge there has existed on the part of the late and present Commissioner of Agriculture an unworthy jealousy of the College and Station, which ought not to continue. This jealousy has been evidenced by many acts on the part of the late and present Commissioner, and notably by the exclusion of the members of the Faculty of the College from the Institute work of the State by the present Commissioner and by his action in reference to the St. Louis Exposition as reported to us. In contrast to this action, we would point out that the President of the College has on many occasions come forward and helped the State Department of Agriculture and the State out of difficulties, notably, when he undertook the work of suppressing peach yellows and the enforcement of the Crop pests law, and especially the San Jose scale.

Again, he voluntarily undertook to execute the cattle quarantine law at great inconvenience and cost to the College and Station. In all these instances, the State Department of Agriculture confessed its inability to undertake the work from absence of scientific knowledge of what was required. Such acts as these do not evince a spirit of jealousy or unworthy rivalry with the State Department of Agriculture or the Commissioner, and are in strong contrast with the action of the Commissioner in the cases mentioned above. Moreover, the President of the College personally called upon the Commissioner of Agriculture shortly after his appointment, and voluntarily tendered him any assistance in his power. Had this offer been accepted, a very large sum could have been saved to the State in the Institute work by the employment of the scientific staff of the Experiment Station and College as lecturers, as is done in other States.

We make these remarks in no unfriendly spirit to-

wards the Commissioner of Agriculture, but with the view, if possible, of bringing him to reconsider his position in the matter, and of inviting the attention of the State Board of Agriculture to the question. A harmonious, cordial co operation in the working of these important factors in the agricultural development of the State, means the saving of a large sum to the State, and the much greater advancement of the farmers of the State in scientific agriculture. The State Department of Agriculture has not, with the exception of the Chemist, a scientific member on its staff, and is therefore precluded from giving that help to the farmers which they daily call for and have the right to expect. In co operation with the Experiment Station and College, this help can be given. That co operation, we know, will not be withheld by Dr. McBryde on behalf of the Station and College. His work there during the past ten years is evidence that he has only the welfare of the State at heart, and that an unworthy jealousy of any other department could not find place in his nature. No man who allows himself to encourage antipathy or antagonism between the College and Station and the State Department of Agriculture, is worthy to hold office in either, and the people should see to it that no such thing is possible.

### A GENERAL DOG LAW FOR VIRGINIA.

At last the Legislature of Virginia has enacted a dog law applicable in every county of the State except those counties already having special dog laws in force. This new law taxes dogs 50 cents and bitches \$1 per year, and requires the constable, under a penalty of \$5 for each dog, to kill all dogs not taxed. On behalf of the sheep owners of the State, we tender to the Legislature their thanks for this long deferred concession to their righteous demands. We may now hope to see new life introduced into sheep husbandry in the State; and there is no other branch of live stock husbandry which has in it more of the elements of enduring prosperity. The farm and the farmer are both benefitted by sheep. We look now to see a rapid diminution in the number of dogs and a great increase in the number of sheep kept in the State. The one is a profitless animal; the other, a blessing and profit wherever kept.

### Tobacco Fertilizer.

I would like to know your idea of the amount of commercial fertilizer per thousand or per acre for tobacco on gray land. Of course, I expect to use a high-grade guano, and the land is a little thin.

Rockingham Co., N. C.

▲ SUBSCRIBER.

See reply to B. S. Francisco in this issue.—ED.

## PURE DRINKING WATER.

*Editor Southern Planter :*

I enclose a parody on "The Old Oaken Bucket." I am sorry to detract from such a charming production, but the parody may serve to point a lesson in rural economy, of great importance to the welfare of your readers.

In the last fifteen years of my life I have had much to do with getting a healthful supply of water, not only for myself but for others. I have spent many hundred dollars in boring deep wells, making cisterns, etc., in order to get a supply of pure water.

With a good, slate roof surface, the cistern is probably the cheapest and best means of getting good water. We have at Randolph Macon College a good slate roof, about seventy by fifty feet, which sheds water enough to supply about two hundred people. Since we have adopted cistern water, we have not had a case of typhoid fever, and that has been for a period of six years. With the improved cement, now easily obtained, a cistern is easily built.

But this is not generally practicable in the country—few having slate roofs. Artesian and deep-drilled wells are costly; and the majority will have to content themselves with the ordinary well, more or less shallow. I think there is no exaggeration in saying that ordinary wells, shallow or deep, are the sources of more disease than all others combined. Some think that because a well is deep it, therefore, is not liable to have in it water likely to engender disease, but surface-water can run into a deep well as well as into a shallow one. Let any one examine any well after a long, wet spell, or after a heavy rain, and he will find a large quantity of surface water flowing into it. If this water is uncontaminated by the earth surrounding the surface at mouth of well, it may not be fruitful of disease, but this is seldom the case. Round the curb, often the pig is found wallowing, and the fowls frequent the place, and the horses and cattle come there to drink. Even when these conditions are not allowed, other causes of pollution in some form exist, especially in dry weather when frogs and snails seek the moisture, and frequently get into the well. The rock or wooden curbing does not prevent these evils, though they may somewhat hide them.

What then can be done to meet this condition of things, efficient and also practicable, and not very costly?

After many experiments, and much observation, I have reached a solution which has proved very satisfactory both in regard to health conditions and good drinking water. When I came to my present lot, I dug a well about thirty feet from the dwelling, in the back lot. It was about three and one-half feet in

diameter and twenty feet deep. We do not need to curb wells here in Ashland, the earth not caving as it does frequently. On a platform of thick plank, which rested on brick walls, a Cucumber pump was erected. The water supply was abundant, and the water was clear, except in rainy spells and after hard showers it was discolored, showing signs of surface-water, which, by observing, you could see running into the well all around. The water was made unpalatable at certain seasons, and not much better sometimes in dry seasons, because, in some way, the frogs, etc., would get into the well, unless it was very closely closed up, which, of itself, injured the water by excluding the air. If you want water good, specially for drinking, let it come in contact with the air as fully as possible, by using the bucket instead of a pump. You can use a pump and bucket too. By putting an iron pipe, with the lower end opening in the bottom of the well, either on the outside or inside of the well pipe, and coming up to a proper height, a pump, either force or suction, can be attached. By putting it on the outside of the pipe, the iron taste will be avoided in the drinking-water. The mode adopted for improving the well was as follows:

Sewer pipe, about twenty inches in diameter, well burnt and glazed, were bought, of sufficient length to extend from the bottom of the well to about two feet above the surface of the ground. It comes in sections of two feet. The first section rests at its lower end on the gravelly sand out of which the water supply rises. It must be placed in the centre of the well, and must be leveled so that the other sections when placed above will be perpendicular. To facilitate the leveling thoroughly burnt brick or flat pieces of rock may be used under the edges, and they must be well settled, so that the pipe will not change its perpendicularity. Then place another section, letting the edge come into the flange or collar prepared for it. Into this joint put no cement. Around these sections, rising four feet from the bottom, place loose stones of the size of a hen's egg to six or eight inches, round, or square, up to within four inches of the upper edge, ramming them down so as to make a good foundation. These stones fill up the space between the pipes and the dirt wall. In the space above the stone all around the top of the pipe, four inches deep, place a mortar of Portland cement and sharp sand, half and half, mixed when both are dry and thoroughly incorporated before adding water, to form a consistency of ordinary working mortar. Keep the water from rising on this till it has set, which it will do in an hour or so if best cement is used. The foundation thus formed is needed for the earth, which will be used to fill up around the pipe to be placed in the well, and will prevent the earth from mixing with the water.

New place sections of pipe one after another, filling the flange or joggles with cement before each piece is put on, and putting the cement around the joint so as to exclude any surface water. Fill the space around the pipe with clay, ramming it as you would do in setting a fence post, until all the sections are in place and the last extends two feet above the surface. When the platform is made let it fit closely around the pipe, and as frogs cannot climb up the pipe they cannot get into the well from below, and by having a hinged door on the box above, the bucket can be brought out and emptied. All the joints of the pipe being cemented, no surface water can get into the well until it shall have passed through clay as thick as the well is deep, which will thoroughly filter it. The hardest rain or the longest wet spell will never discolor or affect the water.

Speaking from years of trial of my own well, and observing others fixed in like manner, I say without hesitation the water has been improved for drinking purpose very materially, and by analytical test has been pronounced very good, and it is not affected by seasons of wet or dry weather in quality. To fix mine after the well had been dug some years, necessitating the hauling of clay to fill up, in addition to the stone, sand and pipe, and the labor on the work, cost about \$25. It has been money as well expended as it could well be, for good water and good health are beyond price.

I will be pleased to give any one further information if desired.

*Ashtland, Va.*

RICHARD IRBY.

#### THE PARODY ABOVE REFERRED TO.

With what anguish of mind I remember my childhood,

Recalled in the light of a knowledge since gained.

The malarious farm, the wet fungus-grown wildwood,

The chills then contracted that since have remained;

The scum-covered duck pond, the pigsty close by it,

The ditch where the sour-smelling house drainage fell,

The damp, shaded dwelling, the foul barnyard nigh it—

But worse than all else was that terrible well,

And the old oaken bucket, the moss-crustèd bucket,

The moss-covered bucket that hung in the well.

Just think of it! Moss on the vessel that lifted

The water I drank in the days called to mind;

Ere I knew what professors and scientists gifted

In the waters of wells by analysis find;

The rotting wood fiber, the oxide of iron,

The alga, the frog of unusual size,

The water, impure as the verses of Byron,

Are things I remember with tears in my eyes.

And to tell the sad truth—though I shudder to think of it—

I considered that water uncommonly dear,

And often at noon, when I went there to drink it,

I enjoyed it as much as now I enjoy beer.

How ardent I seized it with hands that were grimy,

And quick to the mud-covered bottom it fell,

Then reeking with nitrates and nitrites, and slimy

With matter organic it rose from the well.

O, had I but realized in time to avoid them—

The dangers that lurked in that pestilent draft—

I'd have tested for organic germs and destroyed them

With potassic permanganate ere I had quaffed.

Or perchance I'd have boiled it, and afterwards strained it  
Through filters of charcoal and gravel combined;  
Or, after distilling, condensed and regained it  
In potable form, with its filth left behind.

How little I knew of the enteric fever  
Which lurked in the water I ventured to drink,  
But since I've become a devoted believer

In the teachings of science, I shudder to think,  
And now, far removed from the scenes I'm describing,  
The story of warning to others I tell.

As memory reverts to my youthful imbibing

And I gag at the thought of that horrible well,  
And the old oaken bucket, the fungus-grown bucket—  
In fact, the slop bucket—that hung in the well.

#### TIDEWATER (VA.) NOTES.

*Editor Southern Planter:*

Winter seems to be over, and every available man and horse is at work, planting potatoes and getting the ground ready for the spring crops.

About half of our large potato crop is planted at this date—March 11th. It is often planted in February, but February of this year was not a potato-planting month. The winter just ended, while not giving us any severe weather, has still made a colder record than before for many years.

The cold days have been only three really. One day in December at 16—one day in February at 18 and one at 19 comprise the cold days—only three days when the thermometer reached below 20 above zero. Instead of our having any severely cold weather it has been a steady cool winter.

The average temperature for January for the past 32 years has been 41 degrees, but for January, 1902, it was 37 degrees, or 4 degrees per day colder than usual.

The average temperature for February during the past 32 years has been 42 degrees, but for February, 1902, the average was 36 degrees, or 6 degrees per day colder than the average.

Taking the two months together, we see that they have been colder than the average for the past 32 years by 5 degrees per day, or as the Government people term it, there has been a deficiency in temperature during January and February, 1902, of 5 degrees per day.

Now, this greater degree of cold was spread out over so many days that few thought it colder than usual. It has been too cold, however, for the cabbages in the open air, and a portion have been killed.

It has been cold enough to keep back all the fruit so that an abundant crop is probable. It has not been cold enough to prevent the farmers from shipping kale and spinach to market every day in the two months.

In January we had 2.15 inches of rain falling on the 11, 21, 22, 26, 27, 29, 30 and 31. No snow in January. The month gave us twenty-two pleasant days and nine cloudy days.

In February we had 4.66 inches of rain, falling on

the 1, 2, 15, 16, 17, 21, 22, 25, 26 and 28. The rainfall was about one inch in excess of the average. This was a bad month—more rain than usual, colder than usual, more cloudy and gloomy than usual. Still it was a sort of relief to have a bad month now and then in order to make us appreciate the good we have. We had one snow-storm, remaining on the ground less than five days. A few potatoes were planted in February, but it was most too cool to encourage any planting. Kale and spinach moving lively now—great loads going to all the north-bound steamers. A busy season is in sight now.

Norfolk, Va.

A. JEFFERS.

#### THE MUTUAL FARMERS' CLUB OF FREDERICK COUNTY, VA.

This Club met at Fairfield, the residence of H. S. Lupton, March 1, 1902.

In the absence of President Clevenger, L. M. Boyer was appointed chairman for the day, and called the meeting to order at 11 o'clock.

The minutes of last meeting were read and approved. The criticism on J. W. Branson's place was read. As Daniel T. Wood was present, the criticism of his place was read for his benefit, as suggested at last meeting.

The following committee was appointed to suggest and refer questions for next meeting: J. H. Doing, C. M. Solenberger, and H. M. Bond.

The Club Advertiser was read by the Editor, L. M. Boyer. Some comments followed the reading of the paper. Among the advertisements in the paper was one from Mr. Gray Silver, of Inwood, W. Va., in which he stated that he would pay from 8 to 10 cents per pound for March and April lambs weighing from 55 to 60 lbs.

In connection with this subject, Mr. E. W. Lupton stated that one of their Berkeley Co. farmers had recently sold two nine-weeks-old lambs that netted him \$10.10 apiece.

Under the head of unfinished business, H. S. Lupton reported in behalf of the Institute Committee, but as the work assigned to them was not yet completed, the committee was continued. At this point of the proceedings, dinner was announced, and the meeting adjourned for that purpose.

After the usual stroll around, the premises, viewing the buildings and stock, the meeting was called to order, and J. W. Branson was asked for an answer to the question on the best construction of horse stalls, racks and troughs. Mr. Branson had always used racks and troughs for feeding, but as he was contemplating making some changes in his stabling, he expected to put in mangers and boxes, as he thought

they would be better. A discussion followed the reading of the article, and several members strongly advocated sticking to the rack and trough, as they deemed them the best and most economical, as the feed could not be wasted as in a manger.

Next came the question, Should farmers pay more attention to raising stock and cultivate fewer acres in grain? Referred to D. M. Branson.

Mr. Branson thought the environments were so large and important a factor that no rule could be laid down, for there were times when it was more advantageous to sell grain than stock, and much depended on the man. He thought there was more in the man than what there was to sell.

Under the head of miscellaneous business, Mr. Green, of New York, favored the Club with his impression of the recent Institute, and of the Mutual Farmers' Club.

The committee appointed to suggest and refer questions, reported as follows:

1. What do you consider the best implement for pulverizing the soil? Referred to Lewis Pigeon.

2. Give us your opinion on raising lambs for April market. Referred to Dan'l L. Wood.

3. Do you consider it necessary to dry up a two-year-old heifer in order for her to reach her full maturity? Referred to D. P. Lupton.

4. Give your opinion on peas as an orchard fertilizer and hog feed. Referred to Dr. S. L. Brown.

The Club adjourned, subject to the call of the officers.

L. M. BOYER,

W. E. BRANSON,

*Chm. pro. tem.*

*Secretary.*

#### GOOD ROADS CONVENTION.

A most successful and largely attended Convention in furtherance of the Good Roads movement was held in the city of Richmond on the 20th and 21st March. Colonel Miles, of Radford, was selected to preside, and made a most earnest appeal for support of the work. Governor Montague delivered a fine address, and pledged his support to the movement as being of vital importance to the prosperity of the State. Addresses were delivered by Colonel Moore, President of the National Good Roads Association; the Hon. Martin Dodge, of the National Department of Good Roads, and others. A permanent organization was formed, with H. W. Anderson, of Richmond, as President.

The poultry breeder who wants to make the most money out of his poultry will hatch his poultry early, force them to early maturity, get eggs in winter, when high prices prevail, and sell his hens before the second winter comes.

THE

# Southern Planter

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THE SOUTHERN PLANTER PUBLISHING CO.,

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J. F. JACKSON,

Editor and General Manager.

B. MORGAN SHEPHERD,

BUSINESS MANAGER.

TERMS FOR ADVERTISING.

Rate card furnished on application.

TERMS OF SUBSCRIPTION.

The Southern Planter is mailed to subscribers in the United States and Canada at \$60. per annum; all foreign countries and the City of Richmond, 75c.

Remittances should be made direct to this office, either by Registered Letter or Money Order, which will bear our risk. When made otherwise we cannot be responsible.

Always give the Name of the Post Office to which your paper is sent. Your name cannot be found on our books unless this is done.

Subscribers failing to receive their paper promptly and regularly, will confer a favor by reporting the fact at once.

The Date on your Label shows to what time your subscription is paid.

We invite Farmers to write us on any agricultural topic. We are always pleased to receive practical articles, Criticism of Articles, Suggestions How to Improve THE PLANTER, Descriptions of New Grains, Roots, or Vegetables not generally known, Particulars of Experiments Tried, or Improved Methods of Cultivation are each and all welcome. Contributions sent us must not be furnished other papers until after they have appeared in our columns. Rejected matter will be returned on receipt of postage.

No anonymous communications or enquiries will receive attention.

Address— THE SOUTHERN PLANTER,  
RICHMOND, VA.

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## PUBLISHER'S NOTES.

### To Subscribers.

The season of the year when subscriptions to new journals and periodicals are mostly sent in is now fast drawing to a close. To the *Planter* it has been a most successful one. Hundreds of new subscribers have been placed on our list each month since the fall, and the aggregate is now larger than ever before since the journal was issued. We are anxious to still further increase the number before the season closes. The *Planter* is not a journal that appeals only to readers at one time of the year. It is an all-the-year round epitome of information for the practical farmer, written and edited by practical farmers, stock breeders and scientific agriculturists, and there is never a season of the year when the current issue is not of the greatest help to those for whom it is intended. Each month's issue deals in a practical way with the work of that month in which it appears, and therefore whenever a new subscriber commences to read it he finds matter of immediate service to him. We would appeal to our friends to give us their continued help in adding subscribers to our list. There is no season when time cannot be found to solicit some neighbor or friend to become a subscriber if only an effort is made. We ask for this to be borne in mind whenever the opportunity offers.

### Whose Money?

On December 26th last, we received \$1.00 in coin in one of our self-addressed envelopes post-marked "Hampton, Va.," but the sender omitted to sign his name. We shall be very much pleased to credit it to the proper person, provided he will claim same. We have a great number of subscribers at Hampton and in that vicinity, so it is impossible for us to do other than hold it until some one writes for it.

## WOOD'S SEEDS.

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Full descriptions and information will be found on pages 66 and 67 of our Annual Descriptive Catalogue. If you have not received a copy, write for same.

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Sold by druggists, price 75c. Hall's Family Pills are the best.

MAGAZINES.

The features of the April Century are a frontispiece engraving by Timothy Cole of the famous painting by Velasquez entitled "Head of a Young Man;" a group of papers of personal recollection of Ap pomattox by General E. P. Alexander and Colonel Charles Marshall, ex-Confederates, and Generals John Gibbons and Wesley Merritt of the Union Army; the beginning of a new serial story on marriage, entitled "Confessions of a Wife," by "Mary Adams;" four humorous stories, including "Chimmie Fadden on L'Aiglon and Woman," "A Hard Road to Andy Coggins," by Chester Bailey Fernald;" "My Golf," by Charles Battell Loomis, and "Disciplining the R. & O.," by Willis Gibson, all illustrated; in the series on The Great West, a chronicle of the overland trip to California by Noah Brooks, entitled "The Plains Across," with pictures by Remington; in the Collector's Series an illustrated paper on bottles; personal reminiscences of Alexander II by the Actress Rhea; two illustrated articles of travel in Abyssinia by Hugues Le Roux and Oscar T. Crosby, both with mention of American trade; "Recent Discoveries Concerning the Buddha," by the eminent English authority on India, T. W. Rhys Davis; a paper of plain-spoken criticism, by John Burroughs, on "Literary Values," the third of Dr. Weir Mitchell's "Little Stories," entitled "Two Men;" a timely sketch by Henry C. Bowland entitled "The Seamy Side in the Philippines;" a paper by Sylvester Baxter on "The Beautifying of Village and Town," the text of Salvini's address on Ristori delivered at the recent celebration in Rome on her eightieth birthday, besides poetry and the departments. It will be seen from the list that there is a very wide range of topics.

The long story in the April St. Nicholas ought to be popular with the boys and girls of to-day. They love fresh air, and the "Boys of Rincon Ranch" is a long draft of oxygen. It tells of the visit of two city boys to their cousin upon a Texas Ranch. Under his guardianship the slightly morbid city boys grow rugged and strong, are tanned to a beautiful brown, and make the acquaintance

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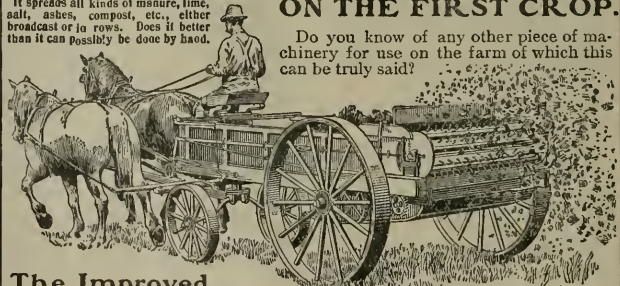
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You do know of any other piece of machinery for use on the farm of which this can be truly said?

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not only makes easy work of getting out the manure, but by the way in which it breaks it up and makes it fine, it more than trebles the value of the same. It will break up and spread evenly, manure that cannot be handled with a fork. It doesn't matter how hard, lumpy, caked, stinky, or stinky the manure is, this machine will spread it. It makes fine, well rotted manure go a long way in top dressing wheat in the spring, meadow lands, pasture, etc. Being mounted on broad faced wheels, it can be handled on any kind of ground without serious cutting in or rutting. Can spread back and forth, as foot wheels turn entirely under. Can be turned on the ground it stands on. 1902 machine has our new Receptor-Freeling Device, Approx-lectralizing Device and numerous other improvements. Send for latest catalogue (free) and read about these and other advantages and also about "How to Grow Big Crops."

Remember that the only original and genuine Kemp Manure Spreader is the one made by ourselves. KEMP & BURPEE MFG. CO., Box 28, SYRACUSE, N. Y.



## FORTIFY YOURSELF

against any possibility of failure in your next season's poultry operations by buying an incubator of tested merit and known worth and which CANNOT FAIL. THE PETALUMA INCUBATOR

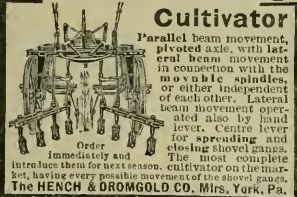
is a machine of that kind. It is the machine that produces only high percentages of hatch. Made of best California Redwood, carefully packed and lined, perfectly heated and regulated, it gives satisfactory results every time. Made in sizes from 4 eggs up. WE PAT FREIGHT ANYWHERE IN THE U. S. It will pay you to get our FREE catalogue and prices. PETALUMA INCUBATOR CO., Address nearest office. Box 46 Petaluma, Cal., or Box 46, Indianapolis, Ind.

**"Rich Soil"**  
can be had more quickly, cheaply and surely by using  
**THE SPANGLER**  
Single Row  
**FERTILIZER DISTRIBUTOR,**  
than with any means known. It distributes all kinds of fertilizer into the open furrow, whether the grounds prepared for Potatoes, Cotton, Tobacco, Corn, Beans, Peas or other crops. Fertilizer is put by putting it on the right spot. Sows 120 to 230 lbs per acre. We also make  
**SPANGLER CORN PLANTER** with and without Fertilizer attachment. The best and most perfect Corn Planting Machine ever put into a field. Send for catalog and circulars. THE SPANGLER MFG. CO., 501 Queen St., York, Pa.



**STEEL ROOFING**  
Strictly new, perfect, Semi-Hardened Steel Sheets, 2 feet wide, 4 feet long. The best Roofing, Siding or Ceiling you can use. No experience necessary to lay it. An ordinary hammer or hatchet the only tools you need. We furnish free with each order sufficient paint and nails. Comes either flat, corrugated or "V" crimped. Delivered free of all charges at the following prices:  
TO ALL POINTS IN  
INDIANA, ILLINOIS, PENNSYLVANIA, NEW YORK, NEW JERSEY, MISSOURI, MICHIGAN, OHIO, IOWA, WEST VIRGINIA, MARYLAND, KENTUCKY, MISSOURI, MINNESOTA, PER SQUARE, \$2.25. PER SQUARE, \$2.50.  
Prices on other States on application. A square means 100 square feet. Write for free catalogue No. 166. CHICAGO HOUSE WRECKING CO., W. 35th and Iron Sts., Chicago

**HENCH'S** 20th Century  
**Steel Ball Cultivator**  
Parallel beam movement, pivoted axle, with lateral beam movement in connection with the main shaft, spindles, or either independent of each other. Lateral beam movement operated also by hand lever. Centre lever for spreading and closing shovel gangs. The most complete introduce them for best season. Cultivator on the market, having every possible movement of the shovel gangs.  
Order immediately and The HENCH & BROMGOLD CO., Mils, York, Pa.



**VARIABLE FRICTION SAW MILLS**  
A great Improvement in Friction Feed Saw Mills. Repair Bills are practically nothing with this feed. Most durable on the market. We build mills with Log Beam or Ratchet Set Works, on trucks or rollers. Also Wood Planers, Engines, etc. Catalogue free.  
**SALEMAN IRON WKS., Winston-Salem, N. C.**



**KENTUCKY ALUMINUM STOCK LABEL**  
The best, lightest, most secure, easiest put on and the cheapest. For description and samples, address F. H. Jackson Co., Winchester, Ky.

of some Texan wonders. They ride, shoot, camp out, hunt and gather pecanuns. They see a fight between a road-runner and a rattlesnake; they chase and bring to bay a peccary boar; they see the tarantula overcome by his immortal enemy, the "tarantula hawk," one of the wasps that lays eggs in the bodies of paralyzed creatures; one of them is lost in the woods and learns to box Nature's compass.

It is a bright, breezy, many little story, well illustrated by B. Martin Justice, an artist who knows the West. Beside the long story there are short stories by Alice Balch Abbot and Tudor Jenks, with articles by Professor J. H. Gore, Rosalind Richards and Frederic Dean—Mr. Dean's being an account of the famous Boy Chorists in the United States.

The Departments are full of prize awards—a feature that appeals strongly to the young St. Nicholas readers.

The April Form opens with an article in which Sydney Brooks pertinently applies to our own problems in the Philippines the lesson to be drawn from "The Example of the Malay States" under British rule. Among other papers on questions affecting foreign affairs are "The Anglo-Japanese Alliance," by A. Maurice Low, and "Prince Henry's Visit," by Professor Paul S. Reinsch. There figure also in this month's contents, discussions of various subjects of domestic politics now attracting the attention of Congress, such as "The Amendment of the Inter-state Commerce Act, and Railroad Pooling," by W. A. Robertson; "Promotion in the Army," by Major John H. Parker; "Shall the United States Lease its Grazing Lands?" by John P. Irish; and "Proposed Amendments to the Constitution," by Henry Litchfield West. In educational matters Yale is represented by Professor Ladd's paper on "The Disintegration and Reconstruction of the Curriculum," and Harvard by Professor Hanus's criticism of "Our Chaotic Education," while Mrs. M. K. Genthe, a Heidelberg Ph. D., gives an account of the present condition of "Women at German Universities." Earley Vernon Wilcox makes several practical recommendations for the "Preservation of Large Game." A timely sketch of the characteristic tactics of "The Boer in Battle" is contributed by Edward B. Rose, a former resident in the Transvaal. In an article entitled "Is England Being Americanized?" Robert W. Horwill replies to a paper on that subject in a former issue of the same magazine.

Lippincott's April Magazine, issuing March 21, publishes as its complete novel (for which it is noted) a love story of the West Indies, by John S. Durham, Ex-Minister to Haiti and Santo Domingo. The setting of "Diane, Priestess of Haiti," is therefore drawn from sight, while the plot shows a marvellous imagination. The story is one of fascinating intrigue, and the scenes of foreign society life in Haiti particularly interesting.

In addition to the complete novel the April Lippincott contains several admirable short stories: "Billy Baxter's Holli-


**ELECTRIC**  
**Handy Farm Wagons**  
make the work easier for both the man and team. The tires being wide they do not cut into the ground; the labor of loading is reduced many times because of the short lift. They are equipped with our famous Electric Sided Wheels, with rubber-tipped, stagger spokes. Wheels any height from 24 to 60 inches. White hickory axles, steel hounds. Guaranteed to carry 4000 lbs. Why not get started right by putting in one of these wagons. We make our steel wheels to fit any wagon. Write for the catalog. It is free.  
**ELECTRIC WHEEL CO., BOX 146, QUINCY, ILL.**




**WE'LL PAY THE FREIGHT**  
and send 4 Burgz Wheels, Steel Tires - \$2.25 With Axle, \$9.85. Rubber Tire Wheels, 15.00 14 mfg. wheels 4 to 4 1/2 in. tread. Top Bars, \$2.75; Harness, \$3.60; Repair Grate Wheels, \$5.60. Write for catalogue, order instructions. Learn how to buy rubbers and parts direct. Umbrella Free with first order. **W. V. BOOB, 420 E. 7th St., CINCINNATI, OHIO.**




**RIFE HYDRAULIC ENGINE**  
Pumps water by water power; runs without attention; gives a constant flow and is sold on 30 days trial, Unsuited for the farm or country home. Any height. Send for Book.  
**RIFE ENGINE CO., 128 Liberty St., New York.**



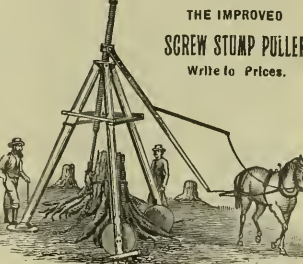
**BAILEY'S HYDRAULIC RAM**  
Runs 24 hours a day and 365 days a year 40 years experience. Water for HOUSE; water for STOCK; Water for IRRIGATION. Once started costs but ONE CENT per month. As simple as a wheelbarrow and as efficient as a Corlies Engine. Information and instruction in plain terms. Prices on ram or complete outfit by return mail. Address **PRYCE W. BAILEY, Experl, Seneca Falls, N. Y.**



**HERCULES STUMP PULLER**  
Clears an acre of heavy timber land each day. Clears all stumps in a circle of 150 ft. without moving or changing machine. Strongest, most rapid working and best made.  
**Hercules Mfg. Co., 413 17th St., Centerville, Iowa.**



**THE IMPROVED SCREW STUMP PULLER**  
Write to Prices.  
**Chamberlin Mfg. Co., Olean, N. Y., U. S. A.**



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with the "Incomparable" **BORDEAUX NOZZLE** and our world's best outfit you are also the master of the situation. Insects and dirt are all before this all conquering outfit. See the book. It is free. Write for it now.

## Steam, Power and Hand Pumps

WIND MILLS, TANKS, TOWERS, GAS, GASOLINE and STEAM ENGINES,

Boilers, Saw Mills, Saws and Supplies, IRON and WIRE FENCES.

**SYDNOR PUMP & WELL CO., Inc**,  
BOX 949, RICHMOND, VA

day," by the witty Irishman, Seumas MacManus, is as full of humor as anything he has done. The holiday is spent in New York, where Billy's queer Irish ways cause his sister-in-law much uneasiness.

General Charles King contributes to the April Lippincott his latest military love-story, called "Like Father, Like Son." This is a tale of the draft in the Civil War.

"And Other Considerations," by Mary Catharine Hews, is a pathetic story with a humorous side to it.

In view of the demand for a new edition of the works of Samuel Richardson there is a short article in the April Lippincott which gives some of the reasons "Why We Read Samuel Richardson." The author is Mary Moss.

Eben E. Rexford presents one of his practical papers in the April Lippincott. It is about "A Garden of Native Plants."

Chief among the attractive features of the Easter Ladies' Home Journal is the opening instalment of Helen Keller's own story of her life. The fact that this, and all the autobiography which is to follow, were actually written by the wonderful girl herself is only equalled by the remarkable literary merit of her production. There is a delightfully personal article about "The President's Daughter," accompanied by a hitherto unpublished picture of Miss Roosevelt, and a pretty story of the singing of Easter carols in a New York belfry on Easter morning. Neltje Blanchan tells "Why the Birds Come and Go," and The Journal's two splendid serials, "Those Days in Old Virginia" and "The Russells in Chicago," are given space. The new children's department, called "The Good-Time Garden," begins in this number. Mr. Bok discusses several timely subjects on the editorial page, chief among them the growing tendency of the American father to neglect the companionship of his children. The illustrations, which are beautiful and numerous, include one of Mr. Taylor's exquisite pictures of Southern life, and a double page of college girls at their studies. The departments are more interesting and helpful than ever. The beautiful Easter cover is the work of A. E. Foringer. By The Curtis Publishing Company, Philadelphia. Ten cents a copy; one dollar a year.

The Chicago House Wrecking Co. sends us its latest catalogue production, being that of Pan-American Exposition. We invite our readers to apply for this catalogue (No. 166), and we are sure they will find in it a thousand and one things they are likely to need during the course of a year. This Company—the only one of its kind of which we know—makes a specialty of buying Expositions, large Government buildings—or any other buildings for that matter—Sheriff sales, etc., and selling every particle of lumber and nails, etc., which can be found available. Farmers throughout the country thereby have the opportunity of buying goods of all kind which have been very little used, at very low prices. This firm has several advertisements in this issue, and we invite our readers to look them up.

## BEST Compressed Air SPRAYER and Whitewashing Machine in the world.



No farmer, florist, liverman, fruit, tobacco, cotton, or celery grower or gardener, dairyman, fancy stock or poultry breeder can afford to be without one. Size, 4 and 5 gallons. Will throw fine mist or charge with air which will force out entire contents. Write at once for circulars and special prices good for 60 days only.

Southern office for sale of all goods manufactured by **RIPLEY HARDWARE CO.; MORRILL & MORLEY, and DES MOINES INCUBATOR CO.**

Address **THOS. P. ROSE, MGR.,**  
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## Men Wanted \$20 A DAY

is what one new man has just made. An other has sold and delivered 600 machines and has nearly 100 more sold for later delivery. This new style sprayer has "Kant-Klog" nozzle and sells like hot cakes. We want one to sell them in your locality at once. Write for circulars telling how to get

### ONE SPRAYER FREE.

**ROCHESTER SPRAY PUMP CO.,**  
21 East Ave., Rochester, N. Y.

The LIGHTNING Compressed Air Sprayer, Pat. 1900



Holds 4 gallons. Made of heavy galvanized iron, nicely painted. Has brass nozzles. Pump in a little air. No more labor required. Will kill all kinds of insects. Sprays tall trees. Will spray two rows of potatoes at one time and as fast as the operator can walk. We manufacture all sizes. Send \$1 for sample. Big

money for agents.

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## AGENTS

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### RIPLEY'S

Orchard, Field, Wheelbarrow, 4 and 5 Gallon Compressed Air **SPRAYERS** and spraying mixtures, Breeders Supplies. Send 2 cent stamp for catalogue and terms.

**RIPLEY HW. CO.,**  
Manufacturers Sprayers and Breeds-  
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# SPRAY PUMPS

Save money by buying one of ours. They will do as much work. Being all brass are lighter to handle and are more durable, will generate a higher pressure thereby making them the easiest pump to operate on the market. Write for catalogue and get treatise on spraying free. Agents wanted. J. F. GAYLORD successor to P. C. Lewis Mfg. Co., Catskill, N. Y.



**WANTED** to send to each town sample of the best

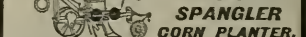
Self operating Sprayer

Made with celebrated Victor spray nozzle. Big money for agents. Write at once.

**FLOWER CITY SPRAYER CO.,**  
88 1/2 Cypress Street,  
ROCHESTER, N. Y.

## Corn Planting

must be well and carefully done, as the future crop depends upon it. In any soil, on all kinds of ground nothing equals the



**SPANGLER CORN PLANTER.**  
It saves time, labor, money and insures the crop. You know when it is working; you can see the corn all its way to the ground. Made with or without fertilizer attachment. New device for sowing peas, beans, castor, corn, etc. We also make the famous Spangler-Down Grains and Fertilizer Drill. Write for catalog and price.

**SPANGLER MANUFACTURING CO.,** 501 Queen St., York, Pa.

## COTTON

**COLE'S COTTON PLANTER** will save you every year plan! Send postal address for proof. We have a COMBINATION PL NTER positively and absolutely without an equal as a money and labor saver. Plants Cotton, Corn, Peas, Beans, Sorghum, Soya Beans, as well and even better than any separate special machine ever built. We prove it in our own field at our expense. Full particulars for a postal.

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## GRAIN and FERTILIZER DRILL

The YORK FORCE FEED DRILL combines lightness with strength. Most complete drill made. No complex gearing to get out of order. Boxes are close to ground. Fully Guaranteed

Early regulates quantity of seed or fertilizer, and sows with regularity.

Weights Only 700 lbs.

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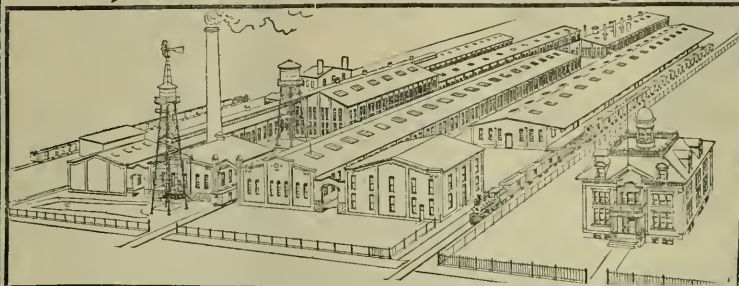
**THE HENCK & DRONGOLO CO.,**  
Mrs. York, Pa.

## Dixie Pea Huller

Hulls Co. Peas, 2 bushels per hour clean. Does not break them. "Bull" of fine Woods as a Mill, 100 feet daily, \$160.00. Sanders Dow Few Cotton Planters, Iron Fencing for Farms, Lawns and Cemeteries. C. catalogue and price sent free. Write us. Sanders Mfg. Company, Oallton, Ga.

Here Is Where We Make the  
**SAMSON.**

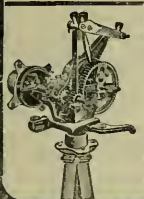
75,000 Wind Mills Annually.



That is the capacity of our new factories shown above. The old were unequal to the demand upon them. We had to build greater. The new plant is constructed so that skilled labor, science, conditions and appliances may conspire to make the perfect wind mill. It covers six and a half acres of ground. We believe it makes the best mill in the world.

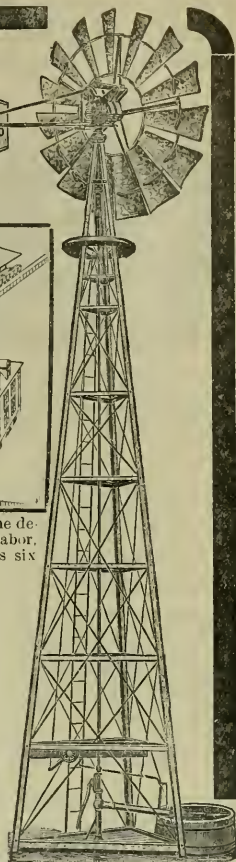
**The Samson**

is all that its name implies. Equally adapted to light work or deep water raising. You may call upon it for whatever power is required. The material is galvanized steel. The tower is lithe and graceful. Every part of the completed whole is equal to any test of strength that may by any possibility be put upon it. Like our factory, the Samson wind mill has grown with us. We confidently assert that in the Samson the nearest approach to perfection is to be found. We fully guarantee the Samson wind mills. Write for our free handsome illustrated catalogue.



**The Stover Mfg. Co.,**

581 River St., Freeport, Ills.



**Glass Milk Jars**

Best way for marketing milk satisfactory to dealer and customers. Use "Bestov" Glass Milk Jars. They save driver's time and do away with waste in measuring out milk in the wagon. Cheaper in the long run than tin cans. Send for catalogue of "Bestov" dairy supplies.

**Dairymen's Supply Company,**  
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**\$8.00**  
Buys delivered, an 800 lb. COOD SCALE, On Wheels.

PLATFORM 19 X 25 IN. CAST Steel pivots, carefully tempered. Accurate, durable, well finished. Other sizes and WAGON SCALES same ratio. For circulars address,

**JONES**  
HE PAYS THE FREIGHT.  
BINGHAMTON, N. Y.  
BOX 31.

**INTERNATIONAL STOCK FOOD.**

We are in receipt of a very interesting letter from Mr. M. W. Savage, manager and proprietor of the International Stock Food Co., Minneapolis, Minn., in which he advises us of the tremendous increase in sales of International Stock Food. Part of his letter is as follows: "We have been compelled to increase our mixing capacity 20 per cent., and last night we commenced working two crews, and are now running our factory twenty-four hours per day. In the last three months we have been compelled to put on additional help, until we now employ over 3,000 people. It requires a force of 95 people to attend to our office work alone, including 34 typewriters."

This well known Stock Food is advertised from time to time in the *Southern Planter*, and our readers are invited to test its merits.

When writing mention the *Southern Planter*.

**WATER CLOSET COMBINATIONS,**

Porcelain Bowl, Hardwood seat and Tank, Nickel Plated flush and supply pipes, complete, each \$11.00.

Cast Iron Roll Rim Bath Tubs, length 5 ft. Complete with full set of nickel plated fittings, each, \$11.00. They are new goods, ask for free catalogue No. 166 on plumbing and building material.

**Chicago House Wrecking Co., W. 35th and Iron Sts., Chicago**

**WILSON'S**  
**New Green Bone, Shell and Vegetable Cutter for the Poultryman.**

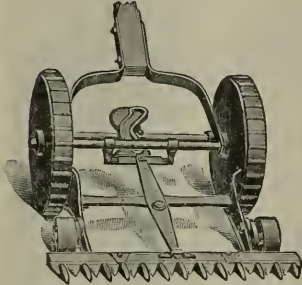
Also Bone Mills for making phosphate and fertilizer at small cost for the farmer, from 1 to 40 horse-power. Farm Feed Mills grind fine, fast and easy. Send for circulars.

**WILSON BROS., Sole Mfgs., Easton, Pa.**

**RUPTURE CURED** while you work. You pay \$1 when cured. No cure, no pay. ALEX. SPEARS, Box 268, Westbrook, Maine.

# THE MOWER

THAT WILL KILL ALL THE WEEDS IN YOUR LAWNS.

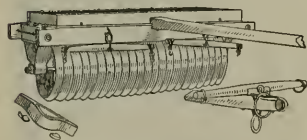


When you keep the weeds cut so they do not go to seed, and cut your grass without breaking the small feeders of roots, the grass will become thick and weeds will disappear. **THE CLIPPER WILL DO IT.** Send for catalogue and prices.

CLIPPER LAWN MOWER CO., Inc.,  
NORRISTOWN, PA.

# THE CAMBRIDGE

Corrugated Land Roller and Pulverizer.



THE BEST IN THE WORLD.

CHARLOTTESVILLE, VA.

I have used the Corrugated Iron Roller made by R. F. Harris & Son for a number of years, and prefer it to any other. It not only pulverizes the clods perfectly, but compacts the soil by its weight and gives a firm seed bed. It runs easily, and considering its weight is light draft. Last spring my corn land broke up hard and to great clods. A harrow made no impression on them. I put the roller on the field just as the plow left it and it was soon ready for the barrow and in perfect order. It is invaluable for preparing for wheat land, and also for rolling wheat, waterolts and young grass in the spring.

SAM'L B. WOODS.

Address..

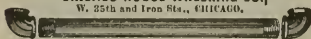
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## WROUGHT IRON PIPE

Good condition, used short time only; new threads and couplings; for Steam, Gas or Water; sizes from 1/2 to 12 inch diameter. Our price per foot on 1/2 inch is 3c on 1 inch 3 1/2c. Write for free catalogue No. 166.

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W. 35th and Iron Sts., CHICAGO.



## POTATO PLANTER

Cheapest Potato Planter on the market. Send for circular. Address J. R. STEITZ, Station D. R. No. 1, Milwaukee, Wis.

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A thing is never worth while doing if it does not do us some distinct good, if it does not make us better, whether spiritually, mentally or physically.—March Ladies' Home Journal.

# SALZER'S SEEDS



**Beardless Barley** is prolifically produced, yielding in 1901 for Mr. Wells, Oregon Co., 200 bushels per acre. Does well everywhere. **That pays.**

**20th Century Oats.** The new variety, produced from 200 to 300 bus. per acre. Salzer's Oats are warranted to produce great yields. The U. S. Ag. Dept. calls them the very best. **That pays.**

**Three Eared Corn.** 200 to 250 bus. per acre. Is extremely productive at present prices of corn. Salzer's seeds produce crops like these.

**Marvel Wheat** yielded 140 bushels last year over 60 bus. per acre. We also have the celebrated **Marathon Wheat**, which yielded on our farms 65 bus. per acre. **That pays.**

**Speltz.** Greatest cereal food on earth—50 bus. grain and 4 tons of stover per acre. **That pays.**

**Victoria Rape** makes it possible to grow hogs, sheep and cattle at a cost of but 1c lb. Marvelous for profit. Does well everywhere. **That pays.**

**Bromus Inermis.** Most wonderful grass of the century. Produces thousands of hay and lots and lots of pasture for hogs per acre. Grows wherever soil is found. Salzer's seed is warranted. **That pays.**

**\$10.00 for 10c.** We wish you to try our great hard seeds. Hence our 10 cent 10 farm seed samples containing Thousand headed kale, Tessie, Bay, Atlanta, Speltz, to fully worth \$10.00 get a star! Proceed with our great going. No postage.

John A. Salzer Seed Co. LACROSSE WIS.

### Wood's Seeds.

## Cow Peas.

WE ARE HEADQUARTERS for these and all Southern specialties, including **Soa Beans, Velvet Beans, Pearl or Cat-tail Mill, Teosinte, Bermuda Grass, Ensilage Corn, Spanish Peanuts, Chufas, Sorghums, etc.** Write for prices, and our interesting Catalogue giving full information about them. **T. W. WOOD & SONS, - Richmond, Va.**

## Cheap Artichokes!

The greatest and cheapest of all hog feed; will produce 400 to 500 bushels on ordinary land. Offer limited quantity at \$2.00 per three bus. bin. Also EGGS from pure bred BARRED P. ROCKS and S. B. LEGHORNS, 75c setting, or two settings for \$1.25.

THE IMPERIAL FRUIT FARM, P. H. Heidenreich, Prop. Staunton, Va.

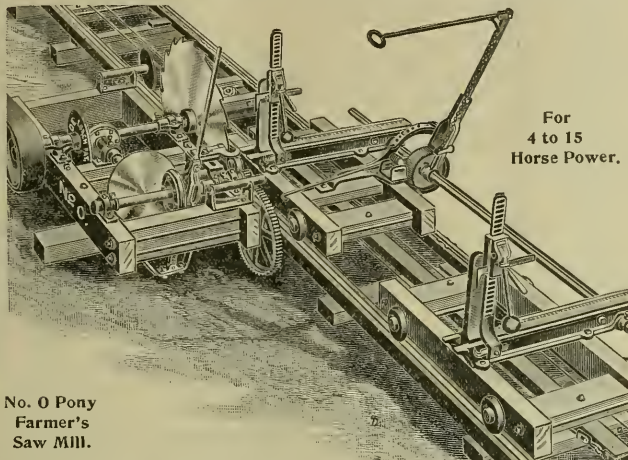
## FRAZER

**Axle Grease** Best in the world. Its wearing qualities are unsurpassed, actually outlasting 3 boxes any other brand. Not affected by heat. — Get the Genuine. FOR SALE BY ALL DEALERS.

# FOR A SHORT TIME ONLY!

To introduce our new FARMERS' SAW MILL, we make the following  
SPECIAL OFFER:

**\$127.<sup>50</sup>** No. 0 PONY FARMER'S SAW MILL, complete as shown in cut and described below, with 36" Solid Saw, del'd on cars at Atlanta, for \$127.50 Spot Cash with Order. **\$127.<sup>50</sup>**



For  
4 to 15  
Horse Power.

With 40" Saw.....	\$132 50
With 44" Saw.....	140 00
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No Discounts from  
these Prices.

BEST RUBBER BELTING, 4-ply,	
6-in.....	20 cts. per foot.
8-in.....	30 cts. per foot.

NET CASH.

Order Now, and Avoid the  
Rush and Delay.

No. 0 Pony  
Farmer's  
Saw Mill.

With DeLoach Patent Variable Friction Feed, "Champion" Duplex Dogs, Improved Head Blocks, Ratchet Set Works and Sectional Carriage, with Cable Feed.

**OUR GUARANTEE.**—This Mill is warranted to be made in a workmanlike manner, of first-class material throughout, and to give **Perfect Satisfaction** if operated according to our printed instructions, which are so simple that a boy can understand them. **Any one with ordinary intelligence can set and operate this Mill** without the assistance of an experienced sawyer or mill man. The Mill will easily cut 2,000 to 2,500 feet of first class lumber per day **WITH ONLY FOUR-HORSE POWER**; 3,000 to 3,500 feet with 6-horse power; 4,000 to 5,000 feet with 8-h. p., etc., and is adapted to any kind or size power up to 15-h. p.

**READ THE SPECIFICATIONS BELOW**, and if not thoroughly satisfied before ordering, write for descriptive circular of this mill. Give us all the information you can as to amount of power you have, size and speed of driving pulley, kind and size of timber to be cut. Also ask for freight rates to your station.

**Specifications.** Husk, 6 feet 4 in. long, 2 feet 8 in. wide; Timbers  $3\frac{1}{2} \times 7\frac{1}{2}$  in.; Steel Mandrel, 1 15-16 in. in diameter, 3 feet 10 in. long, made to take saw with 2-in. eye, and  $\frac{3}{8}$ -in. pin holes, 3 in. from center to center; Adjustable Self-Oiling Mandrel Boxes, 6 in. long, with Oil Chamber and Wick; Board Roller; Wheel Spreader; Double Adjustable Saw Guide; DeLoach Patent Variable Friction Feed; Mandrel Pulley, 18 x 8 in. (larger Pulley furnished up to 24 in.); Carriage made in two 4 foot sections, connected by coupling; Carriage 26 in. wide; Timbers 4 x 6 in.; Four Sets 6 in. Trucks and  $1\frac{1}{2}$  in. Steel Axles, with Set Collar in front of loose wheels to take up all wear and lost motion; Four Track Scrapers for front side of Carriage; Manila Rope Drive for Carriage; 35 feet of Portable Track Complete in three sections; Two Head Blocks, open 36 inches from Saw and take logs 40 in. in diameter, each fitted with "Champion" Duplex Dogs; Improved Ratchet Set Works; Fifteen feet of 1 11-16 inch Steel Set Shaft, in two pieces, key-seated entire length, with Coupling fitted; Wrenches, Cant Hook and Oil Can. Weight of Mill complete as above, 2,100 lbs. with Saw, about 2,200 lbs. This mill will handle any size and length logs up to 3 ft. diam. and 18 ft. long. Can be made to take as long as 22 or 24 ft. at small extra cost.

**IF YOU HAVEN'T OUR LARGE CATALOGUE**, write for it. We build Saw Mills to suit any power, from 4 to 200-h. p.; Shingle Mill Machinery, Drag Saws, Planers, Edgers, Trimmers, Stave and Lath Mills, Bolters, Corn and Flour Mills, Water Wheels, Shafting, Pulleys, Gearing, Etc.

**DE LOACH MILL MANUFACTURING COMPANY, Box 600, Atlanta, Georgia.**

Mr. E. S. Downey, Aurora, Ind., writes: "The No. 0 Pony Mill I sold here is the talk of the county. It is certainly a 'Daisy' and will sell more mills for you. You remember I recently sold another of these little mills to Mr. Boldon. He was in to see me to-day, and says he has turned his sawyer off, and though he has had no experience himself, he is running the mill all right, and that it is giving the best of satisfaction."

Mr. Z. B. Reid, Oakland, Ga., says: "The No. 0 Pony Mill is the nicest running mill I ever saw, and is giving perfect satisfaction."

Mr. W. F. Bentley, Thomaston, Ga.; Fedman Bros., Jackson, Ga., and dozens of others who have recently bought these little mills, express themselves as highly pleased. **THEY CAN'T FAIL TO PLEASE YOU, TOO.**

After Being on the Market TEN YEARS,  
The ACME Engine Still Leads



For Churning, Cutting & Grinding Feed, Filling Siloes, Sowing Wood, Elevating Water, and all Farm and General Uses where

Small Power is Required.

Fuel, Kerosene Oil.

No Skilled Engineer required.

ROCHESTER MACHINE TOOL WORKS,  
No. 17 Frank St. Rochester, N. Y.

The MIETZ & WEISS  
Kerosene Engines.



Cheapest and Safest Power Known. For pumping and electric lighting, grinding corn separating cream, sawing wood, and all power purposes. Also sizes from 1 to 6 horse-power.

Awarded Gold Medal at Pan American Exposition. Send for catalogue.

A. MIETZ, 128 Mot's real, New York.

ENGINES, BOILERS AND MACHINERY.



When you want good rebuilt machinery at bargain prices, write for our Catalogue. We have every all kinds of engines (gas, gasoline and steam), pumps, saws, and mill supplies in general.

CHICAGO HOUSE WRECKING CO.  
West 34th and Van Buren, Chicago.

The "Weber Junior" Pumper



It is all complete, ready to attach to pump. Equals 80 men in a day's work. Uses but little gasoline. It is shipped crated & completely erected, all connections made. Easy to start, any one can operate it. Every one guaranteed. Other sizes up to 50 H. P. Send for catalogue. Weber Gas & Gas Engine Co., Box 128 Kansas City

ROUND SILO

THE PHILADELPHIA.

The only Perfect Continuous Open Front SILO made. See Open Top Patent Hoop. Ask for Catalogue.

E. F. SCHLICHTER,  
32 Vine St., Philadelphia, Pa.

Also made in the West by DUPLEX MFG. Co., South Superior, Wis.



"SILOS" Yes, now is the time to buy a Silo, and the best kind to buy is the Lansing Perfect-Tubular. Made on scientific principles and from good material; made by skilled workmen and improved machinery. Therefore are perfect in construction and the best to be had at any price. For book that tells all about this silo and for prices

address A. W. D. HOLLOWAY,  
Builder's Exchange, Philadelphia, Pa., U. S. A.



25c. THE LADIES' FRIEND  
Hopkins' Bleaching Gloves  
Made from the Best Glove-kid in Black, White, Tan, and Chocolate. That the thing for Bleaching, Dyeing, Driv- ing, Wheeling, Cutting, Gild, etc. Sizes 4, 5, 6, 7, 8, 9. Write for catalogue. Hopkins' Glove Co., 82 1/2 Spruce, Cincinnati, O.

BOOKS.

FUMIGATION METHODS. A timely work for farmers, gardeners, nurserymen, fruit growers, florists, millers, grain dealers, transportation companies, college and experiment station workers, etc. By Prof. W. G. Johnson. Cloth. 300 pp. Over 80 illustrations. Orange Judd Company, New York. Price, postpaid, \$1.

This book is the first of the kind ever published on this important subject. It tells how to construct apparatus and how to apply the gases. It embodies the practical experience of the author, the world's recognized authority, as well as the experiences of many others who have successfully used these gases. The subjects treated cover orchard and nursery fumigation; applications in greenhouses and hotbeds; use in mills, warehouses, elevators, ships, cars, railroad coaches, houses and other places. It also gives a summary of the laws in this and foreign countries relative to the shipment of fruits and nursery stock.

We can supply this book at the published price.

Irrigation in the United States. By Fred. Haynes Newell. Published by Thomas Y. Crowell & Co., N. Y. Price, \$2.

CATALOGUES.

The Barnes Manufacturing Co., Mansfield, O. Pumps.

A. B. Howard & Son, Belchertown, Mass. Howard's New Star Petunias, the floral novelty of 1902.

Pinehurst Nurseries, Pinehurst, N. C. Woody and Herbaceous Plants.

Ames Plow Co., Boston and New York. Matthews' New Universal Seeding and Cultivating Implements.

McCormick Harvesting Machine Co., Chicago, Ill. The McCormick Header.

Mark T. Thompson, Rio Vista, Va. Strawberry, Raspberry and Blackberry Plants; Dahlias, etc.

Ripley Hardware Co., Grafton, Ill. Feed Cookers, Sprayers, Tanks, etc.

Rife Hydraulic Engine Manufacturing Co., Liberty street, N. Y.

The International Stock Food Co., of Minneapolis, Minn, send us a finely got-up booklet on their two Celebrated Stallions, Directum, 2,054, and Online, 2,04. These horses are the two fastest stallions owned by one farm, and are the stud horses kept on the International Stock Food Co.'s farm, where they stand for service.

DATES CLAIMED FOR SALE.

The Kentucky Live Stock Breeders' Association of Louisville, Ky., request us to claim May 20th and 21st as the dates for the first sale to be held under the auspices of this Association. This Association proposes to have two sales yearly, and at this one they will offer one hundred and fifty head of beef and dairy cattle. Mr. M. W. Neal, No. 514 Third street, Louisville, is Secretary, and will furnish any information in regard to the forthcoming sale cheerfully.

The "OXFORD" Cream Separator



Is manufactured in U. S. by the supervision of F. W. Broomall well known as an expert in this business, who after many years of careful study and experiments, avoiding the mistakes of his predecessors, has produced the "Oxford" Cream Separator with these points of merit to commend it: 1st. It skims clean, taking A.L. the butter fat out. 2d. It requires so little power to operate it that the farm-boys will enjoy the fun of running it. 3d. It is so simple in construction and the material being first-class, it will not get out of order, and, with ordinary care, will last a lifetime. 4th. The "Oxford" is the cheapest separator on the market, considering the fact that it will handle 350 lbs of milk per hour, and do better work than any machine yet offered to the farmer. Agents wanted. Price, \$75. Manufactured by THE OXFORD MFG. CO., Oxford, Pa.

Price, \$75. Manufactured by THE OXFORD MFG. CO., Oxford, Pa.

The REID Hand Separator

is the closest skimmer, as well as the easiest running, and most economical separator made.

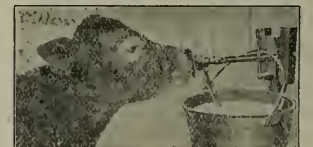
Very Simple and Durable. Capacity 150 to 500 lbs per hour. Prices \$90 to \$100. Hand separator circular and illustrated catalogue of dairy supplies free



Send anywhere on 10 Days' Free Trial

A. H. REID  
30th and Market St., Philadelphia, Pa.

COMMON SENSE GOLF FEEDER



Prevents scours. Weans perfectly. Makes better veal and more of it. Saves time and temper. Seed for literature. PRICE, Single Feeder, \$1.50; Double Feeder, \$2.00. EX. PAID. Gold Medal Pan American Exposition.

O. H. MFG. Co., Dept. P, Lyndon, Vt.

JUST A WORD

Any of our full line of Carriages and Buggies, sent anywhere on 30 Days' Free Trial. How can we do this? Because we manufacture our own factory all vehicles we sell. Get one of our free money saving catalogues. Kalamazoo Carriage & Harness Mfg. Co., Slaters 23, Kalamazoo, Mich. (Opposite the Post-Office)

PALMORE'S

Law and Collection Association,

Established 1884. Claims collected in all parts of the United States. No collection - no charge. P. O. Box 503. 905 1/2 East Main Street RICHMOND, VIRGINIA.

# HALLOCK'S "O. K." DIGGER

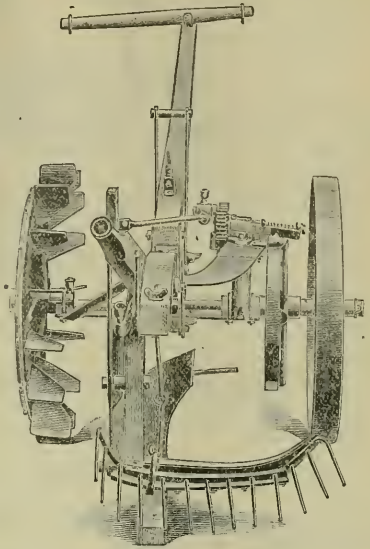
## POTATO GROWERS OF THE SOUTH:

You have heretofore plowed out your potatoes, and hired a small army of men to scratch them out of the dirt. We guarantee that "O. K." digger will dig and leave your potatoes in such shape that one-half the "small army" will barrel more potatoes per day. The larger and heavier the vines, the better "O. K." will handle them.

## WRITE AT ONCE

For terms on which we deliver a digger at your depot, subject to trial in your field before you pay us a cent.

**D. Y. HALLOCK & SON,**  
YORK, PENNSYLVANIA.



1902

# Stallions in the Stud

1902

..AT..

## PLAIN DEALING and ENGLEWOOD STOCK FARMS,

Property of W. N. WILMER, 49 Wall St., New York.

### PLAIN DEALING FARM.

#### VIRGINIA CHIEF, 26267,

Black horse, 16 hands high, weight, 1200 pounds. Sired by Kentucky Prince, 2479; dam Nina, by Messenger Duroc, 106; second dam Hattie Hogan, dam of 2 in list, by Harry Clay, 45. Virginia Chief has fine trotting action, and sires large, handsome colts.

#### HERCULES (Thoroughbred),

Chestnut horse, by Panique, dam Nenetzin, by Imp. Mortimer, second dam Imp. Genista, by King Tom. Hercules is impressive in action and appearance, which he transmits to his get.

*Fee for either horse, \$10.00 to insure.*

Address CHAS. S. HUFFMAN, Manager,  
ISAAC REED, Keene P. O., Albemarle Co., Va.  
STUD GROOM.

### ENGLEWOOD FARM.

#### AEBINEER, 30932,

Chestnut horse 15 3/8 hands, weight, 1100 pounds. Sired by Virginia Chief, 26267, dam Aebina, by Alban, 5332, second dam Violet, dam of Version, 2:19 1/2, by Electioneer, 125.

#### PLAIN DEALING, 30921,

Chestnut horse, 15 1/2 hands, weight, 1050 pounds. Sired by Virginia Chief, 26267, dam Barbara, by Alcantara, 729, second dam Helen, 2:32 1/2, by Daniel Lambert, 102.

Aebineer and Plain Dealing are both young and untried in the stud. They are handsome horses and show pronounced trotting action.

*Fee for either horse, \$10.00 to insure.*

Address E. L. REDMON, Manager,  
RICH'D McDANIEL, Blenheim P. O., Albemarle Co., Va.  
STUD GROOM.

N. B. - Plain Dealing and Englewood Farms may be reached by telephone from Scottsville, which is also the R. R. and Telegraph station.

## Do You Want a Big Crop

of Peaches, Apples,  
Cherries and Plums



### Then Remember,

Trees, as they live, grow hungry for food, and unless there is phosphorus in the ground, the leaves will grow yellow and curl, while the fruit will get scabby, dwindle and die. Then fertilize your

### Peach Trees

with pure Odorless Slag Phosphate. We warrant every pound of it to be pure plant food. The roots of the Trees will absorb it, the sun will draw it up in the sap and cause it to fatten the Peaches, while the Manganese contained in the slag will paint the Peaches with the beautiful prismatic colors that the Delaware Peaches possessed before the ground was impoverished.

Send all orders to

**JACOB REESE,**

400 Chestnut St., Philadelphia, Pa.

## AGRICULTURAL and BUILDERS' LIME

Send for Circulars and Price-List.

**FELLSWORTH LIME WORKS**

REEVES CATT, Agent,

Bodley, Augusta County, Va.

## S. B. ADKINS & CO.,

4 and 6 Governor Street,  
RICHMOND, VA.

**EXPERT BOOKBINDERS**

and Commercial Printers.

For Drunkenness and  
Drug Using

# Keeley Cure

Please write me  
Correspondence  
confidential.

THE  
KEELEY  
INSTITUTE.  
Dept. P.,  
Greenboro, N.C.



### TELEPHONES AT \$5.00

We produced an enormous quantity of telephones that have been sold but little service. We thoroughly overhauled them, and guarantee to ship you instruments so good, that would ordinarily cost you over twice as much. Write for FREE Catalogue No. 166.

CHICAGO HOUSE WRECKING CO.  
West 25th and Iron Sts., CHICAGO.

### "SAVING AT THE SPIGOT."

There is an old saw which characterizes the unwisely parsimonious man as one who "saves at the spigot, and wastes at the bung-hole." He is also characterized as "penny wise and pound foolish."

Such a man is he who will allow costly buildings to fall into decay for the lack of paint. Good paint costs money, of course, and the service of a competent painter to apply it costs more; but the lack of paint costs far more than both combined. To save money by saving in paint is inevitably a saving at the spigot to waste at the bung-hole. Any building that is worth putting up in the beginning is worth enough good paint to preserve it and sufficiently frequent re-painting to continue the preservation. All the money spent in judicious painting is so much saved from the item of deterioration, as would readily appear were property of this sort subject to bookkeeping like industrial property.

Modern paint—the best—is not expensive and it costs less to keep a house well painted than to keep the same house in repair if painting be neglected.

Formerly, when lead and oil were the only painting materials at our disposal, there was some excuse for looking askance at the frequency of the expense of repainting; but since combination paints containing a large proportion of zinc white have come into use the cost of the material is proportionally less while its endurance has been greatly increased. Some of these paints come ready for use, and if assurance can be had that the oil used in them is only pure linseed oil and that they contain neither water nor alkali, they are, generally speaking, as good as anything obtainable. They cost very little, are very simple to apply, and make the practice of "saving at the spigot," in paints at least, quite indefensible.

STANTON DUDLEY.

### CENSUS BULLETINS.

- Bulletin 136. California. Manufactures.
- Bulletin 137. Minnesota. Manufactures.
- Bulletin 138. Oleomargarine Manufactures.
- Bulletin 139. Maine. Agriculture.
- Bulletin 140. South Carolina. Manufactures.
- Bulletin 141. Washington. Manufactures.
- Bulletin 142. Illinois. Manufactures.
- Bulletin 143. Indiana. Manufactures.
- Bulletin 144. Virginia. Manufactures.
- Bulletin 145. Wisconsin. Manufactures.

### "WHAT'S IN A NAME?"

On another page of this issue appears a very unique design calling attention to a line of harvesting machines in which the O. K. stands out prominently, emphasizing the fact that the machines advertised are O. K. in name as well as fame over the world. Readers of the *Southern Planter* should write for "The World Centre," a beautiful and interesting book which is mailed free to all mentioning this journal.

**Fruit.**

Its quality influences the selling price.

Profitable fruit growing insured *only* when enough actual

## Potash

is in the fertilizer.

Neither quantity nor good quality possible without Potash.

Write for our free books giving details.

GERMAN KALI WORKS,  
93 Nassau St., New York City.

..ELMWOOD NURSERIES..

## ASPARAGUS

100,000 2-yr-old Asparagus roots, 5 varieties. A special rate of \$3.50 per 1000 for 2 mos for BARR'S, PALMETTO, CONOVER.

## APPLES

A large general assortment, including WINESAPS and YORK IMPERIALS.

## Splendid Assortment of Ornamental, Shade and Fruit Trees.

**EGGS** from B. P. Rocks. Light Brahmas, Brown Leghorns, at \$1.00 per 13.

WRITE FOR OUR CATALOGUE.

**J. B. WATKINS & BRO.,** Hallsboro, Va.

## STEM-WIND WATCH, CHAIN AND CHARM

You can get a Stem-Wind, Nickel-Plated Watch, warranted, also a chain and charm for selling 19 packages of Bicine at the cheap. Send name and address (once) and we will forward you the Bicine and our large Premium List, postpaid, No money required. **BICINE MFG. CO. B. B. 81, Concord Junction, Mass.**

## YOUR OWN DOCTOR FOR 25 Cts.

For 25 cents, any formula if all the well known remedies were included, would be included in this one, you fill instructions so that any one can put it to use, medicine for a few pennies that is what doctors. Money made by selling to your neighbors. Write for free of each sent to make for complete set. **QUAKER REMEDY CO. DEPT. F. P. O. Box 474, Phila., Pa.**

# NITRATE OF SODA

—FOR—

## MONEY CROPS.

COTTON, CORN, WHEAT,  
FRUIT, POTATOES.

You get *your* share of the profit when you use this

### Standard High-Grade Ammoniate.

Lately around \$2.20 per ton unit on ammonia basis.

Send postal for formulas and other valuable information, free

**WILLIAM S. MYERS, Director,**

12 S. P. John Street.

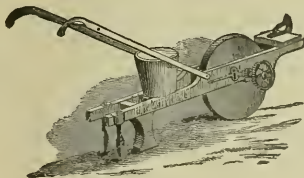
CHILEAN NITRATE WORKS, NEW YORK.

# PLANTERS

CARDWELL'S, EUREKA and CENTENNIAL FERTILIZER ATTACHMENT are the best, therefore they are the cheapest.

They Plant..

CORN,  
BEANS,  
ENSILAGE  
CROPS.



And Distribute

**FERTILIZER**

any distance apart,  
and any quantity.

We make THRESHERS, HORSE POWERS. PEANUT MACHINERY,  
STRAW CUTTERS, WELL FIXTURES, and all Implements  
formerly made by H. M. SMITH & CO. and  
J. W. CARDWELL & CO.

THE CARDWELL MACHINE CO., = Richmond, Va.

BETWEEN SEASONS.

THE NEED WHICH SPRING BATS TO ALL, AND HOW IT IS MET.

That, after the long and wearing struggle with winter, there is need of a revitalizing agency of some sort, the almost universal demand for what is properly known as a "spring medicine," would seem to indicate. People feel, without doubt, that there has been a drain on their vital forces, and that they are not up to the standard of health and strength required by the demands of daily life. They want a spur, a tonic, an invigorant, and they look forward to the coming heat of summer with apprehension, dreading the further call that is to be made on their already impaired forces. In fact, they want a "spring medicine."

And the want is natural, and, fortunately, as naturally supplied. Nature has provided the means, and science has applied them. In Yager's Sarsaparilla with Celery is found a combination, which, while of the greatest general value, is especially adapted to the needs of the weakened physical condition which follow winter and precedes summer. By purifying and enriching the blood, strengthening the nerves, giving restful sleep, creating appetite, and aiding digestion, Yager's Sarsaparilla with Celery builds up the entire system and restores it to its maximum of health and vigor. So effective is it, so unrivaled in its sphere, that in thousands of families its use has become as regular as the recurrence of the seasons. It is "par excellence," the Spring medicine. All druggists sell it, 50 cts. a bottle. Made by Gilbert Bros. & Co., Baltimore, Md.

THE DELOACH SAW MILLS.

The DeLoach Mill Manufacturing Co. of Atlanta, Ga., are out in this issue with a full page advertisement, to which we invite the attention of our readers. This firm is a regular advertiser in our columns, and many of our farmers are acquainted with them; but to those who are not, we would suggest that they look up this advertisement and write to the above firm in regard to this Mill, on which a special offer is made for a brief time. We might suggest here, that in a recent advertisement we made some slight error in giving description of this Mill, but in this advertisement the description is correct, and if any further information is desired than that furnished the Company will cheerfully furnish it. Kindly mention the *Southern Planter* when you write to them

ATTENTION, READERS!

We have just received a catalogue from Ripple Hardware Company, Grafton, Illinois, well known manufacturers of compressed air and orchard sprayers. They have placed on the market a full line of Concentrated Spraying Mixtures, and any person not posted on spraying will make a success by using their preparations; and following directions which they furnish, telling when to spray and what mixtures to use. They will send their catalogue for 5 cents in stamps. Write them to the above address, and any orders intrusted to them will be promptly filled.

**FINE FARMS** In the great fruit, grain and stock section of **VIRGINIA**. Best climate and water in the U. S. Near great markets, with best educational advantages. For further information, address **SAM'L B. WOODS, Charlottesville, Va**

**Virginia Farms**

All prices and sizes. Free list on application. **WM. B. PIZZINI CO., Richmond, Va.**

**GO SOUTH.** For full particulars write **A. JEFFERS, Norfolk, Va.**

**VIRGINIA FARMS**

**\$3 PER ACRE AND UPWARDS.** EASY PAYMENTS. CATALOGUE FREE. **GEO. E. CRAWFORD & CO., Richmond, Va.** Established 1875.

**Cash for REAL ESTATE**

no matter where it is. Send description and cash price and get my wonderfully successful plan. **W. M. OSTRANDER, North American Bldg., Philadelphia, Pa.**

**A BARGAIN IN 63 ACRES ... OF LAND**

In sight of Richmond, Va. Fine large house with modern improvements; fine large barn and other improvements; large orchard; society the best. Will be sold cheap with stock and crops. Would make a fine dairy farm. Address **OAK SHADE, care Southern Planter.**

**..Magnificent Estate..**

Known as the **Hampstead Farm**, situated on the Pamunkey river, for sale. Contains nearly 1600 acres, 80 of which is river bottom land, the remainder being upland and timber. Large deposits of green sand marl; brick barn with wood stable attached; also houses for sheep, etc. Splendid dwelling said to have cost \$60,000. Property now owned by stock company. Price, \$20 per acre, on easy terms. For further particulars, address **"PAMUNKEY," care Southern Planter.**

**HOMES AND THE PLACE TO FIND THEM.**

No place in the United States can a man do so well at **farming**, for the money invested, as in **Virginia**. Lands are cheap; climate good, and the best of markets close at hand. It is the State of all others, for a comfortable all the year round home. The James River Valley Colonization and Improvement Company offer superior advantages to land purchasers. For free 36 page land pamphlet, address

**W. A. PARSONS, Richmond, Va.**

**SAN JOSE SCALE** and other insects can be controlled by using **Good's Caustic Potash Whale Oil Soap, No. 3.**

It also prevents **Curl Leaf**. Endorsed by entomologists. This soap is a fertilizer as well as insecticide. 50 lb. kegs, \$2.50; 100 lb. kegs, \$4.50. Half barrels, 25 lbs., at \$75. per lb.; barrels, 45 lbs., at 35¢. Large quantities, special rates. Send for circular.

**JAMES GOOD, 939-41 N. Front St., PHILADELPHIA, PA.**

Rain and sweat have no effect on harness treated with Eureka Harness Oil. It resists the damp, keeps the leather soft and pliable. Stitches do not break. No rough surface to chafe and cut. The harness not only keeps looking like new, but wears twice as long by the use of Eureka Harness Oil.



Sold everywhere in cans—all sizes. Made by **Standard Oil Company**

**ORNAMENTAL LAWN FENCE**

Buy from manufacturers direct and save the Dealer's Profit of 20 to 25 percent. We make many designs, and sell more Ornamental Fence than any other two firms in the business. Why? Because we use nothing but the best material ever, can buy, sell direct to you at **FACTORY PRICES**, and guarantee you one can erect our fence. We make special prices to Churches, Cemeteries and large Parks. Send us your address. We will tell you the price in mailing you our large 32 page catalogue on Ornamental Fencing, free. If you are interested in Farm Fencing send for our 42 page Catalogue. Address **Box Q, COILED SPRING FENCE CO., Winchester, Ind., U. S. A.**

**HARD STEEL WIRE FENCE**

Heavy lateral wires, heavy hard steel stays, coiled spring wire, Sure Grip lock. In strength, appearance, and durability, the Hard steel cannot be excelled. Write for catalogue and prices. **THE HARD STEEL WIRE FENCE CO., Cuyahoga Falls, Ohio**

**Page Poultry Fence**

weighs 10 ponnas to the rod. Isn't that better? **PAGE WOVEN WIRE FENCE CO., ADRIAN, MICH.**

**A FENCE MACHINE**

That combines Simplicity, Durability, Rapidity and Economy. The **DUPLEX**. It makes over 100 styles, 50 to 70 rods a day, of Home-high, Bull-strong, Pig and Chick-rail Fence that combine Strength, Uniformity, Permanency, Reliability and Efficiency at **ONE OF WIRE**. Machine on Trial. Full information free. Wire of every description and quality. Price, Write today. **MERRILL BROTHERS, EX. DS. Maude, Ind.**

**DOW FARM FENCE**

**PRICE AND QUALITY WILL PLEASE YOU—WRITE US NOW.**

**\*DOW WIRE WORKS—LOUISVILLE, KY.**

**FENCE! STRONGEST MADE.**

Build strong, Chick-rail, sold to the Farmer at Wholesale Prices. Fully Warranted. Catalogue Free. **COILED SPRING FENCE CO., Winchester, Indiana, U. S. A.**

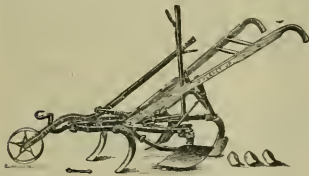
**THE WILSON BONE CUTTER.**

Messrs. Wilson Bros., Easton, Pa., are advertising their well-known Bone Mill elsewhere in this issue. In addition to cutting up bone, it will also cut clover or any other food desired for poultry. Send for their catalogue and price list.

**STOCK MARKERS.**

The F. H. Jackson Company, Winchester, Ky., are advertising their Stock Markers in another column. This is a very useful device, and farmers should use them more largely than they do, thereby avoiding mistakes when their stock breaks out or gets from one field to another. The device is a simple one, and is well adapted for cattle, sheep, swine and poultry.

There are very many men who for good and sufficient reasons find it convenient and best suited to their ends to use a one-horse cultivator. Indeed, there are but few farms of any size but that will afford ample opportunity for the use of the well-made and modern horse hoe. Even where the two-horse cultivator is used for general cultivation, it will be found to advantage to employ a one-horse hoe about the garden, truck patch, etc. Where special crops are cultivated in narrow rows, a good horse hoe is well-nigh indispensable. A most extraordinary tool of this character is shown herewith. It is the "Planet Jr.," No. 8 Horse Hoe and Cultivator. It is pro-



vided with a variety of conveniences and attachments that places it in a class by itself. A convenient lever within easy reach of the operator controls perfectly the width of the tool. It contracts for narrow rows or expands to fit wide rows at the will of the operator. It is capable of a wide range of adjustments in this particular. Another lever is connected with the ground wheel in front, which by its change and adjustment controls perfectly the depth at which it is desired to run the hoe. It is equipped with special shovels for throwing the earth to or from the row, hilling up, etc. It is not unfair for us to say that all of the implements of its kind, this No. 8 "Planet Jr." is the best known and most popular. This is so clearly because of the wide range of use and extraordinary merit of the tool. The "Planet Jr." Catalogue contains illustrations and descriptions of the full "Planet Jr." line of hand and horse tools, shows many pictures of their use in this and other countries, and generally contains much that is interesting and valuable to every tiller of the soil. The manufacturers, S. L. Allen & Co., Box 1107 X, Philadelphia, Pa., will be glad to mail you a copy if you write them for it.

**FOR MAN OR BEAST—YAGER'S LINIMENT IS JUST RIGHT.**

**YAGER'S**

**LINIMENT**

FOR  
**MAN OR BEAST**

**POPULAR**

FOR ITS **SOOTHING & EFFECT**  
**QUICK HEALING POWERS.**

IN THE TREATMENT OF DISEASES REQUIRING  
AN EFFICACIOUS EXTERNAL REMEDY.

**BEWARE OF IMITATIONS.**

PREPARED ONLY BY

**GILBERT BROS. & CO.**

SOLE PROPRIETORS

**BALTIMORE, M.D.**

U.S.A.

REGISTERED U.S. PATENT OFFICE

**WHEN YOU GET YAGER'S FOR 25 Cts., WHY TAKE A SUBSTITUTE?**

**EXACT SIZE OF BOTTLE. TAKE NO SUBSTITUTE.**

# SCRATCH! SCRATCH! SCRATCH!

From morning till night. Hot! Itching! Sore! Ashamed to be seen! Face covered with pimples. Hair falling out! Who isn't sorry for the sufferer from eczema?

And it is so unnecessary! There's a cure for eczema as sure as tomorrow will follow to-day. YAGER'S SARSA-PARILLA WITH CELERY gets right down to the source of the disease—the blood. It draws out the impurities, which otherwise would come through the skin. It puts functional activity in such perfect order that each part of the system does its work and does it well.

A. A. Wilson, of Portsmouth, Va., was afflicted with eczema and itching sores. He writes: "Permit me to thank you for the great benefit I have derived from the taking of YAGER'S SARSA-PARILLA WITH CELERY. My body was broken out all over with pimples and sores; and my flesh constantly itched. I heard of YAGER'S SARSA-PARILLA WITH CELERY, and the wonderful cure it had made for others, and concluded to give it a trial. The results are most satisfactory. My face is becoming as smooth as an infant's."

If you are troubled in any way with any disease resulting from impure blood, you can absolutely rely on YAGER'S SARSA-PARILLA to effect a cure. Try it. You can get it at any drug store, 50 cents a bottle. Made by Gilbert Bros., Baltimore, Md.

## IT STOPS THE COUGH

"The quickest remedy for a cough I ever saw," is the way one Maryland maiden expresses her appreciation of HONEY-TOLL. It stops the cough almost instantly. It cures the cold quickly. It benefits the health permanently. Sold by all druggists. 25c. a bot.

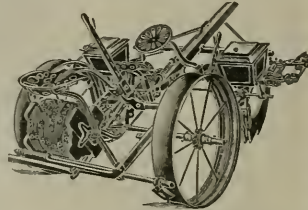
GILBERT BROS. & CO.,  
BALTIMORE, MD.

WHAT ABOUT

## GLEASON'S HORSE AND CATTLE POWDER?

HAVE YOU TRIED IT YET?

The Marvin Smith Company, of Chicago, whose advertisement appears regularly in these columns, differs from all the mail order houses we know of in being specialists. They make a specialty in handling agricultural implements, farm tools, vehicles of all kinds, and a complete line of saddlery and harness. They have specialized to such an extent along their chosen lines, until now they claim to be the largest Agricultural Implement Mail Order House in the world. Some idea of the completeness and thoroughness of this house may be gained by a single instance. In feed grinders alone they handle over fifty-seven kinds, styles and varieties. This may be taken as a very fair example of the whole. The same completeness and thoroughness pertains throughout the whole institution.



As may be surmised, it takes a large complete catalogue to contain, illustrate and describe the various lines handled by this firm. Their large general catalogue contains a list of more than fifteen thousand articles, and in every case the description is plain, direct and truthful, and the prices, which are always such as to save the farmer money, are marked in plain figures.

Write them for catalogue, which they will mail you free if you mention this journal.

### ANNEFIELD HEREFORDS.

In another part of this paper will be found the advertisement of Herefords by Mr. Edward G. Butler, who has recently entered the ranks of Hereford breeders by the purchase of Mr. William B. Withers' entire herd and the addition of several fine animals from other well-known breeders.

The Annefield Farms contain over seven hundred acres of fine land, and with the blue-grass and ample water supply, opportunities are offered for the raising of animals that cannot be excelled, and those desiring young stock should investigate the Annefield Herefords.

### SLUG SHOT.

As usual, Mr. Benj. Hammond, Fishkill, N. Y., is advertising with us this year, and is offering the celebrated Slug Shot, one of the best known insecticides. Mr. Hammond will very cheerfully mail catalogues giving full information if your seedmen doesn't handle it.

### SPRAYERS.

Thos. P. Rose, Shiloh, Va., is advertising with us in this number some splendid Spray Pumps, for which he has the Southern agency. Look up the advertisement and write him for prices, etc.

## AT A SACRIFICE. Three Desirable Virginia Farms For Sale Separately or as a whole.

All one tract. Three miles of Danville (25,000 inhabitants). Good market for farming products. Situated in healthy and beautiful section. Suitable for

### DAIRY AND STOCK FARM.

Three residences and farm buildings. In good order. 655 acres. Divided 125 acres in finest bottoms, 215 in good woodlands, and balance in uplands. All well watered and drained. Very productive. Adapted to machinery. Liberal terms. Write for particulars.

Jno. Stewart Walker & Co., Lynchburg, Va.

### MANLOVE SELF OPENING GATE

Catalogue free  
MANLOVE GATE CO.  
PITTSBURG, PA.

Practical parents please protect happy hearts and handsome homes of Dixie's dear daughters.

### TEN DAYS FREE TRIAL

allowed on our bicycles. We ship on approval without a cent down.

**1902 MODELS, \$9 to \$15**  
1900 & 1901 Models, best makes, \$7 to \$11  
**500 Second-Hand Wheels** all makes and models, good as new \$3 to \$5.  
Great *Picture Illustrating Sale*  
**RIDER AGENTS WANTED** to ride & exhibit sample. Earns a bicycle a week money distributing machines. Write at once for circulars. Dept. 238 G. CHICAGO, ILL.

**MEAD CYCLE CO.**

### DO YOU FEED SWINE?

For the most practical sowing paper, giving up-to-date methods and market reports, send 10 cents in silver for four months trial subscription. Regular price 50 cents a year. Address

**BLOODED STOCK,**  
Oxford, Pa.

### POULTRY AND LIVE STOCK PAPER, 20

pages, illustrated, 25 cents per year, a month's trial to — cents. Indorsed by Poultry and Live Stock breeders everywhere. Address, **THE AMERICAN FARMER and GARDENER** Washington, D. C. A Breeder's Paper With a Different Name, full of useful information.

### INCUBATORS ON 30 DAYS TRIAL

The only perfect business machines in the world. Our large handsome illustrated catalogue explains it all. Send for a copy, it is absolutely free and worth a dollar to any one interested in artificial incubation. Address, Standard F. & C. Inc Co. Rochester, N. Y. Mention this paper.

### VICTOR INCUBATORS

The simplest, most durable, cheapest first-class hatcher. Money back if not as represented. Circulars free; catalogue 5c. We pay the freight. **GEO. ESTEY CO.** Quincy, Ill.

### SURE-HATCH IMPROVED Incubators and Brooders

at prices that will bring your order. 6 kinds of green and dry bone cutters; also cutter and everything used on the farm. Catalogue free. **CASH SUPPLY & MFG. CO.,** Dept. Y. Kalamazoo, Mich.

Mention the Southern Planter when corresponding with advertisers.

# ANY FARMER WHO CANNOT GET A . . . SUCCESS ANTI-CLOG WEEDER

Of his dealer, we will sell him one direct from factory, DELIVER IT AT HIS DEPOT, and guarantee it to prove a good investment to him.

"Would not take \$25.00 apiece for my Weeders."

T. H. BUSEY, Waverly Hall, Ga.

"Used Weeder on Cotton and Corn with perfect satisfaction. More than paid for itself last season."

S. S. CARTER, Zeb, N. C.

"I would not be without my Weeder for three times the cost."

JUDSON ALLEN, Sylva, N. C.

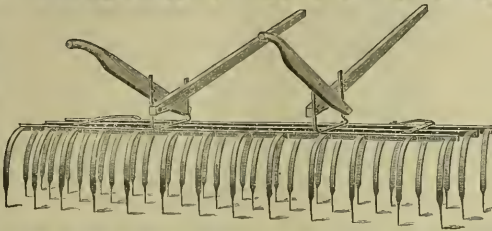
These are samples of thousands of letters we have received.

## CAUTION.

All other flat-tooth Weeders infringe our patent. One firm has settled with us. We now have suit pending against Keystone Farm Machine Co., York, Pa.

Right now is the time to buy. Write us at once.

**HALLOCK WEEDER CO.**  
**YORK, PA.**



# THE BUCHER & GIBBS PLOW CO., CANTON, OHIO.

MANUFACTURE A FULL LINE OF

**PLOWS** in all sizes; **SPIKE-TOOTH, SPRING-TOOTH** and **DISC HARROWS**; **ONE-HORSE CULTIVATORS**, and **LAND ROLLERS**.

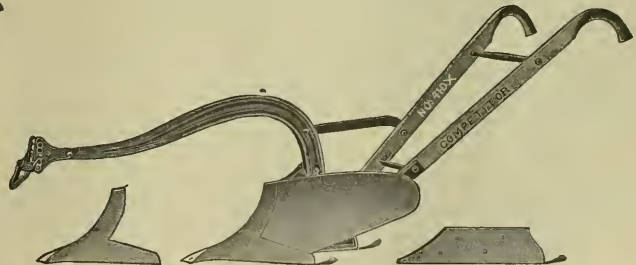
TELL YOU SIR  
THE "IMPERIAL"  
IS THE BEST PLOW IN THE WORLD  
NO MISTAKE AND YOU KNOW IT.

MADE AT  
CANTON,  
OHIO.



This popular Plow is made strong and durable. Gives satisfaction to the farmer.

Our full line of goods for sale by



## THE IMPLEMENT COMPANY,

Catalogue Free.

General Agents, 1302-1304 E. Main St., RICHMOND, VA.

**IF YOUR LIVER**

is inactive or your DIGESTION out of order, use **Mona Liver Tonic** which is the best preparation known for producing a healthful and continuous secretion from the liver and other organs. It is an absolute cure and preventive of torpid or inactive liver, thus preventing the costiveness, or curing this condition if it already exists. Of course the consequent troubles of obstinate costiveness, such as sick or nervous headache, restlessness, sour stomach, colic, heartburn, and kindred diseases, are relieved by this most excellent remedy. Blisters, pimples or rough skin, caused by indigestion or costiveness, will be relieved in a few days by the use of **MONA LIVER TONIC**, thus producing a beautiful complexion. It will cure **JAUNDICE** in a few days.

Price, 50 cents and \$1.00.

—PREPARED ONLY BY—

**E. A. CRAIGHILL, Pharmacist,**  
**LYNCHBURG, VA.**

FOR SALE BY DRUGGISTS,  
**PURCELL, LADD & CO.,** - Richmond, Va.  
Wholesale Distributors.

**EGGS FOR HATCHING**

**BARRED WHITE ROCKS, BROWN and WHITE LEGHORNS, S. C. LEGHORNS.**

75c. per setting of 15; 3 settings, \$2. Rose Comb Brown Leghorns, \$1 per setting. Toulouse Geese Eggs, \$2 per doz. A few more cockereis of above varieties for sale.

**J. B. JOHNSON, Clover Hill Farm,**  
**Manassas, Va.**

**FOR SALE**

**CORNISH INDIAN GAME**  
EGGS and COCKERELS.

**BELGIAN HARES**

Correspondence solicited.

**WILTON STOCK AND POULTRY CO.,**  
**HANOVER C. H., VA.**

**EGGS FOR HATCHING**

Pure-Bred B. P. Rock, Black Minorca,  
S. C. B. Leghorn.

Fine stock, excellent layers. I guarantee eggs to be true to name, fresh and to arrive in good condition. 75c. per 15; \$2.00 per 45; \$4.00 per 100.

**MISS S. M. HITER,**  
**ELLISVILLE, LOUISA CO., VA.**

**EGGS**

Eggs from B. P. Rock, White Wyandotte and Pekin Ducks, \$1 for 15. Eggs from M. B. Turkeys bred from a 45 lb. Tom, heavy in plumage, \$3 per doz. Pedigreed Scotch Cullie Pups, extra fine, \$3 to \$5 each. A very fine 2-yr. old female, well-trained and fine breeder, \$10.

**C. H. BENNETT, McDonald's Mill, Va.**  
(Green Valley Poultry Yard.)

**DIXIE POULTRY FARM,**

BREEDER OF

**Mammoth Pekin Ducks, S. C. White Wyandottes, White Wyandottes, S. C. White Leghorns, S. C. Brown Leghorns, B. P. Rocks.**

Vigorous stock, bred for business, with 1st Premium to their credit at the Great Richmond and Newport News Shows. Eggs, 13 for \$1.25.

**E. D. MOORE, Holly, Va.,**  
First Vice-Pres. of the Va. Pheon,  
Poultry and Pet Stock Association.

**SHORT STORY** Registered and Imp. **COLLIER "Workers."** It is our business. Pups, \$7.50 np. **MAPLE MOUNT STOCK FARM,** Albany, Vermont.

**A NEW FACTORY.**

The Stover Manufacturing Company, Freeport, Illinois, well known to the readers of our paper, have just completed a new and modern factory, which is entirely the result of the legitimate and healthy growth of one of the best and most favorably known manufacturing institutions of this country. The Stover people have repeatedly enlarged their old factory and increased their facilities from time to time until they were about the largest people in the business. When they introduced their famous Samson Wind-Mill several years ago, and took



such a long step forward in wind-mill construction, the instant popularity and enormous demand taxed the old factory beyond its limit to supply, and they were literally forced to build their new factory. Taking a measure of their trade, they have made this factory to cover six acres of ground. It consists of a group of buildings, each specially adapted to the making of a particular part, all of which eventually come together in the great assembly room. The annual capacity of this new factory is 75,000 wind-mills. This makes the Stover factory the largest of its kind in the world. The equipment is the best that long experience, abundant capital and inventive genius can bring together. The result should be, as it is, a very superior product. Write them for their latest catalogue on the Samson and other products. Address The Stover Manufacturing Co., 581 River street, Freeport, Illinois.

**KILL THE WEEDS ON YOUR LAWN.**

We invite the attention of our readers to the advertisement of the Clipper Lawn Mower Company, Norristown, Pa., elsewhere in this issue. The difference between this Lawn Mower and other lawn mowers is that the Clipper is built on the same principal as a field mower, and when it is in use it doesn't tear the roots of the grass, but simply clips it off smoothly and evenly. The makers of this machine claim that frequent use of this machine on the lawn will in a very short time kill all of the weeds that appear. Write for descriptive circular and price.

If you want the best, the most improved and the most reliable binder in the world, buy the McCormick. It is the unit of measure in harvesting machines.

**LEGHORN POULTRY YARDS.**

Have for sale a limited number of Single Comb Brown and White Leghorn Pullets and Roosters. Best layers known. Prize-winning stock. Price, \$1.00 to \$1.50 each. Eggs in season at \$1.00 for 15; \$3.00 per 100. Satisfaction guaranteed. Address

**A. T. MATHEWS, Box 36, Parkside Va.**

**..HOLLYBROOK FARM..**

**EGGS FOR SETTING**

From Thoroughbred Poultry.

"In our poultry yards we have the following thoroughbred poultry, all first class stock originally started from the best stocks in this country, and carefully cross-mated so as to give strong and vigorous stock and the best laying strains of the different breeds that it is possible to obtain."

**BARRED P. ROCK, \$1.00** per setting.

**BLACK LANGSHAN, \$1.00** per setting.

**BUFF PLYMOUTH ROCK, \$1.50** setting.

**LIGHT GRAHAMAS, \$1.50** per setting.

**SILVER LACED WYANDOTTE, Price,**

**\$1.50** per setting.

**WHITE WYANDOTTE, \$1.50** per setting.

In addition to careful breeding, we pay special attention to the handling and packing of our Eggs, so as to ensure good fertility and a good hatch.

**HENRY W. WOOD,**

**P. O. Box 330, Hollybrook Farm, RICHMOND, VA.**

**Cottage Poultry Yards.**

**Black Langshans**

**..EXCLUSIVELY..**

Young stock now ready. Cockerels, Laying Hens. Trios not akin. Price according to points. Eggs, \$1.00 per sitting.

**M. A. Olney, Coleman's Falls, Va.**

**BLACK MINORCA AND BARRED PLYMOUTH ROCK EGGS**

FOR SALE. 60c. for 15 eggs; \$1 for 30 eggs; \$3 for 100 eggs, delivered R. R. Station.

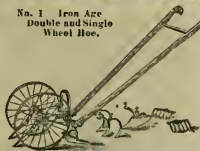
**N. T. GARTH, Ellisville, Louisa Co., Va.**

**FOR SALE NICE LOT W. P. ROCK LAYING HENS, \$1 EACH.**

China Geese, \$6 per pair. 1 M. B. Tom, \$3. White P. Rock Eggs, \$1.25 for 15. M. B. Turkey Egg, \$3 for 13. China Goose Eggs, 25c. each.

**W. F. FLANAGAN, Christiansburg, Va.**

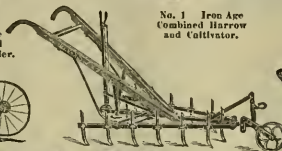
No. 1 Iron Age Double and Single Wheel Hoe.



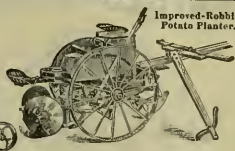
No. 6 Iron Age Combined Double and Single Wheel Hoe, Hill and Drill Seeder.



No. 1 Iron Age Combined Harrow and Cultivator.



Improved Robbins Potato Planter.



## Look for the full name **IRON AGE** branded on the tool.

Don't be imposed upon by dealers selling implements made in imitation of the famous Iron Age brand. All the **IRON AGE** tools are **MARKED WITH THE FULL NAME**. The name is for your protection. It is a guarantee of best materials, best ideas, best workmanship, and all the merits that have made Iron Age tools popular with three generations of farmers and gardeners. Write for a **FREE COPY** of the **IRON AGE BOOK** for 1902, telling about these marvelous labor savers, and giving prices on Cultivators, Horse Hoes, Seed Drills, Wheel Hoes, Riding Cultivators, the Improved Robbins Potato Planter, &c.

**BATEMAN MFG. CO., Box 167, Grenloch, N. J.**



No. 6 Iron Age Horse Hoe and Cultivator.

## S. C. White Leghorns

(EXCLUSIVELY.)

Prize winners. Heavy layers. EGG RECORD, Jan. 1 to March 21, 560 EGGS, pen 14 hens. Settings, \$1.50 per 15; 4 settings, \$5.00.

C. G. M. FINK,  
1409 W. Leigh St., Richmond, Va.  
Member Va. Pigeon, Poultry & Pet Stock Ass'n.

## EGGS Thoroughbred B. P. ROCKS.

GRAVES BROS., Highland Springs, Va.

## EGGS

From Barred Plymouth Rock, winter laying Ringlets. 15 for \$1; 30 for \$1.85; 50 for \$2.90. **SUNNYSIDE POULTRY FARM**, Reference, Christiansburg, Va. Bank of Christiansburg.

## EGGS PURE BRED GOOD STRAINS.

ROSE COMB BROWN LEGHORN, 13 for 60 cis.; \$1.00 per 25. GOLDEN SPANGLED and WHITE WYANDOTTES, \$1.00 per setting. Incubator Eggs, \$3.00 per hundred.

CARSON BROS., Middleport, Ohio.

## EGGS DELIVERED!

Barred Rocks, Irish Gray Game, Brown Leghorns, good size and layers. Sire took premium Hagerstown. Dr. E. WOODS, JR., Charlottesville, Va.

## ONE DOLLAR BUYS FIFTEEN EGGS.

Barred Plymouth Rock, S. C. B. Leghorn. Splendid laying strains. Prompt attention. Mrs. JNO. F. PAYNE, Clairmont Dairy Farm. UNIVERSITY OF VA

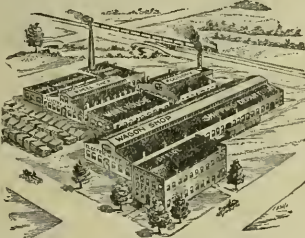
**50 DOZEN EGGS FOR ONE DOLLAR** Can be preserved by EGGIN for any length of time in any climate. Will remain absolutely as fresh as when laid. Send \$1 for EGGIN to preserve 50 dz. eggs. Special prices in large quantities. EGGIN M'F'G. CO., 667 W. Saratoga St., Baltimore, Md.

## Barred Plymouth Rock EGGS AT 75c. PER SETTING.

WM. B. LEWIS, IRBY, NOTTOWAY CO. VA.

### THE GROWTH OF AN IDEA.

When the Electric people took up the idea of broad-tired steel wheel and the low down wagon, it was not apprehended that they would meet such a widely popular reception. But a good idea is quickly grasped by the public. From the very commencement of their manufacture of the low down wagon and steel wheel their business began to increase rapidly. Its growth in recent years has been something phenomenal. The original factory was soon entirely inadequate. It was neces-



sary to expand to keep pace with the demands of the public for these goods. Accordingly the new buildings were begun. The completed plant, a view of which is shown above, affords the Electric people every facility for handling their rapidly growing business and turning out the highest grade work at the lowest possible cost to the purchaser. It is their boast that the present Electric Wheel and Handy Wagon Factory is the equal in equipment of any in the world. Their advertising watch word is that their wheels and wagons are "Built to Last." We might add also that "They have come to stay." Readers of Southern Planter who are not fully acquainted with these goods would do well to write for a catalogue and learn something which will surely be to their individual profit.

"BEST BLISTERING LINIMENT I EVER USED."

DAYTON, O., Aug. 22, 1901.

The Lawrence-Williams Co., Cleveland, O.: I have used your Gombault's Caustic Balm with good results several different times, and can say it is the best blistering liniment I ever used. J. T. HAMKER.

## Thoroughbred Pit Game Fowls

EGGS, \$1.50 for 13. Write to

T. A. FRAZER, Spotsylvania, Virginia.

## REGISTERED BERKSHIRES. B. P. ROCK EGGS

J. T. OLIVER, Allen's Level, Va.

## WANTED Horned Dorset Sheep

To be delivered at EAST LEAKE in the COUNTY OF GOOCHLAND, VA.

A. K. LEAKE.

## BELGIAN HARES

If you want the best BELGIAN HARES, young or old, from 6 to 10 lbs, bucks or breeding does, write to

A. E. WILLIS, Lynchburg, Va.

## BELGIAN RABBITS.

I have a few fine bucks and does left over, that I will sell to first orders at \$2 a pair, to make room for spring breeding.

MIKE COLES, Bedford Springs, Va.

## GRASSMERE STOCK FARM, Glen Allen, Va.

## TROTTING, SADDLE and HIGH STEPPING HORSES

Education, bought and sold on commission, and kept by the month or year. High class POULTRY and BELGIAN HARES for sale at reasonable rates. Write for circulars; no trouble to answer questions. Satisfaction guaranteed.

CHANDLER QUINTIN, Veterinarian, 40 yrs. experience on the best stock farms in America.

## FOR SALE—A No. 1 1/2 bred PERCHERON STALLION 5 yrs. old.

Perfectly gentle and will work anywhere. Will weigh 1500 lbs. Light blood by color. Can give pedigree. Will sell very reasonable and on liberal terms. He has never been in the stud, in fact has never served a mare.

FRANK PARLETT, Woodstock, Md.

# HEREFORDS.



## BERKSHIRES.

Young stock for sale at all times.  
Information and terms upon application.  
EDW. G BUTLER, ANNEFIELD FARMS,  
BRIGGS, CLARKE CO., VA.

## Breeders of HEREFORDS

SINCE 1859.

**FOR SALE** Three bulls 2 yrs. old; 2 mo. bulls 18 mos. old; 2 mo. bulls 1 yr. old; Three bull calves 6 mos. old, at reasonable prices.

HAYFIELDS STOCK FARM,  
COCKEYSVILLE, MD

## FOR SALE. HEREFORD

Herd bull, "IRELAND," No. 79482; age, 4 yrs.; bred by West & Duncan, Windsor, Ill. Sire, "The Orphan"; dam, "Miss Joe." Also GRADED CALVES by "Ireland."

Also "GAZETTEER," No. 104704; age, 2 yrs.; bred by Murray Bo cock, Kee-  
wick, Va. Sire, "Gazette." No. 75100; dam, "Daisy"; sire, "Wilton Chief"; dam, "Curly Lass."

W. J. McCANDLESS, Brandy, Va.

## BARCAINS IN

### Reg. Shropshire Ewes..

From two to five years old, bred to my best ram. These ewes are of the best breeding.

### Aberdeen-Angus Calves..

Herd headed by a winner of five first prizes at State fairs.

ENGLISH SETTERS by the prize-winning Count Rodo. Fine individuals of the best breeding. Satisfaction guaranteed.

WARREN RICE, - Winchester, Virginia.

### FOR SALE REGISTERED ANGUS BULL

8 years old. A strictly first-class individual in every respect. Satisfaction guaranteed. Price, \$125.00. Address R. S. FARISH, Box 145, CHARLOTTESVILLE, VA.

**BUTTER COLOR RECIPE** valuable and easy and inexpensive to make; 25 cents.  
W. G. HIRE, Lyons, N. Y.

### DESERVES SUCCESS.

It is always a pleasure to notice the growth of any concern which builds its business by honorable methods and first-class goods. In this day it is hardly possible for any concern to succeed for any length of time unless the above is their policy. When any concern starts, as did our advertiser, The Reliable Incubator Co., of Quincy, Ill., almost twenty years ago, in a modest way, and their business grows constantly from year to year, until it becomes one of the largest concerns in the country manufacturing incubators and brooders exclusively, one cannot believe but that they make the right kind of goods and treat their customers in accordance with the golden rule. We present herewith a view of their office, regretting that space will not permit the use of several other interesting views of their departments, all of which would give our readers a better understanding of the magnitude of this company's busi-



ness. Probably no incubator in the world has a higher reputation than the Reliable. It has taken many highest awards at various exhibitions, as, for example, the Columbian at Chicago, Cotton States at Atlanta, Trans-Mississippi at Omaha, International at Brussels, Universal at Paris, where they not only took highest award, but the grand prize. They have first premiums at State Fairs and Poultry Shows almost without number, and the Reliable is always a favorite wherever exhibited. The company is already planning great things for the Louisiana Purchase Exposition, to be held in St. Louis in 1903. Doubtless hundreds of our readers are still "on the fence" as to what incubator to buy. We can only say, send for the Reliable catalogue before making your selection. Address Reliable Incubator Co., Quincy, Ills., and mention this paper.

### HALLOCK'S POTATO DIGGER.

Messrs. D. Y. Hallock & Sons, York, Pa., are advertising elsewhere in this issue their celebrated Potato Digger. In this implement Messrs. Hallock & Sons have, to a large extent, solved the labor problem for our truckers and large growers of potatoes. They are especially anxious to get into correspondence with interested parties, as they have a proposition which will surely please. It is needless for us to say that this Digger has been thoroughly tested and found to do its work in the most satisfactory manner. Look up the advertisement and write this firm for particulars.

### FILSTON FARM.

## JERSEY BULL CALVES

From tested dams of high-milking qualities. Perfect as individuals, and guaranteed to reproduce the high qualities of their parents.

## BERKSHIRES

Of the best imported and domestic stock.

Little Book of the Farm on application,  
ASA B. GARDINER, Jr., Manager,  
GLENCOE, MARYLAND.

### Swift Creek Stock and Dairy Farm



Has for sale a large number of nice young registered A. J. C. C.

## JERSEY BULLS AND HEIFERS.

None better bred in the South. Combining closely the most noted and up-to-date blood in America. Bulls 10 to 12 months old, \$25.00. Heifers, same age, \$35.00. POLANDI-CHINA FIGS, \$5.00 each. Send check and get what you want.

T. P. BRASWELL, Prop., Battleboro, N. C.

### OAK HILL FARM..

## Holstein and Jersey Cattle, Biltmore Berkshires.

Wishing to reduce my stock, will sell cheap. Every thing from Oak Hill Farm is guaranteed first-class, and as represented. Address -  
Oak Hill Station SAM'L HAIRSTON,  
on the Farm. Wenoada, Va.

## BERKSHIRE PIGS..

I have for sale 40 thoroughbred Berkshire Pigs. from 4 to 6 weeks old. These are fine pigs; will sell in lots to suit. Prices cheap. Address

H SWINEFORD, - Richmond, Va.

## ESSEX PIGS



A choice lot of PIGS 10-12 weeks old, at \$10 per pair. Ready for delivery in April and May. Your orders solicited. Address L. G. JONES, BETHANIA N. C.

## "Feeds and Feeding"

Prof. Henry's Great Book for  
Farmers and Stockmen.

Delivered anywhere for \$2.00  
With the SOUTHERN PLANTER, 2.25

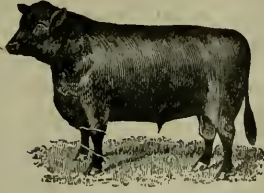
### FOR SALE!

## JACKS, JENNETS and DURHAM CALVES



highly bred Jacks a specialty  
Enclose 2c. stamp for cat.

W. E. KNIGHT & CO.  
West End. Nashville, Tenn.

**FOR SALE LOW.**

- One 1 year old Hackney-Trotter cross bay mare, 16 hands, weight 1080. Fine form, style and action. Price, \$175.
- One 3 year old Hackney-Trotter cross black mare, 15½ hands, weight 1000. Fine form, style and action. Price, \$150. This mare would make an ideal mate for the bay.
- One 5 year old Saddle and Harness horse, pretty tan color, with black mane and tail, 16 hands, weight 1200. This is a superb family horse and a premium winner under the saddle. Price, \$150.
- One 1 year old brown Hackney-Trotter cross gelding, 15½ hands, weight 930. Exceptionally fine form, style and action. Price, \$250.
- One 8 year old brown Hackney-Trotter cross brood mare, weight 1200. Fine style and uncommonly quick. Price, \$150.
- One pair 4 year old black horse Mules, 16 hands. These mules are blocky, well broken and unusually quick. An extra fine pair. Price, \$300.
- One 8 months old Aberdeen-Angus bull calf, thoroughbred and registered. Price, \$75.

Address **W. M. WATKINS & SONS,**  
Randolph, Charlotte Co., Va.

**ELLERSLIE FARM**

**Thoroughbred Horses  
AND SHORTHORN CATTLE,  
Pure Southdown Sheep  
and Berkshire Pigs.**

FOR SALE. **R. J. HANCOCK & SON,**  
CHARLOTTESVILLE, VA.

**SHORTHORNS!**

I have for sale some good **SCOTCH-TOPPED SHORTHORN BULLS, COWS and HEIFERS**, at fair prices for the times. Also one finely-bred and thoroughly gaited horse, sound and well mannered, at reasonable price.

Correspondence solicited.  
**GEORGE CHRISMAN, Chrisman, Rockingham Co., Va**

**EAST RIVERSIDE**

**SHORTHORNS**

Property of Jas. F. Clemmer, Summerdean, Va.

**Choice Young Bulls and  
Heifers for sale.**

Prices right and satisfaction guaranteed.  
Address **JAS F. CLEMMER, Summerdean, Va.**

**VIRGINIA VALLEY HERD**

Of Registered Shorthorn Cattle.  
Choice young bulls, cows and heifers bred.  
Also **Poland-China Hogs and Barred  
Plymouth Rock Chickens.**

PRICES REASONABLE

**HENRY BLOSSER, HARRISONBURG, VA.**

A Neat **BINDER** for your back numbers can be had for 25 cents. Address the Business Office.

**DORSET HORNED SHEEP.**

The Dorset, whether bred in its purity or as a means of building up a flock from crosses and grades, is a money-maker for the farmer.

At Maplemont Stock Farm we have been breeding them for four years, and during all that time we have never lost a Dorset, either young or old, from any cause whatever.

These sheep are hardy, healthy, easily kept, contented in or on a small range, and "dog-proof." On the other hand, Dorsets will respond to good treatment quicker, and make more gain in a given time than any sheep we ever raised. They will breed at nearly any time in the year you wish. You can thus have your lambs come in the fall or spring, and take advantage of your particular market.

Dorset ewes are large and persistent milkers, and rear twins with utmost ease. In fact, they almost always drop twins. Mature Dorset rams weigh from 200 to 275 pounds; ewes, from 140 to 175 pounds, and lambs, from 80 to 100 pounds at four months of age.

They shear from 7 to 10 pounds. The wool is of medium length and fibre, nice crimp, strong, soft, and selling at the highest price.

The wool clip from the Maplemont Stock Farm Dorsets sold for five cents per pound more than the common wool last spring. In fact, the buyer said it was the nicest wool he had bought in this section.

We strongly urge farmers to obtain good, sturdy Dorset rams for building up their flocks.

**W. A. SARGENT,**  
Maplemont Stock Farm, Albany, Vt.

**SALE OF SHORTHORNS AND SHROP-  
SHIRES AT HAGERSTOWN, MD.**

Elsewhere in this issue will be found the advertisement of a sale of 65 head of Shorthorn cattle and a like number of Shropshire sheep, to be held at Hagerstown, Md., on April 30th. It will pay any of our readers who want some first-class stock of the above mentioned breeds to be present at this sale. Some of the foremost breeders in their respective lines have contributed some of their choicest animals to this sale. Look up the advertisement and send to the secretary for a catalogue.

The Review of Reviews for April is, as usual, full of interesting material on various subjects. Beside "The Progress of the World," treating of the important topics of the month, there is an article on the Anglo Japanese Alliance from the Japanese point of view, a rapid review of our great "Captains of Industry," a description of the new Lying-In Hospital in New York, and a character sketch of the late Col. Francis Wayland Parker. Other articles are "Educating the Deaf Blind," "A New Factor in Lake Shipping," "Can Rural Social Forces be Federated?" "A First Step," and a sketch of the late Charles Lewis Tiffany, the New York jeweler. The "Leading Articles of the Month" Department gives a glimpse of much that is good in other magazines.

**Horse Owners! Use**

**GOMBAULT'S**

**Caustic  
Balsam**

A Safe Speedy and Positive Cure

The Safest, Best **BLISTER** ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. **SUPERSEDES ALL CAUTERY OR FIRING.** Impossible to produce scar or blennorrh.

Every bottle sold is warranted to give satisfaction price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.

**THE LAWRENCE-WILLIAMS CO., Cleveland O.**

**Dr. A. C. DANIELS'**

**FEVER DROPS CURE**

Milk Fever in cows. Distemper in horses.

RENOVATING POWDERS prevent aborting in cows and horses. Book free.

**Dr. A. C. Daniels, 1 Stanfield St., Boston.**

Southern Agents:

Lilly Carriage Co., Woodward Mfg. Co.

Memphis, Tenn. Parkersburg, W. Va.

**DEATH TO HEAVES**



Newton's Heave, Cough, Dis-temper and Indigestion Cure. A veterinary specific for wind, throat and stomach troubles. Strong recommendations. \$1 per can. Dealers, mail or Ex. paid. Newton Horse Remedy Co. T. Toledo, Ohio.

**V. P. I.****Farm Bulletin**

Orders booked for

**DORSET RAM LAMBS,**

to be delivered in July and August. No more Berkshire hogs, of any age, to offer until Spring.

**D. O. NOURSE, Prof. of Agr.,  
Blacksburg, Va.**

**DORSET  
SHEEP**

My entire flock of Dorsets,  
registered and eligible,

**FOR SALE.**

44 head, exclusive of  
present crop of lambs.

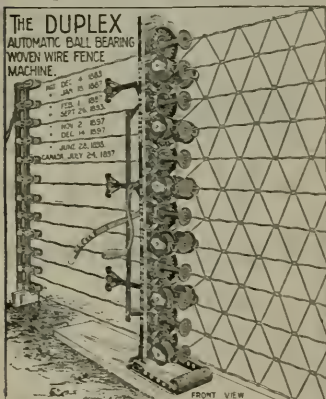
Fine stock; low price.

**WALTER WATSON,  
SALEM, VA.**

A very ingenious machine for making woven wire fence in the field, is the Duplex Automatic Steel Frame Ball Bearing Woven Wire Fence Machine, manufactured by Kitzelman Brothers, of Muncie, Indiana, and advertised elsewhere in this paper.

From the standpoint of fence making qualifications or economy to the owners of one of these machines it is surely unequalled. It is so simple in construction, any one can operate it. It allows its owner to make a fence at actual cost of wire, also to utilize line wires and barbed wire of old fences if desired. It is automatic in every sense of the word. All the operator has to do is to set it up, turn the crank and the machine weaves the fence.

The fence it makes is up to all requirements, in fact, in nearly all cases, is equal to more than is ever required, and will turn not only large and vicious stock, but poultry, rabbits and pigs. Being made on the ground the fence fits the surface



whether rough or even. The machine being so made admitting the weaving of barbed wire into the fabric either for top or bottom margin wires or both is an advantage readily appreciated by fence builders. The manufacturers claim this machine to be the result of their fifteen years of study and experience, and that it is perfection itself. The fact that more than 100 styles of farm and ornamental fence can be made with the machine, and the large number of sales reported bear them out in this statement. That they have boundless confidence in their invention is shown by their offer to send a machine out for six days trial. It will be to your interest to send for one of their catalogues, which are free, mentioning this paper.

A poor old laborer lay dying and his wife waited on him with homely care. "John, dear," she said, "do you think you could eat a bit? Is there anything you fancy?" A light came in his eyes. "I seem to smell a ham cooking somewhere," he said; "I think I could eat a little bit of ham." "Oh! no, John," said his wife, "you can't have that; that's for the funeral."

## ECONOMY PITLESS WAGON SCALE

STEEL JOISTS  
METAL FRAME  
9 INCHES HIGH

**McDONALD BROS. PLEASANT HILL, MO.**

## Hill Top Stock Farm OFFERS FOR SALE

. . . . . A LIMITED NUMBER OF

### Southdown and Shropshire Sheep A Grand Lot of Berkshire Hogs

Young Boars ready for service.

Come and see our stock, or write for description and prices to

**H. A. S. HAMILTON & CO., Staunton, Va.**

Parties will be met at train with conveyance, if we are notified in time. We are always glad to show our stock.

### GASTON STOCK FARM.

## Holstein-Friesian Jersey Cattle.

Having selected my foundation stock from the best, I can offer animals of each breed of highest breeding and individual merit, at moderate prices, containing the blood of the best families, and bred with great care.

I am prepared to sell **HOLSTEIN BULLS**, and **BULL CALVES** and **JERSEYS** of either sex.

**JNO. U. DETRICK, Somerset, Va.**

## 50 TAMWORTH AND POLAND-CHINA PIGS

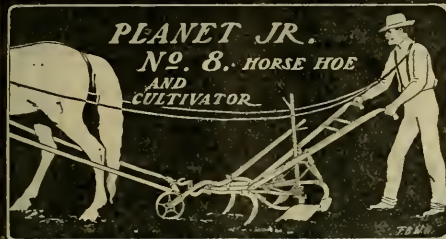
~ FOR SALE. ~

Eligible to registration. A few ready for service. **J. C. GRAVES, Barboursville, Va.**

## Mark W. Johnson Seed Co., ATLANTA, GA.

Fine selected SEEDS of Acme, Rockyford, Jenny Lind, and Nutmeg Cantelope, also Rattlesnake, Jones, Kleckley's, Dixie, Early Market, Sugar and McIver's Watermelon, mated at 10c. an oz.; 20c.,  $\frac{1}{4}$  lb.; 55c., lb. Pearl Millet, 25c. lb. 12 pkts. assorted Garden Seeds, 45c. Chinese Giant Pepper, 10c. pkt. Enormous Tomato, 10c. pkt. New snow-white deep grain large early thoroughbred Corn, 40c. lb. CATALOGUE FREE.

When corresponding with Advertisers, always mention  
The Southern Planter.



## One Horse and the "Planet Jr."

There is no implement made that can compare with our "Planet Jr." Horse Hoe for all around usefulness. With its numerous attachments it comes mighty near being indispensable. The levers regulate the depth and width. Remember that none of the numerous imitations of this implement can approach it for results. Ask for and insist upon "Planet Jr.," the one that is guaranteed. Our "Planet Jr." line includes 25 styles of Seed Drills, Wheel Hoes, Orchard and Pivo Wheel Cultivators, Sugar Beet Drills and Cultivators, etc. Every intelligent farmer should have one of our new catalogues for 1902 in the house. Several hundred thousand other farmers write for them every season. It tells how the "Planet Jr." line of goods are used, and tells it well and briefly. We simply want you to write, sending your name. We mail it free.

S. L. ALLEN & CO., Box 1107 X, PHILADELPHIA, PA.

### "JONES OF BINGHAMTON."

There are but few of our readers who have not heard of "Jones of Binghamton," the great scale manufacturer, who is one of our valued advertisers. The signature, "Jones of Binghamton," in his advertisements, and his "Jones, he pays the freight," usually added, are hardly more familiar than are his farm platform scales all over the land. Platform scales upon the farm are a matter of the greatest utility—we might almost say necessity. Jones has been making them for a good many years. He has made them a standard. They always give satisfaction. We believe the idea of shipping scales direct to the farmer originated with Jones. Our readers need have no fear of getting anything inferior or having any advantage taken of them in dealing. They will get just what they order, and at bargain prices. Everything is in the Jones line, from the delicate table or counter scale to the platform scale of many tons capacity. Consult the advertisements and write to Jones of Binghamton, Box 31, Binghamton, N. Y. Catalogue and prices.

### McDONALD'S PITLESS SCALES.

Among the new advertisements in this issue will be found that of Messrs. McDonald Bros., Pleasant Hill, Mo., in which they offer their well-known Economy Pitless Scales—Wagon and Stock. Among the many points of merit in these Scales is the Pitless feature. Most of our readers are doubtless familiar with the trouble and expense of pit digging, lumber framing, etc., and other consequent expenses in setting scales. This nuisance is entirely eliminated in the Economy Pitless Scale. All the parts are above ground, and are therefore easy to inspect and adjust. Look up their advertisement, and send for a neat little brochure giving full description and prices.

### ONE-WAY SETTLER'S RATES EVERY DAY DURING APRIL VIA NORFOLK & WESTERN RY.

To Minnesota, North and South Dakota, Montana, Idaho, Washington, Oregon, Utah, British Columbia and California. For rates and full information, apply to or address John E. Wagner, City Passenger and Ticket Agent, 838 East Main street, or C. H. BOSLEY, District Passenger Agent.

To make cows pay, use Sharples Cream Separators. Book "Business Dairying" & Cat. 365 free. W. Chester, Pa.

**C. C. Taliaferro,**  
 NASONS,  
 VA.  
 1902

**"MOUNT SHARON**  
**HEREFORD CATTLE**  
**REG. and Grade**

**BRONZE TURKEYS**  
**MUSCOVY DUCKS**

**STOCK FARM."**  
**REGISTERED SHROPSHIRE SHEEP**  
**REGISTERED POLAND-CHINA PIGS.**



**NOW OFFERS**                      **FOR SALE**

**HEREFORD CATTLE.**—Calves, entitled to registration, \$75 to \$100. Grade Calves by "Sir Edward" \$25 to \$40.

**SHROPSHIRE SHEEP.**—Bucks, one year old and over, \$15 to \$20. Buck Lambs, July delivery, \$10. and \$12. Ewe Lambs, July delivery, \$8. and \$10.

**POLAND-CHINA HOGS.**—Pigs, six weeks old, \$5. Pigs, two or three months old, \$7.50. Pigs, five months and over, \$15 to \$20.

**M. BRONZE TURKEYS.**—Toms, \$4. Hens, \$3. Eggs, per sitting of 12, when in season, \$4.

**MUSCOVY DUCKS.**—Pure White Drakes, \$1.25. Pure White Ducks, \$1. Pairs, \$2.25; trios, \$3. **BARRED PLYMOUTH ROCKS.**

**ROUEN GEES.**—Ganders, \$2.50. Geese, \$2.50. Eggs, per sitting, \$3.00

**WILLIAM L. JR.,** No. 21058, half brother of Axtell, will serve a limited number of mares for \$25 the season. Mares boarded at lowest figures per month.

**BACON HALL FARM**

**HEREFORD CATTLE**—REGISTERED. "Gold Standard" at head; related to Champions, "Dale," "Perfection," and half-brother to "Wood's Principal," champion steer International Show, Chicago, 1901.

**CALVES NOT AKIN.**

**Berkshire Pigs, Toulouse Geese, Muscovy Ducks**

**E. M. GILLET,**  
 Verona, Balto. Co., Md.

TERMS, "Satisfaction."

**HEREFORDS**

**..BULLS, COWS, BULL CALVES and HEIFER CALVES FOR SALE..**

The best cattle at the lowest prices. It will pay you to inspect my offering before buying elsewhere. **MURRAY BOOCOCK,** Castalia, Keswick, Albemarle Co., Va.

## MAKES WORK A PLEASURE.

AN EXPERT'S OPINION OF THE IRON AGE  
FARM AND GARDEN IMPLEMENTS.

The idea of pleasure is not usually associated with farm and garden work done for a living, yet every worker knows the wide difference between working with good tools and poor ones. The sense of ease, certainty and rapid progress in the day's work that a good tool gives is something very pleasant by contrast, even if it does not quite make the work itself a pleasure.

In this connection, here is a statement worth thinking about from a man worth listening to. He is T. Greiner, a practical gardener and well known writer on garden subjects, and he writes:

"I have used the 'Iron Age' Combined Double Wheel Hoe and Seed Drill for three seasons, and I can truly say that it has made the task of sowing seeds (which always falls upon me personally) a veritable pleasure. I do not know of any weak point in the machine; at present I use no other make of garden drill. I used to be very pronounced in favor of single tools, for the reason that in the combined tools one wore out two tools at a time and had to waste much time in making changes from Drill to Wheel Hoe and vice versa. The 'Iron Age' meets these objections quite successfully—the former fully, the latter to a great extent."

The works, at Grenloch, N. J., where the Iron Age tools are made, have grown steadily since their beginning in 1836, until to-day they are shipping these tools to every part of the United States and supplying them for the export trade.

The Iron Age Book for 1902 describes all the Iron Age implements, Seed Drills, Wheel Hoes, Cultivators, Plows and Rakes, Horse Hoes and Cultivators, Harrows, Riding Cultivators, both fixed and pivot wheel, and the Improved Robbins Potato Planter. It will be sent free on application to the Bateman Manufacturing Co., Box 167, Grenloch, N. J.

## CALF FEEDER.

The calf feeder manufactured by the O. H. Mfg. Co., Lyndon, Vt., is materially different from the common type, and its makers claim for it decided advantages. Whereas the old type has been abandoned by some on account of the difficulty in keeping it sweet and clean, the O. H. Mfg. Co. claims that its feeder has received the highest endorsements on account of the ease with which it may be kept clean. All interested in this subject should write the manufacturers of this new style of calf feeder for their illustrated pamphlet.

## LANSING SILO.

The Lansing Perfect Tubular Silo, advertised by A. M. D. Holloway, Philadelphia, Pa., found elsewhere in this issue, is the best product of its kind ever offered to the American people, and no first class dairy or stock farm is complete without one; and Mr. Holloway is offering special inducements to early buyers, and will send a complete illustrated catalogue to any one interested.

# Are YOU Going To Buy a Cream Separator This Year?

If so, please cut out and fill in this blank and mail it to one of the addresses below. To do so will cost you but a two-cent stamp and will bring you catalogues and information as to Cream Separators that may save you a bad investment in a poor separator.

(Name).....

(Post Office).....

(County and State).....

(No of Cows).....

## THE DE LAVAL SEPARATOR CO.

RANDOLPH & CANAL STS.,  
CHICAGO.  
1102 ARCH STREET,  
PHILADELPHIA.  
103 & 105 MISSION ST.,  
SAN FRANCISCO.

General Offices:

74 CORTLANDT STREET,  
NEW YORK.

327 COMMISSIONERS ST.,  
MONTREAL.  
75 & 77 YORK STREET,  
TORONTO.  
248 McDERMOTT AVENUE  
WINNIPEG.

# St. LAMBERT JERSEYS

We have for sale a number of YOUNG BULLS from cows with butter tests ranging from 16 to 24 lbs. per week, and yielding from 5 to 6 gallons of milk per day.

We have more high testing ST. LAMBERT COWS than can be found in any herd in the United States or Canada.

## INDIAN GAME FOWLS

We have also for sale a choice lot of INDIAN GAME CHICKENS—male and female. Also some choice WHITE WYANDOTTE COCKERELS. The Indian Game and White Wyandottes are the best general purpose fowls

BOWMONT FARMS, SALEM, VA.

# BLACK PEAS.

We carry a good stock of BLACK PEAS. Also CLAY and BLACK EYE PEAS, and will fill orders at market prices. We offer 500 bushels

## White and Colored Beans.

About half being cracked or broken. Suitable for hog feed and cheaper than corn. ORDERS SOLICITED.

WALLERSTEIN PRODUCE CO., 19-21 S. 13th St., RICHMOND, VA.

**MORE MONEY IN BUTTER.**

**CREAMERY EQUIPMENT AN IMPORTANT FACTOR IN SELLING PRICE.**

Many dairymen complain that there is no money in butter making, yet there are a few whose dairies yield them a handsome profit.

The explanation is easy. The market is flooded with low grade, cheap butter—there is an over production. A low price is the natural consequence. On the other hand, the supply of really high grade butter will not nearly meet the demand. This is the only really profitable kind, and the few who have discovered that fact are reaping a golden harvest.

Gilt edge butter is the aim of every progressive dairyman—but butter is so easily spoiled in the making, or contaminated in the handling or shipping, that only a few attain the desired end. With out up-to-date machinery and working methods, no man can hope to compete with the perfectly equipped dairy—either in quantity or quality.

The best way to get in touch with the latest and best methods and appliances, is to send for the illustrated catalogue of the Dairymen's Supply Company, of Philadelphia. For years this firm has been known as a thoroughly reliable house. They are dairy engineers and outfitters—manufacturing and handling everything required in making, shipping, or selling milk, butter, or cheese.

Their catalogue contains a price-list of this complete line of high grade goods, and is a mine of information concerning dairy and creamery management. Any dairyman, whether an intending purchaser of supplies or not, will find it money in his pocket to read this book, which may be had by writing to the Dairymen's Supply Company, 1937 Market Street, Philadelphia.

Nothing is more annoying, time killing and dangerous than the everlasting stopping to open farm gates. If you use a Manlove Gate, you can drive over the "hump" and the gate automatically opens. It is closed the same way without delay or leaving the vehicle. This Gate has been tested for twenty-five years. It is in successful use the world over. A handsome little pamphlet illustrating it will be sent to all who apply to the Manlove Gate Co., Milton, Ind.

**CORRECTION.**

In the advertisement of Mr. W. R. Crabbe, Hague, Va., in our March issue, in which he offered "Ordway," the splendid old stallion, for sale, we referred to the latter's "wink" as being O K, when it should have been *wind*. The county given was also an error, as it should have been Westmoreland instead of Northumberland. Mr. Crabbe offers a splendid bargain in this horse, and our readers are invited to look up his advertisement in the last number.

**SPRING.**

I'm the busiest man in evolution,  
Stirring up a new solution;  
For spring's began and I'm the man  
Who welcomes it with spraying can.  
W. M.

Write now for "The World Centre," A Beautiful Book.  
Address W. K. BACHE, General Agent,  
McCormick Harvesting Machine Company,  
RICHMOND, VIRGINIA.

\* VIRGINIA DIVISION. \*

**Farmers Mutual Benefit Association.**

A Fire Insurance Association, chartered by the State for the farmers of Virginia, under an amended and well protected plan.

Insures, against Fire and Lightning, only country property—no stores or unsafe risks. Average cost per year for three years has been \$3.66 2/3 per \$1000, including dwellings, barns, produce, &c.,—about one-third the usual cost of insurance to farmers. Amount of property insured \$325,000. Estimated security in real and other estate, \$600,000.

For further information, address,  
MENTION THIS JOURNAL.

CHAS. N. FRIEND, General Agent,  
CHESTER, VIRGINIA.

SLUG SHOT, a Useful and Popular Article, Used Successfully 21 Years.

**SLUG SHOT**

Kills pests that prey on vegetation. Sold by seedsmen everywhere. Send for pamphlet about Bugs and Blights to B. HAMMOND, Fishkill-on-Hudson, N. Y.

### EDUCATIONAL FACTS AND FIGURES.

#### A STATEMENT OF COMPARATIVE EDUCATIONAL CONDITIONS IN TEN SOUTHERN STATES.

In 1900 the ten States south of the Potomac and the Ohio and east of the Mississippi, including Louisiana, had 22 per cent. of the total population of the United States, and 25 per cent. of the school population; yet only 6½ per cent. of the total expenditures for public schools was made in these States, and only 4.1 per cent. of the \$538,623,736 of public school property was in these States.

The per capita expenditure for public schools varied from 50 cents in Alabama and 51 cents in North Carolina to \$4.93 in Massachusetts and \$5.30 in Nevada. The average for the whole country was \$2.83; for these ten States only 86 cents. The average per capita for these States was less than one-third the average for the whole country and only a little more than one-fifth the average for the North Atlantic and Western States. The average salary paid teachers for the entire school year varied from \$87 for males and \$78 for females in North Carolina to \$1290 for males and \$496 for females in Massachusetts. The average for the whole country, exclusive of these ten States, was \$455.02 for males and \$312.22 for females; for these ten States \$175 for males and \$150 for females. The average number of days of schooling for each child of school age varied from 22 in North Carolina to 107 in Massachusetts. For the North Atlantic States it was 87, for the North Central States 82, for the Western States 80, for these ten Southern States 43. It should be remembered also that only 154,000 of the 5,645,164 children of school age in these ten States were reported as enrolled in private schools, primary and secondary.

The total school fund of these ten States was only one million dollars more than the school fund of Ohio, and the total value of their public school property was only one half the value of the public school property of Ohio.

A generation has passed since the close of the war between the States, and business men in the prime of life whose children are now in the schools never heard the noise of battle or saw a wounded soldier sent to the rear. These States are rich beyond comparison in natural resources. They are peopled by a brave and noble race. Is it creditable to us that such comparisons as the above show such relative conditions as to education?

#### NOTHIN' DONE.

Winter is too cold fer work;  
Freezin' weather makes me shirk.

Spring comes on an' finds me wishin'  
I could end my days a-fishin'.

Then in summer, when it's hot,  
I say work kin go to pot.

Autumn days, so calm an' bazy,  
Sorter makes me kinder lazy.

That's the way the seasons run,  
Seems I can't git nothin' done.


SAM. S. STINSON, in Mar. Lippincott's Mag.

## Free Carriage Guide

No matter when, where or how you buy a carriage or harness, our FREE illustrated catalogue will furnish you with the **LOWEST FACTORY PRICES**, complete descriptions and accurate illustrations. It will guide you in buying right. It also explains our plan of selling direct.

A Plan that Fully Protects Every Buyer Against Loss or Dissatisfaction.

Factory and General Office, Columbus, Ohio.  
Western Office and Distributing House, St. Louis, Mo.  
The Columbus Carriage & Harness Co.  
Write to the nearest office of St. Louis, Mo.  
nearest office of Columbus, Ohio.



No. 3384 Buggy.

## "THE OAKS" 3 Reg. SHORTHORN Bull Calves

2 HIGH GRADE (pure bred) but not eligible to registry. Stock guaranteed as represented or money refunded. B. R. Comb Leghorn Eggs; 15 eggs, 75c.; \$3 per 100.

B. B. BUCHANAN, Bedford City, Va.

(Formerly at "Rock Hill," Brownsburg, Va.)

## CISMONT DORSETS..

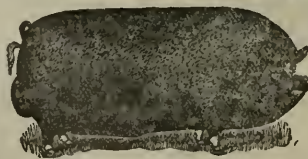
CISMONT STOCK FARM offers well developed young Dorsets of the best blood of England and America.

Prices reasonable.

G. S. LINDENKOH, Keswick, Albemarle Co., Va.

I AM NOW BOOKING  
MANY ORDERS FOR  
FANCY

## BERKSHIRE PIGS



for spring shipment. All sired by my famous boars, SIR JOHN BULL and UNCLE SAM. The former imported by me; the latter bred in the purple. I have four strains of registered sows, so I can furnish pigs no akin. Also GILTS and BRED SOWS.

FIVE high-bred three-year-old (in the spring) COLTS cheap. Fancy stock, but

not fancy prices. Three car-loads good TIMOTHY HAY cheap.

THOS. S. WHITE, Lexington, Va.

WE  
OFFER

## YOUNG JERSEYS

Male and female; several YOUNG GUERNSEY BULLS; BERKSHIRE PIGS, pairs and trios not akin. A few pairs of BRONZE TURKEYS, PLYMOUTH ROCK and BROWN LEGHORN fowls.

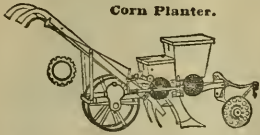
### EGGS FOR HATCHING

From Bronze Turkeys, Plymouth Rock, Brown Leghorn and Light Brahma fowls ready now.

M. B. ROWE & CO., Fredericksburg, Va.

# LABOR- SAVING IMPLEMENTS AND MACHINERY

Corn Planter.



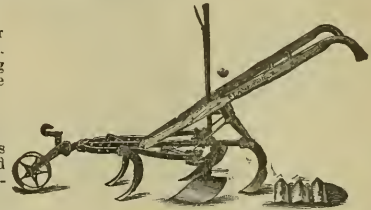
SPANGLER Corn and Fertilizer Planter.

## RN PLANTER

The Spangler for corn in hills or drilled, peas, sorghum and fertilizer. The Hoozier with shoe and covering wheel. The Eureka, plain. The Hoozier double row.

## CULTIVATORS.

Planet Jr. and Iron Age Cultivators and Horse Hoes. All Steel Three and Four Tooth X. Continental Disc Cultivator and Disc Harrow combined.



Cultivator and Horse Hoe.

## HARROWS.

Continental Disc with roller bearings. All Steel Lever, straight and slanting tooth

## DEERING; HARVESTING MACHINERY.

Mowers, Binders and Corn Harvesters with Ball and Roller Bearings. The lightest draft machines in use. Simple, strong and on most liberal terms and prices.

## HAY RAKES.

Hand and Self-Dump.

## THRESHING MACHINERY.

Geiser Threshers and Peerless Engines, all sizes.

## FEED AND ENSILAGE CUTTERS.

All sizes for hand or Power; with or without stalk crushers.

## CIDER MILLS.

With wooden crushing roller.

## WOOD AND POLE SAWS.

For steam or horse power.

## SAW, CORN AND FEED MILLS, All Sizes.

## BUCKEYE GRAIN DRILLS.

With horse or disc. Glass fertilizer feed.

## BAILING PRESSES.

For hand or power.

## CANE MILLS AND EVAPORATORS, CORN SHELLERS, PUMPS, LAND ROLLERS, MANURE SPREADERS.

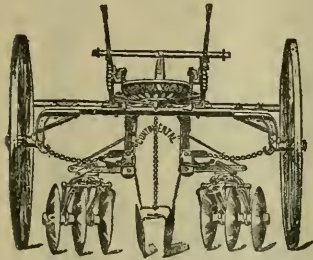
## THE HANCOCK DISC PLOW.

Guaranteed to do as much work and BETTER WITH TWO HORSES, than can be done with ANY OTHER DISC PLOW WITH THREE, will work in any land and with LESS DRAFT than that of ANY two horse plow

## PLOWS AND REPAIRS, All kinds.

## WAGONS.

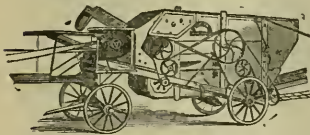
Farm, Freight, Log, Thimble Skein or Steel Axle. All sizes from one horse to six.



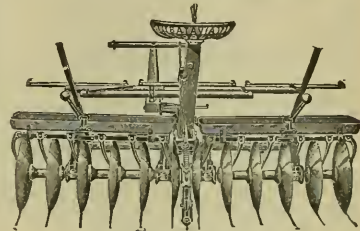
The Continental Disc Cultivator and Disc Harrow Combined.



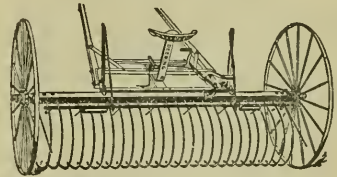
MOWER with Ball and Roller Bearing.



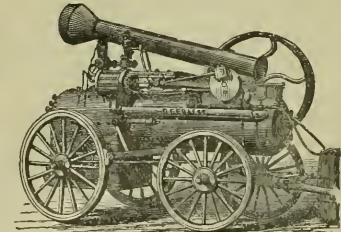
GEISER Thresher.



Disc Harrow - All Sizes.



All Steel Self Dump Rake.



PEERLESS Engines.



IMPLEMENTS, MACHINERY, VEHICLES and HARNESS For All Purposes.

**THE WATT PLOW CO.,** Franklin and 15th Streets,  
RICHMOND, VA.

**FACTS AND FANCIES ON TOBACCO.**

A very curious article might be written on the literature of tobacco; its relation to Church and State; its influence on individuals, mind, body, manners and habits, and its effects upon the general wealth and happiness of the world. Statesmen, lawyers, scientists, prelates, merchants and farmers can testify either to its evil or beneficial effect, from King James' famous "Counterblast" to Charles Lamb's "Farewell to Tobacco," which praises or curses alternately with amusing irony; but we do not propose to go into a long disquisition on the subject, but will give some of the curious uses it has been put to, especially during the early nineteenth century.

There is no doubt but that Columbus was the first to see the plant and its use by the Indians on his first discovery of America. In 1559 it was introduced into Europe by a Spaniard named Hernando de Toledo, who brought it from Tabaca, in the Island of St. Domingo—hence its name, Tobacco, though some attribute it to the island of Tobago, but Humboldt states that tobago was the name as given by the Caribbean Indians for pipe, which was applied to the weed by Europeans. From Spain Jean Nicot (hence the term Nicotin or Nicotina) carried it to Paris, where it was first used as a powder or snuff by Catherine de Medicis. It was soon after patronized by the Popes, and rapidly spread over the Papal States. In 1585 it was introduced into England by Sir Francis Drake and his companions from Virginia, who stated that "it was a remedy used by the Indians for indigestion and as a great medicine for prolonging and stimulating human life"; in consequence it immediately grew into general use, and became very high priced, so much so that "tobacco taverns" (taberna tabacana) were opened, like beer houses, where "they would draw in the strong smelling smoke with insatiable greediness through an earthen tube, and then puff it forth again through their nostrils." After a time, however, the practice of smoking tobacco met with strenuous opposition in high places all over Europe. It was declared sinful by the priests, and in 1634 Pope Urban VIII issued a bull excommunicating all who took snuff in church, and in 1719 the Sultan Anarath IV made smoking a capital offence. For a long time smoking was forbidden in Russia, under pain of having the nose cut off; and in 1661 in some parts of Switzerland smoking was placed on the list of the Ten Commandments, immediately under that of adultery. But, notwithstanding the royal and priestly wrath, the use of the plant extended far and wide, and tobacco continues the greatest luxury of all classes. The following lines from the "Marrow of Compliment," written in 1651, shows the prevalence of smoking at that period:

"Much meat doth Gluttony procure  
To feed men fat as swine:  
But 't's a frugal man indeed,  
That on a leaf can dine!"

"He needs no napkin for his hands,  
His fingers' ends to wipe,  
That hath his kitchen in a box,  
His roast beef in a Pipe!"

**DEALER**

# They All Hang TOGETHER

and have a good pull. If you buy a Buggy, Carriage, Harness or Saddle of your local dealer, you have to lick up all these little losses, the dealer, traveling salesman, jobber, manufacturer and mechanic, as they all get a profit out of you. Seems quite a load to lift, doesn't it? When you look at the buggy it doesn't seem quite fair that you should pay so many profits, does it? If you buy one of our celebrated

## SPLIT HICKORY VEHICLES

of us direct, you cut off three profits, as we need only the mechanic to make our goods and sell them, you have to lick up all these little losses, no use for dealer, traveling salesman or jobber. Split Hickory Vehicles are sold only by us direct. Your dealer cannot sell you one at any price nor can he sell one anywhere near as good for the price we ask for them. We know this to be true and want you to know it and that is the reason we send them **30 DAYS' FREE TRIAL** that you may have ample opportunity to prove our claims. It won't cost you a cent to try Split Hickorys, as we pay freight both ways if you return it.

**This is Our No. 235.**

We furnish this popular Top Buggy, with our genuine long distance, dust proof axles, longitudinal center spring, superior quick sliding shaft couplings, best quality split hickory wheels with tires in rims and with quarter inch round edge steel tires, full bolted between each spoke; also our open top ventilated spring cushion, fine quality double braced, leather and felt in a split hickory shafts, for **\$45-50**



Write for handsome free catalogue of Split-Hickory Buggies, Carriages, Harness and Saddles. It is free.

**OHIO CARRIAGE MFG. COMPANY,**  
Station 41 Cincinnati, O.

**\$55-30 TAKE THE "SHORT CUT"**

Better than your dealer will sell you for \$100.00.



In buying vehicles, and cut out the agents' commissions, traveling men's salaries and expenses and dealers' and middlemen's profits, you have all of these expenses to pay in added price, every time you buy in any other way than we propose here. We sell vehicles of all kinds **DIRECT FROM FACTORY TO USER AT WHOLESALE PRICES.**

We have to agents, no traveling men, and no order middlemen or peddlers. We save you this added expense in the low price at which we sell you direct. Here is one of many instances. See out. This splendid, comfortable, stylish, Long Wear, Top Buggy, for only **\$55.30**—Good as dealers and others would ask you \$100.00 for.

**HOW IT IS MADE.** The body, which is the real feature of a buggy, is as follows: 15-16 inch, reinforced, "big distance" axles; 18x24 wide legs, double full length reach, mortised through head box and braced full length—usually straight. New Hally Loops to carry body. Open back with hand springs, easy and noiseless. Front seat with Sargent patent, shock back or compressed back tires, 3/4 or 1 inch oval steel tires, all wood of best second growth hickory. Hickory shafts with quick shaft, anti-rattle coupling, points covered 36 in. with ester. Plano body, 20, 22 or 24 in. wide by 55 in. long. Wide, deep, roomy seat, with high comfortable back. Top has 5 or 4 bows, according to order. Iron sockets and pins, not painted but covered. Carriage and back upholstered in 18 oz. all-wood bronzed leather, equipped with genuine steel wire, 60 lb. approx. as a standard with hair. High, strong, padded dash, covered with genuine patent leather, and with hand holes. Body painted white or black, plus a stripe. Gear is painted in two star green. New York red, or any other color as ordered.

**OUR LARGE NEW VEHICLE CATALOG** contains every kind and variety of vehicle you could possibly want. It gives correct cuts, sizes, and just how the vehicle looks, and full description as to how they are made. The price is given in full figures in every instance. We ship every vehicle listed in our catalogue, subject to your examination and approval. We make free every job for two years. The book also contains a full line of harness adapted to convey. We will let free to all inquiries. Write for list.

**MARVIN SMITH CO., 62 N. JEFFERSON ST., CHICAGO, ILLINOIS.**

## 29 YEARS SELLING DIRECT.

We are the largest manufacturers of vehicles and harness in the world selling to consumers, and we have been doing business in this way for 29 years.

### WE HAVE NO AGENTS

but ship anywhere for examination from manufacturing establishments. You are outnothing if not satisfied. We make 100 styles of vehicles and 65 styles of harness. Our prices represent the cost of material and making, plus one profit. Our large free catalogue shows complete line. Send for it.




No. 717 Surrey. Price, \$75.00. As good as sells for \$87.00 to \$100.00 more.

No. 232 Wagon has rubber covered steps and 3/4 inch Kelly rubber tires. Price, \$77.00. As good as sells for \$100.00 to \$200.00 more.

**Elkhart Carriage & Harness Manufacturing Co., Elkhart, Ind.**

# LIDLAW'S CONCENTRATED TOBACCO POWDER, SHEEP DIP, HOG AND CATTLE WASH.

**ABSOLUTELY NON-POISONOUS.**



**Why Run the Risk** of losing a valuable animal by using such harsh remedies for destroying vermin on stock as Kerosene, Ambia or Carbolic Acid when you can purchase our celebrated non-poisonous Wash, which will kill all vermin on stock at one-half a cent per head? The greatest wool promoter known. The cheapest and most effective wash.

**PRICES:** 5-lb. bag, 75c ; 10-lb. bag, \$1.25 ; 25-lb bag, \$2.60 ; 50-lb. bag, \$5.00.

..ONE 5-LB. BAG WILL MAKE 50 GALLONS WASH..

For sale by leading Druggists and General Merchants. If your merchant does not handle it, write direct to Manufacturers,

**LIDLAW, MACKILL & CO., Ltd., 3400 to 3500 Williamsburg Avenue, RICHMOND, VA.**

During the early days of the settlement at Jamestown, in Virginia, owing to the scarcity of coin, or any legal tender whatever, tobacco was made, by act of the House of Burgesses, the legal currency in all business transactions. But its growth was restricted, lest it become too plentiful. Each vestry in a parish would appoint two of its members to count the number of plants or hills in the parish. As the salary of the minister was paid in tobacco, this was done to ascertain what amount of tobacco to assess on each farmer for the Church; so we find in 1728 Goodrich Lightfoot and Robert Slaughter counted the plants from Mountain river to mouth of Robinson river in Culpeper county; Robert Green and Francis Kirtly from thence to North river, and George Woots and Michael Cook from there to Great Mountains. Notes were given for tobacco stored in warehouses and passed as our bank notes do.

Parishes were often named for the tobacco planted in them—"Orinoco" and "Sweet-Scented" parish, a "Sweet-Scented" parish being worth more than a "Orinoco" one. "Ministers' tobacco" was worth less than other kinds, because of being mixed.

The Scotch merchants who settled in Virginia grew rich in the trade, often naming their towns after the old country, as "Dumfries" and "Falmouth," and in Glasgow, Scotland, there was a "Virginia Street, in honor of the weed which had so stimulated trade. Lawyers' fees and doctors' bills were also paid in tobacco. In 1751 Gabriel Jones was paid 200 pounds of tobacco for an attorney's fee, and Dr. Thomas Howson 1,000 pounds for medical attendance on the poor. In 1757 Dr. Michael Wallace presented a bill to the vestry for curing Eliza Maddox, 800 lbs. tobacco (being an extra price). C. Hutchings was allowed 100 lbs. tobacco for grubbing church-yard. For buildings, with 300 acres of land, for a glebe, it cost 2159 and 10,000 lbs. tobacco. The rapid filling up of the country by new emigrants and the extended planting of tobacco soon brought its value down to very little, to prevent which the planting

## REGISTERED BERKSHIRE HOGS.



**Boars in Use: COUNTRY GENTLEMAN and GROVE'S CHAMPION.**

**PIGS** from such noted sows as Miss Leewood, Queen Quality, Grove's Queen, &c.

**Registered Holstein-Friesian Cattle** of Netherland, Pieterjes and Clothilde families, All rich, heavy milkers and grand individuals

**English Beagle Hounds, Brown Leghorn and Plymouth Rock Chickens for sale.**

**N. B.**—In the stud, the imported Hackney stallion, "The Duke" (registered in E. H. S. B. and A. E. S. B.); fee, \$10.00. Hackney mare in foal to "The Duke."

Address **T. O. SANDY, Burkeville, Va.**

Norfolk & Western and Southern Railways.

## Headquarters for Nursery Stock.

WHOLESALE  
AND  
RETAIL.

We make a specialty of handling dealers' orders.

**ALL STOCK TRUE TO NAME.**

- |           |             |               |                |
|-----------|-------------|---------------|----------------|
| Apples,   | Nectarines, | Pecans,       | Ornamental and |
| Pears,    | Cherry,     | Chestnuts,    | Shade Trees,   |
| Peach,    | Quinces,    | Walnuts,      | Evergreens,    |
| Plum,     | Almonds,    | Small Fruits, | Roses, Etc.    |
| Apricots, |             |               |                |

**CALIFORNIA PRIVET, for Hedging.**

**WRITE FOR CATALOGUE.**

..AGENTS WANTED..

**FRANKLIN DAVIS NURSERY Co., Baltimore, Md.**

When corresponding with Advertisers, always say that you saw their advertisement in The Southern Planter.

of it was limited, and all common tobacco, or lugs, was burnt. This lasted until 1800, when United States money began to be coined and issued, and tobacco as a currency ceased.

But the plant was the means by which the colony grew and gained a footing in the new world, and out for which it is doubtful if it could have been maintained. It was the great pacificator with the Indians, who sold all they could raise to the "pale faces," and aided them in its cultivation, thereby giving the tribes a good market. It reads like a golden era, when the little cities of Jamestown, Norfolk and Richmond had their harbors crowded with all manner of craft to bear the great staple to foreign ports. Nearly every merchant paid for his goods in the weed—the luxuries of every family were procured by it, the Church prospered by it, even the gay belles and beaux rejoiced in tobacco as bringing them satins, laces and jewels, and the poor negro found in it a solace for his bondage.

Certainly tobacco proved an inestimable blessing to the infant colony, and though classed with slavery as one of the evils in the present day, yet they both grew up together, becoming a great power in the land, as hand in hand they evolved a mighty nation, until, like its handmaid, slavery, having fulfilled its mission, it, too, will pass away under the beneficent influence of a higher Christianity.

E. C. M.

#### REALITIES OF LIFE.

BY LULA M. CAIRNS.

There is many a breaking heart  
Hid under a beaming smile,  
Many who play a merry part  
Are the unhappiest all the while.

Many you think have a happy life,  
Free from toil and care,  
Those are the ones who have a sad, sad  
life,  
These you find everywhere.

Those who are arrayed in garments gay,  
Meeting in many a place of mirth;  
But when they are alone, dressed in  
somber gray,  
Wondering when and whence came  
their birth.

Some seem to strive against fate,  
No matter how hard they may work;  
They labor in early morn and late,  
While the more successful seem to lurk.

Do not judge by the faces in public,  
That this is a picture of their inmost soul,  
For there are a great number in this re-  
public

To whom life seems quite dreary on the  
whole.

Composed for the Southern Planter.

#### WANTED—TO SELL

Three No. 2, 11 gal., and three No. 3, 18 gal..

#### WHEELER GRAVITY CREAM SEPARATORS

(all new), only \$2.50 and \$3.00 each, or will ex-  
change for farm produce.

GEO. T. KING, Box 1, Richmond, Va.

## “Correct Dress for Men and Boys.”

AT the very birth of the new season, we are eager to make you acquainted with the improvements—the close-kin to perfection—reached by our present stock of

# Spring Suits and Top=Coats

It will shake belief in the necessity of custom tailoring for the realization of complete satisfaction. Our ready-to-wear is entitled to the highest consideration of the most particular and exacting dressers.

GANS-RADY COMPANY,

Entire Building, 1005 E. Main St.,

Opposite Postoffice.

RICHMOND, VIRGINIA.

CHARTERED 1870.

# Merchants National Bank

OF RICHMOND, VA.

Designated Depository of the United States, City of  
Richmond and Commonwealth of Virginia.  
Being the Largest Depository for Banks between Baltimore  
and New Orleans, this Bank offers superior facilities for  
direct and quick collections.

Capital Stock, \$200,000.00  
Surplus and Profits, \$531,000.00

JNO. P. BRANCH,  
President.

JNO. K. BRANCH,  
Vice-President.

JOHN F. GLENN,  
Cashier.

DIRECTORS.—John P. Branch, B. B. Munford, Chas. S. Stringfellow, Thos. B. Scott, E. W. Branch, Fred. W. Scott, Jas. H. Dooley, Jno. K. Branch, A. S. Buford, R. C. Morton, Andrew Pizzini, Jr., J. P. George.



## How are Your Eyes?

We are the largest optical establishment South, and give proper adjustment of SPECTACLES and EYE GLASSES. Complete manufacturing plant on the premises. Mail us the pieces and we will from them duplicate your Glasses. Glasses by mail our specialty.

## Our PHOTO DEPARTMENT

is also complete with CAMERAS, KODAKS and PHOTO SUPPLIES. Developing and printing finely executed.

Our line of GRAPHOPHONES, with latest records, OPERA GLASSES, FIELD GLASSES, Incubator and Dairy THERMOMETERS, etc., etc., is also complete. Lowest charges in all cases.

THE S. GALESKI OPTICAL CO., 9th and Main Sts., Richmond, Va.

## BILTMORE FARMS, - BILTMORE, N. C.

### Headquarters for GOLDEN LAD JERSEYS,

Also get of TREVARTH and GEN. MARIGOLD. ❁ ❁ ❁

**GOLDEN LAD'S SUCCESSOR**, First and sweepstakes over all at the Pan-American Exposition, the champion JERSEY BULL OF AMERICA, and out of Golden Ora, our great prize-winning cow, both born and developed on these Farms, is among our service bulls.

Biltmore Jerseys are a combination of large and persistent milking qualities with an individuality that wins in the show ring.

**SPECIALTY.** Write for descriptive circular of the best lot of young bull calves ever offered, both for breeding and individuality. They are by noted sires and out of large and tested selected dams. Many of these calves are fit to show and win in any company.



### BILTMORE POULTRY YARDS.



**SPECIALTY.** Write for descriptive circular of eggs from our prize winning pens. Over 50 yards to select from, made up of the winners at the leading shows for the last two seasons. If you want winners you must breed from winners.

### Headquarters for the best IMPORTED ENGLISH BERKSHIRES.

APPLY TO BILTMORE FARMS, BILTMORE, N. C.

# COMBINATION SALE OF REGISTERED

## Shorthorn Cattle AND Shropshire Sheep

On Hagerstown Fair Grounds, HAGERSTOWN, MARYLAND,  
**APRIL 30th, 1902.**

**65 Head of Registered Shorthorn Cattle.**—45 females and 20 bulls. Females from calves to cows; Bulls; calves, one and two year olds.

THESE CATTLE are mostly fancy reds, a few roans. There will be offered cattle bred by Aaron Barber, of Avon, New York; Robert Watson, Mineral Ridge, Ohio; Wm. Watson, Youngstown, Ohio; J. H. Potts & Son, of Jacksonville, Ill.; C. W. Cartwright & Co., Wayne, Neb. At this sale may be found the blood of Imp. Rose of Sharon, Young Mary's, the descendants of Imp. Josephine, Young Phillis, Princess Alice, High Bank, and Gentle, by Cupid, and many other cattle noted in Shorthorn history. Any one wishing to purchase a show herd should not miss this sale.

**40 Head Registered Shropshire Sheep.**—20 Ewes and 20 Rams. Ewes mostly young stock; Rams, one and two-year olds. Some of the Ewes have lambs by their side. Also my stock ram, DAVISONS, 740, out of Altamont, 160, by Borough Magistrate.

Some of the above rams and ewes are bred from Imp. Ewes, and carry the blood from the flocks of such noted breeders as: J. Bowen Jones, Jno. W. Edwards, Wm. Vaughan, Wm. B. Nevitt, John Thonger, Jno. Darling, A. E. W. Darby, and full of the blood of Altmont.

CATALOGUES, containing full description, with pedigrees extended, will be ready to mail on application by April 1, 1902.

JAS. W. SPARKS, of Marshall, Mo.,  
AUCTIONEER.

ADDRESS HENRY L. STRITE, Leitersburg, Md.

# Our Clubbing List.

The following list of papers and periodicals are the most popular ones in this section. We can SAVE YOU MONEY on whatever journal you wish.

**DAILIES.**

	PRICE ALONE.	WITH PLANTER.
The Dispatch, Richmond, Va.....	\$5 00	\$5 25
The Times, " ".....	3 00	3 00
The Post, Washington, D. C.....	6 00	6 00

**SEMI-WEEKLIES.**

The Dispatch, Richmond, Va.....	1 00	1 25
The World (thrice-a-week), N. Y.....	1 00	1 25

**WEEKLIES.**

Harper's Weekly.....	4 00	4 00
" Bazaar.....	1 00	1 40
Montgomery Advertiser.....	1 00	1 00
The Baltimore Sun.....	1 00	1 35
Breeder's Gazette.....	2 00	1 75
Hoard's Dairyman.....	1 00	1 35
Country Gentleman.....	1 50	1 75
The Times, Richmond, Va.....	50	65
Religious Herald, Richmond, Va.....	2 00	2 25
Central Presbyterian, " ".....	2 00	2 50
Christian Advocate, " ".....	1 50	1 75
Turf, Field and Farm.....	4 00	4 00
Spirit of the Times.....	4 00	4 00
Horseman.....	3 00	3 00

**MONTHLIES.**

North American Review.....	5 00	5 00
The Century Magazine.....	4 00	4 25
St. Nicholas ".....	3 00	3 25
Lippincott's ".....	2 50	2 50
Harper's ".....	4 00	4 00
Forum ".....	3 00	3 25
Scribner's ".....	3 00	3 25
Frank Leslie's ".....	1 00	1 35
Cosmopolitan ".....	1 00	1 35
Everybody's ".....	1 00	1 35
Munsy ".....	1 00	1 35
Strand ".....	1 25	1 65
McClure's ".....	1 00	1 35
Puritan ".....	1 00	1 35
Review of Reviews.....	2 50	2 75
Leisure Hours.....	1 00	1 25
Blooded Stock.....	50	50

Where you desire to subscribe to two or more of the publications named, you can arrive at the net subscription price by deducting 50 cents from "our price with the Planter." If you desire to subscribe to any other publications not listed here, write us and we will cheerfully quote clubbing or net subscription rates.

Subscribers whose time does not expire until later can take advantage of our club rates, and have their subscription advanced one year from date of expiration of their subscription to either the Planter or any of the other publications mentioned.

Don't hesitate to write us for any information desired; we will cheerfully answer any correspondence.

We furnish no sample copies of other periodicals.

# Seed House of the South.

- RED CLOVER.
- MAMMOTH CLOVER.
- ORIMON CLOVER.
- WHITE CLOVER.
- LUCERNE CLOVER.
- ALSTYKE CLOVER.
- BOHARA CLOVER.
- JAPAN CLOVER.
- BUR CLOVER.



- TIMOTHY.
- ORCHARD GRASS.
- BED TOP or HERDS GRASS.
- KENTUCKY BLUE GRASS.
- RANDALL GRASS.
- TALL MEADOW OAT GRASS.
- JOHNSON GRASS.
- GERMAN MILLET.
- BUCKWHEAT.
- OATS and
- CANE SEED.

"Whatsoever One Soweth, That Shall He Reap."

We sell strictly reliable FIELD AND GARDEN SEEDS of every variety at Lowest Market rates, included in which are RAGLAND'S PEDIGREE TOBACCO SEEDS.

WE ALSO SELL

## Our Own Brands of Fertilizers

For Tobacco, Corn, Wheat, Potatoes, &c.

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Parties wishing to purchase will find it to their interest to price our goods.

Samples sent by mail when desired.

**Wm. A. Miller & Son,**  1016 Main Street LYNCHBURG, VA.



# Japan Plums

And all other desirable standard and new varieties of PLUMS, APPLE, PEACH, PEAR and ORNAMENTAL TREES, SHRUBS, ROSES, Etc.

**HEADQUARTERS FOR TENNESSEE PROLIFIC STRAWBERRY.**

The Most Reliable Variety Ever Grown in the South.

Three hundred and fifty acres under cultivation. Write us if you contemplate planting. Catalogues free.

AGENTS WANTED. WRITE FOR TERMS.

**W. T. HOOD & CO.**

OLD DOMINION NURSERY.

RICHMOND, VA.



## ONE DOLLAR.

Chicago to St. Paul or Minneapolis for double berth in Tourist sleeping-cars of the Chicago, Milwaukee and St. Paul Railway, each Tuesday and Friday during March and April, 1902, on train No. 1, leaving Chicago at 6 30 P. M.

For further information, apply to the nearest coupon ticket agent, or address F. A. Miller, General Passenger Agent, Chicago.

To the unobscuring it is a revelation to note the tremendous strides such catalogue houses as Marvin, Smith & Co., of Chicago, are making.

Their goods are carried on almost every train that runs out of Chicago, and every town and village in the country receives some of these goods. There is a business policy that others would do well to imitate. Fair, square treatment always, is doing the work for them.

## ST. PATRICK.

On the eighth day of March it was, some people say,  
Saint Patrick at midnight he first saw the day,  
While others declare 'twas the ninth day he was born,  
And 'twas all a mistake between midnight and morn;  
For mistakes will occur in the hurry and shock,  
And some blamed the baby, and some blamed the clock,  
But with all their cross-questions, sure, no one could know,  
If the child was too fast, or the clock was too slow.

The first faction-fight in old Ireland they say,  
Was all on account of St. Patrick's birthday.  
Some fought for the eighth, for the ninth more would die,  
And who would not see right, sure, they'd blacken their eye.  
At last both the factions so positive grew,  
That each kept a birthday and Pat then had two;  
Till Father Mulcahey, who showed them their sins,  
Said "Sure, no one could have two birthdays but twins."

He said, "Boys, don't be fighting for eight or for nine,  
Don't be always dividing, but sometimes combine;  
Combine eight and nine—seventeen is the mark,  
Let that be his birthday." "Amen," said the clerk.  
If he was not a twins, sure our history will show  
He was worth at least any two Saints that I know.  
So they all got blind drunk, which completed their bliss,  
And kept up the practice from that day to this.

## ARTICHOKES.

I have about 100 bus. Jerusalem Artichokes for sale at 75 cents per bushel.

H. W. STEVENS, Goochland, Va.

## G. &amp; A. BARGAMIN CO

RICHMOND, VIRGINIA.

ESTABLISHED 1817.

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Water Pipe and Drain Pipe, Fire Clay Pipe, Bonnets, Flue Rings, etc.

Water Closets, Bath Tubs, Wash Stands and Sinks. Water Heaters and Tanks. Everything in the Plumbing and Steam Heating line.

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## LEE'S PREPARED AGRICULTURAL LIME

The Old Reliable for COTTON, PEANUTS, WHEAT, OATS, CLOVER and OTHER GRASS; has stood the test for twenty-five years.

## PLAIN SHELL LIME

Constantly on hand at lowest prices.

## LEE'S EXCELSIOR TOBACCO FERTILIZER.

With it crops as good as any on the market stood the dry hot summer without burning.

## SPECIAL WHEAT AND CORN FERTILIZERS.

Agents for CAYUGA BLUE LAND PLASTER, a very superior fertilizer with the best analysis.

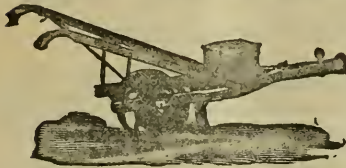
General agents for BLACK DEATH-BUG, WORM and INSECT KILLER. Certain death to Tobacco Worms, Potato Bugs, Cabbage Bugs, and worms and all insects that feed on the leaves of fruit or other trees.

Address

A. S. LEE & SON,

Richmond, Va.

# The EVANS Corn Planters



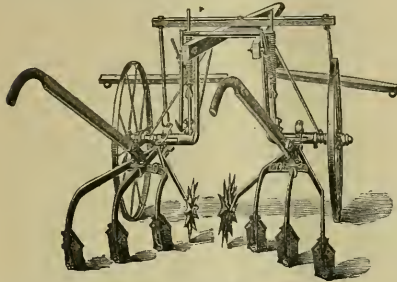
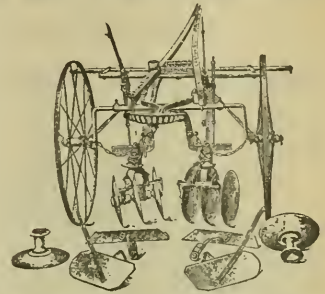
Are noted for their SIMPLICITY of CONSTRUCTION and ACCURACY OF DROP. Plates are furnished to plant any desired distance and fertilizer drilled in any quantity. Extra plates for P-as, Beans, etc., furnished at small cost.

**THE TWO-ROW PLANTER** is made entirely of steel, and after ten years of test is acknowledged the best made. A special feature

of this year's machine is the arrangement for preventing the distribution of fertilizers when not needed, by use of a foot lever.

**THE DISC CULTIVATOR** is receiving its share of attention from farmers who know the economy of buying the greatest labor saving implements.

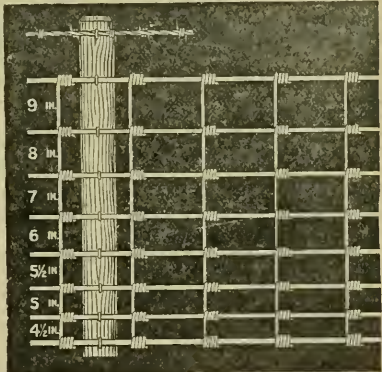
**THE TIGER DISC CULTIVATOR** with its ball bearing, pivot tongue, staggered spoke wheel (compare these wheels with the cheap wheels on other makes), and gangs that can be changed almost instantly to throw either to or from the centre, is the most desirable made. Middle discs are furnished to change into Disc Harrow.



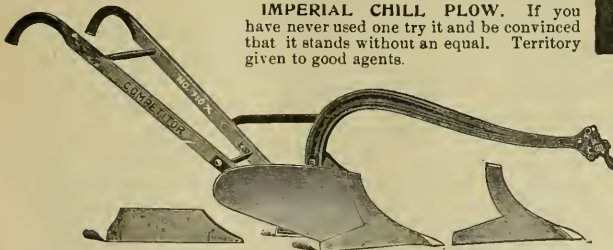
**THE PENN SIX SHOVEL STEEL WALKING CULTIVATOR** for cultivating crops in rows, and with the seventh or middle shovel is very useful for preparing land as well. This harrow furnished also with Spring Teeth instead of shovels.

**A AMERICAN FIELD FENCING** made in many heights and styles for turning the smallest to the much more desirable.

largest animal. Just as cheap as Barb Wire and prices. Write for special catalogue and prices.



**IMPERIAL CHILL PLOW.** If you have never used one try it and be convinced that it stands without an equal. Territory given to good agents.



this setter, and 998 out of every 1,000 will grow. Write for testimonials and prices.

Disc, Cutaway, Lever, and Spring-Tooth Harrows, Land Rollers, Balling Presses (for hand or power), Wagons, Fanning Mills, Pea and Bean Hullers, Engines and Saw-Mills, a full line of solid and inserted tooth Saws in stock. Write for descriptive catalogue.

**CARRIAGES AND BUGGIES, HARNESS AND SADDLES.** Our stock is acknowledged by all who have inspected it to be without a rival in the South. Do not waste time elsewhere, but come where you can rely on being suited, or write for illustrated buggy catalogue.

**BISSELL PLOWS.** We have sold them for many years, and they have given splendid satisfaction. We are overstocked on several sizes, and are going to offer special inducements for the next thirty days. Write for catalogue and prices.

**MASTER PLANT SETTER** will set, water and fertilize more plants than three men can do by hand. Don't wait for showers, but plant your tobacco, cabbage, tomatoes, strawberries, and sweet potatoes with and prices.

## THE IMPLEMENT COMPANY,

1302 and 1304 East Main Street, - RICHMOND, VA.

# If You Want YOUR GOOSE TO LAY "THAT GOLDEN EGG"

FEED HER ON MY GRAIN. You must also use my brain stimulator.

## DURING THIS WINTER SEASON

I am going to offer my friends and customers the most complete stock of GROCERIES, FEED and LIQUORS (that has been seen by the purchasing public during the period of their existence. Bargains, gifts and donations—that is what you may properly call them, because we have not taken into consideration the price. Cost cuts no figure with us; all we want is your orders, and you get \$3.00 worth of goods for \$2.00 in cash; here is a sample:

**COTTONSEED HULLS, the finest winter feed known to the dairyman; it is wholesome, pure, fattens stock, and keeps them so; per ton, \$8.00. It is cheap at \$12.00. Order a couple of tons for sample.**

Order your GOODS THIS YEAR from D. O'SULLIVAN, Richmond, Va. \$25,000.00 worth of Groceries are on the shelves and in the warehouses to be sold regardless of cost price. Stop paying two prices. You can buy your goods at wholesale prices from us, no matter how much you want or how little you need. Send me your orders. Send for my beautiful price list, showing what you can purchase for a few dollars; we mail it free on application.

60,000 bus. Finest Corn, 80c. ♦ 30,000 bus. Oats, 57c.  
SEEDS OF ALL KINDS. Write for Catalogue.

800 sacks Salt, large sacks.....	1.00
Lump Salt for stock, per lb.....	01
Bread Soda, per lb.....	02
200 bags best Laguayra Coffee.....	12
These Coffees are 2 cts. cheaper than the market price. We have a large stock and want to sell.	
500 half barrels White Fish.....	3.25
400 boxes best Ginger Snaps.....	04 1/2
80 bags Navy Beans, bushel.....	2.25
Rock Candy Syrup, per gal.....	30
Sugar-house Syrup, per gal.....	20
Finest New Orleans Molasses, pr gal	40
Home-Made Blackberry Brandy, per gal.....	60
Fine Old Port Wine, per gal.....	65
Sweet Sherry Wine, per gal.....	70
Catawba Wine, per gal.....	60
Old Northampton Apple Brandy (6 years old).....	2.00
McDermott's Malt Whiskey, large quart bottles, full strength, fine flavor. Sure cure for consumption, coughs, colds, or weakness; cures chills, fever, and ague, and nervousness, per bottle.....	85
Tomatoes, 3-lb. cans, per doz.....	1.00
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Green Peas, tender and sweet, doz.	70
Family Roe Herrings, per doz.....	18
Sugar-Cured Breakfast Bacon.....	13
Finest Rice, per pound.....	06
Imported Sardines.....	10
Fresh Mackerel in Cans, each.....	05
French Mustard, Jar.....	05
Byrd Island Patent Family Flour, keeps much longer, yields 40 lbs. more bread than any other flour sold; ask for it, and have no other, barrel.....	4.50
Culpeper Creamery Butter. The finest of all Creamery Butter is	

Culpeper Creamery, in any quantity, per pound.....	.18
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100 Fine Key West Cigars.....	2.10
Only 2 cents for a 10 cent Cigar.	
Plantation Cigars, 100 in a box.....	1.10
Fine Heavy Brooms.....	.25
Carpet Brooms, worth 25c., for.....	.18
Bath Bricks, for scouring.....	.05
7 bars Octagon Soap.....	.25
120 cakes fine Laundry Soap.....	2.80
7 large cakes Tar Soap.....	.25
6 bars highly-perfumed Toilet Soap	.20
Large jars Vaseline, suitable for toilet purposes.....	.05
800 doz. Household Ammonia, quart bottles.....	.07
6 bars Sand Soap, for scouring dishes, pans and tableware.....	.25
6 doz. boxes Matches (72).....	.25
3 cakes Sapollo.....	.23
Electro-Silicon, for cleaning silver-ware, 3 for.....	.25
10,000 large packages Soap Powder, Gold Dust Washing Powder, 4 lbs., Granulated Sugar.....	.05
New Cabbage, crate.....	1.00
Fine, large, fat New Mackerel, weighing a pound each.....	.05
Cotton-seed Holls, 100 lbs.....	.40
5,000 lbs. finest Green Tea.....	.35
1,000 lbs. finest Black Tea.....	.35
These are the finest goods sold anywhere. Order 5 or 10 lbs. for sample.	
Try a 15 lb. kit of our New Imported Mackerel.....	1.25
New Cut Herring, doz.....	.10
New Carolina Rice.....	.05
Flaked Hominy.....	04 1/2
800 California Hams, 8 to 10 lbs.....	.09
Rolled Oats, per lb.....	.02
This is an exceptionally big bargain.	
80 doz. cans Chipped Beef.....	.07

Large jars French Mustard.....	.10
Large bottles Catsup.....	.10
Finest Home-made Cakes.....	08 1/2
Fresh Milk Biscuits.....	.08
French Candy in 30 lb. buckets, lb.	.05
Royal Baking Powder, box, 1/2-lb.....	.24
Good Luck Baking Powder, doz. 1 lb.	.48
Good Luck Baking Powder, doz. 1/2 lb.	.43
Nutmegs, 5 for.....	.03
Mustard, large boxes.....	.10
Ess. Lemon, large bottles.....	.10
Ess. Vanilla, large bottles.....	.16
Ess. Cinnamon, large bottles.....	.10
Macaroni, per lb.....	.07
Star Lye, doz.....	.80
8 lbs. Laundry Starch.....	.25
We are agents for a specially prepared Juniper Gin, a sure cure for kidney troubles. It has cured 100 of our customers. Order a quart at 45. \$1.75 gal. No charge for packages.	
Bumgardner's 6-years-old Old Rye Whiskey, gal.....	3.00
Olemmer's Old Rye, quart.....	.40
500 bottles 3-Star French Brandy, worth \$1.25, now selling for.....	.75
Order a quart Malt Whiskey. It is the best medicine for chills and fever, loss of appetite, dyspepsia or indigestion. Makes rich, red blood, builds and tones up the system, restores lost appetite. A sure cure for lung trouble. Per large bottle.....	
Medicated Corn Whiskey, 8 years old, thick and finely flavored, fine tonic, gallon.....	2.00
Angostura Bitters, finest tonic made.....	.75
Sweet Sparkling Cider, per gal.....	.40
50 tons City Made Shipstuf.....	1.35
8,000 Bushels Finest Oats.....	.59
10,000 Bales Timothy Hay, hundred.....	.80

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# THE STAR CORN PLANTER

Every year improved as each season suggests In no year has it been equaled by any planter made. Last season the demand could not be supplied. But that it might be misconstrued we would name the planters that are represented each year, as "the same thing," "just as good," etc.

**NOTICE CAREFULLY IMPROVEMENTS FOR 1902.**

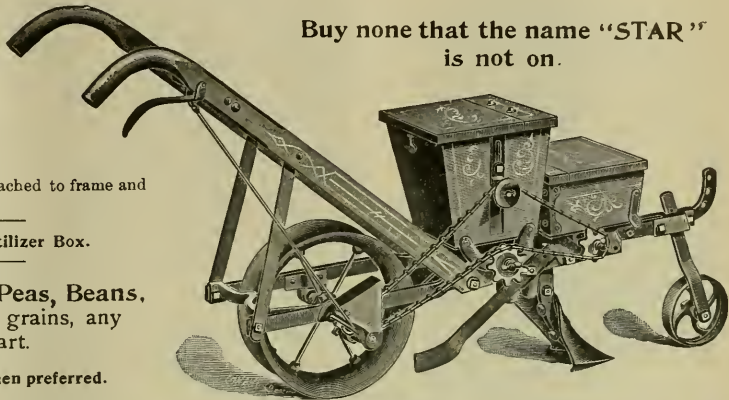
ROUND METAL GRAIN HOPPER placed behind fertilizer box that every grain can be seen as it falls, instead of wood box in front as shown. Chain tightener is attached to frame and not to box.

With or without Fertilizer Box.

Drills or drops Corn, Peas, Beans, etc., any number of grains, any distance apart.

With Runner Opener when preferred.

Buy none that the name "STAR" is not on.



ASHTON STARKE IMPLEMENT HOUSE, RICHMOND, VA.

OUR PRICES ARE LOW ON ALL AGRICULTURAL IMPLEMENTS.

## S. ULLMAN'S SON.

BEST GOODS FOR THE LEAST MONEY.

Lion Coffee in 1-lb. packages.....	9c	<b>Black Eye Peas, bus.,.....</b>	<b>\$1.75</b>	Best Feed Corn, per bushel.....	75c
American Granulated Sugar.....	5c	<b>Black Stock Peas, " .....</b>	<b>1.75</b>	Brown Stuff, per 100 lbs.....	\$1.20
Liberty Laundry Soap, 10 bars.....	25c	<b>Early Rose Potatoes.....</b>	<b>1.15</b>	New Raisins, 4 lbs. for.....	25c
White A Sugar, 6 lbs. for.....	25c	<b>Beauty Hebron Potatoes, 1.10</b>		Best Cream Cheese, per lb.....	14c
Pure Lard, per pound.....	9c	Silver King Flour, per bbl.....	\$4.40	<b>6 lbs. Good Rice.....</b>	<b>25c</b>
Good Salt Pork, per pound.....	8c	Silver King Flour, per bag.....	28c	Best Feed Oats, per bushel.....	53c
<b>Arbuckle's or Cordova Coffee, per pound.....</b>	<b>10c</b>	Jefferson Spring Wheat Flour, per bbl., \$4.50; per bag.....	29c	100-lb. sack best Dairy Salt.....	50c
Postum Cereal, per package.....	12c	Small Corned, Fresh or Smoked California Hams, per lb.....	9c	13 Large Bars Dewey Soap.....	25c
Grape Nuts, per package.....	12c	<b>Large Burbank Irish Potatoes, peck .....</b>	<b>25c</b>	Best City Meal, per peck.....	20c
Grape, Plum, Peach or Tornado Tobacco, 3 plugs for.....	25c	<b>American Sardines, 3 can, 10c</b>		<b>Ginger Snaps or Soda Crackers, per lb.....</b>	<b>4½c</b>
Quart Cans Porto Rico Molasses.....	8c	Four-String Brooms.....	18c	<b>Uneda Biscuit, package... 5c</b>	
New Raisins, 4 pounds for.....	25c				

We carry complete line GROCERIES and PRODUCE and shall be glad to have your order.

## S. ULLMAN'S SON,

1820-1822 East Main Street, and 506 East Marshall Street, RICHMOND, VA.  
1212-1214 Hull Street, MANCHESTER, VA.

# The Great WALTER A. WOOD New Improved MOWER.

FOR HARD USE, CLEAN CUTTING, AND LIGHT DRAFTS—AHEAD OF THE WORLD.

Write to us at Richmond for catalogues. Will make you prices that will please. Will



WALTER A. WOOD M. & R. M. COMPANY, - Richmond, Va.

## SOUTHERN POETRY.

About the same time that the *Southern Planter* published an article on "Injustice to the South" an article so similar appeared in the February International Monthly, that I here transcribe a part of it for reproduction in the *Planter*. The writer, Mr. Hamilton Wright Mabre, in treating of the poetry of the South, and how much it has been neglected (except in the case of Edgar Poe), says:

"The student of vital conditions in this country might have anticipated that the deepest and richest poetic movement would take place in the South, rather than in the North. History has failed to confirm such a prediction, but it remains true that in lyrical quality, in sensitiveness, in simplicity, and directness of emotional response to the appeals of beauty in nature, in that capacity for pure song which more than anything else, reveals the poetic temperament, the Southern poets are at one from the time of Poe to that of Lanier. The product is not great in mass. It is by no means so comprehensively interpretative of the spiritual history of a great community as is the work of the Northern poets, but so far as it goes, it is pure poetry. It is poetry for the sake of beauty rather than of ideas. It is transparently sincere. Its spontaneity gives it fidelity to experience and emotion. It is the poetry of feeling rather than of the intellect."

## The Chesapeake & Ohio Railway

EXTENDING FROM CINCINNATI AND LOUISVILLE, AND

THROUGH ITS CONNECTIONS

THE BIG FOUR SYSTEM, from Chicago, St. Louis, Peoria, Indianapolis, Sandusky and Cleveland;

THE OHIO CENTRAL LINES, from Toledo and Columbus;

THE CINCINNATI, HAMILTON & DAYTON, from Detroit, Toledo, Lima and Dayton—

FORMS THE MOST DIRECT And from Five to Twelve Hours the Quickest ROUTE.

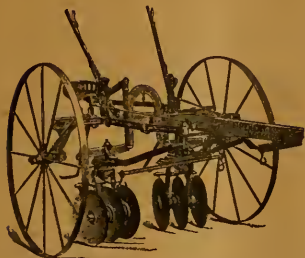
To STAUNTON, LYNCHBURG, CHARLOTTESVILLE,

RICHMOND, PETERSBURG, NORFOLK,

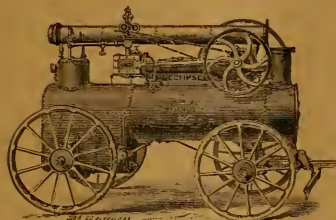
And Principal Virginia Points.

H. W. FULLER, Gen. Pass. Agt. C. & O. Ry., Washington, D. C.

# AGRICULTURAL IMPLEMENTS

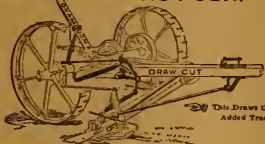


CEMENT DISC CULTIVATORS, with 6 or 8 discs.



Aultman & Taylor and Frick Threshing Machines, Engines and Saw Mills.

IT DRAWS THE BAR—  
NO PUSH.



This Draws the Bar—  
Adds Traction.

THE WHEELS WILL NOT LIFT FROM THE GROUND.  
CHAMPION Mowers, Reapers, Binders,  
Hay Rakes and Twine.



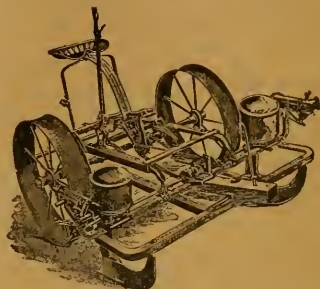
TIGER Steel and Wood Self-Dump Rakes,  
GRANGER Steel and Wood Hand-Dump  
Rakes, all sizes.

Among the prominent agencies  
represented by us are the  
following:

- Genuine Oliver Chilled Plows and Repairs.
- Genuine Farmers' Friend Plows, Subsoil Plows.
- Studebaker and Brown Farm Wagons, Carts and Buggies.
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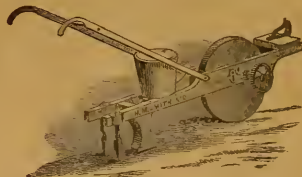
Smith's EUREKA Corn Planters,  
FARMER'S FRIEND Plain and Fertilizer  
Planters.



TIGER Double-Row Plain Planters, TIGER  
Double-Row Planters with Fertilizer and  
Check Rower Attachment.



Genuine BROWN Walking and Riding  
Cultivator. All styles. Write for  
circular and prices.



We trust to receive the liberal patronage which has been bestowed on the late Mr. Hunter, and wish to assure all of liberal treatment and careful attention to any of their favors

REMEMBER, we are at the same old stand with the same reliable line of Implements

All Goods Guaranteed First-Class.



STEEL LEVER HARROWS.

Spring tooth Harrows, all sizes, plain and with levers; Smoothing Harrows and anything in the Harrow line always on hand at bottom prices.

Write For Our New Illustrated 1902 Catalogue and Prices

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ORGANIZED 1857. A PURELY MUTUAL COMPANY.

INSURANCE IN FORCE (243,158 Policies), \$574,705,000.00.

The New Policies of the NORTHWESTERN embrace in one Contract practically everything that is desirable in Life Insurance.

The Strongest and Safest and Affording the Best Results for Policy Holders.

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## **STRONG, HEALTHY AND SLEEK HORSES**



Are the inevitable result of giving OWENS & MINOR'S DIXIE CONDITION POWDERS. If you wish fat and smooth Cattle and healthy Milch Cows, give

## **DIXIE CONDITION POWDERS.**

For RHEUMATISM, SPRAINS, STRAINS and all PAINS use

**DIXIE NERVE AND BONE LINIMENT**—Best on earth for Man or Beast. 40 Bottle 25 cts.; everywhere.

OWENS & MINOR DRUG CO., Richmond, Va.



## **FARMERS <sup>MUST</sup> <sub>USE</sub> FERTILIZERS**

**TO SUCCEED.**



For TOBACCO use "NATIONAL"  
For CORN use 'CHAMPION CORN GROWER'



For GRASS and CLOVER use "ORCHILLA GUANO,"

For ANY CROP use "BEEF, BLOOD and BONE" Brand

Our Fertilizers can be relied on to give satisfaction. They are especially prepared for the Crops named. Other brands for other crops. Write for prices.

### **S. W. TRAVERS & CO.,**

Manufacturers, Richmond, Va.

5000 Tons ACID PHOSPHATE for Sale.

Branch Virginia-Carolina Chemical Co.

## **The STATE BANK OF VIRGINIA**

JOHN S. ELLETT, Presid't. WM. M. HILL, Cashier.  
CAPITAL, \$500,000. SURPLUS, \$240,000.  
RICHMOND, - VIRGINIA.

# Southern Planter

A MONTHLY JOURNAL

DEVOTED TO

Practical and Progressive Agriculture, Horticulture,  
Trucking, Live Stock and the Fireside.

OFFICE: 28 NORTH NINTH STREET, RICHMOND, VIRGINIA.

THE SOUTHERN PLANTER PUBLISHING COMPANY, - - - - Proprietors.  
J. F. JACKSON, Editor and General Manager.

Vol. 63.

JUNE, 1902.

No. 6.

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---

Agriculture is the nursing mother of the Arts.--XENOPHON.  
Tillage and pasturage are the two breasts of the State.--SULLY.

---

63d Year.

Richmond, June, 1902.

No. 6.

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## Farm Management.

### WORK FOR THE MONTH.

Up to within a few days of the writing of this (21st May) the unseasonably cold weather, which has been the characteristic of the present spring, has continued throughout the whole of the eastern section of the country, and over a large part of that area there has also been a deficiency of rainfall, and even now the warmer weather is only partially distributed, as is also the case with the rainfall. Thunder-storms in various sections have done something towards supplying the needed moisture, but these have not been at all general, and many sections are still complaining of drouthy conditions. The effects of the winter and cold spring are strongly reflected in the area and condition of the winter wheat crop all over the country. Something near 5,000,000 acres of the area seeded in the fall has been plowed up or abandoned, and this leaves the area of the crop at little over 27,000,000 acres. Throughout the South the damage done has been severe, and we hear of few crops of wheat that promise a satisfactory result, and much has been plowed up, and the land is being planted to corn or other crops. The condition of the crop throughout the country is reported on May 1st at only 76.3 as against 94.1 on the 1st May last year and 83.2 the average of the May conditions for ten years. This means a much reduced yield per acre, which it does not appear likely that the spring wheat crop will do much to make good, as the weather throughout the spring wheat area has not been at all so genial as to

encourage liberal seeding. In North Dakota especially the weather has been very unfavorable, and the area seeded is much reduced and not at all promising. Like conditions are characteristic of the rye crop, of which the condition is the lowest on May 1st since 1893, and the lowest, with that exception, in twenty years. It is too early yet to know the condition and area of the oat crop, but the winter oat condition in the South is distinctly unpromising, much of the crop having been killed out and been plowed up. Spring oats in the South are making promise of a fair crop, the cool weather having been in their favor. Clover and hay crops have been much hindered in growth by the cool, dry weather, and there is only promise of a light crop generally. The planting of corn has proceeded without much interruption throughout the South, and the area of the crop promises to be larger. Cold, dry weather is not conducive, however, to quick germination and growth, and up to the present the outlook is not as good as we would like to see. The cotton crop in the Gulf States is making promise of a good crop. The stand is good, the plants healthy, whilst the area planted is large. In the Carolinas it is yet too early to speak with any certainty. There does not, however, appear to be any indication of the planting of a much larger crop than last year, the demand for cotton fertilizers having been distinctly less than a year ago. Probably this may be accounted for by the fact that in consequence of the high price for which tobacco has sold and the reduced stocks of the

weed brought about by the crop failure last year many planters in these States are planning to increase the size of their crops of tobacco. Setting out the plants is now in progress, and whilst we hear some complaints of scarcity of plants and small plants, we gather that on the whole there will be a sufficiency for all needs. In this State and Maryland little has yet been done in setting out the crop, but progress will be rapid with the first "season," as land is nearly all ready and plants waiting. There is a strong desire expressed to increase the area in "sun cured" and some types of "shipping," but the labor question is likely to cause difficulty in realizing this desire. We believe that it will be good policy not to increase the area over much, but to make "quality" rather than "quantity" the goal to be aimed at. The great fight now going on between the American Tobacco Company and the Imperial Company, of England, is likely to result in distinct gain for tobacco growers if only the quality of the crop is maintained.

The planting and cultivation of the corn crop should have constant attention. Except upon "low ground" all corn should be planted before the end of the first week in June. Low ground may continue to be planted up to the 20th of the month, but the sooner it is got in the better is likely to be the yield. The power of the sun is now very great, and constant work with the cultivator will be needed to keep the soil from crusting and to conserve the moisture, which is not over abundant at the best. Cultivate frequently and cultivate shallow. Keep the plow out of the field and work the crop level. The main development of the crop is horizontal and not downward. If the soil is kept in proper condition and not stirred deeply, the roots will run across the land between the rows at a depth of two or three inches below the surface, and after filling the surface land will then strike down. The corn plant is a great forager for plant food, and can be greatly helped by shallow cultivation, which makes available the inert plant food in the soil. In terrecultural fertilization—that is, the application of fertilizer during the period of cultivation of the crop—is found to be of great help to the corn plant on thin land. It is better than the application of all the fertilizer at the time of planting. If resorted to, do not apply the fertilizer next the rows or plants, but spread it broadcast in the middles. The plants will soon find it and take on new energy, which will be largely devoted to the making of ears rather than stalks. In an article in this issue on velvet beans, a wonderful example of the power of the leguminous crops to help the corn crop is shown. In the experiment there described, both velvet beans and Soy

beans were demonstrated to be more effective as fertilizers for the corn crop than even a complete commercial fertilizer. The experiment once more proved what we have so often asserted—that the use of commercial fertilizers on the corn crop is rarely profitable. They may, and often do, increase the yield, but rarely sufficiently so to pay for the cost of the fertilizer. If farmers, instead of spending money on fertilizer for the corn crop, would now sow velvet beans, Soy beans or cow peas on land intended to be put into corn next year, giving an application of 200 or 300 lbs. of acid phosphate to the acre if the land is poor, and then in the fall, after the crop is fairly matured, plow down the crop or take off the vines for hay, leaving a tall stubble, and then apply twenty-five bushels of lime to the acre and harrow in and seed with a mixture of Crimson clover, vetches and wheat or winter oats, they would secure a winter and spring pasture and a better preparation for a corn crop than with the application in the spring of 500 lbs. of complete fertilizer to the acre.

Corn for the silo should be planted during this month. In planting for this purpose do not plant too thickly. Room sufficient should be given to allow of the plant making a perfect growth and becoming fairly matured and carrying a fair proportion of good ears. Rows three feet apart and the plants eight or ten inches apart in the row will make a crop that will give the best returns when fed. If overcrowded, the crop will be merely watery stalks without ears, and will make poor sour silage. A good many farmers now grow peas with their silage corn. These climb up the stalks and add considerably to the yield, and at the same time make the silage a better feed, being more nearly balanced. Soy beans make a good crop to mix with the corn when being cut into the silo. They may be grown either with the corn or as a separate crop. If grown with the corn, the corn should be planted further apart in the rows than we have suggested, or the beans will not make much growth. The best plan is to grow the Soy beans as a separate crop, planting them in rows two feet six inches apart and about six or eight inches apart in the rows. The crop should be cut at the same time as the corn, and be mixed as run into the silo. Wherever two or three different crops are used for silage, they should be mixed and not be put into the silo in separate layers. Mr. Jones, of Fluvanna, reports to us that he tried sweet potato vines as an ensilage crop, but that the ensilage spoiled. He did not mix them with the corn, but put them in the silo alone near the top. We believe that if they had been mixed with the corn, that they would have cured all right. We know that peas and soja beans will do so. In our next issue will say something as to the building of a silo.

The forage crops about which we wrote in our last issue should be got into the ground as soon as possible, so that they may have time to make good growth and become fairly matured before cutting and yet have good weather for curing. We refer our readers to our last issue for further information as to these crops.

Keep the cotton and tobacco crops growing by frequent cultivation, and sow cow-peas in the cotton crop when cultivating the last time. In this way the land can be improved and some feed can be made.

The harvesting of the wheat and oat crops will call for attention before our next issue reaches our readers. See to it that the Binder is in good repair and working order a week or two before it is likely to be needed, and if any repairs are needed or likely to be wanted, have them ordered and on hand. Many a good crop has been largely lost whilst waiting for repairs. It is always well to have duplicate parts on hand of the parts most subject to wear and strain. Do not let the wheat crop stand until overripe before commencing to cut it. When overripe much grain is lost in the handling, and the sample is never so fine as when cut just before being dead ripe. When harvesting, see that the shocks are well made, so that they will turn a good rain. There is much art in building a shock so that it will turn rain, and only hands who have had experience and can do the work properly should be put to do this work. Have all the grain cut during the day shocked up before leaving the field.

Wheat and oat stubbles not seeded with grass or clover should be run over with the Cutaway or Disc harrow as soon as cleared of the grain, or the harrow may be run between the shock rows. Sow the fields with Crimson clover and vetches or with a mixture of these and rape or turnips, or a crop of cow-peas to be out for hay may be grown. In this way, a large addition can be made to the feed of the farm and the fertility of the land be conserved instead of being wasted in growing a crop of weeds. If seeded with grass or clover, see to it that the mower is run over the fields as soon as the weeds have put up and commenced to flower, and thus prevent the production of a crop of weed seed. These weed crops have killed out many a fine stand of clover and grass by robbing the land of the moisture and food which the grass and clover need. Leave the cutting on the land, it will act as a mulch and protect the grass and clover from the heat, and later from the effects of frost.

The saving of the hay crop will call for attention during this month and the next. The crop does not

promise to be a very heavy one, and it is therefore the more important that it should be carefully saved. Do not let it stand until the seed is ripe and much of the leafage dead. That hay is most nutritious which is cut when the plants are in bloom. When once the seed begins to form, the nutritive value of the rest of the plant rapidly decreases. See to it that the hay is not wasted by being allowed to remain broadcast in the scorching sun and hot wind. A few hours' exposure to a June or July sun is sufficient to wilt a crop so that it may safely, and with advantage to the hay, be raked up into windrow and there continue the process of curing until fit to be put into cock or be carried to the barn. More hay is spoiled in the South by overdrying than is spoiled by being housed too soon. When overdried, much of the leafage and finer part of the crop, and the parts which contain most nutriment, is lost in the field. As soon as ever the hay can safely be put into cocks it should be done, and this is much sooner than most farmers imagine possible if only the hay is free from rain or dew. It is impossible to lay down any hard or fast rule when this can safely be done, as so much depends on the character of the crop and the weather conditions. Only experience can decide. But err on the side of under-exposure rather than over-exposure when putting into cocks. If, after twenty four hours, the cocks feel cold and damp inside, break them out again and expose to the sun and wind for a few hours. It is not necessary to spread the hay broadcast over the field again, but only just around the cocks. Turn and lighten up with a fork, and two or three hours' sun and wind will fit the hay for the barn. Never house hay that has had rain or heavy dews on it until these are thoroughly dried out. They will cause hay to spoil in the barn, and even to fire, when natural moisture in the hay would only cause it to become a browner color. When hay is stacked out of doors, make large stacks instead of small ones. The hay will be much better in quality and the loss from weatherage much less.

#### THE FERTILITY PROBLEM.

Now that the spring planting season is drawing to a close, we may expect a "let up" in the torrent of letters which we have been daily receiving from all parts of the South for the past three months, asking for advice as to the fertilizer to be used to make satisfactory crops. Whilst we have answered many of these through the journal for the benefit of our readers, we have answered very many times this number by direct correspondence with the writers. This has imposed on us heavy labor, and labor of a character that has not been of the most satisfactory nature to us, as in many, probably most, of the cases we have

not had before us all the factors affecting the problems of crop production which would have enabled us to give the best information. We have, however, done what we could to give help in each case, by pointing out what were the requirements of the crop in question and how these could be best supplied. The question of how far it was necessary in each case to supply the different elements of plant food, and in what proportion they should be supplied, is one which only experimentation on the particular land could accurately determine. This is very strongly illustrated by the article from Dr. Stubbs in our last issue where he shows that by experiments he has determined that a soil which might fairly be presumed from its character called for potash does not need potash at all *as yet*, even for such a potash-loving crop as tobacco. This should open the eyes of farmers to the difficulties surrounding the question of fertilization of crops and emphasize the importance of each man making for himself a careful series of experiments on his own land with the crops he desires to grow to learn accurately what are the requirements of the soil. Having ascertained these facts, he can then be intelligently advised as to the plant food necessary to be supplied in order to meet the requirements of any particular crop. In connection with this subject of fertilization, the article in our last issue from Mr. Franklin should be carefully studied. He emphasizes a point which we have frequently made, viz., the apparently wonderful effect almost invariably produced by the application of even a light dressing of farm-yard manure, a fertilizer well known to be lacking in two essentials of plant-food, viz., phosphoric acid and potash, to be a well balanced fertilizer. We have frequently, in our own experience, noted this apparently exaggerated effect of a small application of farm-yard manure, and are strongly of opinion that Mr. Franklin has divined the cause in the power of vegetable fertilizers to increase the bacterial life in the soil, and to set this life to work actively in breaking down the unassimilable mineral plant-food in the soil and rendering it capable of being utilized by the crop. This is a power possessed by no commercial fertilizer apparently, and ought to stimulate in every farmer the desire and the determination to increase his production of farm-yard manure. It is an undoubted fact that very few farmers make anything like the quantity of farm-yard manure which it is possible to make by the aid of the stock kept, and still more farmers fail to keep all the stock which they could do. In both these respects, there is room for great improvement in Southern husbandry. The making of more manure means the growing of heavier crops, and the growing of heavier crops is the means whereby a greater head of stock can be carried on the farm. All this means a less out-

go for purchased fertilizers, or a much greater return from the use of purchased fertilizers if the same continue to be applied. Long experience has demonstrated the truth that as the land becomes better filled with humus, and the bacterial life in it more plentiful and active, the greater is the return made from the use of applied commercial fertilizers, and the more permanent is the fertility of the soil. Sir Jno. Lawes demonstrated at Rothamstead that the permanent improvement of the fertility of land worked by the application of farm-yard manure was almost immeasurable. He saw for 25 years afterwards the effect of a dressing of farm-yard manure on one piece of land, and in an experiment begun in 1852, and which is still carried on, has demonstrated the power of farm yard manure to maintain the fertility of land and produce heavy continuous crops. In this experiment, one field has been kept in barley every year without any manure or fertilizer.

During the first 20 years of that time, including 1852 and 1871, the average yield of grain was 20 bushels per acre each year. During the next 20 years, including 1872 and 1899, the average was 13½ bushels per acre, and during the five years to end of 1896 it was 10½ bushels per acre. The periods of comparison were purposely made long to equalize favorable and unfavorable years, and it will be seen that the fertility has been reduced at least one-half in that time, or more than one half when the last five years are contrasted with the first five or ten years.

At the same time, he began on another field to apply barn yard manure at the rate of 14 tons per acre each year. The fields were as nearly alike at the beginning as they could be found, and 14 tons would not be considered heavy manuring, yet the average yield for the first 20 years was 48½ bushels per acre, or nearly two and a half times as much as where no manure was used.

This field was then divided, and on one-half the application of 14 tons of manure to the acre was kept up, and during the next 20 years it yielded an average crop of 49 bushels per acre each year. The other half was sown without any more manure for 25 years, and the average for 20 years was 30½ bushels per acre, or 17 bushels more than that which had no manure from the start, and 18½ bushels less than that which had the manure each year. During the next five years the field averaged without manure 24½ bushels.

Or to make the comparison stronger, in 40 years the land which received no manure produced 665 bushels of barley, and in the next five years 57½ bushels. On the field which was manured the first 20 years and not after that time, they grew 1,570 bushels of barley in the first forty years, and 120½ bushels in the last five years. On that which was manured each year the crop

was 1,945 bushels in 40 years. It will be seen that the 20 years of manuring had left the land in condition to produce about 13 bushels per acre more after cropping 20 years without manuring than could be grown on the unmanured land.

This experiment not only shows the value of the manure for this crop on land which was, perhaps, a little better than the average, if we judge by the crop grown on the unmanured land in the first 20 years, but it also illustrates the lasting effect of barn-yard manure. Probably that which was manured each year for 40 years will show the effect of its treatment for the next 40 years.

We would urge upon every farmer the importance of making every effort to produce all the feed crops possible during the present year, so that he may be able to keep a heavy head of stock during the winter and make all the manure possible. At the same time lay out experimental plots, and test the needs of the soil, so that next year it may be possible to decide, with some certainty, what additional help, in the way of commercial fertilizers, is called for.

#### POISON FOR TOBACCO WORMS.

From the number of enquiries which we have had as to using Paris green for destroying worms on the tobacco crop we judge that there is a movement on the part of many growers to substitute poison for the hand worming of the crop. Doubtless this may be largely accounted for by the scarcity of labor in the tobacco sections of the State. In replying to these enquiries, we have pointed out that experiments have conclusively shown that Paris green may be used without fear of any injury to the users of the tobacco, and with success in destroying the worms, but at the same time we have urged caution in adopting the remedy as there appears to be a strong prejudice amongst tobacco buyers against the use of poison on the plants, and a grower may ruin the sale of his crop if it should be known that he used poison on it. We believe this to be an unreasonable prejudice if the poison be only used as it ought to be. Not more than one pound of the Paris green should be used with 150 gallons of water, and the plants ought not to be sprayed with even this solution after the tobacco begins to ripen. Used in this proportion and in this way, there will be no trace of the poison left on the leaves at cutting time, and no possible injury can happen to the user of the tobacco. The question of antagonizing the prejudices of the buyers is, however, one that cannot be well or safely disregarded, and where this is found well established it would be wiser to regard it. One or two substitutes have been suggested, but as to their efficacy we are unable to say anything, as we cannot

find any reports of experiments made with them. Amongst these we find chloro naphtholeum advised as a safe and yet certain remedy. We know chloro naphtholeum to be a disinfectant largely used for destroying foul odors and germs, and also for destroying insects, but can find no record of its use on the tobacco crop as a destroyer of worms. It may, however, be effective for the purpose, but we would advise its use only experimentally at first. The old remedy of poisoning the moth which lays the eggs from which the worms are produced by the use of eobalt made into a syrup with sugar and dropped into imitation "Jimson" weed blossoms made of glass or porcelain, and which are kept for sale in many towns is one that should be resorted to. These imitation poisoned blossoms should be set upon boards in and around the fields, and these will be visited by the moths, and their powers for mischief be ended. The destruction of a moth means the prevention of hundreds of worms.

#### VELVET BEANS.

When mentioning this crop as one of the forage crops which can be successfully grown in the South, we remarked that it was, in our opinion, better fitted to be grown as a soil-improving crop than for feed, as it is such a rampant grower that it is exceedingly difficult to cut and harvest. In confirmation of this, we observe that the crop was grown at the North Carolina Test Farm at Tarboro last year, and turned down as a preparation for a corn crop. The result was that the plot so treated produced the heaviest yield of corn and stover of all the plots tested. The yield of corn on this plot was 36.50 bushels per acre, and of stover 2 280 lbs. The next best yield was on a plot on which a complete fertilizer had been applied following a dressing of lime in 1900. On this plot, the yield was 25.40 bushels per acre, and 1,800 lbs. of stover. The next highest yield was made on a plot on which Soy beans had been turned down. This plot made a yield of 24.40 bushels per acre, and 2,200 lbs. of stover. The value of the increased yield on the Velvet bean plot, over the cost of fertilizer, taking the value of corn at 50 cents per bushel and of stover at \$8 per ton, was \$11.54, which was nearly five times more than the value of the increased yield on any other plot. This great value as a fertilizer comes largely from the fact of the wonderful power of the plant to gather and store nitrogen from the atmosphere. Dr. Stubbs told us some time ago that he had seen nitrogen nodules on the roots of Velvet beans nearly as large as pigeon eggs. Of course the great mass of humus producing matter provided by the plant has also considerable influence.

### COW-PEAS AND OTHER FORAGE CROPS.

In our last issue, in the article advising the growing of forage crops and describing the best methods and best crops to grow for the purpose, we said little about the cow-pea beyond recommending that it should be grown as largely as possible. Some of our readers seem to have gathered the impression from this short notice of the subject that we thought the other forage crops mentioned were preferable to the cow-pea. This was far from our desire or intention. We have always been strong advocates of the cow-pea. We believe it to be the sheet-anchor of Southern husbandry, and far more valuable to the Southern farmer than red clover is to the Northern farmer. Our desire, however, was, whilst not discouraging the growing of the cow-pea, to encourage the production of the other forage crops mentioned as being valuable auxiliaries in the feeding of stock and as being capable of making very heavy yields of feed somewhat more easily cured and saved than cow-pea hay. In this connection, we would say in answer to some enquiries addressed us as to the relative yields of the various forage crops on land of about equal fertility—say, capable of producing twenty five bushels of corn to the acre—that in recent experiments made in Arkansas, corn made 2,835 lbs. of dry fodder; cow-peas, 3,040 lbs. of dry feed; sorghum, 7,012 lbs. of dry feed, and Kaffir corn, 5,412 lbs. of similar feed to the acre. Spanish peanuts, on similar land, made a yield of 4,460 lbs to the acre. Commenting on the value of these crops as feed, the Station says that all the different dry feeds, except the Kaffir corn, were readily eaten by stock of all kinds. Kaffir corn was apparently less relished than the others, but this, very likely, arose from the fact that it was new to the stock. Where it has been regularly grown, as in Kansas, for several years, all stock eat it eagerly, and no doubt will do so here. For forage for winter feeding, cow peas are given the preference over corn because of their greater palatability, and also of their higher feeding value. Sorghum is to be preferred over either corn, Kaffir corn, teosinte or other coarse fodder plants. It yields more, resists drouth better, and is preferred by all stock. There is less waste in feeding it; it is easier to cure than corn, and matures for feeding much earlier.

In recent experiments made in Alabama with cow-peas, extending over a period of six years, the following facts seemed to be established: Broadcast sowing afforded a larger yield of hay than did drilling and cultivation, but the latter method is more certain to afford a fair crop of peas in an unfavorable season. The varieties averaging the largest production of peas are New Era, Black and Red Ripper. The varieties making the largest yields of hay for three years are

Wonderful and Clay. Fertilizer experiments on soil repeatedly fertilized showed very slight gains from any fertilizer, but on poor sandy or loamy soils an application of acid phosphate with or without potash proved superior to crude or raw phosphate. As compared with velvet bean as a forage plant, cow peas have the advantage in convenience of curing and in palatability, but are at a disadvantage on certain soils by reason of the susceptibility of cow peas to the attack of the nematoid worm and of several fungous diseases. The most profitable method of disposing of the growth of cow peas consists in cutting the vines for hay and using the roots as fertilizer for the next crop. Where haying is not practicable and picking too expensive except for seed, the crop should be grazed with cows or hogs. In curing pea vine hay, no rule as to the number of hours of exposure in swath, in windrow, or in cock can be blindly followed, as the method must vary with the luxuriance and succulence of the vines and the condition of the weather. The alm should be to retain all the leaves which requires that the exposure of the unraked hay be as short as practicable, and that the main part of the curing be effected in the windrows or cocks. Wonderful peas sown broadcast at the rate of a bushel to the acre in May with acid phosphate, and muriate of potash applied broadcast and harrowed in made a yield of 6,400 lbs. of hay to the acre. Cow peas (Clay variety) sown with sorghum, made a yield of 5,440 lbs. of hay to the acre.

June and July are the two months best suited for the seeding of cow-peas, as then the soil is warm and still moist enough to ensure quick germination. Sow broadcast, unless planting for a seed crop, at the rate of one bushel to the acre, and if the land is not in a state of good fertility, apply 300 lbs. of acid phosphate to the acre. A luxuriant crop of peas will gather from the atmosphere about 100 lbs. of nitrogen to the acre, equivalent to the nitrogen supplied by 600 lbs. of nitrate of soda, and worth about \$15 as a fertilizer. If the crop is turned under, all this, together with the humus supplied by the stalk, beans and roots, goes to enrich the land for the succeeding crop. If cut for hay only, that part in and on the roots remains to benefit the land; but this is a large part, and will materially improve the yield of the following crop, whilst the hay made from the vines makes a feed containing almost exactly the same amounts and proportions of digestible materials as wheat bran. In thus utilizing the crop, you can save the expense of buying bran for your stock. Sow peas in the corn at the last working, and you will improve the land and secure much extra pasturage; and if planted in corn for the silo, will largely increase the crop and greatly improve the silage.

## FERTILIZING PEANUTS.

*Editor Southern Planter.*

Looking over the Query Column, I saw a question from Mr. G. W. Eppes asking for a peanut fertilizer. From my personal experience, I think the answer given added a good deal of unnecessary expense to the raising of a crop of peanuts, especially at the present price of one of the ingredients named. The answer given was 80 lbs. of acid phosphate, 240 lbs. of kainit, 300 lbs. of cotton seed meal to the acre, making a total of 600 lbs. As I have been working in the peanut field since I was able to pull grass, and have always used commercial fertilizer, think a much cheaper mixture can be used with better results. As the peanut is one of the gatherers of nitrogen from the air, cotton seed meal is useless, as it is used for the nitrogen in it.

We have been raising peanuts for thirty years, and find the following mixture a good one: Eight hundred pounds of kainit and 1 200 pounds of 14 per cent. phosphate with a 30 bushel dressing of lime to the acre every four or five years. There is always a rye fallow turned under to put humus in the land, as peanuts leave the land bare.

Last year I planted a piece of land in peanuts that had never had a leguminous crop on it. Twenty five years ago it was cleared up, and it has been planted in corn and oats with a two year's rest, which always meant a fallow of broom grass and weeds with not even a sprig of wild clover on it. I used the aforesaid mixture at the rate of 300 pounds to the acre in the drill and 150 pounds of dirt from a field where peanuts have been raised in every alternate year. On this land I raised thirty bushels to the acre with 2,000 lbs. of vines, which was a good crop for the land with only such a light dressing of fertilizer. The land is so poor that rye now stands only from twelve to eighteen inches in height, and is head ing out.

Some may wonder why I use dirt in my fertilizer from an old peanut field. Three years ago I read in *The Southern Planter* about inoculating land for leguminous crops, and have tried it with good results. In the peanut crop, a big difference could be seen where the land was not inoculated. B.

*Chesterfield Co., Va.*

[In suggesting the fertilizer named in our reply to the query, we had in mind the object of securing a much heavier yield of peanuts than a 30 bushel crop to the acre. Such a yield cannot be a profitable one, and ought to be greatly increased. There is no reason why twice that yield should not be made. To secure this increased yield heavier fertilization is needed, and a great increase in the humus content of the soil. Whilst it is true that peanuts are able to secure nitrogen from the atmosphere like the other legumes, it is equally true that they can only do this largely when the growth is luxurious and the specific bacteria needed is abundant in the soil. A 30 bushel per acre crop of peanuts requires for its production 42 lbs. of nitrogen, 7 lbs. of phosphoric acid, 16 lbs. of potash, and 23 lbs. of lime. Numerous experiments

made in various States have established the fact that legumes fail to make the best yield unless assisted with some available nitrogen in the soil at starting growth, and that a light application of a nitrogenous fertilizer along with the mineral plant food at or before planting is a wise expenditure of money if the best result is to be obtained. This ensures vigorous growth and the ability to utilize all the other elements of fertility, and with this vigorous growth, the power to seize upon and utilize the nitrogen in the atmosphere. We have nearly doubled the yield of a clover crop by giving a top dressing of nitrate of soda just when growth was starting in the spring, and yet clover is as able to secure its nitrogen from the atmosphere as the peanut. An application of 300 lbs. of cotton seed meal, which we advised, would only supply about one half of the nitrogen called for in a 30-bushel crop of peanuts, but it would give a supply when most needed just at the start, and thus enable the plant the more quickly to get to work in utilizing the supply in the atmosphere. Whilst we strongly urge the importance of growing the legumes to secure nitrogen from the atmosphere, instead of buying this class of fertilizers, yet we are also as strongly of opinion that where the object in growing the crop is not merely that of supplying humus and some nitrogen to the soil, but also a sale or feed crop, then that it is wise economy to help nature by giving some nitrogen in the fertilizer to start the crop. This needed help can be and should be much less than the crop calls for in order to make its best growth, as experiments have shown that where the nitrogen-applied is sufficient to meet all the needs of a full crop, as measured by the abundance of the other elements of plant food in the soil, then that the plant will not exert its power to secure nitrogen from the atmosphere, but, like most human beings, will take that nearest at hand and most easily obtained. We are glad that our correspondent has raised this question, as it indicates that farmers are thinking more for themselves and not relying altogether upon the statements which they may see in print. The use of earth from an old peanut field to supply the bacteria necessary to inoculate the new land, is also an evidence of this same application of the knowledge which science is placing at the disposal of farmers.—ED.]

## CHINCH BUGS.

We hear complaint from several sections of chinch bugs infesting the wheat crop. Whilst it is practically impossible to do much to save a wheat crop already infested, it is possible to do something to prevent injury to other crops. As the wheat matures the bugs will leave this crop in search of fresher pas-

tures, and will probably attack neighboring fields of oats or corn. The chinch bug is especially fond of millet and similar grasses, and a farmer who finds his wheat fields infested will do well to sow a narrow strip of millet between the wheat and his other crops.

As the proper time for sowing millet is during, or just after, the corn planting season, a strip of millet two or three yards in width may be sown along the side of the corn field next to the infested wheat or oats, and when the bugs have taken possession of it the millet may be plowed under with a jointer plow and the ground harrowed and rolled, thus burying the bugs.

#### NOTES ON MR. FRANKLIN'S AND DR. STUBBS' ARTICLES IN THE MAY ISSUE.

*Editor Southern Planter:*

Though my time is so well filled with other engagements, I cannot refrain from expressing my approval of some things I note in your issue of May, especially the downright, hard, commonsense of what Mr. Franklin says in regard to the recuperation of the soil. I have for years been trying to impress our farmers with the fact that no soil, originally fertile and of a good mechanical make up, can ever be exhausted with any sort of fair treatment. It may, as a great deal of our Southern lands has been, be reduced in productiveness by bad farming, but it still has in it the power to restore itself to its pristine productiveness without the use of fertilizers, just as nature restores it with the broomedge and the pine tree. But the process would be too slow for the demands of our modern agriculture, and hence the value of commercial fertilizers when used not for the mere purpose of getting a little more sale crop from the land, but for increasing its productiveness through a greater growth of the humus-making legumes.

Now as to the galls. I do not believe that a gall can ever be cured till deeply broken and some organic matter gotten into it; and the quickest way to do this is to break it deeply and get peas to grow on it either with the use of manure or fertilizers. Deep breaking of these bare red spots is the most important thing in their restoration, and I speak knowingly, for I have done it more than once. I have here a small piece of ground that was an excavation made necessary by building into a hillside. It was nothing but hard red clay, six feet below the original surface. In two seasons I got on that excavation a sod of grass that is unequalled on any surface soil around here, simply by breaking it up and putting a little manure on it to start the grass. But the deep loosening was the main thing.

I was interested, too, in what Dr. Stubbs says in regard to fertilizers. I long ago found out that in the

red clay soils of the Piedmont country, there was no need for spending money for potash. But I fear that Dr. Stubbs is too sweeping in his opinion in regard to the sandy soils of Tidewater. The fact that in one location he did not find any need at present for potash, can hardly be taken as showing that these sandy soils, as a rule, do not need it; and I think that the experience of our truck farmers and tobacco growers on the South Atlantic coast shows that the sandy soils of the Eastern coast do, as a rule, need liberal applications of potash, while it is a waste of money to buy it for the red clay uplands *generally* on this side of the mountains. I say, on this side of the mountains, for there is red clay and red clay, and on the red clays of the dolomite formation in East Tennessee, which to the ordinary observer look like our Piedmont red clays, potash is an important constituent in fertilizers. The fact is, as I have time and again said, that what has been found best on one farm cannot be taken as a rule for the next one, and the only way for any farmer to learn what his soil needs, is to experiment with plots for himself, and not even then to take the results of a single season, but a series of seasons. I found that I need not buy potash in the upper Piedmont of Virginia, but I would not say that none of the soils of the Piedmont country would be helped by it, though, as a rule, soil such as I had I do not believe needs it, if lime is used at intervals with the legumes.

To what Dr. Stubbs says about Johnson grass, I, of course, say AMEN. I wish those who are so anxious to try it could travel through some sections of this State right now, and they would be cured of the Johnson grass fever. I agree, too, with the advice for the farmers of Tidewater to grow alfalfa. Since we have learned more of the proper treatment of alfalfa and the soil condition it requires, there is no more reason for its failure in the East, as it has in past years, when we did not recognize the best mode of treating it. Alfalfa, for permanent mowing and cow peas for the rotation, are the great agents for the restoration of Southern soils to productiveness through the feeding of stock.

Clover sickness of the real sort is the result of an excess of humic acid in the soil, and not any deficiency of plant food, and it is easily cured by restoring the alkalinity of the soil with lime. But there is no doubt much so called clover sickness that is sickness for want of clover or some other legume. Mr. Franklin is right about the legumes. When the farmers of America fully awake to the possibilities in legumes, we will cease to see land run in grass till a sheep can hardly bite it, as one can see all over the North and Central West to day (for all the bad farming in the country is not in the South). But we will

see farmers using short rotations and legumes rather than grass. I was asked a year or so ago to address the meeting of the Commissioners of Agriculture of the Cotton States on the subject of grasses, and I opened my remarks by saying that in my opinion the South does not need grass except in permanent pastures, but that we do need legumes and the hay that the legumes will give us, and that with these grown as they should be, we could do more for the cattle and the land than we can ever do with the grass.

W. F. MASSEY,

*Editor of Practical Farmer.*

## LIEBIG AND HIS DOCTRINE OF EXHAUSTED SOILS.

*Editor Southern Planter:*

With a great deal of interest I have read Mr. Franklin's remarks in the May edition of the *Southern Planter*. From my own experience, I can indorse every word he says in regard to manure and the general benefit which the soil derives from the growing of leguminous crops. The good effect of even small quantities of manure is not only due to the life it puts into the soil, but also to the start it gives the young plants. This can especially be noticed in plants from very small seed, as, for instance, tobacco, rape, clover and turnip seed, which can supply the tender sprouts with minute quantities of plant food only. Every farmer is familiar with the good effect even a small quantity of superphosphate has on the developing of young plants. They make not only stronger, but probably 100 or 200 times as many rootlets as plants without this help would do, and the great mass of stronger roots enables them to extract more plant-food from the soil.

In regard to "clover sickness," which Mr. Franklin mentions, I would, however, not like to go so far as to say that it is caused by bacteria, though this may sometimes be the case. To judge from my own experience, I am induced to believe that the cause is rather due to an exhaustion of the assimilable plant-food. A soil may contain thousands of pounds of potash or phosphoric acid to an acre, but only a few hundred pounds may be available to the plants. The insoluble constituent of the soil must be broken down first before the potash or other plant-foods they contain can be taken up by the plants, and this breaking down is a very slow process. If the soil is continually cropped with two or three different crops only, without replacing any of the removed plant food, and is not rich in available plant-food, it explains why some soils are easily exhausted. I have seen clover-soils so run down by poor management that the red clover made a very poor growth, and I have seen

these same soils under different management again produce the best crops of clover. I have seen thousands of acres of light soils, too poor to produce a crop of red clover, by continuous liberal applications of manure and fertilizers, brought to such a high state of fertility that they would produce a paying crop of red clover, though not oftener than every fifth, sixth or seventh year, according to the quality of the soil.

Now, in these cases we can hardly assume that the cause is due to some disease which attacks the clover. There can be no doubt that the cause is due to a lack of plant food. If lime is a remedy for this "sickness," even on alkaline soils, I think it is more due to the liberating of plant-food by the action of the lime than to any other cause.

In the old countries, where the soil has been cultivated for a long time, and the yield depends upon the applied quantities of manure or fertilizers, the making of paying crops only once in a six-, seven- or eight-field rotation, is not confined to clover alone. Wheat, beans, peas, sugar-beets, rape and others often refuse to make a second paying crop in a rotation. I know of sandy soils, classified as three-, six- or nine-year rye soils, indicating that rye, notwithstanding that it is a modest crop, will produce paying crops only every third, sixth or ninth year, according to the soil. In those countries, the legumes have long ceased to be "soil-improving crops," in the sense they are so considered here. The depths from which these crops draw their food have just as much been impoverished as the surface soil has by the more shallow rooted cereal crops. On some soils only a mixture of from two to four different legumes, with different demands on plant food will give satisfactory results. The leguminous crops have to be manured or fertilized just as all the other crops, otherwise they will make a very scant growth only.

Mr. Franklin's statement that in Virginia many soils can be improved with legumes alone is, without doubt, correct. The conditions are different from those in the old countries. Leguminous crops have only been grown occasionally, and the depth from which they draw their food has hardly been touched. As the impoverishment of the soils is mostly due to growing a few shallow rooted crops only and to chemical changes in the plant food, through the disappearance of the humus, it having become difficultly soluble, it is easily understood why, with a fresh supply of vegetable matter brought into the soil, the former fertility, if not quite, but to a great extent, will be again obtained.

We know that, for instance, phosphoric acid, one of the most important plant-foods, becomes difficultly soluble when it comes in contact with alumina, iron

oxide and lime. In the presence of these minerals, boracic acid, carbonic acid, ammonia salts, algae and bacteria alone will keep it soluble. With the disappearance of the humus, the main source of these agents of solubility, by permanent cropping without replacing it, the phosphoric acid becomes difficultly soluble—can only be with difficulty assimilated by the plants. The same is true of the potash salts. Carbonic acid changes the neutral potash salts into bicarbonates, and is a solvent for the silicates. If seed is sown in such a soil, with difficultly assimilable plant food, the plants are weak from the start. Even a small quantity of manure gives them a better start, and assists in overcoming the difficulties of extracting the necessary food.

Mr. Franklin takes issue with Liebig on account of his exhaustion theory. I think Mr. Franklin is laboring under a misapprehension of what Liebig really means. The term "exhausted," I admit, is an unlucky one, is misleading, because it creates the impression that Liebig meant the soil was exhausted of all its plant food. But such is not the case. Liebig says in his "Letters on Chemistry," p. 443: "A soil is not exhausted as long as it produces paying crops of clover, cereals, tobacco and beets without replacing any of the soil constituents. It is exhausted when the *missing conditions of its fertility* have to be replaced by the hand of man." The great majority of our soils is exhausted in this sense.

This shows clearly what Liebig means. He called a soil exhausted as soon as the merely tilling of it would not cause it to produce paying crops any more.

District of Columbia.

H. WINKELMAN.

### HINTS ON BARN BUILDING.

*Editor Southern Planter:*

Barn building talk is always in order, excepting only when the subject for the time being has been sufficiently discussed. Having built a new barn a few years ago, I probably learned something which may be of service to farmers who contemplate building. A barn should never be begun until it has been carefully planned and draughted, even to the smallest details. This is just as necessary as to sit down and count the cost, and will assist materially in counting the cost. All the great public buildings in the world were planned, draughted, studied, and cost estimated by the architect, before the foundation was dug, or a stone laid. Any person is capable of making a rough draught of what he wants which the carpenter can understand much better than if told by word of mouth. The first thing to be decided is the location. A barn should not be too near the house, nor too far away, for if too far away it makes too much travel to

and fro in doing chores. If the stables are cleaned every day, as they should be, the manure deodorized by the use of plaster (gypsum) as an absorbent, and the manure drawn often to the field, the barn can stand near the house without the diffusion of foul odors. The barns in Holland stand much closer to the houses than in this country, but they are kept remarkably clean and neat. (They frequently form a part of the house.—Ed.)

The next thing to be determined is the size, and this will depend on the amount of hay and grain to be housed, and the number of horses and cattle to be stabled. The barn had better be too large than too small.

Before building my new barn, I visited several which were said to be convenient. The owners were courteous, and in answer to the question, "Were you going to build another barn, what alterations, if any, would you make?" would promptly point out any mistake they had made.

My barn is a bank barn. The advantages of a bank barn are, first the economy of space and materials. It adds to the capacity of the barn for holding hay, grain and cattle without increasing its size or the amount of roofing. If the whole basement is not needed for horses and cattle, the bays can extend down to a floor near the ground, but far enough above it to permit a circulation of air under them to prevent the hay and grain from drawing dampness from the earth and moulding. Such bays will hold much more than ordinary bays, because of the pressure of the greater height compressing the hay. Second. It saves labor and time in taking care of stock in that there is not so much travelling to be done, and it is easier to throw hay and fodder down from above than to carry it away to a wing built on purpose for stock. Basement stables are warmer in winter than it is easy to make them when entirely above ground, and are cooler in summer.

Masonry is more expensive than wood work, but is more durable, and no good thing can be obtained without cost. There need not be so much masonry as is sometimes put under bank barns. It is best not to have the basement much under ground. It requires more digging, higher walls, and you cannot get in so many windows—three things of considerable importance. When a person is at liberty to choose the site, it would be better to dig into the bank only far enough to get sufficient earth to make the embankment for the driveway. There should be a bridge two or three feet long between the embankment driveway and the barn sill to prevent the sill from rotting. For permanence the bridge stringers might be made from bars of old railroad iron, and covered with flagstones. The height of the foundation walls should be regulated

by the height of the ground outside, by as many offsets as are necessary. Walls a foot higher than the surface are sufficient to prevent the sills from rotting. Basements will not be damp if good drains with outlets are put under the foundation walls, and a space a foot or more in width between the walls and the bank are filled with broken stone. This will also protect the walls from being pushed over by frost.

It is a very general fault with basement barns that they are too dark, and when the doors are shut there is hardly light enough, even in a bright day, to see how to do work without a lantern. This need not be. Windows are not expensive, and particular pains should be taken when building to put in enough to make the basement as light as possible. Horses and cattle enjoy the light as much as human beings, and it is cruel and injurious to their eyesight to confine them in a dungeon instead of a well lighted stable. The basement of my barn is nine feet high. A low ceiling is not conducive to health in house or barn, and is particularly objectionable in a barn where forkfuls of hay and straw cannot be carried without hitting the beams overhead.

My barn posts are twenty feet high, and I wish they were higher. With a horse fork there is no trouble in elevating hay to the peak of the roof which is twenty feet higher than the plates. A steep roof is not so apt to leak, and it gives more room in the barn for storage. In this part of Pennsylvania barn frames are built with timber about eight inches square, but in Ohio they are most generally built with planks and spikes, which they say makes a frame just as strong and much cheaper than a timber frame. "Balloon" frames for wooden houses are now universal, and it may be that plank frames will soon supersede timber frames for barns.

When a farmer builds a new barn he should be sure to build it large enough to hold all his hay, grain, straw, pumpkins, roots, horses, cattle, and farm tools, and have some room to spare. His neighbors may think he is crazy for building so large, but he should endeavor to raise enough to fill it, and show them he knew what he was about. My barn is so large that when the threshing is done the straw can be kept in the barn where it is always dry and handy to use. Formerly it had to be pitched out of doors and stacked where it was inconvenient to get at, and in winter frozen on the outside and generally covered with snow. According to my experience, a farm of one hundred acres of good land will require a barn of not less dimensions than 40 x 60 feet, with 20 feet posts and basement under the whole.

My barn is 50 x 70 feet, and none too large. It is said that no enterprise should be undertaken without first counting the cost. Of course the cost of barns

will differ in different localities, as the cost of labor and building materials differ; but as a general rule a barn can be built of timber, weather-boarded with planed lumber, painted on the outside, and roofed with shingles for one dollar per two square feet. According to this rule, a barn 40 x 60 feet with 20 feet posts and basement under it would cost about \$1200. My barn built with timber frame, white pine weather boards, pine shingles, oak joists and floor, and good basement walls cost about \$1500.

J. W. INGHAM.

### ENQUIRER'S COLUMN.

Enquiries should be sent to the office of *The Southern Planter*, Richmond, Va., not later than the 15th of the month, for replies to appear in the next month's issue of the *Planter*.

#### Salt as a Fertilizer—Peach Borers—Orchard Practise—Strawberry Growing.

1. Can bacon salt be applied to clay galls and swamp lands, and any good results be expected? If so, when apply and what quantity?

2. What is your experience with applying coal tar, lye washes, and "Dendrolene" to kill peach-tree borers?

3. Can Bordeaux mixture ever be applied too strong to pears and strawberry plants? If so, is it not the copper or the sulphur uniting with some element in the leaf, causing a burning? If not, what might be the cause, should it be possible for mixture to be too strong?

4. Give best way and time to apply a complete commercial fertilizer to strawberry plants in matted rows; give quantity.

5. Is there such a thing known as a worm pest for strawberry plants? If so, what is the remedy? I've noticed a few very small white worms in old strawberry rows.

6. Can a strawberry culturist continually expect to grow fine berries from the plants that he grows himself—i. e., from the runners made every season; or is it essential that he buy or propagate some new variety that will strengthen his old plants; or should he buy new plants at end of every three years, and plow under all old plants?

7. In applying some form of phosphoric acid and potash to fruit trees and grape vines what quantity should be put to each individual tree or vine, providing I have not enough to broadcast?

8. Is it true that some swamp lands do not need lime. Please explain.

9. Is it wise to let peas, whether sown in drills or broadcast, bear in a young (three years) bearing orchard, when the soil (sandy loam) needs building up, and no kind of fertilizer has been applied since the trees were set? I know that the legumes and clovers do not give all the plant food required, but if the vines were turned under in the flowering stage, would that not help the soil to retain any fertilizer afterwards applied, regardless of immediate results (since I am after ultimate results); then sow to cover crop in June. I have a hillside orchard to contend with.

10. What do you think of the method of propagat-

ing grape vines by layering cuttings in late fall, to be set out in a cold frame in the spring?

11. Is it true that this Southern climate will grow trees "with one side softer than the other"? One reason given is, that a tree facing the south would have the softer side.

12. Is it a superstition, a theory, or a fact, that a nail driven into a plum tree will cause it to grow better; that kerosene corked up in an old pear tree will infuse new vigor; that sulphur applied in the same way cures blight in old pear trees. If so, give technical reasons.

A recent article in a reliable orchard journal published the above from a correspondent, and did not dissent from it in its columns.

13. Why will some scientific men advocate *not* to cut back (severely) transplanted trees, whether large or small, when they know that it is almost impossible to take up all of the roots, thereby making the tree unbalanced?

What injury could come to the tree, if it were severely cut back. I've seen no injury done to any tree that I've severely cut back, instead it helped to produce more and larger branches.

14. After a tree is pruned, when will the cut parts of the tree cease the decaying process, not applying white lead, etc.

Macon Co., Ga.

F. H. CARDOZO.

1. Salt is of no value as a fertilizer applied anywhere. Some wheat growers use it with the idea that it strengthens the straw and thus helps to prevent lodging, but we have seen no such results as would justify us in endorsing this. It may have some slight value when applied in a light dressing on dry, sandy soil in helping to attract and hold moisture, but we do not think the result would be sufficient to justify the expense.

2. None of these remedies are effectual in preventing damage by borers. They may perhaps lessen the damage somewhat, but the only way to deal with the borer is to dig him out and kill him. Washing the trunk of the tree with sulphur wash or with tobacco solution or with lye may help to repel the beetles from laying their eggs on it.

3. The standard formula for making Bordeaux mixture gives a solution which can safely be used on all trees and plants except peach trees, which are very susceptible to burning. For the peach an extra pound of lime should be used to further neutralize the copper sulphate.

4. Apply the fertilizer in the late winter or early spring months before growth starts, making the application mainly on each side of the row and then work it into the ground with a cultivator. From 500 to 1,000 lbs. to the acre is applied by good growers.

5. There is a white grub which is very destructive to strawberry plants. When a field is infested with this pest there is no remedy but to plow up the crop. An application of muriate of potash may do something towards checking the trouble.

6. There is no reason whatever why a strawberry grower should not raise all his own plants from the runners made. Of course, if he finds a variety running out, which all varieties will do more or less when grown continually on the same land, he should buy new stock of another variety and then proceed to raise his own plants from these.

7. In an orchard that has been planted several years the roots of the trees will have extended so far out from the trunk as practically to have occupied the whole of the land more or less. In such a case broadcast applications ought always to be made. In a newly planted orchard, or one only two or three years set out, an individual application of 5 to 10 lbs. to each tree may be made. This should be spread over an area of 4 or 5 feet all round the tree and be worked in.

8. Practically all swamp lands are acid after the water is drained off and need lime to sweeten or make them alkaline slightly before they will produce profitably.

9. The peas are better for the land as a fertilizer and maker of humus when allowed to mature their growth and pods. Turning down a mass of green watery vegetation in the hot soil will almost certainly result in souring the land.

10. The usual way to propagate grape vines is to cut the canes into lengths having two or three eyes in the fall, and then to tie these cut lengths into bundles and store them away in a cellar until spring and then set out in rows, burying the whole length of the cane except one eye. They root readily in suitable soil. Some adopt the layering system, but it is not so convenient as the ordinary method. In the case of a shy growing variety it may be necessary to adopt layering.

11. It is not correct to say that one side of the tree is softer than the other. What happens sometimes is that the side of the tree towards the south will become scalded by the action of the hot sun. When this happens the bark parts from the trunk and this is a source of great injury to the growth. This can be prevented by heading the tree low and thus making the branches shade the trunk.

12. These are all old wives fables and have not any foundation either theoretically or in fact.

13. We cannot say why some men adopt this idea any more than we can approve Mr. Stringfellow's practice of cutting off all the roots except one and thrusting that down into a hole made with a bar. We know from experience that the best growth is secured when top and bottom are brought into harmony by judicious pruning before planting, and then the tree planted in a well broken hole large enough to spread out the roots and get the soil well amongst them.

14. If a tree is pruned at a proper season and is healthy no decaying will take place even without the

use of paint, unless the branch removed is a very large one, and so cut as to allow water to stand in it. It is advisable to use some paint or other preservative when large branches are removed.—ED.

#### Rooster with Hens for Laying.

Will you kindly tell me in your columns if it is a fact that hens kept for laying purposes only, whose eggs are for the market, do not require a cock or cocks to run with them. I ask this question because I have seen this statement made in a pamphlet published by one of the Government Department of Australia.

Bangkok, Siam, Asia.

COCK O' THE WALK.

Where the eggs are only wanted for market there is no necessity whatever to keep a male bird with them. They will lay quite as well, and some think better, without the male, and there is some ground for believing that the eggs will keep longer and remain in better condition without there being a germ present in the eggs.—ED.

(Note that this enquiry comes to us from the far off kingdom of Siam, in the neighborhood of the Philippine Islands. This shows the wide circulation of the *Planter*.—ED.)

#### Red Clover.

Please answer through your columns how to best treat a stand of red clover sown last fall with winter gray oats, after the oats are harvested, if stable manure is not available. I have a good stand on five acres and wish to make it get there. Oats and clover followed cantaloupes. Soil treated with 100 lbs. sulphate of potash and 400 lbs. 14-per cent. acid phosphate to the acre broadcast previous to planting the cantaloupes.

Greenville Co., Va.

F. M. HUMMON.

We would apply a top dressing of 75 to 100 lbs. to the acre of nitrate of soda.—ED.

#### Crimson Clover.

When is the right time to sow Crimson clover? Will it do to sow in corn field when laying by corn, say, June or July, and how is the best way to put seed in ground, or will it do to plow them in with the plows generally used to lay by corn with?

Pittsylvania Co., Va.

F. L. W. GRAVES.

Crimson clover may be sown at any time from July to October. It may be sown in corn at the last working. The seed should not be buried too deeply, and is best covered with a cultivator.—ED.

#### Water in Cellar.

Have a cellar built in city in a low place; wall is eighteen inches thick, laid with cement (such as piers, etc., are laid with in water); cement floor in same (wall runs down eighteen inches below floor); water rose in it this winter for first time (about three feet deep); water comes in where cement floor joins the wall (don't think anywhere else). Some one has sug-

gested to lay a double brick floor or pavement in a soft solution of cement, then coat side walls with same about three feet. Don't mind expense as do the water. N.

Oulpeper Co., Va.

No water should come through a cement floor nor through a wall laid in cement. If it does, the work has not been properly done. We would lay another coating of cement over the floor and plaster the wall with cement two or three feet above the floor level, being careful to make a perfect job without cracks at the point of junction with the floor and side walls. A cistern lined with cement will hold water, and what keeps it in should keep it out.—ED.

#### Bermuda Grass.

Will you please tell me in the next number of the *Planter* how many pounds of Bermuda grass roots it will take to set an acre, and where I can get them?

Iredell Co., N. C.

O. E. SHOOK.

A two-bushel bag full of the roots would suffice. When received they should be run through the feed cutter and a few of the cuttings be dropped every foot or eighteen inches in every other furrow when the land is plowed. This can be done at any time during the summer or fall months, and the grass will commence to grow at once. These roots can usually be obtained for the asking in any of the Eastern counties of your State, but if not convenient to procure them there, they can be had from T. W. Wood & Sons, seedsmen, of this city.—ED.

#### Honeysuckle.

Please tell me in your magazine how to get rid of white honeysuckle. I have tried grubbing, pasturing, burning brush on it, and everything only seems to make it grow better. It stops up ditches, growing on the inside of banks where I can't get at it to dig it up. It spreads by seeds and roots, and is altogether the greatest pest we have. I have tried putting a fence around a small lot and keeping hogs in it until it seemed to be entirely dead; then took them off, and in a short while it would be as green as ever.

Alamance Co., N. C.

R. W. SCOTT.

We know of no way to get rid of this shrub except by grubbing it out. It is most persistent in growth, and will withstand the hardest treatment when once fully established in land.—ED.

#### Fertilizer for Peas.

Please publish in your next issue (June), what is the best cheap fertilizer for peas.

Prince Edward Co., Va.

A SUBSCRIBER.

Apply 250 or 300 lbs. of acid phosphate to the acre. The addition of 50 lbs. of muriate of potash may be advisable on some land, but in your section we think it probable that this is not needed.—ED.

## Trucking, Garden and Orchard.

### WORK FOR THE MONTH.

This is a busy month in the garden and truck fields. The early and fall planted crops are becoming rapidly ready for use or market, and every day brings a harvest of one crop or another. Cabbages are to cut and ship or market. English peas want gathering and marketing. Early Irish potatoes are to dig, and the first pickings of snaps, squashes and cucumbers require attention. Along with this work is the picking and marketing or preserving of strawberries, dewberries, blackberries and raspberries. See that baskets and crates are ready, and take care to have them clean and neat in appearance. Cull the products carefully and send to market put up neatly and attractively. Do not mix second and third grade fruit or vegetables with the best or first quality. If you have more of these poorer grades than you can use at home, ship them in packages by themselves and mark them distinctly "seconds." If mixed with the best the whole consignment will sell at only second rate prices.

The planting of successional crops of beans, peas, corn, melons, cantaloupes, cucumbers, squashes, peppers and egg plants must have attention as opportunity offers, whilst the first planted crops will require constant cultivation to keep them growing and weeds under control. Where crops are not making the progress desired a dressing of nitrate of soda will help them. A vigorous, rapid growth of all vegetables should be encouraged in every way possible as it is only the quick grown products which attain to perfection in quality. This vigorous growth also helps them largely to overcome attacks of insects and worms.

Land cleared of early and fall planted crops should be at once broken and fertilized and be planted with other crops to come in later. Never let the land lie idle and producing only weeds. It is wasting fertility and making work. If not needed for other vegetable crops, sow with cow peas or some fodder crop and make some feed for the stock.

In setting out successional crops of tomatoes plant a hill of corn every few yards. This will largely save the tomatoes from the attacks of worms, which prefer corn to tomatoes. The corn when infested with the worms should be cut and fed to stock. A row of mustard sown here and there amongst cabbages will largely protect them from terrapin bugs. The bugs will settle on the mustard and this should then be sprinkled with kerosene and burnt. Look out for potato bugs on the Irish potatoes and egg plants and dose them with Paris green, Bug Death or Slug Shot.

Celery seed should be sown this month. In this issue will be found an article dealing with this crop, to which we refer our readers.

Cucumbers for pickles should be sown. Prepare the land well and fertilize liberally with a complete fertilizer having about 5 per cent. nitrogen, 7 per cent. phosphoric acid, and 8 per cent. potash. Plant in rows four feet apart and four feet apart in the rows. This is a crop for which there is a large demand by pickle manufacturers all the year round. If not located near enough to a pickle factory for delivery direct from the field they can be preserved in brine until the whole crop is harvested and then be shipped in casks.

The renovation of old strawberry beds is dealt with in an article in this issue.

Onions should be pulled as they become mature. Leave them in rows on the ground to dry out for a few hours, and then house them in a cool, dry shed or room, and prepare at once for market by cutting the tops and trimming off the roots. The early grown onions of the South will not do to store for winter use. They should be got onto the market before the northern grown ones are ready for shipping, and they usually sell well if so handled, as the market is then bare of stock.

Sow salsify seed for a winter crop. This will make better roots than seed sown earlier. It will grow slowly during the hot weather, but in the fall will push on and make a fine crop.

### SAN JOSE SCALE.

*Editor Southern Planter:*

Can you not publish something on the summer treatment of the San Jose Scale? We have various ways for destroying it in winter, but when it is doing most harm, there seems to be no way of stopping it.  
*Albemarle Co., Va.* J. MASSIE SMITH.

From a careful examination of the reports made by many of the most eminent horticultural and entomological authorities, it seems to be the consensus of opinion that but little can be done in summer to check this disease. The remedies most potent in destroying the scale are usually equally potent in destroying foliage, and thus permanently injure if they do not kill the tree, unless used with great care and discretion. Prof. Alwood, the State Entomologist, says in his last report on the subject: "Unless there are very special reasons, all spray washes for this scale insect should

be applied during the dormant season. Summer washing is only resorted to in very serious cases, where plants are likely to be destroyed by delay, or where the pest is likely to spread into uninfested plantations if it is allowed to multiply unchecked. The later in winter the treatment is deferred just so it is made before the buds push, the more effective it appears to be in destroying the scale insects. \* \* \* *Summer washes*—In the light of our experiments, we recommend—1st. For apple and pear and all hardy shrubs, the application of a very light spray of pure kerosene 130° to 150° flash test. The plant should be sprayed only in bright weather, and a calm day is necessary in order to do good work. Spray the plants rapidly over the top and outer twigs flushing downward, and only moisten the same in every part without using oil enough to flow on the limbs or trunk. Do not repeat during growing season. Not recommended for peach trees. 2nd. Apply a like grade of kerosene with kerosene water pump, using 20 to 25 per cent. of oil. This must also be sprayed with caution as to weather and quantity, but is thought by some to be less dangerous to tender plants. We have used this strength without any harm except in case of peach. In some instances peach trees have been harmed. Caution is always necessary in treating the stone fruits. We do not recommend that this wash be applied in summer on peach. A good summer wash for treating this insect in peach is unknown to us."

#### CANNERS AND SEEDSMEN SHOULD ENCOURAGE THE FARMER.

*Editor Southern Planter:*

Packers of canned goods and seedsmen are well aware of the fact that the area in which are to be found the natural conditions of soil and climate conducive to the production of vegetables and fruits of fine quality is somewhat limited, and in most cases where seed crops have been grown on the same soil for a few years, there is a noticeable decrease in the quantity of good seed, not perfect types, nor as strong in germination as they were at the first, which makes it necessary to place their contracts the following year in fields with new growers not familiar with the details of seed growing. The canners have much the same difficulties after the land has been run for a few years on the same crops producing a weakened soil, both physically and chemically.

Tomatoes contain too much water, which means a high content of acid; corn is not as heavy nor sweet as it used to be, and squash grow large enough, but the flesh is thin and of quality deficient. Under these conditions the canning factory cannot compete with goods that are produced in favored localities,

and the factory is either abandoned or moved to a better point. Canners and seedsmen in most cases may avoid these changes by assisting the farmer to restore the natural conditions that existed in the soil at the beginning and by a little continued care, and these conditions maintained, the soil would meet the demands of the crop, whether the season be wet or dry (providing the soil has been prepared and fertilized from eight to ten days previous to planting), and paying crops of good quality will be the result. We know that this can be accomplished from personal experience on different soils and over a wide range of climate. It will pay canners and seedsmen to make an effort to induce the growers to try the following:

For corn in the North, use 1,000 lbs. to the acre of a fertilizer containing 2 per cent. nitrogen, 8 per cent. phosphoric acid, and 10 per cent. potash; for the South, increase the quantity to 1,500 lbs.

For squash, use 1,500 lbs. of 4 per cent. nitrogen, 4 per cent. potash, and 6 per cent. phosphoric acid.

For tomatoes in the North, 1,500 lbs. of 4 per cent. nitrogen, 8 per cent. phosphoric acid, 7 per cent. potash; in the South, same amount to the acre of 2 per cent. nitrogen, 8 per cent. phosphoric acid, 8 per cent. potash—all broadcasted and worked well into the surface ten days previous to planting seeds or setting plants. Where ten loads of yard manure and a crop of clover or winter rye has been plowed under, this treatment should bring handsome crops of the very best quality. Yet, without either manure or green crops, splendid results will be gained.

The manure or green crops turned under will furnish organic nitrogen and strengthen the physical condition of the soil; the chemical fertilizer will tend to produce, first, good stems and leaves, then solidity of material, adding to the vigor of the plant, which will be conveyed to the blossoms, then into the seed or fruit, working in perfect harmony, all tending to the one end, helping the plant to resist the effects of the climate, blight and insects, completing the first law of nature, which is self preservation. To do this, should be the aim first with the farmer encouraged by the canner and seed grower, thus the farmer will be rewarded with the increase of crops and the seedsmen and canner by an increase of reputation.

E. J. HOLLISTER.

Onions are not grown in the South to anything like the extent they are in the North and West, but some of our growers are growing them very successfully. The varieties best adapted to the South are the Bermudas, Extra Early White Pearl, and the potato onions, although the standard varieties of other sorts also succeed and do very well.

## FINE STRAWBERRIES.

On the 20th May, Mr. M. T. Thompson, of Rio Vista, near this city, brought us in a few baskets of his two new strawberries—Thompson No. 1 and Mrs. Mark Hanna. The fruit of both varieties was wonderfully large, fine and highly colored and of fine flavor. Thompson No. 1 is decidedly the best early strawberry we have ever tasted, and very prolific. Mrs. Mark Hanna follows in quick succession, and is a grand berry; and with Mark Hanna, which follows in ripening quickly, and both most prolific bearers, makes up a trio of varieties difficult to beat.

## VIRGINIA FRUIT CROP REPORTS.

We have received the following reports from the President and Secretary of the Virginia Horticultural Society. They do not present a very promising outlook, and we regret to say that we have had similar reports from other fruit growers who have seen us. The indications from all parts of the country are that the fruit crop is likely to be a light one. In New York State the prospect is very gloomy—the crop of apples being practically a failure. In that State they have had killing frosts almost daily to the 20th May. The New England reports, whilst not quite so gloomy, are decidedly not cheerful. It is difficult to account for the failure of apples in this State, as the fall was an ideal one for the ripening of the bearing wood which was produced freely in the showery summer. It may be that the summer was too wet and that too much new wood was made, thus sapping the strength of the trees:

The fruit prospects are not good. There is a fair prospect for peaches and summer apples; there will be very few winter apples, in some localities none at all. Cherries, damsons and other fruits, except berries, will be scarce.

SAM'L B. WOODS,  
Albemarle Co., Va. Pres. Va. Hort. Society.

In reply to your letter of 15th asking me to send you a report on fruit prospects in this section, I am sorry to say the outlook is very unpromising. We have suffered from very severe hailstorms, which appear to have visited practically all our orchards. Wherever they have struck, the majority of the fruit has been broken off the trees, and the latter damaged by the hailstones. I do not think there will be one fifth of a full crop of peaches. Only a few scatterings pears; cherries, practically all damaged; strawberries, about one-half crop; plums, one-fourth of a crop, and apples, practically no crop at all. The Winesaps had but very light bloom, and what there was did not set to amount to anything. Johnson's Winter and Fall and Summer apples bloomed full, but the former, and Fall and Cheese, have been attacked by twig blight, and all their apples have failed to set. Summer apples have been very badly damaged by the hail. The

grape vines were much damaged by same, but not having set fruit yet, can hardly say to what extent. Damsons will be a light crop also.

WALTER WHATELY,  
Albemarle Co., Va. Secretary Va. Hort. Society.

## HOW TO MAKE OLD STRAWBERRY BEDS NEW.

Editor Southern Planter:

Though it may involve some repetition of what I have had to say in former years, I will give some advice on this very important point in strawberry culture. It rarely pays to keep a strawberry bed or field in bearing more than two years, but they can, with profit, be kept that long, provided a little work is properly and timely done.

As soon as the berry crop ripens and is gathered, begin operations. While not imperative, it is always good to burn off the bed or field. A good plan is to mow the vines, loosen up the mulch, and on a dry, breezy day set fire to the windward side of the field and let it burn quickly over. This destroys the insect pests that should chance to be present, besides weed and grass seed, scarcely less a pest. This treatment, which burns the plants down to the ground, may seem heroic, but I never knew plants harmed by it. Of course, if there was an enormously heavy mulch not loosened up, the burning might generate enough heat to kill the plants. Judgment must be used in everything.

The field or bed burnt over, side or "bar off" the rows by means of a turning plow, leaving a strip along the rows about eight or ten inches wide. If the plants have been allowed to mat, chop them out, leaving one row on each bed, with the plants about eighteen inches apart in the row. If the stool system has been followed, "bar off" as above directed, and give the stool plants a good working. In small beds, where it is not practicable to run a plow, chop out and cultivate with a hoe alone.

This done, then some time before the grass starts again—say, after a good rain has fallen—sow on each side of the plants in the furrows made in "barring off," 500 to 1,000 lbs. cotton-seed meal or good commercial fertilizer an acre, split the middles, throwing the earth back to the plants, and draw it up neatly, but not too high, around them with hoes.

After that, give the plants just enough shallow cultivation with a plow and hoe to keep clear of weeds and grass. If the stool or hill system is to be followed, clip all runners as fast as they come. If the matted system is preferred, be sure not to let too many runners come and take root to form young plants. Plants, when too thick, are simply weeds.

By the above mode, as good, or nearly as good, results can be obtained the second year as the first.

Early in the spring that the second crop is expected, have young plants set elsewhere to come in the following season.

As the strawberries ripen early, the old bed, after bearing two crops, can be plowed up and planted to vegetables, corn, or, above all things, cow peas. Cow peas put the soil in the most excellent tilth for strawberries again the following season.

Küttrel, N. C.

O. W. BLACKNALL.

### HORTICULTURAL POSSIBILITIES.

Professor Raue, of the New Hampshire Agricultural College, read a paper on this subject before the Massachusetts Horticultural Societies, from which we take the following extracts:

I know of one man in New Hampshire who netted \$285 on currants from one acre four years after the plants were set. An acre of currant bushes, set 4 by 5 feet, takes 2,178 plants.

Another man has raised 7,000 quarts of strawberries on a single acre. You and I ought to raise one half that amount—3,500 quarts—which, at 10 cents, equals \$350.

Muskmelons in hills 5 by 6 feet make 1,452 hills to the acre, and the small Netted Gem kinds will average 10 or more to the hill under good culture, or 14,520 melons, which, at 4 cents apiece, would bring \$580.

Sweet corn, planted 3 feet by 9 inches, allows 19,360 stalks to the acre, or 1,613 dozen, and if sold at 8 cents per dozen, gives \$129 per acre.

Six hundred bushels of onions per acre is not an excessive yield, and the average price for them is generally good. I know of one man whose success with onions has been the means of awakening the interest of others, and resulting indirectly in the whole community becoming prosperous. Another New England man of my acquaintance has averaged more upon a very small area of land, the main crop of which is onions, than any general farmer about him whose invested capital is from 10 to 50 times as great.

Celery is a crop of simple culture, and if well grown it usually pays well. An acre of celery, set in rows of three feet apart and six inches in the row, will contain 20,040 plants, or 2,420 dozen, which, should they bring only 25 cents a dozen, would give \$605 returns. Celery is also a second crop, an early crop of something else being taken first.

A New Hampshire man, not a farmer, tells me that he raised in his small garden, on a city lot, the past year, \$100 worth of celery on a 60 x 60 foot area, or at the rate of \$1,400 an acre. The same season he raised two outdoor crops of heading lettuce on a bed 6 x 60 feet, the sale of which brought \$15, or at the rate of \$1,815 an acre. While this seems large, it only means a price of about 2 cents a head and a square foot of space to grow it in. His market was simply the retail groceries of Laconia, N. H., which did not pay fancy prices.

Cabbages pay better than most people realize, and what farmer cannot raise them? Set 2 by 3 feet, an acre requires 7,260 plants. The price per head or pound varies greatly, but any one can easily estimate his possibilities with this crop.

Tomatoes are as commonly used as almost any crop grown. Although the tomato is one of the rankest of plants and an assured producer, it is ever in demand. Even with an increased demand for the canned product, which largely is shipped into New England, our local markets continue firm.

Horticulture on the farm has its place, and should not be neglected. It pays for family use if in no other way. Horticulture on the farm pays, for it keeps the boy there. Horticulture on the farm pays, for it makes the pocket money. Horticulture is education in plant life. For example, grafting, pruning, budding, propagation, rotations, varieties, soils, fertilizers, cultivation, etc.; these, and many more, can be studied.

### BULBS IN NORTH CAROLINA.

In the raising of flower bulbs—tulips, hyacinths, daffodils, etc.—for the American market, North Carolina seems likely to outstrip Holland, says a correspondent of the *Outlook*. Two years ago Peter Henderson & Co., of New York, sent to Professor W. F. Massey, Horticulturist of the State College at Raleigh, N. C., 1,000 flowering bulbs, saying that if he would return 2,000 bulbs, none of which should be small enough to go through a wire screen of two inch mesh, they would be satisfied with the increase. At the end of a year Professor Massey sent back 2,000 bulbs, none of which would go through a screen of three-inch mesh, and after making this shipment had 3,000 smaller bulbs left for his own use. North Carolina sent to Eastern markets last year 2,500,000 crates and packages of fruit and vegetables, including 9,500 tons of strawberries.—*Country Gentleman*.

### LETTUCE GROWING.

In forcing lettuce under grass at the Geneva Station it was found that the best crops were grown where the soil was fertilized with stable manure, though only small quantities were needed. More than 10 per cent. was usually valueless, if not really harmful to the crops. Clay loam proved a better medium for growth than sandy loam, especially when much manure was used.

Chemical fertilizer alone did not force the crops rapidly enough for profit, but supplemented the stable manure admirably. Of the nitrogenous commercial fertilizers, dried blood gave somewhat better results than nitrate of soda or sulphate of ammonia.

Irish Potatoes have long been recognized as one of the staple and most profitable crops for the South. Potatoes can practically be planted in this section the greater part of the year. Experiments in recent years have proven that cold storage potatoes, planted in June and July, yield most satisfactory and profitable late crops. The late fall and winter planting of early potatoes in November and December has also proved particularly profitable and desirable, as potatoes planted at this time come in earlier and yield better than spring-planted potatoes.

### THE CELERY CROP.

The demand for celery during the fall, winter and spring months is now so large in the Southern markets, and is constantly growing, that efforts are being made to at least raise a part of the supply needed in the South itself, and to a considerable extent this effort is succeeding. Whilst we can never hope to compete in Northern markets with the Northern-grown celery there is no reason whatever why we should in the South be so dependent upon the Northern grown product as we have been. Celery is produced in the highest perfection in a cool, moist climate, and for us to succeed in the South we must adapt the time of seeding and planting so as to avail ourselves of that season of our climate which most nearly approaches these conditions. Instead of sowing seed in April and May under glass and setting out plants in May and June, as in the North, we must raise plants in June and July and set them out in August and September. Our cool, moist fall weather is just the climate which suits the celery plant, and the ground being so warm, if proper conditions of fertility are secured, the plants will have ample time within which to mature and blanch before our winter season sets in. Here our winters are usually so mild that there is no necessity to lift and store the crop in cellars, as is necessary at the North. The product can go direct from the field to the market. The most that will be required will be a mulching of straw over the rows just before hard frosty nights and days are expected. The best land on which to grow celery will be that on which an early crop of Irish potatoes has been raised and which has been highly fertilized for that crop. Even then another heavy dressing of farm-yard manure and fertilizer will be needed to make the crop a success. Celery is a gross feeder, and land can never be made too rich for its growth. We have grown it in trenches filled a foot deep with rich farm yard manure, and this only just covered with two or three inches of good soil, and on this preparation have grown stalks three feet long and of the finest quality. The two requisites for success are abundant fertility and moisture. If it can be irrigated so much the better. The plants should be raised by sowing the seed on a bed of moist soil prepared very finely and made rich with farm-yard manure. This bed should be got ready in June, and towards the end of the month the seed should be sown either broadcast or in drills three or four inches apart. Scatter the seed thinly, cover lightly, firm the soil around the seed by treading or rolling, then sprinkle and cover the bed with bagging or old sacks. These will conserve the moisture and induce germination. As soon as the seeds germinate the bagging should be raised on sticks to gradually inure the plants

to the light and to shelter from the rays of the sun— shading the beds until the plants are large enough to transplant, and after transplanting will be found very helpful. When the plants are big enough to handle they should be transplanted into a rich bed, set about two or three inches apart each way, and be allowed to grow on slowly until time to set them out in the rows or beds. In finally setting out the plants they may be either planted in beds or rows. We prefer to plant in a bed of three rows with six feet between each bed to obtain soil from which to earth the plants and blanch them. Set the rows nine inches apart and six inches apart between the plants, letting the plants in the middle row come between those on the outside rows. This is for convenience in earthing. The plants should be lifted carefully from the seed or plant bed so as to secure good roots, and if tall or straggling the tops should be chopped shorter with a pair of scissors, but still leaving part of the leaves. Plant firmly in the rows. Keep the rows frequently cultivated and free from weeds, and encourage the growth by irrigating or watering the plants. Do not cultivate or handle the plants when wet with dew or rain or they will rust. As the plants grow the outer leaves will have a tendency to spread out upon the ground. This must be prevented by holding the plant together with one hand and drawing just sufficient soil up around it with the other to keep the leaves upright. Do not earth up the plants to blanch them until the end of November. In earthing up the plants hold each plant compactly together whilst the soil is being banked up around it. It is important that the earth should be kept out of the hearts of the plant. Bank the soil from between the beds around the plants so that it will remain firm in position, and cover the plants so as to leave only the tops of the leaves above ground. A couple of weeks covering will blanch the stalks ready for use. The so-called self blanching varieties are not desirable for growth in this climate. The Large White Solid is one of the best varieties to grow. As a fertilizer use all the farm-yard manure you can apply to land, and if this be not to be had in abundance use a fertilizer having about 7 per cent. of ammonia, 5 per cent. of phosphoric acid, and 8 per cent. potash, made up of 300 lbs. nitrate of soda, 800 lbs. fish scrap, 600 lbs. acid phosphate, and 300 lbs. muriate of potash, to make a ton. From 500 to 600 lbs. to the acre of this may be applied.

Celery is always in demand at high prices. A great many farmers and gardeners have land well adapted to celery. On soils which retain moisture, or where there are facilities for watering, this crop should pay well.

## Live Stock and Dairy.

### PURE BRED STOCK IN THE SOUTH.

The change which has come over the system of farming in the South within the past twenty years is a great one. At that time, and even up to ten years ago, so few planters or farmers kept any live stock other than the mules and horses necessary to work the plantation or farm and the hogs necessary to find meat for the hands, that it was practically then of no use for breeders of pure bred live stock to advertise their animals in the southern agricultural press. There was no sale whatever for the animals beyond, it might be, a few Jersey cows to supply milk and butter for family use. Of southern breeders of pure bred stock there were practically none. Here and there, scattered over the wide extent of the Southern States, might be found a man who loved to see and have around him pure bred animals, but these breeders indulged themselves in a luxury which resulted in no profit for the pocket. Nearly twenty years ago, we took charge of the editorial columns of this journal, and at once set afoot a crusade in the interest of pure bred live stock of all kinds. At that time, we did not carry in our advertising columns more than an occasional advertisement from a breeder of Jerseys and Berkshire hogs, and when we asked for a renewal of the order we were almost invariably met with the reply that it did not pay to advertise pure bred stock in the South. Gentlemen whose advertisements appear now in every issue of *The Planter*, and who renew their orders without solicitation by the year, would then at most give us only an inch advertisement for one or two insertions in the course of the year. The result of our advocacy of the value of pure bred live stock as a factor in the farm economy of the South, and of our constantly keeping this subject before our readers, is to be seen in every section, and especially is it to be seen in the character of the stock of all kinds which reaches our markets. Farmers now realize that at the least it is essential for them to keep pure bred male animals in order that they may grade up their stock and keep pace with the requirements of the markets, and many of them have gone into the business of breeding animals of all kinds of pure blood, satisfied that whether for sale or home use there is more profit to be realized from these than from "scrubs" of any kind. Our columns now carry pages of live stock advertising the year round, and rarely a day passes but that we receive letters from breeders giving information as to good sales made. This is a wonderful change to have come about in a few years, and is one which means dollars to southern farmers and the permanent enhancement of the value

of their farms by the improvement in the fertility of the land, which the keeping of the stock naturally brings about. And yet, in the face of all this, we have complaints from one or two advertisers of stock that they cannot obtain for their animals the high prices which are common out West, and hence are disappointed. To these men we would say, have patience. We have largely created a demand for good stock where none existed a few years ago. In a few years more the realisation of the benefit to be derived from keeping pure-bred stock will be so apparent to every farmer that the demand will ensure prices more closely approaching those now common in the West. A few years ago, western and northern breeders found it impossible to obtain the prices they now readily receive, and if asked would have doubted very much whether it was likely ever to see such prices, and yet the change has come. It will come in the South, which, in our opinion, is destined to be one of the great stock producing and feeding centres of the country. The natural advantages which we possess in the way of climate and feed, and our nearness to the great centres of population will ensure this, and when this comes the day of the breeders will come also. Meanwhile, we know they can sell at prices which are profitable—when the cost of production only is taken into account. The addition to this price, which reputation and enterprise in seeking for the best wherever they are to be found demands and is entitled to, will come in due course.

### THE MEAT TRUST.

Whilst we have no sympathy whatever with the methods pursued by the so called Beef Trust in the pursuit of a monopolistic control of the markets for meat, as disclosed in the *New York Herald*, and made the basis of the case against the Trust in the proceedings instituted by the government, and which methods the Trust itself admits to be correctly charged by allowing judgment to go by default, we yet think that both the city press and the inhabitants of the large cities are in the wrong in charging that the so called Beef Trust is wholly responsible for the rise in the price of meats of all kind, and that the prices now asked in the city markets are unreasonably high, and the result of collusion between the Beef Trust and the farmers and dealers in stock. An examination of the statistics goes to show that the prime cause of the advance is the high price of feed brought about by the failure of the corn and fodder crop last year by reason of the drouth and by the scarcity of stock, brought

about by the long-continued demand of a well employed laboring class at high wages. We take the following from the *Breeders' Gazette* as confirmation of this position:

"The inexorable law of supply and demand still holds supreme sway. On Wednesday last, May 14th, prices in Chicago for beef on the hoof reached \$7.60 per cwt., paid for a load of Shorthorns averaging 1,451 pounds and a load of Angus some twenty five pounds lighter. Steers averaging only 1,040 pounds sold up to \$6.55, and Angus yearlings, 1,138 pounds only, landed at \$7.55, the highest price ever paid for cattle so young and so light in the ordinary run of the trade and barring show stock. Touching the condition of the market on the day named, the *Chicago Drovers' Journal* says:

"This was decidedly the highest day of the year. The very small supply of cattle last week and the moderate offerings this week thus far have caused a deficiency which buyers are beginning to feel, and today's demand showed that more cattle could be used than are available."

The supply for the three days from May 12th to May 14th, was 6,682 head less than for the same period last year, and the total for the week before was over 25,000 head smaller than for the same week of 1901. In other words, the total supply of cattle received in Chicago between May 5th and 14th, both days inclusive, of this year, amounted to a few over 64,000 head, whereas during the same period of 1901 the total supply reached 95,000 head in round numbers. The very tip-top of the market for the weeks reported in this journal on May 13th and 20th, 1901, was \$5.90. Prices are now \$1.70 per cwt. higher than they were last year on the best and proportionately higher so on the bulk. How does it come about that this decided rise has taken place if there is no competition among the men who control more than one-half of the fresh meat trade of the world?

The decrease in the supply is the reason for the advance. For the present May to the 14th receipts of cattle in Chicago exhibit a decrease of 37,723 head compared with the figures for the same fourteen days of 1901. There is the story in a nutshell. Cattle are higher in the main range than they have been since 1882—twenty years. No one seems to know where farther supplies of dry-fed cattle are coming from. The prices have been bid up but the shippers have not been "allured." Butcher stock—cows, heifers, fat bulls and the like—are at the high notch of two decades. Still fed cattle are higher than they have ever been. Texas cattle are selling to \$6.50, as against prices almost \$2 per cwt. less paid at this date of last season. Hay fed cattle, fattened without grain in the western range country, sold last Wednesday up to \$6.75, far and away the largest price ever paid for such stock. Would the slaughterers pay record prices for steers, cows, heifers, still-fed, hay fed and Texas range stuff if the supply was not so short as to force them to bid such figures as were never paid nor ever heard of before?

But granted whatever may be cause that the prices charged are high, possibly even somewhat higher than the cost of production justifies, is it not right that the farmer and feeder should have a share in the prosper-

ity which the people in the great centres of commerce have now so long enjoyed? For how many years has the farmer had to be content with the barest margin of profit over cost of production, yea, even for years, with no profit beyond that which he could realize from the improvement made by the stock in the fertility of the farm. Surely the city people are not so unreasonable as to want to keep all the prosperity for themselves. Farmers are so large an element in the material prosperity of the country that it is well for every one that they should at least now and again have their fair share of the prosperity that is going on, and on their behalf we claim it even though the people in the cities should have to pay a cent or two more per pound for their meat or economise by wasting less.

#### THE ANGORA GOAT A BENEFACITOR.

At the request of Secretary F. D. Coburn, of the Kansas Board of Agriculture, Mr. R. C. Johnston, of Lawrence, read an interesting paper before the late annual meeting of the Board, on the subject of Angora goats. Mr. Johnston is well qualified to intelligently write of these animals, as he has been breeding and handling Angoras quite extensively for some years. He has sublime faith in their ability to adapt themselves to varied conditions, and to do much toward transforming otherwise waste places into profitable areas. He says in part:

"The Angora grows the same size as sheep, but does not mature so rapidly. A six months old lamb will weigh more than a kid of the same age with equal care; therefore, the goat is not as good to raise for the early market; but this is more than offset by the fact that it carries its lamb or soft joint longer than a lamb does, and its life is so much longer than that of a sheep. It is a prolific breeder and a productive shearer until twelve and fourteen years old. It lives and thrives in any climate or country where sheep live and prosper, no matter how hot or cold. It readily adapts itself to the surrounding conditions, from the rich valley to rugged mountain wastes. All the shelter it needs in this climate is an open shed, facing the south, which it can go under to protect itself from the cold rains and snow of our winters. The rain or snow freezes on its long, silky hair, and forms a mass of ice, which chills the goat. Keep it dry, especially after shearing, and it will stand any amount of cold weather. They feed and do well during the winter on corn fodder, straw and coarse hay, with a little grain during March and the first of April, to strengthen them for the kidding season of May. A goat abhors filth and dirt. While they eat every kind of food, it must be sweet and clean, with fresh, pure water to drink. They will only drink dirty, stagnant water when compelled to by extreme thirst.

"It is not best to have your does kid too early in the spring, as the kids are liable to chill and die during cold, wet weather, and the does do not milk

so well, and are more liable to disown their kids. Better wait until May, warm weather and plenty of grass. They require the same care and attention during the kidding season as sheep during the lambing season. The high grades and pure breeds are more prolific than sheep, raising 90 to 110 per cent. increase. They are very hardy, having lots of sense, are good rustlers, and will not starve if there is anything in the neighborhood to eat. They seem just as happy gnawing the bark off a dogwood sapling as barking your choicest apple tree. They feed in flocks, and do not scatter over the pasture like sheep. When alarmed, they will bunch together to defend themselves. They are browsers, not grazers, and prefer weeds and brush to grass. They eat the leaves off every tree and brush that grows in Kansas, and, not content with the leaves, they want the bark also. They eat every weed that I know of, except mullen and burdock. They seem 'tickled to death' when they strike a patch of jimsonweed, and are perfectly happy in a bunch of smartweed. They watch and patiently wait for the thistle to put forth its bloom, so that they can enjoy that rare morsel. Buckbrush, which is destroying so many of our fine pastures, is their delight; in fact, goats are ideal brush exterminators; they do it at a cash profit instead of a costly outlay. One writer speaks of them as 'picking gold off the bushes.'

"They are always sure of a good living, for no matter how dry or wet a season may be, it always produces weeds. They will condescend to eat grass when there are no weeds or brush in sight. After the frost has killed the weeds and leaves, they feed during the winter, as long as it is not covered with snow, on the blue grass which grew undisturbed under their feet during the summer. Horses, cattle and sheep will feed after goats in the same pasture, while goats will feed on that which other animals will not touch. One need not sell any of the stock already owned to make room for the Angora goat; the farm is able to take care of that much more stock, and render that much greater income. They are a vegetable scavenger; hence their value in farm economy, in converting into money the weeds and brush which the farmer every year spends time, labor and money to get rid of, at the season of the year when time is most valuable. This makes the cost of raising the Angora almost nothing.

"They make the richest fertilizer from the foliage and deposit it on the highest and poorest spots of the farm, while horses and cattle fertilize the richest part, where the grass grows.

"Thus, we find the Angora goat reclaiming thousands of acres of waste land in every State in the Union and converting them into tillable fields of productive pastures, at the same time making millions of pounds of wholesome meat to feed and millions of pounds of fine mohair to clothe people. Being a very hardy, self-reliant animal and a browser, one will soon find his hilly and rough districts, which are to-day of no value whatever to any other industry, filled with this useful animal. They are comparatively free from diseases. A sheep fence will hold them.

"They are shorn in the spring, at the same time and in the same manner as sheep, but be careful to keep them out of a cold rain for a week or two after shearing. The fleece of mohair weighs from two and

one half to four pounds on average good goats, while extra fine, pure bred goats will often shear eight to ten pounds, worth from thirty to forty-five cents a pound on the market, according to the grade and care in handling. The skin of a high grade Angora has double the value of a sheep's pelt, because of the furs, rugs and kid leather robes manufactured from them, while the skins of the lower grades sell at about the same price as pelts.

"The Angora does are not as good milkers as the Maltese and Swiss goats, but they give plenty for rearing their young. They are kind and watchful mothers, and will fight for their kids. These goats are profitable animals in the feed lot; give them like conditions and the same grain, and they will take on flesh rapidly, and fatten in one fourth less time than sheep. They respond very quickly to good care. At the final test of all domestic animals—the butcher's block—the Angora is not found wanting. Their flesh in summer, when browsing, has a very delightful flavor, between venison and mutton, which gives the name 'venison' to their meat. In winter, when fattened on grain, it loses that flavor, but acquires a mutton flavor. It has none of that 'wooly' taste of mutton which is so objectionable to many people. Thousands of them are killed in our packing houses and sold as 'well dressed mutton.' Only an expert can tell the difference, as their carcasses appear the same when hanging in the market. They will dress out a larger per cent. of meat than sheep; hence are much more valuable, and their meat is more juicy than mutton and has a finer flavor.'

[We are glad to know that a number of these goats have been introduced into this State recently. One gentleman brought a car load from the West into Southside Virginia. There are thousands of acres there which need clearing up badly, and we look for these animals to do the work with profit to their owners.—ED.]

#### SKIM MILK CALVES.

Within the last decade, Kansas has amply demonstrated her superior natural advantages for dairying, by rising from a position of comparative obscurity to a foremost rank among the States noted for the excellence of their dairy products. In response to the special invitation of Secretary F. D. Coburn, of the State Board of Agriculture, Prof. D. H. Otis, of the Kansas Agricultural College, ably discusses many features pertaining to profitable dairying in Kansas and elsewhere in the recent biennial report of the Board. What he has to say concerning the important problem of rearing calves upon skim milk follows, in part:

When calves six months old are worth from eighteen to twenty dollars per head, and when the profits from a good milk cow are so greatly enhanced by raising the calf on skim milk, it is vastly important that we know how, first, to raise a No. 1 calf, and second (especially to the man with limited capital on high priced land), how to accomplish this result through the me-

dium of skim milk. The following points on feeding skim milk have been gleaned from actual experience from handling calves:

The young calf may either be taken from the cow a few hours after birth, or left until its mother's milk is fit for use. Where the cow's udder is in good shape, it is easier to teach the calf to drink when it is taken away before sucking at all. In nature, the calf gets its milk often, but in small quantities, and always at blood temperature. In this respect, we should imitate nature as far as possible. At first, the calf should not be fed over ten pounds daily (one quart equals about two pounds), divided into three messes: four pounds in the morning, two pounds at noon, and four pounds at night. This quantity may be increased gradually to twelve pounds per day. After two weeks, the milk may be given only twice daily. Calf milk should always be fed warm and sweet. If impossible to have the milk sweet all the time then it should be fed sour every meal. It is possible to raise good calves on sour milk, but it is impossible to raise good calves and have sweet milk one meal and sour the next.

When two or three weeks old, we may begin to feed skim milk. The stomach of a calf is delicate and sensitive, and any change of feed should be made gradually. Do not change from whole milk to skim milk faster than a pound or a pound and one half per day—i. e., if the calf is getting twelve pounds of whole milk per day, the first day of the change feed eleven pounds of whole milk and one pound of skim milk; the second day, ten pounds of whole milk and two pounds of skim milk; and so on until the change is complete.

It has been found by experience that the starch and fat contained in corn or Kaffir corn can be made to take the place of fat removed from the milk. Calves will begin to eat grain when from ten days to two weeks old. At first put a little meal in their mouths after drinking their milk, and in a short time they will go to their feed boxes and eat with a relish. We find that calves four weeks old will eat from one-half to three-fourths of a pound per day; when eight weeks old, from one and one-fourth to one and one-half pounds per day.

Kaffir corn meal has proven to be a superior feed for calves. It seems to be somewhat constipating, and materially assists in checking the common tendency to scours.

Calves will begin to nibble at hay about the same time that they commence to eat grain. When from six to eight weeks old, the calves under experiment at our Agricultural College consumed from one-half to one pound daily per head. Mixed orchard grass and prairie hay are best. Alfalfa hay proves to be too loosening for young calves, though it may be gradu-

ally introduced into the ration after from three to four months. Nothing but clean, bright hay should be used.

The greatest difficulty in raising calves is undoubtedly scours. Here, as elsewhere, "an ounce of prevention is worth a pound of cure." The principal causes are overfeeding, feeding sour milk, feeding cold milk, feeding grain with the milk, dirty milk pails, unwholesome feed boxes, and irregularity of feeding. An intelligent and observing reader will notice the symptoms of this disease as soon as it appears, in which case the ration of milk should be cut down one-half or more, and gradually increased again as the calf is able to stand it. A successful feeder will do his best to keep the milk sweet.

Heating milk seems to produce chemical changes that help to prevent scours. There is probably no more effective way of upsetting the system of the young calf than by feeding it cold milk. So important is it always to feed the milk at blood temperature (95 degrees to 100 degrees F.), that a careful feeder will test the temperature with a thermometer. No one can expect to successfully raise skim milk calves without giving close attention to the temperature of the milk fed.

Calf buckets may be kept clean by rinsing and scalding after each feed. No more grain or hay should be given than the calves will eat up clean. Should any remain uneaten, it should be removed before giving any fresh feed. Calves like salt the same as any other animals.

To summarize: Warm, sweet milk, given in clean buckets, with access to corn meal or Kaffir corn meal, bright hay, fresh, clean water, salt, plenty of sunlight, shelter and bedding in cold weather, shade in summer, and regularity and kindness in treatment will usually insure good, thrifty calves that will gain from a pound and one half to two pounds daily.

[A teaspoonful of blood meal fed in the milk has been found to be a most successful remedy for scours in calves.—Ed.]

#### FAILURE TO BREED.

I noticed in the questions and answers of the veterinary column a remedy for failure to breed in cows. One of the components was black haw root, but I have forgotten the other parts, also the proportions.

*Pasadena, Cal.*

J. B.

#### ANSWER.

Give a full dose of physic. When this has taken effect, give a teaspoonful each of the following:

Powdered black haw and golden seal in a little bran morning and night until the next heat, then change bulls and breed her again. If not successful the first time repeat the above.—*Hoard's Dairy.*

### VALUE OF WHEAT FED TO HOGS.

Mr. Brennan, speaking at institute meetings in the Territories, gave the following personal experience in feeding wheat to hogs: In the year 1900 he had in his possession 500 bushels of inferior wheat which, if marketed, would have brought only 45 cents per bushel, or  $500 \times 45 = \$225$ .

He fed practically all of this to hogs, cattle, and poultry, and sold

\$162.00	worth of pork on local market.
110.50	“ pork to Indian Head Farm.
35.00	“ pork—private sales.
125.00	“ beef.
20.00	“ poultry.

\$452.50

There was also something over a bushel of the wheat unfed, which, if marketed at 45 cents, would have brought the proceeds up to \$453.00, or 90.6 cents per bushel.

### FEEDING BABY BEEF.

*Editor Southern Planter:*

I have for two years troubled you with an account of the results of a poor attempt at improved calf feeding, and now, encouraged by your kindness in the past, I venture to try your patience once again.

We have sold only five of our calves of 1901, some of which were calved in December, 1900. Of the five sold two were pure-bred Angus bull calves. My son had promised the first pure bull calves he might have to two of our neighbors, and I indulged the hope of being able to help in introducing good beef stock into this section. For some reason neither of our neighbors came to claim the calves, so my son advertised them for sale in the *Planter*. He had enquiries from ten cattle men, many from other States, asking price, etc. One man from Augusta came to see them, and fixed on the largest of the two, which I did not think the best. He gave \$50 for him and seemed satisfied. Another Valley man wanted the other one at a very *modest* price, and rather than alter him we sold him at \$35. He cannot get him registered, but the animal would have been cheap at \$60. We had three crosses of a Hereford male and grade Angus and Galloway cows. These were altered at a week old and ran with their mothers all winter. They were sold and sent off last week, at which time they were just 15 months old, and weighed 850 pounds each, selling at 6 cents a pound—\$51 a piece. The five sold realized \$238. The two stock males netted \$42.50 each. The three “baby beef” made an average of \$51. We will not trouble to keep male calves after this. Those who want them will think more of any they may buy if they have to go to Chicago for them and pay \$200 for a good long yearling.

We fed over twenty Virginia scrub steers this year. They make a pile of manure when straw is plentiful, but I would rather buy fifty steers in Kansas City and have the pleasure of sending off some 1300 pound beasts.

Nelson Co., Va.

D. MACGREGOR.

### A WET AND STORMY SUNDAY.

Various press dispatches, covering a wide territory and telling of rain and storm and flood, on Sunday, May 18, are thus condensed in a Chicago daily of Monday morning: “Yesterday, the warmest of the season in Chicago, was a day of widespread damage in the West, of many cloudbursts and much crop destruction. What is even worse, in the great food-producing Red River Valley of the North is the excessive flooding which will prevent seeding. The heavy rains in Oklahoma, Kansas and Missouri, while in spots producing cloudbursts and resulting damage, seem to have been vastly beneficial, filling wells and streams and renewing the deep sources of the springs, preparing the earth for the season's growths and producing interior reservoirs, which will preserve the corn through the hot spells of summer. But the tale that came from the Red River Valley last night, even if exaggerated, is dolorous. Three days of continuous rain has converted the greatest of wheat belts in the world into marsh and lake. The low lands along the river, both in North Dakota and Minnesota, for 140 miles northwest of Lake Traverse, in a zone from two to fourteen miles wide, cannot, it is reported, be seeded this season. The most optimistic local opinion despairs of the possibility, and it is calculated the Red River Valley will be short from 15,000,000 to 18,000,000 bushels of wheat. Under the most favorable conditions now it is estimated no seeding can be done until the 25th of the month, so late that the fall frosts will nip the grain before it could ripen.

A press dispatch from Evanston, Wyo., under date of May 19, reads thus: The snow storm which struck this vicinity Saturday night has continued without abatement. It is estimated that ten to fourteen inches of wet snow has fallen, the greater part of which is melted in the valleys. Sheep and lambs are reported to be dying by thousands, and a prominent sheep man estimates the loss in Uintah County alone will reach 200,000 head. The storm at times reached the proportions of a blizzard, and sheep on the ranges have become uncontrollable. At 8 o'clock tonight the storm shows no signs of abatement, and if it continues for another day it is feared that all of the lambs and many of the sheep that have been sheared will be lost.”

GARDEN CORN.—In roasting-ear corns, the varieties which have proved best for market in the South are Truckers' Favorite and the Adams varieties. The growing of roasting-ear corn, to come in late in the season, has proved very profitable to gardeners and truckers.

## The Poultry Yard.

### HOW TO MAKE HENS PAY.

The following article, which we take from the *Country Gentleman*, is so full of valuable information which we can fully endorse from our own experience, that we are glad to have the opportunity of republishing the same. In connection with the raising of broilers in this State, we would say that, if properly carried on, it cannot fail to be profitable. Broilers have, during May, sold for thirty-five cents per pound in this city. This is not the price for single birds but for wholesale lots. We know of one sale being made of nearly \$100 worth at that price:

"It may be that a few things which I have picked up in my very few years' experience with poultry would be of some interest to those who keep poultry. The first thing that should be decided in the fall is how many can be properly cared for; overcrowding should be studiously avoided. It is an invitation to failure and disaster to crowd 50 or 100 hens into a small room where they barely have space to roost.

In arranging a house for hens, a feeding place should be provided; this will give them an opportunity to exercise freely by scratching in the litter, or wallowing in the dust; it should also be built so that it can be easily cleaned out. Cleanliness is essential to success in the poultry business. Vermin and disease always lurk in a foul, ill smelling hen-house. In constructing our hen-house, we should not imagine that we get them too warm. I have never yet seen one that was too warm; if enough air should not enter the poultry house during warm weather, some of the windows can be opened. The walls of the house should be doubled, with building paper between the two thicknesses of plank, or better yet, studding may be used, leaving a dead air space in the walls, making the house cooler in summer and warmer in winter; some people fill this space with sawdust. I believe that this is a good idea and mean to try it next winter.

The roosts should be so arranged that they can be removed when cleaning the house out; it would be well also to have the nests so that they can be frequently taken out and cleaned. A filthy nest is one of the best harbors for lice.

After you have decided how many you can accommodate, sort out your flock, using great care in the selection of the individual birds that make up your bunch of winter layers. Select the most vigorous and best developed pullets, rejecting undersized and undeveloped ones. The flock of winter layers should, as far as possible, be made up of early hatched pullets. Next after these I would select yearlings; all over this age I would dispose of, as an old hen, except in rare cases, will not pay for her feed through the winter.

The pullets, if of the Mediterranean stock, should be hatched in April, or early May to make good good winter layers; if a heavier breed is used, they may be hatched in March. These, if properly cared for, will begin to lay in the fall when the prices of eggs is advancing. It should be the aim of every farmer to have his hens in good shape for laying when the prices paid for eggs are highest.

The moulting process usually occupies about three months, and this period will be prolonged into the winter, if the hens are not properly cared for. A hen that does not shed her feathers until November or December will not pay for her feed through the winter. In order to encourage early moulting the hens should be fed rather heavily of feather producing food; meat-meal and a little sulphur twice a week will be beneficial. Sunflower seed is an excellent feed for moulting hens. Corn should be fed rather sparingly through the warmer months, although a small quantity each day will do no harm, and in the fall it will be of great benefit. A bran mash is greatly enjoyed by the hens at any time of year. All table scraps should go to the hens, while a great many other things that would be otherwise wasted, such as offal at butchering time, wheat screenings, sorghum tops, and various other by products, if given to the hens are quickly converted into a cash-bringing commodity in the shape of eggs.

One of the greatest mistakes made by farmers is in not giving their hens a sufficient quantity of feed; another is in not providing proper shelter, while there is a limited number who recognize the importance of providing grit for the poultry. Without grit the poultry will have poor digestion, and a flock of hens with poor digestion is usually an unprofitable flock. When a flock is confined for a few days during a cold snap the first few feeds of grain that are given are readily eaten. Then they will eat but very little. Some may imagine that they have been overfed, but this is rarely the case; it is usually because they have not been provided with grit enough to digest their food, and the poultry are starving, while we are comforting ourselves with the belief that they are well fed.

The incubator, if properly handled, is almost indispensable in making poultry raising a profitable business, especially on a large scale. It should be started going in February, in order to obtain the best prices, which are paid for the first spring broilers which go into market. But in order to raise chicks by artificial means at that early season, or at any time for that matter, it is necessary to have a suitable building in which to brood them.

All chicks hatched at this early season may be prepared for market, as it is not necessary to hatch pullets for the next winter's layers thus early. Those early hatches should be made from the eggs of some of the heavy breeds. Either the Plymouth Rock or Wyandotte are excellent for this purpose, as they are rapid growers and soon reach a marketable size. But for layers, the Mediterranean stock should be used. Of these there is none better than the Leghorns. This breed is surely the morgage lifter, and to my mind they are the most profitable breed that can be kept on the farm.

In preparing broilers for market, they should be penned up in some clean, healthful quarters and fattened. The heavier breeds will take on fat rapidly if confined and given plenty of fat-producing food; they will fatten readily on ground corn, corn pone, milk, grit and a little green stuff. The first year that I became interested in poultry-keeping for profit, I

sold about \$47 worth of eggs from fifty Leghorn hens. Our sales of chickens and eggs for the second year were \$65. Our egg account did not come up to the average of the year before, which was the result of changing from Leghorns to Plymouth Rocks. The next year our sales amounted to \$111. I became dissatisfied over the egg record of the Plymouth Rocks, so I added a few Leghorn pullets to the flock, and the record for the following year was \$136 for chickens and eggs. I was so well pleased with the Leghorns as layers that I abandoned the Plymouth Rocks, except for broilers. Last year I had about sixty laying hens, mostly Leghorns, and they made a record of \$73.62 for eggs, from the first of December till the first of July, an average of over \$1.20 per hen in eight months.

EDWARD E. HIGGINS.

Jackson County, W. Va.

### CARE OF YOUNG TURKEYS.

*Editor Southern Planter :*

To those who propose to raise turkeys I think the following advice, if heeded, will prove of much benefit:

Before setting your turkeys, sprinkle a little sulphur under the nests to avoid or kill any lice that may be on the turkey. After the chicks are hatched, and are ready to put out, select a sunny spot where the coops can be well aired each day. Rising ground is far better than level or low ground, as the rain soon runs off. Each old turkey should have a coop to herself, at least 2 x 3½ feet. Twenty young turkeys are sufficient for one old one to care for. From the first to the fourth week turkeys require a good deal of attention. Twenty four hours after being hatched, they should be given hard boiled egg crumbled fine. For the first week two eggs are enough for a meal for twenty five. During the second week, they may be fed on eggs and on curds. After the second week, if the egg is too costly, they may be fed on corn bread made up with water only, and baked thoroughly, as insufficiently cooked dough gives diarrhoea. This is rather hard to crumble fine enough. The best way is to use a common fork. When they are a month or so old, wheat is a very good food for them. But do not use this entirely, as they still need the bread for some time after.

Great care should be taken when first put out, that the old turkey is free from vermin. If she is not, the little ones will soon succumb to them. A good preventive of this is coal oil and lard equally mixed and rubbed over the body and wings. For the young ones this is also a good remedy, though of course very little has to be put on at a time. The best place, as I have found by experience, is under the feathers on top of the wings. After greasing, they should be put out in the sun, so as to dry as soon as possible. Never grease on a damp, cloudy day, as they are certain to die if the grease stays damp upon their bodies.

Turkeys should have a large range, so as to forage for themselves. Give them fresh water at least twice a day.

Westmoreland Co., Va.

MISS F. F. W.

[We are not in accord with our correspondent on the subject of feeding turkey chicks. Our experience

is that the feeding of hard boiled eggs to chicks of any kind as a sole diet is very apt to produce diarrhoea. We have raised large flocks of turkeys with very little mortality by feeding wheat bread squeezed nearly dry after being soaked in cold water, mixed with hard boiled egg, oat meal, grits and onion tops or lettuce chopped fine. Feed this mixture four or five times per day for the first two or three weeks, and then begin to feed wheat along with it, and gradually drop the mixed food until wheat alone is fed. Curds may be fed with the mixed food if desired. We prefer insect powder to coal oil and lard for getting rid of the lice.—ED.]

### GAPES.

*Editor Southern Planter :*

As I read with interest what is in the *Planter* about poultry, I would like to give my experience in the treatment of a too common ailment, which carries off many chickens, and that is the "gapes." Year before last, when visiting a friend, and his chickens had gapes, I asked several country people for a cure, appealing to their experience. One said one thing and one another, and some said the best thing was to knock them in the head as you would a dog that had mange. Among the remedies advised, one was the insufflation with slaked lime. This I tried that summer on seven chickens, and it cured them all; one chicken only had to have two doses. Last year I had eight cases of my own, and it proved equally successful, and I did not lose a chick. This year, when feeding my chickens at 6:30 A. M., one little B. P. Rock was gaping at a great rate. I dosed him lightly, and told my wife when she let the chickens out at 10 o'clock to dose him again. But when she let them out not a chicken was gaping. The way to administer it is simple. Put your gaping chicken in an old tin bucket and cover top with a single thickness of coarse bagging. Then rub through the bagging about a teaspoonful of slaked lime, making the chick breathe air heavily charged with lime; when you hear his bill strike the sides rapidly, remove the bag and give him some air; repeat this again two or three times at the one administration and that will suffice. The chick will continue to gape, but in a few hours he will be all right. Of course cleanliness is very necessary, as also changing chickens to different roosting place each night. This remedy has been as near a specific as one can find. I have never had a failure with it, nor does it seem to injure the eyes or skin. When I free the chicken I wipe off his bill and blow on its head and body once or twice to carry off the lime, but without this I believe the chicken would sustain no injury. This remedy is so cheap, so easily applied, and so effectual, that I am satisfied to use no other.

Albemarle Co., Va.

E. WOODS, JR.

[We have used the above mentioned remedy, and at times with success, but again with no advantage. The best remedy for gapes, in our experience, is prevention. Keep the chicks on a dry board or a dry earth floor until they are three or four weeks old, and no gapes will trouble them.—ED.]

## The Horse.

### A PRINCE WITHOUT A PEDIGREE.

*Editor Southern Planter :*

Breeding from the best specimens of the best breeds is the only way to improve our domestic animals, and is the only way by which the present excellence can be maintained. It was this painstaking method of selection which produced the improved breeds of live stock, and is the only means by which degeneracy can be prevented. Nevertheless, some people get fanatical on the subject of breeding, and say that "no good thing can come out of Nazareth," and if by accident a superior horse is found, they "move heaven and earth" to trace his genealogy back to some English racer, or Arabian stallion. This is not sensible. Nature has produced "sports" or prodigies among men, animals and vegetables, without great ancestry, in all ages of the world. These were not after the order of Melchizedek, "without father, without mother, without descent," but sprang from ancestry unknown to fame—the ordinary class—"the natives."

Old Blackhawk was foaled in Greenland, near Portland, N. H., in 1833. At the age of four years he was sold as a roadster for \$150. In 1842, he won a match of a thousand dollars trotting five miles over the Cambridge track in sixteen minutes. In the year 1844, Mr. Hill bought and kept him as a stallion at Bridgeport, Vt., until the time of his death in 1856. His skeleton is preserved in the office of the Secretary of the Board of Agriculture at the State house in Boston.

Blackhawk was a little less than fifteen hands high, and weighed when in condition not far from ten hundred pounds. He was a remarkably symmetrical and muscular animal, graced with the most beautiful head, neck and limbs, and when in action, whether in harness or out, of a spirited, nervous and elegant bearing, which could not fail to command universal admiration wherever he appeared. He could easily trot a mile in two minutes and forty seconds, even without much training; and he combined with great speed the perfection of form, the intelligence, courage and endurance sufficient to make him a complete model of a roadster of the highest class. He possessed the power of transmitting his characteristics to his very numerous offspring in a degree unsurpassed by any other horse in the country. In the carriage, or on the saddle, in the quiet of the country road, or in the parade ground, under whatever circumstances the descendants of old Blackhawk appeared, the trained eye of the experienced horseman could hardly fail to detect their relationship to their progenitor.

It has been conclusively shown, and proved beyond

the shadow of a doubt, that he was sired by Sherman Morgan, and "it was said that his dam was a thoroughbred mare raised in New Brunswick—a fast trotter and a superior animal."

The man who raised the colt (Blackhawk) sold him as a son of Sherman Morgan. Mr. Hill, his last owner, investigated his history, procured affidavits, and the evidences of his relationship to Sherman Morgan, which established the truth of his paternity as certainly as human testimony can establish anything. About the time of old Blackhawk's death, the following romance was set afloat: "During the latter part of Sherman Morgan's life there was kept with him as a 'teaser,' another fine stallion called 'Paddy.' There is little doubt (they say) that Paddy stood by his side in 1832. One Sunday night, after dark, with lanterns in hand, the 'boys,' (or the young men who had charge of the stallions), put the mother of Blackhawk to Paddy, the teaser. According to the statement of the 'boys,' the mare went to both horses, but as the colt resembled Paddy more than Sherman, was larger, and had no hair on his fetlocks like Sherman, they concluded that Paddy was the father of the colt."

It is astonishing that such a story should ever have been printed. Boys don't do things like that without a motive. What motive could these boys have had to do this thing secretly in the night? They had no interest in the matter; they would not dare to boast of it to other boys lest they should be discharged by their employers. Not only this, they were rendering themselves liable to prosecution.

In case Paddy was the father of Blackhawk, who was the sire of Paddy? "He was said to have been a beautiful animal, possessing a high strain of English blood, though often mentioned as a Canadian or French horse."

It is remarkably strange that a beautiful horse, "possessing a high strain of English blood," should have been kept year after year as a "teaser," when he could have made money for his owner in begetting colts on his own merits. Paddy had no more pedigree than old Justin Morgan—not even a well authenticated tradition to stand upon; and there is no evidence, so far as I know, that Blackhawk's dam was a half thoroughbred mare.

Let the lantern story would be deemed insufficient, the thoroughbred partisans endeavor to prove their case another way. They say that of all the stallions got by Blackhawk only three fell below a thousand pounds in weight, and scarcely one fell below fifteen hands high. On the other hand, they say: "Of Sherman Morgan's get, only two exceeded a thousand

pounds in weight, and only one exceeded fifteen hands high."

This does not prove a great deal, and would hardly be produced in a court of justice. Everybody knows families in which the sons, when grown, were taller than their fathers. I knew a man named Johnson, who kept a tavern at Orangeville, Pa., who was only four feet in height, and his wife was a common sized woman. All their children, except one, when fully grown, were tall, well formed persons. The emperor, Charlemagne, was nearly seven feet high, and his father, Pepin, the short, less than five feet.

J. W. INGHAM.

#### SERVICE FEES.

Not many moons since, I was pleased to see an article in a weekly country newspaper from a man who preached the doctrine that the draft horse is the most profitable of all horses for the farmer to raise, and his theories have been and are yet borne out by practice and the experience of our best farmers and breeders; but the old adage of "better practice what you preach," would touch this young man all over, and might do more than touch unless his skin is as thick as a rhinoceros', for only last week I heard him lamenting the death of a foal that was lost through his own negligence. He said he had to pay \$30 for the insurance on two colts, \$15 each, and now he had only one living. He also said \$15 was too much to pay for colts by one of the best individuals and the best bred draft horse east of the Ohio river. The gentleman fails to see but his own side, and that through smoked glass, for any reasonable thinking man would argue that a colt by a first class horse would be worth at least \$15 more than a "scrub" at six months old, and the difference would, of course, be much greater at maturity. While on the subject of this gentleman's policy, which I regret is not very different from that of a majority of his neighbors, I will state a case bearing me out in my argument that this "would-be educator" of our unsophisticated farmers only sees things from one point, and his judgment is biased by what he considers his own interests, for he has a bull, and a good one, that cost only one tenth as much as the stallion that he bred to last season, and thought the \$15 insurance fee too high. The bull he charges \$3.50 service fee for and the horse is too high at \$15 to insure a mare safe with foal! I will pay \$25 to breed to a first-class stallion before I will accept the service of an inferior one as a gift. Do not spend all of your lives theorizing, but "practice what you preach," and your argument will have some weight with thinking men.

Rockingham Co. Va.

JNO. F. LEWIS.

#### VIRGINIA BRED HACKNEYS SELL WELL.

At a sale of Hackneys in New York in May, the Hon. Hy. Fairfax, of Oak Hill, Aldie, Va., made the high average price of \$862 each on his offerings. He also won the silver cup offered for the Hackneys selling for the highest price. The Oak Hill offerings are always choice, and put on the market in fine order.

#### NOTES.

The circuit of Virginia Horse Shows as arranged for this season is a convenient one, and permits of easy shipments from one point to another. The horse shows are of great benefit to the interest in this State, and fully merit the liberal patronage and support accorded them by the best classes in each community. With the exception of Richmond, all are open air affairs, but the latter is held under cover, and the one to take place here this fall promises to be a big affair. The dates follow: Upperville, June 11th and 12th; Berryville, June 18th and 19th; Manassas, July 16th and 17th; Orange, July 24th and 25th; Charlottesville, July 31st and August 1st; Culpeper, August 19th; Warrenton, August 27th and 28th; Front Royal, September 3d and 4th; Richmond, October 13th-18th.

W. W. Sanford, of the Woodley Farm, Orange, Va., has purchased of J. W. Colt, Genesee, N. Y., the brown horse Lackland, thoroughbred son of Spendthrift and imported Llandrinio, by The Arrow. Lackland is sixteen hands high, well made, and of fine proportions. He will be bred to good general purpose mares with a view of producing fine hunters and jumpers. The master of Woodley, who is a college-bred man and of pleasing manners, is one of the shrewdest judges of horse flesh in the South, reports an active demand for good horses, but finds it no easy matter to find animals of real class. In the latter connection, I may add that doubtless Mr. Sanford's experience tallies with that of one of the best known shippers in the country, who, in speaking of the faults most commonly found in carriage and saddle horses, says: "In all the years that I have been shipping to New York markets, low, thick withers have caused more criticism than all other imperfect ones combined." This imperfection, commonly termed "nut-ton shoulders," ruins animals for riding, and is likely to handicap them as a carriage horse, for high action seldom goes with high withers.

Mr. James Cox, of the Belgravia Farm, Mt. Jackson, Va., has a three year-old of promise in the bay filly Lucy Montrose, by Belgravia's premier sire Kelly, out of Minnie Montrose, by Robert McGregor. She is well formed and handsome, and has the gait action and determination that betoken both speed and race-horse quality. Helen Wilmer, the yearling daughter of Kelly, and the great brood mare Erena, 2:19½, by Alcyone, is, however, looked upon as the gem of the trotting bred youngsters at the farm, and she will be placed in skilled hands for development. Kelly, 2:27, the son of Electioneer, and famous thoroughbred Esther, dam of Expressive, 3, 2:19½, who heads Belgravia, always a handsome horse, is now looking grand, and Mr. Cox jogs the bay stallion on the road. Among the mares bred to Kelly this season is Frances S. Dayton, 2:27½, by Cadmus, Jr., dam the great brood mare Daisy Dayton.

As a member of the Southern Railway's staff of surgeons, the proprietor of a private sanitarium, and with quite an extensive practice to look after in and around Reidsville, N. C., Dr. J. C. Walton finds his time pretty well occupied, but his fancy for good road

and trotting horses is as strong as of yore, and his private stables always shelters some speed. During recent years, Dr. Walton has owned that grand mare Lucy Ashby, 2:21; Marie, 2:30½, and Miss Parker, 2:40, all of whom were sired by Jolly Friar, and a number of others. He now has Edith Bethell, by Barney Wilkes, son of George Wilkes, and Georgia Girl, by Almont, Jr., 2:29; a rangy black mare, 4, of considerable promise, by Nutrock, son of Norfolk, and nice bay, 4, by Prince Belmont, dam by Wilkes Boy.

I have only recently learned of the death, which, however, occurred several months since at the home of her owner, James A. Graham, Gould Hill Farm, Hanover Court House, Va., of the great brood mare Remembrance, by George Wilkes, dam Ella Dean, by Corbeau, due to old age and general debility. She was the dam of Virginia Jim, 2:9½; El Banecia, 2:20½, and Remember, 2:21½, while the last two and one other son, Tennessee Dictator, figure as producing sires.

J. D. Farrier, Wilson, N. C., has sold through Jos. Lasitter, of the Richmond Horse Bazaar, this city, the grandly bred and handsome five year old chestnut stallion Estuary, full brother to Marique, 2:14½, by Expedition, 2:15½, out of Wavelet, 2:24½, dam of 3 in list, by Belmont, and second dam of far famed Waterwitch, one of the greatest of foundation brood mares, by Pilot, Jr., sire of dams of Maud S., 2:08½; Jay Eye See, 2:10; Nutwood, 2:18½, etc.

Mr. T. O. Sandy, of the Grove Farm, Burkeville, Va., reports two of the handsomest foals of the season, by his imported hackney stallion, The Duke, out of the registered hackney mares Express, by Star of Mepal, and Queen of the Grove, by Lord Bardolph, and both of these well-bred matrons have been again mated with the stoutly made, well-mannered son of Silver Star and Lady Fanny, by Rob Roy. Mr. Sandy is a progressive farmer, and affairs are in a prosperous condition at The Grove, where up to-date methods are pursued and satisfactory results obtained.

Mr. Joseph Wilmer, owner of the beautiful Horse Shoe Farm, near Rapidan, Va., has recently added to his landed estate by the purchase of the farm of 700 acres, near Carter's Bridge, Albemarle county, formerly owned by the late Dr. Robert Randolph. This place will be improved by Mr. Wilmer, and likely be devoted principally to grazing and stock raising.

The chestnut mare Bessie W., by King Bolt, owned by Colonel G. Percy Hawes, of this city, foaled, on May 2d, a large, handsome brown colt, by Whalebone, 7872, and was bred back. The foals of Whalebone, who made his first season here in 1901, are of fine size, good colors, and well formed, and the son of Abdallah Wilkes promises to be well patronized during 1902.

#### BROAD ROCK.

Mr. H. B. Nalle, proprietor of Rocky Stock Farm, near Leesburg, sold recently a splendid pair of trotting bred bays for \$1,600. They went to the city.

#### THE ELLERSLIE YEARLINGS.

Messrs. R. J. Hancock & Son, of the Ellerslie Stock Farm, will sell their yearlings at Fasig-Tipton Co.'s Paddocks, Sheepshead Bay, New York, on Tuesday, June 10th, 1902. The offering will consist of fifteen head, of which six are by the celebrated imported sire Charaxus, 7 by Eon and 2 by Aurus. They are all out of well bred fashionable mares of winning families, and are a choice lot of youngsters. They are not forced specimens of horse flesh merely got up to suit the eye of the buyer, but are naturally developed animals, raised on the fine pastures of Piedmont Virginia, a section noted for its fine air, water and climate, and have had abundant exercise over the undulating country distinctive of the section. The records which have been made by the Ellerslie stock in the past are an evidence of the fine judgment displayed in the breeding, and of the system adopted in developing the youngsters. Messrs. Hancock have never sent forward finer samples of their work than this consignment, and they should fetch good prices, and in the future do credit to their breeders.

The Silver Cup Hackney Sale held by W. D. Grand in the American Horse Exchange, New York, May 13 and 14, was very successful. Last year Mr. Grand offered a silver cup to the breeder of Hackneys whose consignment to this sale should make the best average, and it was won by Hon. Henry Fairfax, Aldie, Va. A condition of the offer of the cup was that six or more horses should be sent up. The cup last week was won for the second time by Mr. Fairfax, whose six head by the Hackney Danesfort out of mares of Hackney and trotting blood averaged \$862. The next best average was made by the consignment of F. J. Kimball—\$345. The highest price paid for a representative of the Fairfax stud was for a young mare, Dr. Grensie being the last bidder. Five entries by F. G. Bourne made an average of \$337; six sent on by Mr. Cameron made \$266 each. A few sent up by Mr. Ogden averaged \$396; the Ross lot \$392, and the Astor representatives \$284. In the afternoon of May 7 some trotting-bred carriage horses from Village farm were disposed of by Mr. Grand, thirteen going for an average price of \$518. In this lot a pair, respectively by Mambrino King and Silvery Chimes, sold for \$2,400. Some of the French Coacher-trotter crosses, obtained by the Hamlins when they sent some Mambrino King mares to Oaklawn farm to be bred to Perfection were offered in this sale and sold as high as \$500. Pauline, a bay mare 16.1 hands, brought this figure, being purchased by J. E. Gale, Haverhill, Mass.—*Breeders' Gazette*.

What is considered to be one of the largest contracts for horses ever entered into in the United States was closed in South St. Joseph, Mo., recently, when a firm agreed to supply 12,000 horses, to be delivered at the rate of 500 per month for two years. Many sorts and varieties are included in the specifications, but it is thought that the most of the animals will find their way into the British army service in South Africa and elsewhere.

## Miscellaneous.

### GOOD ROADS TALK.

Address on Road Building read before the Farmer's Club of Gloucester Co. by Percival Hicks, Esq.

In preparing this paper, which I have had the pleasure of doing at the instigation of the Farmer's Club, it has seemed to me proper to adopt the approved method, which is, I believe, to begin at the beginning and, consider first, the laying out of a highway; second, its construction and drainage, and lastly the maintenance of a hard smooth surface.

Roads are primarily means of access from place to place, and at first sight one might think that the axiom of geometry "a straight line is the shortest distance between two points," would solve the problem off hand, but a little consideration will make it apparent that it is not possibly applicable to the laying out of highways as the financial question of bridging streams, and the desirability of avoiding steep grades, materially influence the engineer. It can safely be said then that the straightest road is not always the best one, but that the road that connects two points without unnecessary grade at the least expense to the builder, is the one best adapted to the needs of a community.

The first point I mean to discuss is how great a detour is it wise to make to avoid a hill?

Mr. John J. Thomas, in his book on "Natural Philosophy as Applied to the Ordinary Practices of Agriculture," goes into the question at some length, and his conclusions are that it is advisable to lengthen a road three-quarters of a mile to avoid a hill 105 feet high with loaded teams, and one-half to five-eighths of a mile for all kinds of travel taken together. These figures are applied to hard, smooth roads, and where roads are wet or rough smaller loads must be hauled, in any event, it would, he thinks, only be wise to go half as far around to avoid the same elevation.

But this question of avoiding hills is also modified by the per cent. of grade; when a hill 12 feet high and 100 feet long intervenes, making what is known as a 12 per cent. grade, it would generally be best to go over it, but if the grade exceeds 12 per cent. which is the maximum of safety for loaded teams to descend, the preferable plan is to go around it.

A good plan is to go around every hill that does not necessitate a detour of more than twenty times its own height.

While discussing the question of per cent. of grade it may prove interesting to go outside the matter as applied to the business uses of highways, and to give some easily grasped idea of the kind of a hill we are talking about. I will say that a 5 per cent. grade can be ascended and descended with ease by a cyclist, a 4 per cent. grade can be ascended at a trot by any good horse pulling two men of ordinary weight in a buggy, a 6 per cent. grade is almost the limit of comfort and safety for the cyclist, and that a 12 per cent. grade is one on which 2,500 pounds of horse-flesh will haul 3,000 pounds, including wagon and contents, at the rate of one and a half miles per hour. As the efficiency of a road is governed by the steepest places in it, and a

team will haul 50 per cent. more up an 8 per cent grade than up a 12 per cent grade, it will be very apparent that it is wise and necessary to surmount all hills encountered at the same gradient, and that it will not be good policy to expend money in avoiding an 8 per cent. grade between any two points if a 12 per cent. grade was to be encountered further on; but that when money is an object it should be spent in avoiding—or reducing the steepest hill to the per cent of gradient of the next steepest. Whenever there is a difference of slope on one hill the steepest place should be at the bottom. A curve of any kind should never be tolerated in a steep place, as it is dangerous to descend and a great handicap to four horse teams in ascent, for the wheel horses must necessarily do most of the pulling. When short curves are unavoidable, they and their approaches should be as nearly level as possible, and a 3 foot radius to the outside of the road is the minimum limit of arc.

An engineer when constructing a highway should first compare the distance to be covered with the amount of money at his disposal, and after surveying the line of road and setting aside all sums necessary for grading, draining and bridging, take into consideration the amount of soil which must be used to give the road a proper crown, and as a good narrow road is more useful than a wide one that is not well built and cared for, he had best reduce the road bed to a width that can be thoroughly crowned, and one that the taxes of the county will enable the overseer to keep in order. And right here I will say that the crown of a road should not form the arc of a circle, but rather the apex of an obtuse angle, for the wear of travel will eventually tend to flatten the middle of the road, and a circular crown will soon wear hollow in the center, whereas the apex of an obtuse angle only wears flat and can readily be replaced by the road machine.

In crowning the cross-sections of naturally flat roads 40 feet wide, it is necessary to move 20 cubic feet for each lineal foot of road; and if this is to be obtained from ditches at the side they must be 3 feet wide and 3 feet 4 inches deep to furnish it. A 30 foot road will require 11 and 1 4 cubic feet per lineal foot, and call for ditches 3 feet wide and 1 foot 10 inches deep, and a 20 foot road necessitates 5 cubic feet of earth per lineal foot, and this would be the product of ditches 3 feet wide and 10 inches deep, or to put it in more graspable form the amount of ditching and grading necessary to 1 mile of road 40 feet wide would make 1 and 4-5 miles of road 30 feet wide and 4 miles of road 20 feet wide. These figures may seem a little startling, but a few moments calculation will prove them approximately correct, and they speak in unmistakable language in favor of narrow roads. To me they seem italicised passages, every one marked by an exclamation point.

In the above calculations it is proposed to raise the center of the 40 foot road 1 foot, and the 30 foot road 9 inches and the 20 foot road 6 inches, which would give the same crown to each, but in practice it would probably be necessary to greatly increase the crown of the wider road in order to maintain as dry a surface

for the reason that the 40 foot road would receive an average annual rain 112 gallons per lineal foot, while the 20 foot good road would only have to dispose of 56 gallons (figures based on the report of the Agricultural Department for 1897, which gives the mean annual rainfall of Tidewater Virginia as 45 inches). It is also probable that the narrow road would dry out faster after being thoroughly saturated, on the principle that a small sponge will dry faster than a large one. When a road passes along a hill side these statements have no application, as then the surface should have an inclination to the up hill side, and as soil is always plentiful and drainage perfect, the width is immaterial so long as it is wide enough; the only important question is that of batter, which varies much in different soils. Probably an angle of 40 degrees from the horizon will be generally sufficient for the support of the down hill side, while 45 degrees will be ample above to prevent land slides from filling up the road.

[TO BE CONTINUED.]

### THE TARIFF QUESTION IN SWITZERLAND.

*Editor Southern Planter :*

Now that the diplomatic dispute with Italy seems reasonably certain of amicable settlement, the tariff is again the grand question in Switzerland, and the bill proposed by the Federal Council is before Parliament, but a number of months must elapse before the issue of the debates decides whether the little republic will renew her commercial treaties or enter a war of rates with other countries. The Council finds itself between numerous fires, and its position is far from easy. Many manufacturers insist upon greater protection than the bill provides for; the agrarians are drawing very dismal pictures of Swiss agriculture, showing among other things that the production of grain is decreasing and the importation of live stock and meat increasing, and are clamoring loudly for an adequate consideration of their interests; consumers are protesting against any increase in the cost of the necessities of life; several of her big neighbors are assuming rather threatening attitudes, menacing reprisals, so the economic future of the country is full of stumbling blocks and difficulties. Indeed, very much the same conditions with respect to tariff matters prevail here as in Germany.

*Die Schweizer Bauernzeitung* and other agrarian organs assert that in the pending bill the interest of the farmer have been sacrificed to those of the manufacturer, and meetings are being held throughout the land to discuss the most effective means of bombarding Parliament. It looks now as if the gentlemen with hay-seed in their hair will win the fight, and every one acquainted with rural Switzerland must admit the justice of their cause.

The Swiss co-operative societies, too, are warming up, and their central board, which represents a mem-

bership of 100,000, is vigorously opposing a higher tariff on food stuffs and raw materials. There are 265 of these societies, or about one to about every 11,000 of the population, a larger proportion, I believe, than in any other country in Europe, and, if Swiss politicians are wise, their demands will not be ignored. Ten per cent. of the Swiss people, it is estimated, get their supplies from the societies' stores, and in the cities the membership is very large, often 2,000-5,000; in Bazel, it is 13,000. In organization, management and scope they are by no means uniform, although in most of them mutual principles are applied, in some cases, however, only partially, while others are mere joint stock companies, and their chief object is the buying and selling, oftentimes to non-members as well as members, at wholesale or retail, commodities intended for consumption, and, wherever given a fair trial here, I am told, they are successful, as is shown by the increase in number, membership and volume of business.

Times are rather slack in Switzerland now, and the flow of emigration, especially to transatlantic countries, has increased. In the Federal Council's report for 1901, recently made public, I see that during that period 3,921 persons sought new homes abroad, seventy-five per cent. of them being Swiss subjects and the rest foreigners temporarily residing here. Ninety per cent. of these were attracted to the United States, notwithstanding the liberal inducements offered to home-seekers by the local agents of several South American governments, and few of them, I doubt not, will be unable to comply with our immigration laws, especially those from the rural districts, who always furnish the largest contingent, last year 1,347, as they are generally intelligent, industrious and comparatively well to do, able to adapt themselves readily to their new existence and make good citizens.

Several weeks ago a consignment of 82 horses for the Swiss government passed through by rail en route, it was said, from England, and from the very imperfect examination I could make they appeared well fitted for military purposes and in good condition, but in size and shape hardly up to the standard of those I saw on my last visit here in 1898. They would average perhaps 15.2 hands, and most of them were evidently intended for troopers. Army contractors here claim that it is now very difficult to find good horses, especially for military service, as the demand greatly exceeds the supply, but they say they have less trouble in filling their orders in England than elsewhere, despite the fact that English agents are ransacking the markets of the world for shipments to the seat of war, as prices have advanced there very slightly since the commencement of hostilities, and no more than in continental countries. Most of the re-

mounts bought in England come from Ireland, and the statement frequently made, doubtless by interested parties, that they are not as hardy and do not stand change of climate as well as French or Hungarian horses have, I am informed, been conclusively disproved as far as Switzerland is concerned, at least, although used to a more liberal grain diet. Indeed, Hungarian horses have not proven satisfactory here, and for some years none of them have been bought for government account. The same is true of French horses. North Germany, formerly considered an excellent market, is now reported to have nothing to offer except very young animals, at anything like reasonable prices.

Hamburg newspapers announce the arrival there of large numbers of horses, chiefly from Russia, many of which are re-shipped to England. Representatives of the Bavarian Cavalry Commission have been in Hamburg for some time and announce that they have bought several hundred fine remounts "at satisfactory figures."

On the market square here I notice the following prices posted:

Wheat, per 100 *kilos. ....fr.	17.50 to 18.50
Rye, per 100 kilos.....	16.50 to 17.00
Barley and Oats, per 100 k...	17.00 to 18.00
Butter, per kilo.....	2.50 to 3.00
Eggs, 14 for 1 franc.	

\* (100 kilos = 220.46 pounds; 1 franc of 100 centimes = 19 cts.)

SAM'L ROLFE MILLAR.

*Stein-on-the-Rhine, Switzerland, April 21, 1902.*

## FRUIT PROSPECTS IN MIDDLE VIRGINIA.

*Editor Southern Planter:*

Replying to yours of the 15th, will say that there will be almost a total failure of apples in this section this season, due to a failure to bloom. The bloom was the lightest that we have ever known. There is scarcely any winter fruit. A few varieties of summer and fall have a limited quantity of fruit on them, but we have not seen a tree with a crop on it. Peaches promise a fair crop. Plums promised a heavy crop, but have fallen off badly and will not be quite one fourth of a crop. Cherries also failed to bloom, and there is no crop. Pears about one-half crop. These are mostly Keifer and Leconte. Strawberry crop promised to be fine, but dry weather cut it short, and while prices are fair, there will be only about one-half of a crop. Blackberries promise to be a good crop. Gooseberries promise to be almost a failure.

*Chesterfield Co., Va.* J. B. WATKINS & BRO.

Mention the *Southern Planter* when corresponding with advertisers.

## TRUCKING SITUATION IN TIDEWATER VA.

*Editor Southern Planter:*

In response to your request I beg to hand you short statement showing general status of the trucking industry for this portion of the "Middle Atlantic Seaboard." Our State (Virginia) used to be known as a "Southern State," but now is classified by the Government as one of the "Middle Atlantic States." It is associated on the Government Records with New York, Pennsylvania, Maryland, Delaware and New Jersey. This is proper, seeing that we are so closely connected with said States, by water and by rail, and the commercial interests of Virginia with said States are very closely interwoven indeed.

This being the case, Eastern Virginia, for thirty or more years, has been the "garden" for all the great consuming centres of the North and East. In these later years, the trucking industry has spread all along the coast to Florida, and has broken out in spots here and there in the great interior of the South.

This rapid spread of the "market gardening industry" has made the business rather uncertain as to results. As a rule we can grow the crops to perfection, both as to quality and quantity, and we can get our crops to market at less expense and in better condition than any trucking section to the south of us, and yet there is enough truck grown to the south of us to interfere materially with our success.

Candidly speaking, the Norfolk trucking section does not have an undisputed field or sway. We grow early truck, early fruits and vegetables, but sections to the southward of us grow earlier crops of fruit and vegetables than we do.

It is true they have a "longer haul," and double, or more than double, the "freight rate" we do. It is true they have to ship perishable produce in refrigerator cars at still higher rates of freight, and yet there is enough of such crops raised and shipped to unsettle the market and render the trucking industry for our section a little more uncertain as to results than before.

Still our truckers believe in keeping "everlastingly at it," and they are "still in the ring," and just now we are close on to the largest crop of Irish potatoes ever harvested here—probably a crop of at least 750,000 barrels. The stand is a good one, and although the vines are small, owing to rather too much dry weather during the past month, still the present rains are bringing the crops along nicely.

The cabbage crop is not so large as we had anticipated, owing to the fact that the winter was rather harder than usual on said crop. We had no excessively cold weather; but the start for the cabbage crop last fall was poor, and the winter growth not up to the usual growth, and the crop is late, and altogether will not make more than three fourths of the usual crop.

Berries are bringing a fair price, but the yield is not

up to the average. The pea crop and the snap bean crop is short. Since March 1st, we are at least four, and perhaps five, inches of rain behind the average. The area of land set to tomatoes is very large indeed; the area of the crop being increased, we suppose, by the location here of the "Heinz" people, who propose to engage largely in the canning of tomatoes and other farm crops here, also in the pickling of immense quantities of pickles.

We have never seen quite so much white clover as we see this summer. It seems to be getting in everywhere. Acres upon acres of berry beds, especially the beds two or three years old, are literally choked out with white and red clover. It is nothing unusual to hear a berry grower howl, because the "pesky clover" and other grass takes his berry patches; at the same time, we have never heard him grumble at himself for taking home hay baled in Michigan with which to feed his horses.

The trucking business, as it is followed here, is not so much of a great success as it used to be. Our truckers have to compete with large areas of new trucking lands opened up to the south and southwest of us. The prudent ones are seeing the trend of matters, and recognize that a change must be made to meet the new conditions arising and prevent disaster.

In the trucking work, as it is in growing grain, the "fittest only will survive." The "top shelf" men will continue to do business at the old "trucking" stand. But the great "middle class" of truckers must make a radical change in program or go out of the business. The small trucker, who works only a few acres, say 10 acres of market garden crop, and who does the work largely within his own family, and who has a cow or two, and a pig or two, and a flock of chickens and a few sheep, and who grows a few acres of regular farm crops, he too will survive, but the large class of truckers, who are most too large to be called small, and most too small to compete with the big ones, are sure to see hard times.

We are not an "alarmist" and by no means a "pesimist," but we see no good, thorough remedy for the "condition that confronts us," for, as Grover truly said, "It is a condition and not a theory which confronts us," except for our truckers and market gardeners to reduce the area in truck crops, and increase the area to grow such crops as are now purchased from the West.

For what doth it profit a man, even if he gain the entire markets of the United States for one or two special crops, and then lose every dollar of that profit in buying back such crops from other portions of the country as should be grown and might be grown upon his own farm?

A reasonable amount of "market garden farming"

or "truck farming," backed up and sustained by what may be termed "mixed" or "diversified farming," will send this section to the front and keep it there for all time.

Our "trucking" industry may be said to be only fairly profitable, with no very bright prospects ahead; but it is the fault of our people and not the fault of our soil, our climate, or our markets. There is too much money expended for fertilizers; too large an area planted to truck crops, and too little attention paid to "mixed farming." Too much money is paid out by our farmers and truckers for crops which should be raised here at home.

Norfolk, Va.

A. JEFFERS.

## POULTRY CACKLE-ATIONS FROM TIDEWATER VIRGINIA.

*Editor Southern Planter :*

Eggs are selling steadily at 20 cents per dozen, with still upward tendency in price. Chickens, half grown, command 30 to 40 cents each, depending upon weight and quality, with which the "breed" has much to do. The "peep" of the chick is now heard abroad in the land. The market seems to be well supplied with chicks and eggs, and yet the price falls not. This seaboard section of Virginia makes a wonderful record in poultry matters, or would make a wonderful record if the figures were obtainable.

During the past five years, the price of eggs has advanced from 12 to 15 cents per dozen up to 18 and 20 cents, and in winter time up as high as 35 cents. The price of chickens has also advanced materially. It seems that cheap beef and pork is a thing of the past, which stiffens the price on chickens and eggs, also on fish.

It is an "ill wind which blows no good," and our people who are engaged in fish and oyster work, and in the poultry business, will reap a rich reward if they keep at it. Our poultry people are squarely in touch with the best markets in the United States. We have the best climate in America for poultry work. A limited investment in land and stock brings maximum returns, provided the business is manipulated with a fair amount of practical brain power. But we started in to say, Why is it that hens set the first week in May, never pay? Have the *Planter* readers discovered that point? or is it a chicken myth? Our old-time poultry raisers say, "Never set hens the first ten days in May, lest the dickens be to pay, with the chickens every way." We have one good old lady, who has progressed so far in the business as to hatch sixteen chickens from fifteen eggs, and she stoutly upholds the "May" theory above noted.

Norfolk, Va.

A. JEFFERS.

THE  
**Southern Planter**

PUBLISHED BY

THE SOUTHERN PLANTER PUBLISHING CO.,

RICHMOND, VA.

ISSUED ON 1ST OF EACH MONTH.

J. F. JACKSON,

Editor and General Manager.

B. MORGAN SHEPHERD,  
BUSINESS MANAGER.

TERMS FOR ADVERTISING.

Rate card furnished on application.

TERMS OF SUBSCRIPTION.

The *Southern Planter* is mailed to subscribers in the United States and Canada at \$6c. per annum; all foreign countries and the City of Richmond, 75c.

Remittances should be made direct to this office, either by Registered Letter or Money Order, which will bear our risk. When made otherwise we cannot be responsible.

Always give the Name of the Post Office to which your paper is sent. Your name cannot be found on our books unless this is done.

Subscribers failing to receive their paper promptly and regularly, will confer a favor by reporting the fact at once.

The Date on your Label shows to what time your subscription is paid.

We invite Farmers to write us on any agricultural topic. We are always pleased to receive practical articles, Criticisms of Articles, Suggestions How to Improve THE PLANTER, Descriptions of New Grains, Roots, or Vegetables not generally known, Particulars of Experiments Tried, or Improved Methods of Cultivation are each and all welcome. Contributions sent us must not be furnished other papers until after they have appeared in our columns. Rejected matter will be returned on receipt of postage.

No anonymous communications or enquiries will receive attention.

Address— THE SOUTHERN PLANTER,  
RICHMOND, VA.

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Binders for the Planter.

We have received a new supply of binders for the *Planter*, and shall be glad to send one holding the numbers for a year to any one sending us 25 cents in stamps or coin.

PUBLISHER'S NOTES.

Eight Months' Subscription for 25 Cents.

In last month's issue we offered to send the *Southern Planter* for the remaining months of this year for 25 cents. We had several hundred to avail themselves of this offer, so we feel inclined to renew it, to include the January 1903 issue. As this will be our usual holiday number, it will be well worth the price we charge for the entire 8 months. Remember that this offer is intended for *new subscribers only*, and is not open to any one already on our list, as some seemed to think. Do not forget that you get the issues from June to next January, both numbers included, for 25 cents. We hope our old subscribers will mention this to their friends who are not on our list and induce them to accept this trial offer.

We have a very liberal proposition to make our old subscribers, and will furnish it on request. We desire to treat every one alike, and the offer to which we refer accomplishes this, we believe.

"ELLERSLIE" SHORTHORNS AND SOUTHDOWNS.

We wish to call the attention of our readers to the advertisement of Messrs. R. J. Hancock & Sons, proprietors of "Ellerslie" Farm, Charlottesville, Va. This farm is noted for its splendid horses, of course, but it has not neglected cattle and sheep. It has, therefore, a splendid lot of Shorthorn bulls and Southdown sheep for sale at farmer's prices. The bulls are mostly reds by the famous sire "Overton" and the Southdowns are by the imported buck "Warwick," which came direct from King Edward VII's Sandringham flock, and out of ewes from the noted Druid Hill Park flock. Messrs. Hancock advise us that all their stock is in fine working condition, but not in show ring order at all. If you want something good, you had better look up the advertisement and write for what you want.

DORSETS AND BERKSHIRES.

Among the new advertisements in this issue is that of Mr. N. S. Burrier, New Midway, Md. Mr. Burrier makes a specialty of Dorset Horned Sheep and Berkshire Hogs. If you are interested in these popular breeds, we invite you to send for a catalogue and see what good stock Mr. B. has to offer.

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LATE SEED POTATOES.

Our system of keeping Late Seed Potatoes unsprouted and in vigorous, ready-to-grow condition when planted, causes them to carry safely through the driest or hottest spells of summer weather, making splendid crops during the fall, ready to dig just before the winter comes on. Crop results the past three seasons, from these potatoes planted in June and July, have been most satisfactory.

Our stock in cold storage is limited, so that it is advisable to place your orders early, so as not to be disappointed in securing your seed potatoes when ready to plant.

Circular giving prices and full information mailed on request.

T. W. WOOD & SONS,  
Seedsmen, Richmond, Virginia.



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SCREW STUMP PULLER  
Write to Prices.

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The only Perfect Continuous Open-Top SILO made. See Open-Top Patent Roof. Ask for Catalogue. E. F. SCHLICHTER,  
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Also made in the West by DUPLEX MFG. Co., South Superior, Wis.

**\$100 REWARD, \$100.**

The readers of this paper will be pleased to learn that there is at least one dreaded disease that science has been able to cure in all its stages, and that is Catarrh. Hall's Catarrh Cure is the only positive cure now known to the medical fraternity. Catarrh being a constitutional disease, requires a constitutional treatment. Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system, thereby destroying the foundation of the disease, and giving the patient strength by building up the constitution and assisting nature in doing its work. The proprietors have so much faith in its curative powers, that they offer One Hundred Dollars for any case that it fails to cure. Send for list of Testimonials.

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Hall's Family Pills are the best.

**MAGAZINES.**

The June Century is alike a man's and a woman's number.

For so-called business men there are articles on "Making Laws at Washington," a searching exposition of the machinery of Congressional action, by Henry Loomis Nelson, the well-known student of public affairs, with attractive pictures by Keller; on "Triumphs of American Bridge Building," by Frank W. Skinner, with pictures of the most notable bridges built by Americans; the second paper by Ray Stannard Baker on "The Great Southwest" dealing with "The Desert," "An Audience with Diaz," by Alfred Bishop Mason; a diverting paper on "Episodes of Journalism," by Francis E. Leupp, the well-known Washington correspondent; and a curious article on "Bloodhounds in America" and their growing use in the West as detectives.

Of particular appeal to women are the third part of Mary Adam's much-discussed "Confessions of a Wife," dealing with "Motherhood," and "The Royal Family of England," and "The Royal Family of England," by Professor Oscar Browning, of Cambridge, England, setting forth some characteristics of the royal family based on personal acquaintance, with several portraits of the King and Queen, two of which, in tint, form the double frontispiece of the number.

Of general interest are articles on "The Humor of the Elder Sothorn," one of the most noted practical jokers of the last century; "The Canals in the Moon," a paper in the nature of news, by Professor William H. Pickering, of Harvard; "A Great Civic Awakening in America," by Sylvester Baxter, setting forth the specific work of organizations for the creation or preservation of beauty in public places; and a second paper of recollections by J. H. Stoddard, the veteran actor.

The stories, which include contributions to the "Year of American Humor," are by Harry Hillwell Edwards, Tudor Jenks, Lucy Baker Jerome, Lily A. Long and Dr. Weir Mitchell. Thomas Bailey Aldrich contributes a curious "Note on 'L'Aiglon,'" and among the poems is a

**THE MAIL ORDER HOUSE**

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Manufactured by  
VA. CATTLE FOOD CO.,  
Danville, Va.

Removes all taste, taint and smell of garlic, onions, "rag weed," ensilage and other tastes foreign to pure milk and butter.

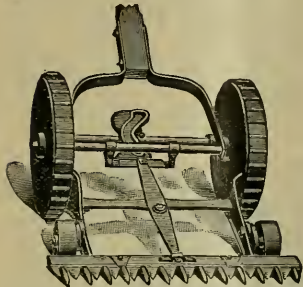
**MRS. LEA'S MILK AND BUTTER PURIFIER**

is not an experiment, having stood the most rigid Government test, and has the endorsement of the Dairy Division at Washington, and hundreds of dairymen and farmers, who used it last season, and are sending us duplicate orders every day. Write us for book of testimonials.

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# THE MOWER

THAT WILL KILL ALL THE WEEDS IN YOUR LAWNS.



If you keep the weeds cut so they do not go to seed, and cut your grass without breaking the small feeders of roots, the grass will become thick and weeds will disappear. **THE CLIPPER WILL DO IT.** Send for catalogue and prices.

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## WATER CLOSET COMBINATIONS,

Porcelain Bowl, Hardwood Seat and Tank, Nickel Plated Flush and supply pipes, complete, each \$1 00.  
Cast Iron Roll Rim Bath Tubs, length 5 ft. Complete with full set of nickel plated fittings, each \$1 00.  
They are new goods, ask for free catalogue No. 166 on plumbing and building material.  
Chicago House Wrecking Co., W. 35th and Iron Sts., Chicago

"habitant" ballad by Dr. William Henry Drummond, the Canadian poet.

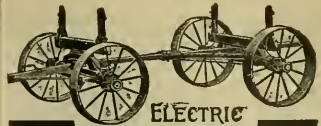
The illustrations have great variety, and include some pictures by Maxfield Parrish in the series on the Southwest, whose colored frontispieces in the May number will be remembered, portraits of the King and Queen of England as Prince and Princess of Wales; and some interesting autographs of the Duke of Reichstadt (L'Aiglon), contributed by General Henry M. Cist.

The editorial articles are on divorce ("The Holy Estate of Matrimony"), and on the vacation season ("Town Mouse and Country Mouse"). "In Lighter Vein" adds noticeably to the light and readable looks of this number.

The June Lippincott has evidently been made up with early summer travellers in mind. The complete novel this month is "A Real Daughter of the Revolution," a spirited love story by Caroline Gebhardt, a personality new in fiction, possessing fresh charm and ready wit. Her work stands easily beside the best of recent Revolutionary tales. The story teems with Redcoats and gallant Rebels; there are some sharp skirmishes and close escapes. A British Colonel and an American Captain fight for their love as well as for their country. The fair heroine manages her father's house as well as she manages her lovers.

In addition to the novel there are half a dozen up-to-the-date short stories such as Lippincott's Magazine has won a reputation for.

Mr. Charles Morris presents a paper on "The New Atmosphere," which tells in readable language all about this up-to-date subject. An article called "Tips and Com-



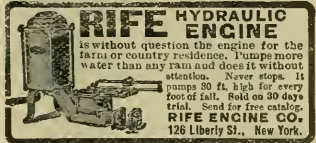
## ELECTRIC Handy Farm Wagons

make the work easier for both the man and team. The tires being wide they do not cut into the ground; the labor of loading is reduced many times because of the short lift. They are equipped with our famous Electric Steel Wheels, either straight or staggered spokes. Wheels any height from 24 to 60 inches. White hickory axles, steel hounds. Guaranteed to carry 400 lbs. Why not get started right by putting in one of these wagons. We make our steel wheels to fit any wagon. Write for the catalogue. It is free.  
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and send 4 Huggy Wheel, Steel Tire on, • \$7.25 With Rubber Tires, \$15.00. 1 mfg. wheels \$1 to 410. tread. Top Baggage, \$28.75; Harness, \$1.00. Write for catalogue. Learn how to buy rebels and parts direct. Wagon Umbrella FREE. W. V. BOOB, Cincinnati, O.



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Runs 24 hours a day and 365 days a year 40 years experience. Water for HOUSE, water for STOCK, Water for IRRIGATION. Once started costs but ONE CENT per month. As simple as a wheelbarrow and as efficient as a Corliss Engine. Information and instruction in plain terms. Prices on ram or complete outfit by return mail. Address PRYCE W. BAILEY, Expert, Seneca Falls, N. Y.

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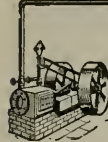
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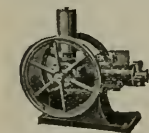
Can also be used for other purposes.

It is all complete, ready to attach to pump. Exports 20 min pump, 1/2 gal. water. Uses but little gasoline. Is shipped crated completely assembled. All connections made. Easy to start, any one can operate it. Every one guaranteed. Other sizes up to 20 H. P. Send for Catalogue. Weber Gas & Engine Co., Box 128 Kansas City, Mo.



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missions" by John Gilmer Speed, contains some valuable hints about fees both in this country and abroad. Since Stevenson's life and death in Samoa a new interest attaches to the piece; and the delightful paper by Mrs. Lewella Pierce Churchill, entitled "At the Trader's Store in Samoa," with its strain of humor, makes a wide appeal.

The "Walnuts and Wine" department still waves its flag at the top of the hill of Humor.

"How the Pilgrims Came to Plymouth," by Azel Ames, M. D., the author of "The Mayflower and Her Log," etc., is probably for older readers the most interesting and important article in the June St. Nicholas, and the author claims that it is the most up-to-date, accurate, and condensed presentation of the causes, objects, and historical facts of the Mayflower's voyage. Not only does the article deal with data more or less well known, but it gives also those little touches of the life of the times that make the old Puritans seem real to the young reader. It is a paper that every boy and girl ought to read, if only because of its value historically.

**THE SOURCE OF PROFIT.**

To how many property owners—people that pay out their money for paint and painting—has it ever occurred that it is unprofitable to the painter when paint is too durable? The expense of painting is in the labor of applying, not in the material applied. The actual cost of the paint used in doing, say, a hundred-dollar job, is scarcely more than ten or fifteen dollars, the rest being workmen's wages and painter's profit. On the paint, the painter may make possibly one or two dollars, but on the application of it he makes perhaps ten dollars or more. It follows that the oftener he can repaint the more money he makes.

Now, while I do not mean to intimate that the average painter has figured the proposition out in this way, and deliberately proceeds accordingly to defraud his patrons with paints that he knows to be inferior; yet at the same time I do think that many painters are unconsciously biased by the facts of the case, and this may explain their adherence to materials which all experts have agreed in pronouncing inferior.

The whole paint world, outside of the painters, has long since decided that a fair proportion of zinc white is essential to durability in any white or tinted paint, yet the old-time painter still clings to "straight lead." If it does not "stand," he considers himself free from blame; but he profits by the necessary renewal, and the consumer foots the bill. This paint problem has many sides, and this is a phase of it that has as yet received but little attention.

STANTON DUDLEY.

If you want a harvesting machine that is reliable—one that will work successfully in all conditions of grain—buy the McCormick.

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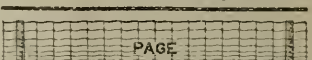
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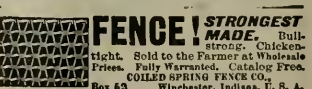


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LOW PRICES. CIRCULARS AND SAMPLES.

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## THE HISTORY OF A SPRIG OF GERANIUM—A STORY FOR YOUNG FOLKS.

BY MARY WASHINGTON.

### CHAPTER I.

In a rather forlorn locality, on the outskirts of the city of —, lived my little heroine, Anna Stevens, a young girl of about thirteen, who, in addition to poverty, suffered under the still greater drawback of delicate health. Her father was a carpenter, her mother a seamstress, and both worked early and late to support their family. They had four children, of whom Anna was the oldest, and she being frail, could only assist her mother in doing the lighter parts of the house work, and in taking charge of her little sister, the youngest child of the family. Weak eyes put it out of her power to sew, except in a very limited way, so the vocation of seamstress was closed to her. If she sewed more than an hour or two at a time, inflamed eyes and headache were the penalty, so she felt, as if she were a lumberer of the ground, though in fact she was more helpful than her modest nature realized, for the influence of a gentle, patient spirit is just as helpful in a household as active services rendered; perhaps even more so. On the evening upon which our tale opens, Anna stood at the gate of her home, in the golden light of the October sun, watching the passers by whom the beauty of the weather called out, some on foot, some on horseback, and some on vehicles. Although so unfashionable a locality, many persons passed through it, owing to the fact that beyond it lay a fine view, and also, a much frequented floral establishment. Amongst those bound to the latter destination on this October evening, was a young man, driving a young lady. Arrived there, they went in, and he bought a profusion of flowers for his fair companion; amongst other things, a spray of rose geranium which she declared to be her favorite plant. But when the florist commenced to put them up in a stiff, professional manner, she objected, saying that it deprived them of all grace, and took them from him, in a loose bunch. Soon they were back in the buggy, driving rapidly towards town. It was almost twilight when they drove through the outskirts of the town, and past Anna Stevens' home. She was still standing at the gate, looking wistfully at the bright orange tints of the sunset, as they began to fade into the grey of twilight. The couple were busily engaged in conversation at the moment, so the young lady was not paying as close attention as she should have done to the flowers lying on her lap, and the sprig of geranium fell out just as she passed Anna. The latter called to them, and tried to run after them, but they were going so rapidly, and the wheels and horse hoofs making so much noise, that she could neither overtake them nor make them hear. There seemed no alternative then but for her to keep the sprig of geranium thus thrown at her feet, as it were. As she held it to her nostrils, and inhaled its fragrance, a flash of pleasure suffused her wan face. She dearly loved flowers, but she had a far

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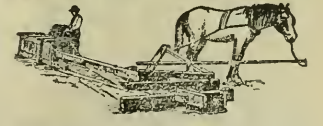
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off, despairing love for them as unattainable things. She had grown up in an atmosphere of poverty in which it was a struggle to get bread, and other necessities, and in her case, medicine and medical attendance had been among the necessities, so there was never even a nickel to spare for flowers. Occasionally there had been an oasis in her existence in the shape of a visit to an aunt who lived a few miles in the country, on the farm of a Mr. Akers, a gentleman who had a market garden, the products of which this aunt sold. Of all the wonderful and delightful things that had thrilled her, and enlivened her attention on these visits, none had made such an impression on her as the flowers. In her dim, vague ideas of heaven, flowers occupied the foremost and most conspicuous place; and now these lovely green leaves, so redolent with fragrance, seemed almost like a message from heaven. Long she stood in the gathering twilight, inhaling their delicious fragrance, till at last, she was roused from her reveries by her mother's voice, when she went back into the house, and put the geranium into a mug of water, thinking she might thus prolong her enjoyment of it for a few days, perhaps a week. Next morning the first waking thought was of her geranium, and suddenly a bold idea darted into her mind—she would try to raise it. With trembling haste, she hurried on her clothes and ran down stairs to consult her mother about this undertaking. The latter was in favor of it, and advised her to set it out in an old tomato can with a hole punched in the bottom, in default of a flower pot, or small box. As the Stevens family occasionally indulged in tomatoes on festival days, Anna had no difficulty in finding an empty can, which she filled with the richest earth at her command, before inserting the geranium slip into it. Never did a plant receive closer and more loving attention. Morning, noon and night, it was the object of Anna's constant care, and it seemed to make her days less long and empty and her headache less severe. She was continually shifting it from one point to another so that it might catch the brightest sunshine at different hours of the day. As winter drew near, it became a serious question how she was to keep it alive with their scanty supply of fuel, but she finally decided to place it in the kitchen as being the best heated room in the house, as the family cooked, ate and sat there (when not off at work) during the winter. As they did not keep up the fire there later than nine or ten, however, Anna feared her geranium would come to grief during the long, cold winter nights till she hit upon a plan by which she managed to save it. Her mother had a contrivance for keeping her light-bread dough warm on cold nights. Two little triangular shelves of slate, in one corner of the kitchen, on the bottom one of which she placed a small, coal oil lamp, lighted, whilst she put her jar of dough on the upper shelf, which was kept gently heated by the lamp beneath. Anna managed to squeeze her plant alongside of the jar, and thus saved it from freezing on bitter cold nights.

After awhile the winter passed away and spring opened, and then the plant,

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which had done little more than keep  
 alive during the cold weather, began to  
 thrive and develop wonderfully, greatly  
 because of the faithful care taken of it,  
 and partly because it was an extra fine  
 variety. Soon it commenced to get too  
 big for the tomato can. In this dilemma,  
 Anna betook herself to her father who,  
 as we said before, was a carpenter. He  
 got some little odds and ends of plank at  
 a place where he was working and made  
 her a nice box, in which the geranium  
 sent out new roots and fibres with great  
 vigor. Under the warm spring sun, it  
 sent out so many new branches that Anna  
 cut off three and set them out in tin cans,  
 like the original one. Her father (whose  
 carpentry was very servicable to her)  
 made a little stand for her enlarged col-  
 lection, and she would place this stand  
 either before a sunny window, or in the  
 porch or yard, according to the weather.

TO BE CONTINUED.

### ANNOUNCEMENT.

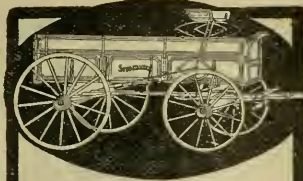
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 to announce that, beginning with the July  
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 quarterly, instead of monthly, as hereto-  
 fore. The general character of the maga-  
 zine will be the same, and its high stand-  
 ard will be maintained, but its purposes  
 will be more specifically those of a review  
 and outlook. It is believed that by pub-  
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 events in every field, as well as to some  
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 tions presented, the essential features can  
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 be conducted in departments, each of  
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 inently qualified by his training and con-  
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 riods, etc.
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 passed by foreign governments, complica-  
 tions between foreign countries, the  
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### REPORTS.

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Bureau of Animal Industry. Bulletin 41. Mexico as a Market for Pure-Bred Beef Cattle.

Bureau of Animal Industry. Circular 46. Officials, Associations and Educational Institutions connected with the Dairy Interest of the U. S. for the year 1902.

Section of Foreign Markets. Bulletin 27. Our Foreign Trade in Agricultural Products 1892-1901.

Section of Foreign Markets. Circular 24. Agricultural Imports and Exports, 1897-1901.

Bureau of Plant Industry. Bulletin 17. Some Diseases of the Cow-Pea.

Public Road Inquiries. Bulletin 21. Proceedings of the International Good Roads Congress, held at Buffalo, N. Y., September, 1901.

Bureau of Soils. Bulletin 19. Capillary Studies and Filtration of Clay from Soil Solutions.

Farmers' Bulletin No. 149. Experiment Station Work.

Farmers' Bulletin, No. 150. Clearing New Land

Colorado Experiment Station, Fort Collins, Col. Bulletin 68. Pasture Grasses—Leguminous Crops—Cantaloupe Blight.

Bulletin 69. Plant Diseases of 1901.

Kansas Experiment Station, Manhattan, Kan. Bulletin 107. Analysis of Corn with Reference to its Improvement.

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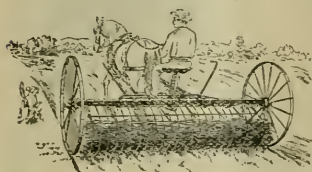
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New Hampshire Experiment Station, Durham, N. H. Bulletin 89. The Squash Bug.

Bulletin 90. Insect Record for 1901. New York Experiment Station, Geneva, N. Y. Bulletins 203 and 204. Popular Edition. Some Problems in Cheese Curing

Bulletin 208. Fertilizers for Forcing Lettuce.

Bulletin 210. How Changes in Feed Affect the Yield of Milk.

Bulletin 211. Director's Report for 1901.

Bulletin 212. Four Lesser Insect Enemies.

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## A HORSE STORY.

In his article on "Tips and Commissions" in the June Lippincott, John Gilmer Speed says:

"Our skirts are not entirely clean on this side of the Atlantic, though, to be sure, it is not yet by any means common for gentlemen or ladies to take commissions from their tradesmen on account of services rendered. As to whether it will be or not, I am not so sure. That servants expect and exact commissions is absolutely certain, however. A while ago I sold a horse to a friend. He took a fancy to the horse and finally bought him for four hundred dollars. The next day he came to me with a check for four hundred and twenty-five dollars. 'When you send that horse around,' he said, 'please give that extra twenty-five dollars to my coachman. I don't want him to lame that horse or injure him in any way.' 'Gracious!' I asked, 'you seem to be in mortal fear of your coachman?'

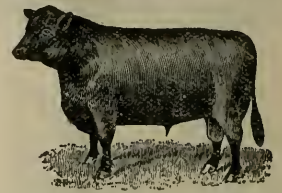
"Yes, I suppose I am. They are all alike, however. Commissions on purchases are the perquisites of the stablemen, and they have no use for a horse about which they have not been consulted and on which they have not had a commission. I have had some nasty experiences, and is this horse is for my own riding, I don't want any prejudices in the stable against him."

## ANGUS BULL CALVES

For the next 60 days, I will make special prices on reg. Angus bull calves to Southern readers of the *Planter*. This is an opportunity to get something choice backed by the strongest breeding. Watch the agricultural press and see what the Angus are doing.

WARREN RICE, - Winchester, Va.

## FINE STOCK AT A BARGAIN.



One finely bred black saddle and harness mare, 8 yrs. old, 15 hands, weight, 1200. Stylish and quick. Gentle as a kid. Superior all around combination family horse

One trotting bred brown gelding coming 4 yrs. old, 15 1/2 hands, weight 1000. Trim as a fawn, and dashing in style and action. His record opens with a 3 minute gait under the lines and his future is full of promise.

One extra fine pair of well matched black mare mules, 6 years old, weight 1240 and 1260. Gentle as the gentlest family horse, strikingly trim, finely proportioned, and exceptionally quick. A faultless team.

Two registered Aberdeen-Angus bull calves. To dispose of surplus stock we offer all the above animals cheap.

Address W. M. WATKINS & SONS,  
Cottage Valley Stock Farm,  
Randolph, Charlotte Co., Va.

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## Early Yellow Variety.

Popularly known as "Huron Dent," most perfect shaped ear and most reliable early corn ever introduced. Planted as late as July 15th, it can be cut and in stock before frost. It is very productive. Price, \$1.75 per bushel.

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By prize-winning imported sires and trained dams. Eligible. Fit for bench, ranch or farm. Price, \$10, either sex. Also a book on the care and training of the Collie for all practical uses. Price, 50c. Copy of book free to purchaser of Collie.

Stock Farm, "MAPLEMONT," Albany, Ver.



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**AGED BULLS, YEARLING BULLS, COWS, YEARLING HEIFERS,  
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**The Finest Lot of Pure-Bred Cattle Ever Offered in the South.**

The use of Hereford Bulls on the common cows of Virginia will improve the cattle of the State 100 per cent. in actual cash value—first, by putting the beef on the right places; second, by improving the quality and increasing the percentage of dressed beef on the block; third, by increasing the live weight.

**PRICES LOW; NO "FANCY PRICES."** Call and see the Castalia Herd on grass.

**MURRAY BOOCOCK, Owner, Castalia, Keswick, Albemarle Co., Va.**

1902. ————— IN THE STUD. ————— 1902

## Whalebone, 7872.

Standard, Registered in Vol. XV., A. T. R

Sired by Abdallah Wilkes, son of George Wilkes, 2:22. Dam Maggie O., by Abdallah 15 sire of Goldsmith Maid, 2:14; second dam Viley Filly, by Pilot, Jr., sire of dam of Maud S., 2:08½.

NOTE.—Whalebone is a richly colored bay horse of fine size, handsome, well formed and with the purest of trotting action. His disposition is perfect. He has sired Visitor, 2:26½, and other winners.

**FEE, \$15, with usual return privilege.**

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Nos. 8, 10 and 12 Tenth St., RICHMOND, VA.

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Correspondent of

RICHMOND TIMES, Richmond, Va.  
SOUTHERN PLANTER, Richmond, Va.  
SPIRIT OF THE TIMES, New York,  
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REFERENCES.—Mr. A. B. Gwathmey, Cotton Exchange, New York; Mr. W. N. Wimer, of Wimer & Canfield, Lawyers, 49 Wall St., New York; Col. K. M. Murchison, Banker, Wilmington, N. C.; Mr. L. Banks Holt, Proprietor Onelda Cotton Mills and Alamance Farm, Graham, N. C.; Col. B. Cameron, Fairtoosh Stud Farm, Stagville, N. C.; Maj. P. P. Johnson, President National Trotting Association, Lexington, Ky.; Mr. Thos. N. Carter, President Metropolitan Bank, Richmond, Va.; Mr. Jas. Cox, Belgravia Stock Farm, Mt. Jackson, Va.; Capt. John L. Roper, Foxhall Stock Farm, Norfolk, Va.; Capt. R. J. Hancock, Ellerslie Stud Farm, Charlottesville, Va.; Sam'l Walton, Walton Farm, Falls Mills, Va.

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**A HORSELESS CARRIAGE**

Is a special feature of my business this season.

**BUGGIES, CARRIAGES AND RUNABOUTS.  
All Kinds Pleasure and Business Vehicles.**

It will pay you to see my stock before purchasing elsewhere. Rubber Tiring, Bike Work and all kinds of Repairing done.

ESTABLISHED 1840.

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## JERSEY BULL CALVES

From tested dams of high-milking qualities. Perfect as individuals, and guaranteed to reproduce the high qualities of their parents.

## BERKSHIRES

Of the best imported and domestic stock.

Little Book of the Farm on application.

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### Swift Creek Stock and Dairy Farm



Has for sale a large number of nice young registers of A. J. C. C.

### JERSEY BULLS AND HEIFERS.

None better bred in the South. Combining closely the most noted and up-to-date blood in America. Bulls 10 to 12 months old, \$25.00. Heifers, same age, \$35.00. POLAND-CHINA PIGS, \$5.00 each. Send check and get what you want.

T. P. BRASWELL, Prop., Battleboro, N. C.

### ..OAK HILL FARM..

## Holstein and Jersey Cattle, Biltmore Berkshires.

Wishing to reduce my stock, will sell cheap every thing from Oak Hill Farm is guaranteed first-class, and as represented. Address

Oak Hill Station **SAM'L HAIRSTON,**  
 on the Farm. **Wenonah, Va**

## FOR SALE

One very fine and beautifully marked pure.....

## Holstein-Friesian

### HEIFER CALF, 3 MONTHS OLD.

Several Grade Heifers, 6 months old. Sire, pure registered Holstein; mothers, Devon. All from rich heavy milkers. Stamp for reply. Prices reasonable. **MRS. W. F. JACKSON,**  
 Olga P. O., Amelia County, Va

### GRASSMERE STOCK FARM, Glen Allen, Va.

## TROTting, SADDLE and HIGH STEPPING HORSES

Educated, bought and sold on commission, and kept by the month or year. High class POULTRY and BELGIAN HARES for sale at reasonable rates. Write for circulars; no trouble to answer questions. Satisfaction guaranteed.

**CHANDLER QUINTIN, Veterinarian,**  
 40 yrs. experience on the best stock farms in America.

### ..FOR SALE..

## 1 Pair Black Horses

Very closely matched; high actors; desirable driving team; wt., 1850; age, 6 yrs. Price, reasonable. For further information, apply to

Box 206, PT. DEPOSIT, MD.

## MEETING OF FARMERS' INSTITUTE WORKERS.

Editor Southern Planter:

Permit me through your columns to call attention to the coming meeting of the American Association of Farmers' Institute Workers to be held in the city of Washington, June 24, 25 and 26, 1902. Practically every State in the Union is making some organized effort to bring the results of improved methods of farming in reach of the farmer. The best methods of accomplishing this result are, perhaps, not yet worked out. It is pioneer work, and we all have much to learn concerning it. There is no doubt that a national meet of those who are engaged in farmers' institute work is the best place to get new ideas, and I hope those of your readers who are interested in the subject will make it a point to attend this meeting. Noted institute workers from all parts of the United States and Canada will be present, and will discuss all phases of the work. Arrangements are being made for reduced rates at the best hotels in the city, headquarters being at the National Hotel. Addresses will be delivered by such noted men as Hon. James Wilson, Secretary of Agriculture; Col. Joseph H. Brigham, Assistant Secretary of Agriculture; Hon. G. C. Creelman, of Canada; Prof. George T. Powell, Briar Cliff Manor, New York; Prof. Curtis, of Iowa; Secretary Coburn, of Kansas, and others. A portion of the program will be devoted to discussion of the teaching of domestic science in the rural districts.

Yours very truly,

**W. J. SPILLMAN, Agronomist,**  
 U. S. Department of Agriculture.

## CAUSTIC BALSAM SUCCESSFUL WHERE OTHER REMEDIES FAIL- ED.

Nashville, Tenn., Nov. 12, 1901.

The Lawrence Williams Co., Cleveland, Ohio:

Having used your liniment for several years, and knowing its value, I would like to become general agent for it. I find very few drug houses in Nashville have handled it. I can assure you I will push it to its fullest merits should you appoint me as agent, for I know it is unexcelled. I have used at least twenty or thirty bottles in past two years. Having been a trader, and also deputy sheriff for the past eight years, I have had occasion to come in contact with a number of injured horses that no other liniment but this could have helped. I consider it the best liniment for stock that can be used. I would like to meet you some time and give you my experience with your liniment; also can give you reference as to my ability.

**JOHN C. SAWYER.**

### ACME ENGINES.

The Rochester (N. Y.) Machine Tool Works are advertising their celebrated "Acme" Engine in this issue. It is well worth while to send for information in regard to this splendid little engine. Just the thing for low work.

To make cows pay, use Sharples Cream Separators. Book "Business Dairying" & Cat. 305 free. W. C. Cheeter, Pa.

## HEREFORDS.

High-Class  
 Animals  
 Ready for  
 Service.

## BERKSHIRES.

Young stock for sale at all times.  
 Information and terms upon application.

**EDW. G. BUTLER, ANNEFIELD FARMS,**  
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## Breeders of HEREFORDS

— SINCE 1856. —

**FOR SALE** Three bulls 2 yrs. old; Two bulls, 18 mos. old; Two bulls 1 yr. old; Three bull calves 6 mos. old, at reasonable prices.

**HAYFIELDS STOCK FARM,**  
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## DORSETS AND HEREFORDS

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### FOR SALE.

## DEVON BULL

(18 mos.) Registered. 25 Hampshiredown Ewes (1 and 2 yrs.); Young Hampshiredown Ram (2 yrs.); Registered: Two H. D. Rams (1 yr.); Wild and Bronze Turkeys, Indian Runner Ducks, Col. Dorkings and Black Minorcas.

**ROBERT J. FARRER, ORANGE, VA.**

## For Sale Regist'd DEVON BULL CALVES

From beef and milk producing herds.  
**W. E. THOMAS, NASSAWADOX, VA.**

## \$50.00 WILL BUY SHORTHORN BULL CALF

Dropped November 23th, 1901. Sired by The Dean, 140815; dam Sowerby's Beauty, Vol. 40, A. S. H. B.

**HUMBERT BROS., University of Va.**

### PURE-BRED STOCK

## Reg. Poland-China Hogs Reg. Shropshire Sheep \* \* \* Shorthorn Cattle

Stock of all ages for sale. Stock as represented or money refunded.

**J. F. DURRETTE, Birdwood, Albemarle Co., Va.**

## BILTMORE FARMS, - BILTMORE, N. C.

### Headquarters for GOLDEN LAD JERSEYS,

Also get of TREVARTH and GEN. MARIGOLD. ❀ ❀ ❀

**GOLDEN LAD'S SUCCESSOR**, First and sweepstakes over all at the Pan-American Exposition, the champion JERSEY BULL OF AMERICA, and out of Golden Ora, our great prize-winning cow, both born and developed on these Farms, is among our service bulls.

Biltmore Jerseys are a combination of large and persistent milking qualities with an individuality that wins in the show ring.

**SPECIALTY.** Write for descriptive circular of the best lot of young bull calves ever offered, both for breeding and individuality. They are by noted sires and out of large and tested selected dams. Many of these calves are fit to show and win in any company.

### BILTMORE POULTRY YARDS. ❀ ❀

**SPECIALTY.** Write for descriptive circular of eggs from our prize-winning pens. Over 50 yards to select from, made up of the winners at the leading shows for the last two seasons. If you want winners you must breed from winners.

### Headquarters for the best IMPORTED ENGLISH BERKSHIRES.

APPLY TO BILTMORE FARMS, BILTMORE, N. C.

# ONE MORE MONTH ONLY

## LAST CALL! LAST CALL! LAST CALL!

We have decided to extend the time to **JULY 1st**, in order to give every reader of the PLANTER that may be interested in Nursery Stock the opportunity to purchase reliable trees at the lowest prices ever offered. Note the low prices mentioned below and send in your order at once. If you think of planting one tree or one thousand this should interest you. You can depend on the quality. If not convenient to send all cash with the order, remit one-fourth with the order and the remainder any time previous to the shipment of the stock. Shipment, Fall, 1902.

**APPLE**, 3 to 5 ft., 7c. each; \$5 per 100; \$45 per 1000.

**APPLE**, 2 to 3 ft., 5c. each; \$4 per 100; \$35 per 1000.

**STD. PEAR**, 3 to 5 ft., 10c. each.

**DWARF PEAR**, 2 to 3 ft., 8c. each.

**CHERRY**, 3 to 4 ft., 10c. each.

**PLUM**, 3 to 5 ft., 10c. each.

**PEACH**, 4 to 5 ft. 10c.; 3 to 4 ft., 8c.; 2 to 3 ft., 6c.

**QUINCE**, 2 to 3 ft. 10c. each.

Our assortment of varieties consists of the popular sorts for market and home use. To get the benefit of the above rates, your order must be received on or before July 1st. Orders for the Apple must call for not less than ten of a variety. The other items any number of a variety at the rates mentioned. Purchaser will pay the transportation charges.

❀ **FREE** Any one ordering to the amount of \$10, we will send free the "SOUTHERN PLANTER" for one year. ❀

We refer you to any business house in this city and many customers in all parts of the U. S. Write us for catalogues or any information. Don't delay but send your order in at once. Address

**THE NURSERY & SEED COMPANY, Charleston, W. Va.**

# DORSET SHEEP

My entire flock of Dorsets, registered and eligible,

**FOR SALE.**

44 head, exclusive of present crop of lambs. Fine stock; low price.

**WALTER WATSON,  
SALEM, VA.**

# V. P. I.

## Farm Bulletin

Orders booked for

**DORSET RAM LAMBS,**

to be delivered in July and August. No more Berkshire hogs, of any age, to offer until Spring.

D. O. NOURSE, Prof. of Agr.,  
Blacksburg, Va.

## Large English Berkshires

AND

## Dorset Horned Sheep

IMPORTED BOARS at HEAD OF SERVICE. Send for 1902 Catalogue.

N. S. BURRIER, New Midway, Md.

## ELLERSLIE FARM

Thoroughbred Horses  
AND SHORTHORN CATTLE,

Pure Southdown Sheep  
and Berkshire Pigs.

FOR SALE. R. J. HANCOCK & SON,  
CHARLOTTESVILLE, VA.

FOR SALE—A Choice Lot of Young

## SHORTHORN BULLS

Ready for Service.

W. W. BENTLEY, Palaski City, Va.

## POLAND-CHINA PIGS

MALE AND FEMALE.  
REGISTERED AND ELIGIBLE.

J. B. CRAIG, Sturgeon Pl., Charles City Co., Va.

### EDUCATE THE GIRLS.

ILLITERATE MOTHERS MEAN ILLITERATE CHILDREN.

1. In no section of this country have the women been treated justly in education, says Pres. McIver of the N. C. State Normal School. In some quarters the injustice has been less flagrant than in others.

2. Illiteracy among the women throughout the United States, and especially in the southern states, is much greater than it is among men.

3. The most important factor in our civilization is the white girl in the country; she will make the home and fix the ideas of the people, and as mother and primary teacher she will do the most important teaching that is done for the human race; until recently the state, the church and the philanthropists have in South devoted their attention, so far as endowed institutions are concerned, almost exclusively to the education of the white man, the negro man and the negro woman.

4. It is suicidal and criminal for the State, the church and society not to see to it that all women have at least equal educational advantage with the advantages enjoyed by men; that 2,000,000 illiterate mothers in the South mean 4,000,000 or more illiterate children for society and the schools to contend with in the next generation, and it is safer and cheaper to educate them now than then.

5. If these statements are true, we ought to act at once. Let this be done, not by taking anything from men of the white race or from the negro man and the negro women, but by increasing from all sources our gifts of every kind to those educational institutions which are training the most important part of our population, so long forgotten, but which must always set the pace of our civilization.

### OUT OF SIGHT.

A woman in Summerville who was the possessor of a solitary piece of statuary, was one evening giving a party. Shortly before the guests arrived she looked through the rooms to see that everything was in order. Missing the Venus from its accustomed place—"Lee," she asked of the old butler, "where's my piece of statuary?"

"Miss Weeny, you mean, ma'am?" answered Lee, looking obstinate.

"Yes, the Venus. Where is it?"

"Well, Miss Margrit, ma'am, I jes' thought as gemmens was expected dis evenin', I'd better set Miss Weeny under de stahs."—*June Lippincott.*

### GASOLINE ENGINES, Etc.

Among the new advertisements in this issue will be found that of the Rumsey-Williams Co., St. Johnsville, N. Y. This firm makes a splendid line of Gas, Gasoline and Steam Engines and Grain Thrashers. Write for catalogues and prices.

### HEREFORDS.

Stonehurst Fruit and Stock Farm, Union Mills, Va., is offering some Choice Herefords in another column.

### Wood's "Trade Mark Brand"

## German Millet

is the true large-headed sort, and produces from one-fourth to one-half more forage per acre than the ordinary Millet. The difference in yields from different grades of Millet is more marked than any crop we have ever grown and it is a great deal the cheapest—crop results considered—to purchase the best quality of seed that you can obtain; this you can always be assured of doing when you order Wood's "Trade Mark Brand" of Southern-grown German Millet.

Write for prices and Descriptive Circular which also gives full information about all Seasonable Seeds, Cow Peas, Soja and Velvet Beans, Teosinte, Sorghums, Buckwheat, Late Seed Potatoes, etc.

T. W. WOOD & SONS,

Seedsman - Richmond, Va.

## "Crop Growing & Crop Feeding"

BY PROF. W. F. MASSEY.

383 Pp. Cloth, \$1.00; Paper, 60c.

We offer this splendid work in connection with the Southern Planter at the following prices:

Southern Planter and Cloth Bound Volume, \$1.25

Southern Planter and Paper Bound Volume, 90c.

Old or new subscriptions.

# TAMWORTH

And POLAND-CHINA PIGS For Sale.

From registered stock, 8 weeks old, \$5.00  
Apply to

J. C. GRAVES, - Barboursville, Va.

## HIGH GRADE Southdown Flock FOR SALE.

Owing to an extension of our dairy business we must dispose of about 120 EWES and LAMBS immediately. All in fine condition and will be sold with registered bucks. Write for full details to  
BILTMORE FARMS, BILTMORE, N. C.

A Neat BINDER for your back numbers can be had for 25 cents. Address the Business Office.

Mention the Southern Planter when writing advertisers.



IN THE ACCOMPANYING ILLUSTRATION is shown the spot that marks the centre of population of the United States. This spot is situated four miles east and two miles south of Columbus, Ind., very near the residence of Mr. Henry Marr, which, together with his barn, is shown in the photograph. Having just purchased a new McCormick binder, Mr. Marr consented to have himself photographed on his World-Centre machine at the spot marking the centre of population of the United States. The machine owned by Mr. Marr and shown in the illustration is fully illustrated in a beautiful book entitled the "World-Centre," which will be mailed free upon application to McCORMICK HARVESTING MACHINE COMPANY, Chicago, U. S. A., or

W. K. BACHE, AGENT, RICHMOND, VIRGINIA.

#### AN EARLY DAGO.

A Sunday-school teacher was impressing upon the little ones in her class the story of the lame beggar who was carried every day to the Beautiful Gate of the Temple, and when the Apostles, Peter and John, went up there they miraculously healed him. The teacher expressed sorrow for the poor man, who could do nothing but sit at the gate and beg. A little hand shot up, and a small voice piped out:

"He might have got a hand-organ."

The same teacher asked the little ones to repeat the Golden Text on one occasion, when the Sunday-school lesson was upon the subject of temperance. Here is the version of the text as given by one of them:

"Wine is a mocker, strong drink is raging, and whosoever is deceived thereby hath everlasting life."—*Lippincott's June Magazine.*

Mention the *Southern Planter* when corresponding with advertisers.

# DON'T BUY A SPRAY PUMP

UNLESS YOU BUY THE BEST.

## "Maryland High Pressure"

BEST IN THE WORLD!

By working Pump a half minute you spray continuously for fifteen minutes with a very fine or coarse spray, narrow or wide spread as you may wish. Four gallons of solution carried easily with shoulder strap, leaving both hands free to direct spray. Saves material and labor. Write for prices and complete description.

FRANKLIN DAVIS NURSERY CO., Baltimore, Md.

### WHAT THE ATMOSPHERE IS MADE OF.

The first rude shock to the prevailing ideas concerning the atmosphere was given in 1774, when Priestley discovered in it the very active element, oxygen. Two years later he added to this the passive element, nitrogen, and the two main constituents of the invisible air became captives of science. To these new elements the old ideas clung for a time. Oxygen was named by its discoverer dephlogisticated air. It lacked phlogiston, the fancied fire element, and sought it with eager appetite in whatever it touched. It was believed to be saturated with phlogiston, and therefore fatal to flame. While oxygen combined briskly with almost all the elements, nitrogen refused to combine at all except under great provocation. Though intimately mingled in the atmosphere, these elements were as unlike in character as two substances could well be.

No long time passed before a third substance was found in the atmosphere, this time not a chemical element, but the compound gas, carbonic acid. While not great in quantity, it proved to be indispensable in quality, since all the world of living things is dependent upon it for existence. Inimical as it is, when in large quantity, to animal life, without it there could be no life at all, and the earth would be a dead and barren expanse. For the plant world gains from this gas its foundation element of carbon, and is thus enabled to lay up those stores of food upon which the animal world depends.—CHARLES MORRIS, in the June *Lippincott*.

### FORTUNES MADE IN TIPS.

In some restaurants in New York the waiters put all their tips in a box and divide equally. That is a very general plan in Paris, I believe. As a rule, in this country, however, what each gets is his own. In one café with three distinct sets of patrons the tipping is so constant that the waiters serving there pay handsomely for the privilege. There is, however, but one such place, I think. At another well-patronized place some of the waiters have served many years. I talked with one of these the other day. He said he had kept accounts of his tips for twenty years. The lowest on record was eight hundred dollars, the highest eighteen hundred, while the average was thirteen hundred. This means that in tips this worthy man had taken in about three dollars and a half a day during twenty years. I was quite prepared to have him tell me that he had educated one of his sons, putting him through college and the law school. This man was German. It probably never occurred to him that there was anything debasing in taking a tip. And for him there was nothing debasing in it. He lived and acted in harmony with the sphere of life into which he was born. That was all. But it would be an entirely different thing for this son, this beneficiary of tips, to receive one. He is an American, and must take fees only. For his father's sake, as well as his own, I hope his fees will be large.—JOHN GILMER SPEED, in June *Lippincott*.

### "ELLERSLIE."

## SHORTHORNS

124204 A. H. B.; out of registered cows which have been selected for milking as well as beef qualities.

## SOUTH DOWNS

1 and 2 yr. old rams by Warwick, imported from the Sandringham flock of KING EDWARD VII, out of ewes from the celebrated DRUID HILL PARK (Baltimore) flock. These are unregistered but are first class in every respect.

REMEMBER.—We do not ask fancy, but farmers' prices. Our stock is not in showing ring but working condition.

R. J. HANCOCK & SON, CHARLOTTESVILLE, VA.

\*\*\*\*\*  
WE  
OFFER  
\*\*\*\*\*

## YOUNG JERSEYS

Male and female; several YOUNG GUERNSEY BULLS; BERKSHIRE PIGS, pairs and trios not akin. A few pairs of BRONZE TURKEYS, PLYMOUTH ROCK and BROWN LEGHORN fowls.

### EGGS FOR HATCHING

From Bronze Turkeys, Plymouth Rock, Brown Leghorn and Light Brahma fowls ready now.

M. B. ROWE & CO., Fredericksburg, Va.

## St. LAMBERT JERSEYS

We have for sale a number of YOUNG BULLS from cows with butter tests ranging from 16 to 24 lbs. per week, and yielding from 5 to 6 gallons of milk per day.

We have more high testing ST. LAMBERT COWS than can be found in any herd in the United States or Canada.

## INDIAN GAME FOWLS

We have also for sale a choice lot of INDIAN GAME CHICKENS—male and female. Also some choice WHITE WYANDOTTE COCKERELS. The Indian Game and White Wyandottes are the best general purpose fowls.

BOLMONT FARMS, SALEM, VA.

## CISMONT DORSETS..

CISMONT STOCK FARM offers well developed young Dorsets of the best blood of England and America.

Prices reasonable.

G. S. LINDENKOHL, Keswick, Albemarle Co., Va.

# LARGEST HOG IN THE WORLD

## WEIGHT 1621 LBS.



The Poland-China hog called "Old Tom" was raised in Minnesota, and was exhibited at Minnesota State Fair in 1897. He made a Big Gain by eating "INTERNATIONAL STOCK FOOD." "INTERNATIONAL STOCK FOOD" cures Hogs, Cattle, Horses and Sheep to grow very rapidly and makes them Big, Fat and Healthy. It is used and strongly endorsed by over 500,000 Farmers. It is sold on a Spot Cash Guarantee to Refund Your Money in any case of failure, by over 20,000 Dealers. It will make you extra money in Growing, Fatening or Milking. Owing to its blood purifier and stimulative tonic effects, it Cures or Prevents Disease. It is a safe vegetable medicinal preparation to be fed in small-sized feeds in connection with the regular grain, so that each animal obtains more nutrition from all grain eaten. It Fatens Stock in 30 to 60 Days less time, because it aids Digestion and Assimilation. In this way it saves a large amount of Grain. The use of "INTERNATIONAL STOCK FOOD" only costs  $\$2$  FEEDS for ONE CENT.  $\$75$ . Ask your dealer for it and refuse any of the many substitutes or imitations. It always pays to feed the best. "INTERNATIONAL STOCK FOOD" is endorsed by over 100 leading Farm Papers. The U. S. Government included "INTERNATIONAL STOCK FOOD" in the Government exhibit at Paris Exposition in 1900, and it was awarded the Highest Medal.

### A \$3000.00 STOCK BOOK FREE

For You and Every Reader of This Paper.

This Book Contains 183 Large Colored Engravings of Horses, Cattle, Sheep, Hogs, Poultry, etc., and of this Hog. It cost  $\$3000$  to have our Artists and Engravers make the Engravings. It contains a finely illustrated Veterinary Department that will save you Hundreds of Dollars. Gives description and history of the Breeds of Horses. Answer the 3 Questions and I'll Write You a Letter or Postal Card and Answer 3 Questions: 1st—Name this Paper. 2nd—How much stock have you? 3rd—Did you ever see "INTERNATIONAL STOCK FOOD" for Horses, Cattle, Sheep, Hogs, Colts, Calves, Lambs or Pigs? Answer the 3 Questions and I'll Write You at Once for Book.

Cattle, Sheep, Hogs and Poultry. The Editor of this Paper will tell you that you ought to have a copy of our finely illustrated Book for reference. We will give you  $\$14.00$  worth of "INTERNATIONAL STOCK FOOD" if Book is not exactly as represented.

1st—Name this Paper. 2nd—How much stock have you? 3rd—Did you ever see "INTERNATIONAL STOCK FOOD" for Horses, Cattle, Sheep, Hogs, Colts, Calves, Lambs or Pigs?

Largest Stock Feed Factory in the World  
Capital Paid In,  $\$1,000,000$ .

DEALER, SELL THESE  
ON A "SPOT CASH"  
GUARANTEE

INTERNATIONAL STOCK FOOD;  
INTERNATIONAL POULTRY FOOD;  
INTERNATIONAL LOUSE KILLER.

INTERNATIONAL WORM POWDER;  
INTERNATIONAL COLIC CURE;  
INTERNATIONAL HAIRNESS SOAP.

INTERNATIONAL GALL COLIC CURE;  
INTERNATIONAL BLEAF CURE;  
SILVER PINE HEALING OIL, ETC.  
MINNEAPOLIS,  
MINN. U. S. A.

### PERILS OF BRIDGE BUILDING.

The design of a long bridge span is one of the most elaborate mathematical problems that arises in constructive work. The stresses produced by its own weight, by the weight of traffic, by locomotive drivers, by the hammering of flattened wheels, by the action of brakes on an express train, by the high speed on a curved track, by the wind, and by the expansion and contraction of the steel in summer and winter, are all accurately calculated. The deflection of the loaded and unloaded bridge is determined, and complete drawings are made of every member of it. The bars of steel are tested in machines which will pull in two a horse-hair or a steel bar strong enough to lift half a score of the heaviest locomotives at once, and which will crush an egg shell or a steel column, and accurately measure the stress in each case. The different kinds of members are forged, riveted, bored, or planed, in perhaps half a dozen remote shops, and, although not usually fitted together there, are examined and measured by specialists to see that they are correct, and are then shipped by scores of car loads to the site of the proposed structure, where steam derricks unload them and pile them many feet high in stacks covering acres of ground.

The bridge piers may rise above the water, hundreds of feet apart. It remains to place on them a 1,000 ton structure, high above a savage chasm, over an impassable current or roaring tide, where the water is deep, the bottom of jagged rocks or treacherous quicksand, or where an old bridge must be removed, and the new one built in its place, without interrupting navigation or obstructing continuous traffic on the bridge. To accomplish this, the engineer has timber, bolts, and ropes, hoisting engines, derricks, and a band of intrepid builders, who have perhaps followed him for years through more hardship and danger than fall to the lot of almost any other calling.

The complicated framework of a great span is a skeleton with many accurate joints and thousands of steel sinews and bones, each of which must go in exactly the right place in exactly the right order.

## Hill Top Stock Farm OFFERS FOR SALE

..... A LIMITED NUMBER OF

### Southdown and Shropshire Sheep

### A Grand Lot of Berkshire Hogs

Young Boars ready for service.

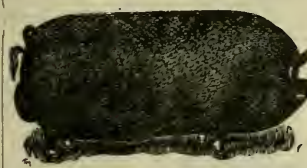
Come and see our stock, or write for description and prices to

**H. A. S. HAMILTON & Co., Staunton, Va.**

Parties will be met at train with conveyance, if we are notified in time. We are always glad to show our stock.

I AM NOW BOOKING  
MANY ORDERS FOR  
FANCY

## BERKSHIRE PIGS



for spring shipment. All sired by my famous boars, SIR JOHN BULL and UNCLE SAM. The former imported by me; the latter bred in the purple. I have four strains of registered sows, so I can furnish pigs no akin.

FIVE high-bred three-year-old COLTS cheap. Fancy stock, but not fancy prices.

**THOS. S. WHITE, Lexington, Va.**

FOR SALE.

## One Holstein-Friesian Bull,

12 months old registered and transferred to the buyer for \$50. This young bull's ancestors on both sides are heavy milkers and rich in butter fat. Also

## One Cutting Box, Good as New.

24 FEET OF ELEVATOR. It will cut from 50 to 60 tons a day of ensilage. It is the best cutting box made. Dick's Improved. Whole rig complete, \$46.00.

**T. O. SANDY, Burkeville, Virginia.**

The builder must weave into the trusses pieces larger, heavier, and far more inflexible than whole tree-trunks; swiftly hoist and swing them to place hundreds of feet high; fit together the massive girders and huge forged bars with watch makers accuracy; support the unwieldy masses until they are keyed together and self-sustaining; and under millions of pounds of stress must adjust them, at dizzy heights, to mathematical lines. This he may need to do, not deliberately in a comfortable shop or on a solid platform, but in dangerous emergencies, at utmost speed, putting forth his whole strength on narrow, springing planks, in a furious tempest, in bitter cold or in blazing heat. He may be in the heart of an African desert, menaced by blood-thirsty fanatics, or in a gorge of the Andes, hundreds of miles from tools or supplies, where there is absolutely no supplement to his own resources. Under such conditions, bridge-building is one of the most fascinating and difficult of engineering problems, and requires a different solution for almost every case.—FRANK W. SKINNER in *June Century*.

**THE CENTRE OF POPULATION.**

Of course, every one in this country has heard or perhaps read something about the centre of population of the United States. Elsewhere in this issue will be found an illustration showing the stake which marks this celebrated spot, which is on the farm of Mr. Henry Marr, four miles east and two miles south of Columbus, Ind. Mr. Marr, whose portrait



is presented herewith, has bought a new McCormick-World Centre Binder for 1902. It was eminently proper for this centre-of-population man to purchase a world-centre binder—and it is also proper for every other man who needs a binder to follow the example of this celebrated Mr. Marr and purchase an O. K. Binder.

**RED RIPPER HAY PRESSES.**

Look up the advertisement of Sikes Bros. & Co, Helena, Ga., in which they offer their well-known Red Ripper Full Circle Hay Presses.

There is no record of a FARQUHAR BOILER having exploded

**The BEST Threshing Outfit**

for a threeheman to buy and for a farmer to use is the Farquhar Celebrated AJAX THREE-RING ENGINE and the FARQUHAR SEPARATOR. Engines made in sizes 4 h. p. and up, and combine the advantages of all successful engines. Easy steamers and develop more than rated horse-power. Have driver's seat, foot-brake and two injectors. SEPARATORS of all sizes and sizes for merchant threshing or farm use. Farquhar machines have all late improvements, they thresh and clean all kinds of grain perfectly.

Catalogue of Engines, Threshing Machinery Saw Mills, Agricultural Implements, &c.

**A. B. Farquhar Co., Ltd**  
YORK, PA.

**HEREFORDS**

**Registered Herefords**

YOUNG BULLS and HEIFERS  
NOT AKIN FOR SALE BY  
STONEHURST FRUIT & STOCK FARM,  
Union Mills, Virginia.

**BACON HALL FARM**

**HEREFORD CATTLE**—REGISTERED. "Gold Standard" at head; related to Champions, "Dale," "Perfection," and half-brother to "Wood's Principal," champion steer International Show, Chicago, 1901.

CALVES NOT AKIN.

**Berkshire Pigs, Toulouse Geese, Muscovy Ducks**

**E. M. GILLET,**  
Verona, Balto. Co., Md.

TERMS, "Satisfaction."

**G. C. Taliaferro,**  
NASONS,  
VA.  
1902

**"MOUNT SHARON**  
**HEREFORD CATTLE**  
**BRONZE TURKEYS**  
**MUSCOVY DUCKS**

**STOCK FARM."**  
Registered SHROPSHIRE SHEEP  
Registered POLAND-CHINA PIGS.

**NOW OFFERS FOR SALE**

**HEREFORD CATTLE.**—Calves, entitled to registration, \$75 to \$100. Grade Calves by "Edward" \$35 to \$40.

**SHROPSHIRE SHEEP.**—Bucks, one year old and over, \$15 to \$20. Buck Lambs, July delivery, \$10. and \$12. Ewe Lambs, July delivery, \$8. and \$10.

**POLAND-CHINA HOGS.**—Pigs, six weeks old, \$5. Pigs, two or three months old, \$7.50. Pigs, five months and over, \$15 to \$30.

**M. BRONZE TURKEYS.**—Toms, \$1. Hens, \$3. Eggs, per sitting of 12, when in season, \$4.

**MUSCOVY DUCKS.**—Pure White Drakes, \$1.25. Pure White Ducks, \$1. Pairs, \$2.25; trios, \$3.

**BARRED PLYMOUTH ROCKS.**

**ROUEN GESE.**—Ganders, \$2.50. Geese, \$2.50. Eggs, per sitting, \$3.00

WILLIAM L. J., Jr., No. 21058, half brother of Axtell, will serve a limited number of mares for \$25 the season. Mares boarded at lowest figures per month.

# LIDLAW'S CONCENTRATED TOBACCO POWDER, SHEEP DIP, HOG AND CATTLE WASH.

ABSOLUTELY NON-POISONOUS.

**Why Run the Risk** of losing a valuable animal by using such harsh remedies for destroying vermin on stock as Kerosene, Ambia or Carbolic Acid when you can purchase our celebrated non-poisonous Wash, which will kill all vermin on stock at one-half a cent per head? The greatest wool promoter known. The cheapest and most effective wash.

PRICES: 5-lb. bag, 75c.; 10-lb. bag, \$1.25; 25-lb. bag, \$2.60; 50-lb. bag, \$5.00.

..ONE 5-LB. BAG WILL MAKE 50 GALLONS WASH.

For sale by leading Druggists and General Merchants. If your merchant does not handle it, write direct to Manufacturers,

LIDLAW, MACKILL & CO., Ltd., 3400 to 3500 Williamsburg Avenue, RICHMOND, VA.



## CATALOGUES.

Laidlaw, Mackill & Co. (Ltd.), Richmond, Va. Laidlaw's Concentrated Tobacco Powder, Sheep Dip, Hog and Cattle Wash. Absolutely non-poisonous. This is one of the best dips for destroying lice, scab and ticks on all kinds of animals, and may be used with perfect safety. Wherever used, it has given satisfaction.

E. W. Cole & Co., Kenton, Ohio. Breeders of Angora goats.

Medart Patent Pulley Co., St. Louis, Mo. Pulleys of all kinds. Shafting, gearing.

Caledonia Bean Harvester Works, F. W. Miller, proprietor, Caledonia, N. Y. Makers of bean harvesters, bean and corn planters. Potato covers, hillers, etc.

The Marlin Fire Arms Co., New Haven, Conn. Rifles and guns.

Chicago Stump Machine Manufacturing Co., Chicago, Ill. Stump pullers and land-clearing devices.

Anderson Malleable Iron and Manufacturing Works. Rex wind-mills and tanks.

N. S. Burrier, New Midway, Md. Berkshire swine, Dorset horned sheep.

Wm. Cooper & Nephew, Chicago, Ill. Makers of the well known Cooper sheep dip, in use all over the world for destroying lice, ticks, scab, etc.

A sheep dip that helps the growth of the wool as well as accomplishing the eradication of insects and diseases has a double claim upon the sheepman. Cooper Dip, the famous English remedy now so popular throughout the States, and which by the way has the enormous annual sale of sufficient quantity to dip two hundred million sheep every year, possesses these two qualities, and many thousands of owners in all parts of the world resort to its use regularly for the benefit it gives to the wool alone.

JERSEYS AND BERKSHIRES, and good ones too, are offered by Filston Farm.

## ECONOMY PITLESS WAGON SCALES

STEEL JOISTS

METAL FRAME



SCALE COMPLETE EXCEPT THE SEVEN PLANK FOR FLOORING.

McDONALD BROS., PLEASANT HILL, Mo.

## G. & A. BARGAMIN CO

RICHMOND, VIRGINIA.

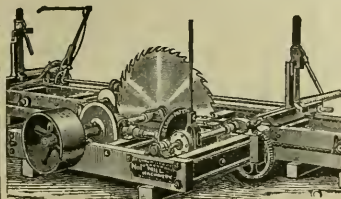
ESTABLISHED 1817.

### PUMPS, RAMS, HOSE, Etc.

Water Pipe and Dain Pipe, Fire Clay Pipe, Bonnets, Flue Rings, etc.

Water Closets, Bath Tubs, Wash Stands and Sinks. Water Heaters and Tanks. Everything in the Plumbing and Steam Heating line.

BOLTS, NUTS, RIVETS, BELTING, Etc.



## Farmers' \$125 Saw Mill.

Cuts 2000 ft. lumber a day with only 4 h. p.

Our large, handsome catalogue tells all about the famous DeLoach Variable Friction Feed Saw Mills, 4 to 100 h. p., \$125 up. DeLoach Saw Mill Machinery, Planers, Shingle, Lath and Corn Mills, Water Wheels, etc. Write for catalogue and price f. o. b. your depot. DELOACH MILL MFG. CO., Box 600, Atlanta, Ga. (Branch, 120 Liberty St., New York.)

## BOOKS AND PAMPHLETS.

The Breeding and Rearing of Jacks, Jennets and Mules, by J. W. Knight, M. D. The Cumberland Press, Nashville, Tenn. Price, \$1.50.

This book deals with a subject upon which very little has been published in the past, and yet the animals treated upon are of the highest value in Southern agricultural pursuits. Without the "nigger and the mule," our crop production would be indeed small.

The Feeding of Farm Animals. F. W. Wool.

This is a little pamphlet issued by the Armour Fertilizer Works, Chicago, and contains valuable information on the subject of feeding, and especially on the feeding of packing-house products.

## CENSUS BULLETINS.

- No. 155. Alabama. Agriculture.  
 158. Massachusetts. Manufactures.  
 159. New York. Manufactures.  
 160. Iowa. Agriculture.  
 161. Manufactures. Silk Manufactures.  
 162. Vermont. Agriculture.  
 163. Pennsylvania. Manufactures.  
 164. California. Agriculture.  
 165. Florida. Agriculture.  
 166. Manufactures. Shipbuilding.  
 167. New Mexico. Agriculture.  
 168. Manufactures. Flax, Hemp, and Jute Products.  
 169. Hawaii. Agriculture.  
 170. Minnesota. Agriculture.  
 171. Manufactures. Rubber Boots and Shoes.  
 172. Manufactures. Buttons.  
 173. Manufactures. Watches and Watch Cases.  
 178. Manufactures. Manufactured Ice.

## A HANDY EGG SUPPLY.

"I see you've got chickens," I said to my neighbor in the Vicksburg Canal, when a Leghorn pullet peeped her lonely way across the gang-plank and into the front room of his shanty-boat.

"Yas, suh, John, I sholey have. I sholey got chickens. I only got that one yo' was obsehvin' as yil. But I has made up my min' John, that they ain't neveh no use o' payin double prices to them Louisiana 'Cadjuns for eggs. I says to the ol' woman, I says, that when we get ready to be taken out and drif' down the riveh I'm jes' a-goin' to get in a few chickens, John, an' lay my own eggs."—JOHN SWAIN, in the June *Lippincott*.

## A RICHMOND MAIL ORDER HOUSE.

We invite the attention of our readers to the advertisement of M. Rosenbloom & Son, Richmond, Va. This firm has entered the mail order field, and is prepared to supply all kinds of household goods at rock bottom prices. Refer to the advertisement and write them your wants.

## SOUTHDOWN SHEEP.

The Biltmore Farms, Biltmore, N. C., offers the entire flock of Southdowns—120 head—elsewhere in this issue.



as thousands who have used it gladly testify. Everybody knows the price of this remarkable fly-discourager is \$1.00 the half-gallon can. We have made arrangements with the manufacturer for so large a quantity that we are enabled to send to subscribers to Farmers Voice and National Rural a half-gallon can as a mark of our good will. Send \$1 and pay for a year's subscription and get a can of the "Fly Bouncer." Address

THE FARMERS VOICE,

45-47 Plymouth Place,

Chicago, Ill.



## Make Your Live-Stock Comfortable

You will feel better yourself: your cows will give one-third more milk and twice the cream; your beef cattle will fatten on half the feed, and your horses will do their work with ease. The best thing in the world to protect your stock is

## SPRACUE'S FLY BOUNCER

# "THE OAKS" HERD 2 Reg. SHORTHORN Bull Calves

2 HIGH GRADE (pure bred) but not eligible to registry. Stock guaranteed as represented or money refunded. B. R. Comb Leghorn Eggs; 15 eggs, 76c.; \$3 per 100.

B. B. BUCHANAN, Bedford City, Va.

(Formerly at "Rock Hill," Brownsburg, Va.)

## The Southside Manufacturing Company, PETERSBURG, VIRGINIA.

WE MAKE . . .

BASKETS AND CARRIERS for Peaches, Tomatoes, Grapes, Plums, Canteloupes, Egg Plants, Mushrooms, Egg Settings, etc. Sole owners of

The NEW MOTT Patent Nesting Tomato Carrier and the SOUTHSIDE 6-Basket Nesting and Panel End Carriers

If interested send for our 1902 Catalogue and prices.

CHARTERED 1870.

# Merchants National Bank

OF RICHMOND, VA.

Designated Depository of the United States, City of Richmond and Commonwealth of Virginia. Being the Largest Depository for Banks between Baltimore and New Orleans, this Bank offers superior facilities for direct and quick collections.

Capital Stock, \$200,000.00  
 Surplus and Profits, \$531,000.00

JNO. P. BRANCH,  
 President.

JNO. K. BRANCH  
 Vice-President.

JOHN F. GLENN,  
 Cashier.

DIRECTORS.—John P. Branch, B. B. Munford, Chas. S. Stringfellow, Thos. B. Scott, B. W. Branch, Fred. W. Scott, Jas. H. Dooley, Jno. K. Branch, A. S. Buford, R. C. Morton, Andrew Pizzini, Jr., J. P. George.



No. 212½ Jump Seat Trap. Price, \$40. As fine as sells for \$40 to \$50 more.

## 29 YEARS SELLING DIRECT.

We are the largest manufacturers of vehicles and harness in the world selling to consumers, and we have been doing business in this way for 29 years.

WE HAVE NO AGENTS but ship anywhere for examination guaranteeing satisfaction. You are out nothing if not satisfied. We make 100 styles of vehicles and 65 styles of harness. Our prices represent the cost of material and making, plus one profit. Our large free catalogue shows complete line. Send for it.



No. 152 Top Buggy has ½ inch Kelly rubber tires and rubber-covered steps. Price, \$73.00. As good as sells for \$40.00 more.

Elkhart Carriage & Harness Manufacturing Co., Elkhart, Ind.



Pat. March 16 and Nov. 9, 1897.  
Pat. in Canada Nov. 2, 1897.

## BUG DEATH

BUG DEATH is being extensively used by the prominent truckers throughout the South. We invite all those who have not given it a trial to do so according to directions, and take note of the wonderful results to be derived from its use.

BUG DEATH kills the potato, squash and cucumber bug, currant and tomato worm, also other plant and vine-eating pests. It prevents blight and is a plant food of great merit. Our 16-page booklet, entitled "How to Grow Good Potatoes," mailed free upon application.

### PRICE-LIST.

1-lb. package.....	15c.	5-lb. package.....	50c.
3-lb. package.....	35c.	12½ lb. package.....	\$1.00
		100-lb. keg.....	\$7.00

BUG DEATH can be used either dry or in water. We want a good live agent in each town where we are not represented.

**DANFORTH CHEMICAL CO., Leominster, Mass.**

Norfolk Branch with Percy L. Banks, 111 Church St., Norfolk, Va.

### THE CURSE OF ILLITERACY.

AGRICULTURE WILL BE IMPROVED BY IMPROVING THE PUBLIC SCHOOLS.

The South as a whole needs better schools. This is so plain that no way-faring man able to put two and two together can fail to understand it. No appreciable progress in agriculture can be made without better schools, says the Progressive Farmer. Our agricultural colleges, agricultural departments, experiment stations, and farm papers may work with all the earnestness and enthusiasm conceivable, but it will be in a large measure unavailable unless the curse of illiteracy is removed and all the people taught to read.

### GAVE IT UP.

A young woman of twenty-eight upon returning home after a long absence was greeted by her old mammy with, "An' so, Miss Caroline, yer ain't married yit?" "No, mammy, and I've about given up all hope."

"Well, honey, it's powerful comfortin' when ye cease to struggle, but it will be mighty disapp'intin' to yer maw."—*June Lippincott's Magazine.*

The attention of our readers is directed to the first advertisement for this year in our columns of P. K. Dederick's Sons, of Albany, N. Y., upon their celebrated line of hay presses. These people might be termed the fathers of the hay pressing business. It has grown up almost entirely since they began hay pressing. They have always been the recognized leaders in the manufacture of goods for these purposes. Readers of *Southern Planter* interested in hay or any other kind of baling should consult the advertisement and write for the Dederick catalogue.

### SECOND-HAND ROOFING, Etc.

Look up the advertisements of the Chicago House-Wrecking Co., elsewhere in this issue. Roofing, Nails, Water-Closets, Wire, Engines, Boilers, Pipe, etc., good as new, are offered at low prices. Get catalogue No. 166.

### FRAZER'S AXLE GREASE

Is the old reliable. See that you get no substitute.

## The Middle South WOOL BOOK

A Treasure of Practical Information for the Home and Farm



Presented by the LEAKSVILLE WOOLEN MILLS, Leaksville, N. C.  
Edition of 1900

FULL SIZE, 7¼ x 5½ INCHES  
.. BOUND IN CLOTH ..  
.. STAMPED IN GOLD ..

## DO NOT DISPOSE OF YOUR WOOL



until you write to the LEAKSVILLE WOOLEN MILLS, Leaksville, N. C., for samples and catalogue containing liberal offers for the season of 1902. A handsome line of Dress Goods, Flannels, Tailor-made Skirts, Blankets, Coverlets, Carpets, Rugs, Cassimeres, Jeans, Buggy Robes and Knitting Yarns, exchanged for Wool, or manufactured on the cash plan. We pay freight on wool sent to the mills. A valuable book sent free in every package of manufactured goods.



LEAKSVILLE WOOLEN MILLS, :: LEAKSVILLE, N. C.

\* VIRGINIA DIVISION. \*

## Farmers Mutual Benefit Association.

A Fire Insurance Association, chartered by the State for the farmers of Virginia, under an amended and well protected plan.

Insures, against Fire and Lightning, only country property—no stores or unsafe risks. Average cost per year for three years has been \$3.66 per \$1000, including dwellings, barns, produce, &c.,—about one-third the usual cost of insurance to farmers. Amount of property insured \$325,000. Estimated security in real and other estate, \$600,000.

For further information, address,  
MENTION THIS JOURNAL.

CHAS. N. FRIEND, General Agent,  
CHESTER, VIRGINIA.

3 FEEDS TO THE ROUND SELF FEEDER 2 TONS TO THE HOUR

ADAMIRAL HAY PRESS CO. BOX 29, KANSAS CITY, MO.

WRITE TODAY FOR OUR FREE CATALOGUE

## DEDERICK'S, NEW TWO WHEEL BELT PRESS.

It is light, strong and durable, and requires but little power to operate it. Balance wheels replace trucks. Most compact and simple belt press made.

We also make Hand, Horse and Belt Power Presses. Over 150 styles to select from. Write for catalogue, full description, prices, etc.

P. K. DEDERICK'S SONS, 59 Tivoli St., ALBANY, N. Y.



# Our Clubbing List.

The following list of papers and periodicals are the most popular ones in this section. you can **SAVE YOU MONEY** on whatever journal you wish.

DAILIES.	PRICE ALONE.	WITH PLANTER.
The Dispatch, Richmond, Va.....	\$5 00	\$5 25
The Times, " ".....	3 00	3 00
The Post, Washington, D. C.....	6 00	6 00

SEMI-WEEKLIES.	PRICE ALONE.	WITH PLANTER.
The Dispatch, Richmond, Va.....	1 00	1 25
The World (thrice-a-week), N. Y.....	1 00	1 25

WEEKLIES.	PRICE ALONE.	WITH PLANTER.
Harper's Weekly.....	4 00	4 00
" Bazaar.....	1 00	1 40
Montgomery Advertiser.....	1 00	1 00
The Baltimore Sun.....	1 00	1 35
Breeder's Gazette.....	2 00	1 75
Hoard's Dairyman.....	1 00	1 35
Country Gentleman.....	1 50	1 75
The Times, Richmond, Va.....	50	65
Religious Herald, Richmond, Va.....	2 00	2 25
Central Presbyterian, " ".....	2 00	2 50
Christian Advocate, " ".....	1 50	1 75
Turf, Field and Farm.....	4 00	4 00
Spirit of the Times.....	4 00	4 00
Horseman.....	3 00	3 00

MONTHLIES.	PRICE ALONE.	WITH PLANTER.
North American Review.....	5 00	5 00
The Century Magazine.....	4 00	4 25
St. Nicholas ".....	3 00	3 25
Lippincott's ".....	2 50	2 50
Harper's ".....	4 00	4 00
Forum ".....	3 00	3 25
Scribner's ".....	3 00	3 25
Frank Leslies ".....	1 00	1 35
Cosmopolitan ".....	1 00	1 35
Everybody's ".....	1 00	1 35
Munsey ".....	1 00	1 35
Strand ".....	1 25	1 65
McClure's ".....	1 00	1 35
Puritan ".....	1 00	1 35
Review of Reviews.....	2 50	2 75
Leisure Hours.....	1 00	1 25
Blooded Stock.....	50	50

Where you desire to subscribe to two or more of the publications named, you can arrive at the net subscription price by deducting 50 cents from "our price with the Planter." If you desire to subscribe to any other publications not listed here, write us and we will cheerfully quote clubbing or net subscription rates.

Subscribers whose time does not expire until later can take advantage of our club rates, and have their subscription advanced one year from date of expiration of their subscription to either the Planter or any of the other publications mentioned.

Don't hesitate to write us for any information desired; we will cheerfully answer any correspondence.

We furnish no sample copies of other periodicals.

# Seed House of the South.

- RED CLOVER.
- MAMMOTH CLOVER.
- CRIMSON CLOVER.
- WHITE CLOVER.
- LUCERNE CLOVER.
- ALSYKE CLOVER.
- BOHARA CLOVER.
- JAPAN CLOVER.
- BUR CLOVER.



- TIMOTHY.
- ORCHARD GRASS.
- RED TOP or HERDS GRASS.
- KENTUCKY BLUE GRASS.
- RANDALL GRASS.
- TALL MEADOW OAT GRASS.
- JOHNSON GRASS.
- GERMAN MILLET.
- BUCKWHEAT.
- OATS and CANE SEED.

"Whatsoever One Soweth, That Shall He Reap."

We sell strictly reliable **FIELD and GARDEN SEEDS** of every variety at **Lowest Market rates**, included in which are **RAGLAND'S PEDIGREE TOBACCO SEEDS.**

WE ALSO SELL

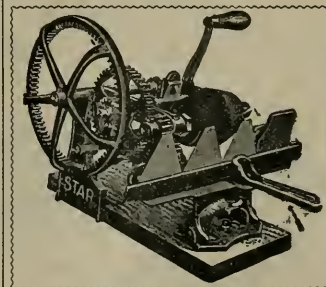
## Our Own Brands of Fertilizers

For Tobacco, Corn, Wheat, Potatoes, &c.  
**Pure Raw-Bone Meal, Nova Scotia and Virginia Plaster and Fertilizing Materials generally.**

Parties wishing to purchase will find it to their interest to price our goods. Samples sent by mail when desired.

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AN INDISPENSABLE ARTICLE to every farmer for grinding mower blades and all kinds of tools. Is used all the year through, and is perfectly adapted to all needs of the farm or shop as a complete and durable grinding machine.

It does not need to be secured or fastened to wheel or tongue of mower; simply sit on the ground, put the knives in position, and the clamps will hold them fast. The stone moves along the edge of the knife without drawing the temper, grinding TWO EDGES AT ONCE, leaving smooth, sharp edges; BOTH OF SAME BEVEL, perfectly

true from heel to point. A gap in a section can be ground to an edge without grinding it out. With each grinder is furnished a flat faced stone for grinding tools.

THE WATT PLOW CO., 15th and Franklin Sts., Richmond, Va.

**TROUSERS REVERSED.**

Representative John F. Lacey, of the Sixth Iowa District, tells the following: "A funny thing happened at one of the Presidential receptions last winter. One of my constituents was doing Washington for the first time and I was exhibiting the lions—in fact, the whole menagerie, for it is not exclusively lions that are on exhibition at our high society functions. As we circulated among the crowd we met Dr. Mary Walker—yes, she was in full evening dress—of the bifurcated variety; décolleté too, in her low-cut vet.

"My friend, like many others visiting Washington for the first time, had been very anxious to meet her, and, indeed, I suspect he would rather have missed a peep at the President than the sight of her; for we have had twenty-five Presidents, you know, and there is only one Dr. Mary Walker. So I introduced him. Just at that moment Minister Wu approached, and, stopping to shake hands with me, was introduced to her also.

"The spinal infection was barely completed when the little Doctor stepped back a pace, and, drawing her rather slight anatomy up to the uttermost semblance of dignity that she could command, with an expression too of utter disapprobation upon her countenance, eyed the big Chinaman most severely for a moment.

"With a look of astonishment at this attitude, to which the popular diplomat is so little accustomed, he waited in curiosity for what was coming, for Dr. Mary's expression was portentous. At last she let him have it, with a look that might have annihilated one less a philosopher:

"Why do you wear petticoats, Mr. Wu?"

"The Minister, smiling blandly, as only a Chinaman can, replied:

"Because it is the custom of my country, Madam; and then, after a slight pause, to give his words all the effect possible, 'Why do you wear trousers, Madam?'—*April Lippincott's Magazine.*

**INTERNATIONAL STOCK FOOD.**

The International Stock Food Co., of Minneapolis, advises us that owing to the enormous increase in their business they have been compelled to build factory No. 3. This will give them 62,000 feet of space. You can get some idea of the business this Company is doing when we tell you that it takes 107 people to do the office work alone. This shows what the farmers think of International Stock Food. By the way, we never heard any thing but praise from any one who had used it. Look up their advertisement in this issue.

Mr. J. F. Durette, Birdwood, Va., is a new advertiser in this issue. He offers Poland-China Hogs, Shropshire Sheep and Shorthorn Cattle. "Stock as represented or money refunded" is the way his advertisement reads.

**ANGUS BULL CALVES.**

Mr. Warren Rice, Winchester, Va., is making a special offer of Angus Bull Calves. Look up his ad.



**Ripley's Compressed Air Sprayer**  
 Finest Sprayer ever invented for spraying cotton and tobacco, trees, and whitewashing buildings, etc. Tested to 60 lbs. pressure. Has a safety valve. Can't burst. One minute's pumping will discharge contents of Sprayer in the form of a mist, covering every part of the foliage. Made of Galvanized Iron and Copper. Has a brass cylinder pump. Prices—5-gal. Galvanized, \$5.50; 4-gallon Galvanized, \$5.00; 5-gallon Copper, \$8.00; 4-gallon Copper, \$7.00; special pipe and nozzle for spraying under 9 inch cotton, tobacco and shrubbery, 70c.  
 Agents and Dealers Wanted to Sell the Sprayers.  
 Write for Catalogue and Discounts.  
**RIPLEY HARDWARE COMPANY,**  
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 make the handiest and most economical threshing outfit known. The thresher is made in three sizes, 21, 26 and 30 h.p. cylinder. It is a simple, easy to handle, light running, strong, durable and effective machine. Will thresh and clean wheat, rye, oats, barley, fax, rice, alfalfa, millet, sorghum, clover, etc. Capacity 200 to 500 bu. Runs perfect. Will fit one man or a whole neighborhood equally well. Can be run by steam, mangle, or any other power desired. Tread powers for 1, 2 and 4 horses (equal to 2, 4 and 6 horses in lever power.) Recutting dry feed, ensilage and chaffing, sawing wood, pumping, repairing cranes, etc. Strongest and lightest running powers on the market. Mounted or unmounted, as ordered. We also make Lever Powers, Feed and Ensilage Cutters, Wood Shaws, Feed Cutters, etc. Send for FULL CATALOGUE. **HEEBNER & SONS, No. 25 Broad St., Lawrence, Pa.**

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 EXTENDING FROM CINCINNATI AND LOUISVILLE, AND THROUGH ITS CONNECTIONS—

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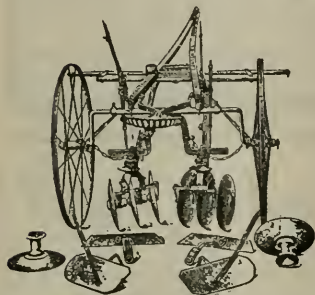
THE OHIO CENTRAL LINES, from Toledo and Columbus;

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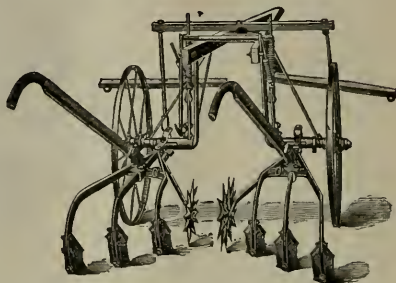
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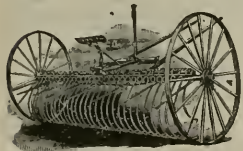


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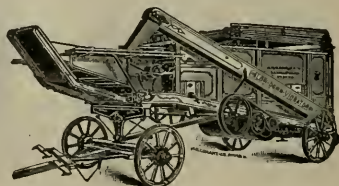
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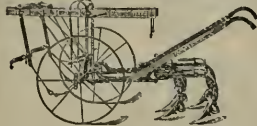
**W**E are anxious for every farmer in the South-Atlantic States to become a regular subscriber to the SOUTHERN PLANTER, hence make this liberal trial offer. Remember you get 8 numbers—June to January, 1903—for only 25 cents. The January issue will be our regular Holiday number, and will be worth the price alone. This offer DOES NOT apply to our old subscribers. We have another proposition for them, and will be glad to submit it on request. Won't you mention this offer to your neighbors?

THE SOUTHERN PLANTER, Richmond, Va.

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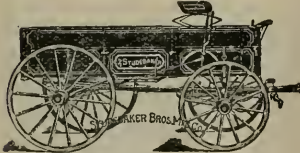
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**PLYMOUTH**  
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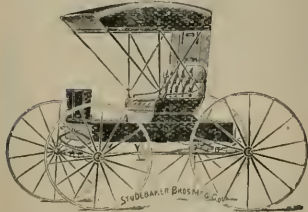
Genuine BROWN Walking and Riding Cultivator. All styles. Write for circular and prices.

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TIGER Double-Row Plain Planters. TIGER Double-Row Planters with Fertilizer and Check Rower Attachment.



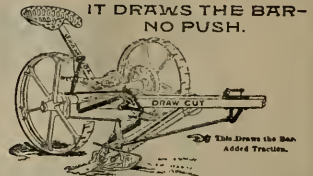
Special prices given on Studebaker and Brown Wagons, Buggies and Carts.



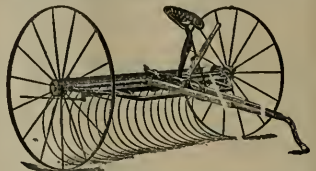
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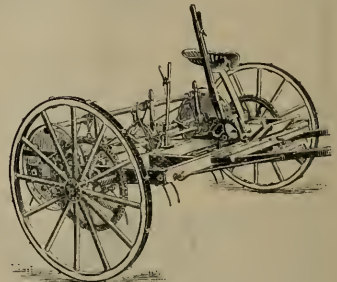
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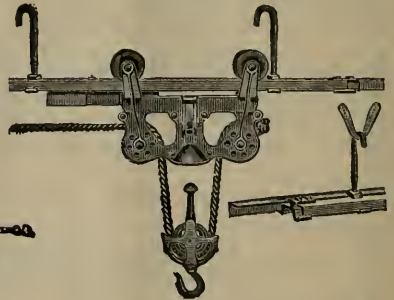
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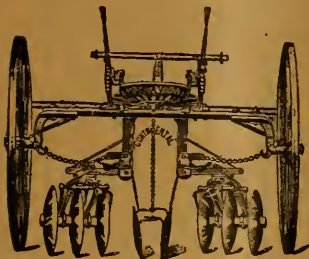
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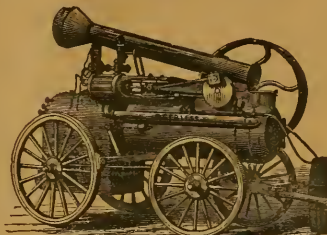
The Prosperous Farmer always has a



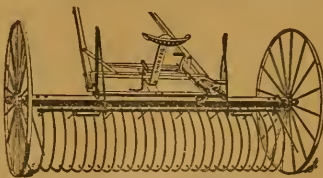
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For ANY CROP use "BEEF, BLOOD and BONE" Brand

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# Southern Planter

A MONTHLY JOURNAL

DEVOTED TO

Practical and Progressive Agriculture, Horticulture,  
Trucking, Live Stock and the Fireside.

OFFICE: 28 NORTH NINTH STREET, RICHMOND, VIRGINIA.

THE SOUTHERN PLANTER PUBLISHING COMPANY, - - - Proprietors.

J. F. JACKSON, Editor and General Manager.

Vol. 63.

JULY, 1902.

No. 7.

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TRUCKING, LIVE STOCK AND THE FIRESIDE.

---

Agriculture is the nursing mother of the Arts.--XENOPHON.  
Tillage and pasturage are the two breasts of the State.--SULLY.

---

63d Year.

Richmond, July, 1902.

No. 7.

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## Farm Management.

### WORK FOR THE MONTH.

Usually at this time of the year it has been our custom to review the progress of the crops throughout the country, and endeavor to form some idea of what is likely to be the result of the labors of the farmers in the way of production and what return they are likely to get for these products, and also to indicate in what crops deficiency exists which can yet be made good by substitutes to be at once planted. Following this practice, we take, first, the wheat crop. The winter wheat yield is distinctly unpromising. The cold, dry winter caused widespread destruction of the plant, and the area left to be harvested is no greater, if as large, as that harvested a year ago. The continuance of the cold, dry weather until late in May, impaired the condition of the plant and left it on the 1st June at only about 76 per cent. of normal as compared with 87.8 on June 1st, 1901, and 80.3 the mean of the June average for the last ten years. This means that there will be a much reduced yield from this portion of the wheat crop, even though conditions from now on to harvest should be as satisfactory as could be wished. In the spring wheat crop there has been, as we indicated would be the case in our last issue, a heavy reduction in the area seeded. Returns so far would seem to make this reduction about 2,500,000 acres. The condition of the crop was on June 1st somewhat better than at the corresponding period a year ago—it being now 95.4 as compared with 92 then, and better by 3 per cent. than the ten-year average for

the crop. Taking the two crops together, there would seem to be every indication of a reduction from last year's yield of from 100,000,000 to 150,000,000 bushels. The Cincinnati *Price Current* puts the reduction at 100,000,000 bushels, which we think is not as much as it will be. Even with this reduction in yield, it would seem that we are likely to harvest about an average wheat crop—the last one having been much in excess of the average. The indications so far point to a disappointing crop in Europe. The weather, both in England and on the continent of Europe, has been distinctly adverse to the crop all winter and spring. Up to the end of May, frost and snow was common even in South Europe, and the reports from Russia, Austria and Hungary—the only exporting wheat countries of Europe—were very pessimistic as to the yield of the crop. In England and France, the yield is not expected to be equal to the average, and both countries are likely to be large buyers. It would seem a fair inference to draw from these facts that our wheat is likely to be in demand at prices in excess of those ruling on the market to-day. We fear, however, that Southern farmers are not likely to receive much benefit from this, as Southern wheat crops are almost universally disappointing. We have seen and talked with many large farmers, and have heard from scores of others in different sections of this and other Southern Atlantic States, and in very few cases indeed have we had satisfactory replies to our enquiries as to the crop.

The oat crop of the country promises to be about the same as that of last year. The area is practically the same and the condition about the ten year average, which is somewhat above that of last year. The Southern crop is disappointing, both as to area and condition, and we expect that much of it will be cut for hay.

An immense corn crop is being planted—probably the largest ever put into the ground. Whilst it is too early yet to say much about it, yet the indications are that in the South it promises well. Whilst a little late on account of cold, dry weather, yet it is looking healthy, and the recent warm rains we have had will cause it quickly to respond to cultivation. Drouth is likely somewhat to injure the yield in Texas, but in the other Gulf States the crop is practically made, and is likely to be good.

The cotton crop promises to be about as large in acreage as that of last year. The condition, however, is greatly in advance of the average, and the indications are for a heavy crop. Whether the world will want this great crop so much as to give even the price at which it is now buying cotton, is, in our opinion, doubtful. If business conditions continue good and labor is kept fully employed, the price of cotton may not fall much, even with a very heavy crop, but should trade flatten, the price, in our opinion, will go lower.

The long-continued cold, dry spring has seriously interfered with the prospects for the tobacco crop. The indications on the 1st May were for the setting out of a large crop, but this has not been realized. Up to the end of the first week in June there were large sections of this State in which few plants had been set out, and those planted were doing badly, whilst the plants in the plant beds were spoiling every day. The welcome rains of the 15th and 16th of June enabled planting to be resumed, and no doubt much leeway has been made up; but we think that the result will show that the crop planted will not be any larger than that of a year ago, and materially later in starting. The Bright crop in the more Southern States is likely to be a larger one than that of last year, and so far is showing up well.

The hay and clover crop is distinctly a light one all through the South; and this is also the case in those Northern and Western States which have harvested the crop. The recent general rains will no doubt help to make a better yield in States where the crop is not yet made, and may cause an increase in second crops in the South and Middle States which may somewhat reduce the present deficient yield. Forage crops of

all kinds already planted are making a fine start in growth, the rains having come just at the right time to help them.

The Irish potato and other truck crops have suffered from the cold, dry weather, and we hear numerous complaints of small yields in the earliest planted crops. Later crops not too far advanced in growth have been largely benefited by recent rains. All through Tidewater Virginia and Eastern North Carolina there has been a large deficiency in the rainfall since January 1st, and on light land like that of those sections such deficiency tells heavily.

The fruit crop of the South is disappointing, and especially so in this State. Apples are likely to be very scarce, and peaches, which at one time promised well, have dropped badly. Pears and plums are better.

The one bright feature in the agricultural situation is the higher prices at which all products are selling in consequence of the well employed condition of the people. The farmer who has fat stock of any kind to sell can to day get a higher price for it than at any time within the past two years; and this also applies largely to all other farm products. Whilst, therefore, yields of crops may promise to be somewhat less, yet the probabilities are that more net money will reach the farmers' pockets.

A consideration of the foregoing retrospect will lead to the conclusion that whilst the outlook for Southern farmers is not as bright as it might be, yet that there is a fair prospect of sufficient for both man and beast, and that if only we are now favored a few weeks with such weather as we have had for the past week—showers and warmth—we may yet make a fair showing with the corn and cotton crop, and that tobacco will be better than it promised ten days ago. The deficiency in the hay, clover and oat crops may yet be made good by prompt sowing of forage crops. Millet, peas and sorghum should be got in without delay. Of the various millets, we prefer the German as making the heaviest yield of hay. If wanted for cutting green for feed, possibly Hungarian will make a crop which can be cut more frequently. Prepare the land well and have a fine seed bed. Sow a bushel of seed to the acre, harrow in lightly and roll. Do not let the crop stand until the seed forms in the heads. Cut when in bloom and cure in the windrow and cock, and the hay will be readily eaten by all kinds of stock. If the seed is allowed to form, the hay cannot safely be fed to most horses and to some cows. It affects the kidneys strongly. We have already said so much on cow-peas, sorghum and other forage crops, that we do not think it necessary to say more.

In this issue will be found an article dealing with Crimson clover, to which we refer our readers. It is time to begin the sowing of the crop, but do not seed all you intend to grow at one time. Better spread the work over this and the two following months; you will then be certain to secure a stand on at least part of the seeding.

Sow cow-peas, Crimson clover or Sapling clover in the corn at the last working, and lay the crop by level. In this way you can secure much winter and spring grazing, and at the same time improve and conserve the fertility of the land.

Corn for the silo, if not already planted, should be got in at once. Plant in rows two feet six inches apart and six or eight inches apart in the rows, and let it mature fairly before cutting. Planted in this way, a fair proportion of ears should be secured, and the stalks will be more nutritious. In this issue will be found an article dealing with the subject of growing peas with the silage corn, to which we refer our readers.

If you have no silo, now is the time to build one. In this issue will be found an article dealing with this subject.

As fast as the wheat and oat crops are harvested, and where not seeded to clover or grass, run over the stubbles with a disc harrow and sow with Crimson clover and Sand vetch, or with a mixture of these and oats or wheat, to which may be added 10 or 12 lbs. to the acre of Italian rye grass or herds grass. This will make fall, winter and spring grazing and improve the land for the next crop.

As a pasture crop for sheep and hogs, nothing will be found more acceptable than rape. An acre of rape was found to be equivalent to 2,767 lbs. of grain when fed to hogs at the Wisconsin Experiment Station, and lambs and sheep fatten on it quickly. The land should be well broken, and the seed-bed be made fine, and if it be not rich, should have 300 or 400 lbs. to the acre of acid phosphate applied. The crop makes the best growth seeded in drills two feet six inches apart, and thinned out to stand six or eight inches apart in the rows—2 or 3 lbs. of seed will sow an acre in drills. If sown broadcast, 4 or 5 lbs. will be needed. If sown in drills, cultivate two or three times. July and August are the best months to sow this crop in the South. It makes its best growth in the cool moist fall, and can be grazed until cut down by the frost. If the winter be not very severe, the plants will start growth again in the spring and make spring grazing.

Land should be got ready for ruta bagas and turnips, and the ruta bagas be sown this month. Turnips can be sown in August. These crops make the best yield grown in rows two feet six inches apart, and thinned out to stand six or eight inches in the rows—2 or 3 lbs. of seed will sow an acre in this way. If sown broadcast, 5 or 6 lbs. will be needed. Every farmer should grow some ruta bagas and turnips. They are most valuable as feed for stock of all kinds, and especially for sheep and cattle. With their help, dry fodder and straw can be made into appetizing rations, and stock do well on these alone.

See that the straw is carefully stacked or housed when threshing. It is too valuable to be allowed to rot away in piles in the field. If not wanted for feed, it should be used freely in the stables and pens in winter as an absorbent for the liquid manure, and to serve this purpose must be kept dry and should be close at hand.

#### LEGUMINOUS CROPS.

##### Rotation of Crops and Deep Plowing and Cultivation of Land as Factors in Improving Land.

In this year of almost universal failure of the wheat crop in Virginia, and when reports from almost every State go to show a probably much reduced yield of the crop everywhere, it has been a satisfaction to us to be able to see a crop of wheat of 75 acres or over on one farm which, for luxuriance of growth and promise of yield, is the equal of the best we see in the South in an average year. This crop was grown on the farm of Mr. Bellwood, at Drewry's Bluff, in Chesterfield county, partly on river low-ground, and the residue and much larger part on the bluff land adjoining the low-grounds, but away above the flood-water level. The crop stood thickly on the ground, the straw was of an average length, and the ears were long and well filled with plump kernels. On the 10th June, when we inspected it, the crop on the npland was being cut, and that on the low-ground was ripening fast, and would need cutting within a week. We estimated the yield of the crop at an average of 25 bushels to the acre. Some part would, in our opinion, go much beyond this, whilst a small part would not probably reach 20 bushels. It will, we think, be instructive and interesting to look up and discuss the factors which have made possible such a crop in such a year as this. At the outset, we would say that commercial fertilizers have had nothing to do with it, as the land upon which it is growing has never had a pound applied to it since it was owned by Mr. Bellwood—that is to say, within the last fifteen years. The whole secret of the success is

leguminous crops, rotation of crops, and deep plowing and frequent cultivation. When Mr. Bellwood bought the farm the place had for years been run by tenants who had skinned the fertility out of it, and, except upon the low-ground, it was incapable of producing a profitable crop. He set about its renovation by the introduction of a good system of rotation of crops, and by making the preparation of the land for the crops as perfect as possible, and he looked to the growing of the legumes as the means whereby the needed nitrogen and humus should be supplied. Whilst keeping a heavy head of live stock on the farm, this particular land on which the wheat crop was growing has derived no benefit from the manure made by the stock, as it lies a long way from the barn, and poorer upland around the barn has called for all the manure that has been made to restore its wasted fertility and make it capable of carrying a good grass sod. The rotation which has been followed has been corn, followed by cow-peas or Soy beans, followed by wheat seeded with clover and then followed with corn. The cow-peas or Soy beans are cut for hay, and the clover is mowed twice. Under this system the fertility of the land has constantly increased, and heavy crops are produced. The deep breaking of the land permits of the clover and cow-pea roots getting deep down into the subsoil, and from thence procuring the phosphoric acid and potash needed for a luxuriant growth, and this luxuriant growth gathers nitrogen from the atmosphere and accumulates it in the soil evidently from the luxuriant growth of the wheat and corn crops in excess of the requirements of those crops, and thus adds to the permanent fertility of the land. In a series of experiments made at the Alabama Experiment Station, of which a summary will be found in this issue, it has been demonstrated that the largest percentage increase from either the vines or stubble of cow-peas or velvet beans was made by wheat and fall sown oats, and that the stubble of the legumes was equally as effective as the vines as a fertilizer when the wheat and oats were sown immediately after the legumes matured. This result is confirmed by the successful growth of wheat at Drewry's Bluff. The seeding of the wheat soon after the cow-pea stubble has been plowed down prevents the loss of the gathered nitrogen by leaching, and the same result is attained by the planting of the corn crop on the clover fallow. The wheat crop growing on the low-ground this year was seeded on land part of which was in Soy beans and other part in cow-peas last year. On both plots heavy crops were grown. The wheat following the cow-peas is a heavier crop than that following the Soy beans, and yet Soy beans will gather and accumulate as much nitrogen from the atmosphere as the cow-peas. The only explanation which would

seem to explain this difference is that the Soy bean being an upright growing plant, less of the leaf and stalk of the plant was left on the ground when the crop was harvested than was the case with the cow-peas, and as these parts of the plants are rich in nitrogen, the portion of land fertilized by the cow-peas was made richer than that fertilized by the Soy beans. An average of 2½ per cent. of the total nitrogen contained in the whole cow-pea plant was found in Alabama to be contained in the roots, stubble and fallen leaves after the removal of the vines. It may be also that some of the difference in the wheat crop on this land was also caused by the fact that it was covered with the water of two floods during the winter, and the mud deposit may have been heavier on one part than on the other. This wheat crop would seem to amply demonstrate the truth of the principle for which we have so long contended, that with deep plowing, good and frequent cultivation, the use of the leguminous crops, and a system of rotation which shall place a leguminous crop in between each grain crop, it is possible to restore land to fertility and yet make it also return, whilst being so restored, profitable grain and hay crops, and thus provide food for both man and beast without having a fertilizer bill tagged to each crop.

#### CRIMSON CLOVER.

Year by year experiments and experience go to prove more and more the importance of keeping land, especially in the South, covered with a growing crop of some kind if the fertility of the soil is to be conserved and increased. The crops suitable for this purpose in the winter months are confined to the hardy cereals, like wheat, winter oats and rye, and the clovers and vetches. If the cereals are used, they merely conserve the fertility without adding to it, whilst if the clovers and vetches are used, they not only conserve but increase the fertility by their power of abstracting nitrogen from the atmosphere and fixing it in the soil. It is, therefore, of the highest importance that the growth of the clovers and vetches should be encouraged. Of all the clovers, the one most suited to southern climatic soil and crop conditions is the Crimson or German clover. If sown in the late summer or early fall months, so that it secures good root-hold before the period of cold weather sets in, it will make continuous growth during the winter unless the weather be very severe, and will perfect that growth in time to be either cut for forage, made into hay or be plowed down so that a summer crop can be grown on the same land. In addition to this adaptability, it is more valuable as a gatherer of nitrogen than either the Mammoth or Medium Red. In an experi-

ment made at the Cornell Station, New York, seeds of these three varieties of clover were sown August 1st, and the plants were dug November 4th, three months and four days after the seeds were sown. An acre of the Crimson clover had in that time gathered 156 lbs. of nitrogen, an acre of the Mammoth clover had gathered 146 lbs., whilst an acre of the Medium Red had only gathered 103½ lbs. Taking the value of this nitrogen at only 10 cents per pound as against 15 cents, the usual rate used in estimating the value of nitrogen in a fertilizer, because of the possibly less available character of that nitrogen than if in the form of a nitrate, as in nitrate of soda, we have here a fertilizer value in the case of the Crimson clover of \$15 for the nitrogen alone gathered in three months by at most 10 to 15 pounds of seed, costing say from \$1 to \$2. In addition to this fertility added to the land, the crop itself makes constant pasturage during the winter and spring months and a heavy yield of green feed or hay by the month of May or June if the stock is taken off in April. Crimson clover and cow-peas grown in succession make two crops in practically one year, which will outyield even the alfalfa of the West in quantity and value as feed. The average composition of either Crimson clover or cow-peas rivals that of alfalfa in digestible nutrients. In experiments made recently, alfalfa yielded on the average of two tests 4.3 tons of dry hay per acre, Crimson clover made 2.3 tons, and cow-peas 2.28 tons per acre, hence the combined weight of the two last named crops surpasses that of alfalfa alone by a quarter of a ton per acre. Alfalfa rarely makes more than a very light crop the first year, whilst Crimson clover and cow-peas can be relied on to produce a maximum crop if only a stand is secured. At the Delaware Station, Dr. Neale, in one test with cow-peas, secured the following results: July 10th, 1900, threshed 34.7 bushels of rye from shocks on one acre; July 12th, plowed stubble, and July 14th, drilled 20 lbs. New Era seed peas per acre in rows 32 inches apart; July 23d, replanted; cultivated July 25d, 28th, and August 13th; ripe seed first seen September 22d; crop cut and put into silo September 28th. Total yield, nine tons of green vines per acre. This crop could have followed a Crimson clover crop, which would have come off at least a month earlier than the rye crop, and thus have easily allowed of the cow-peas being made into dry hay and been followed by another Crimson clover crop. Coming off even in September would admit of the seeding of Crimson clover, as we have known a good crop made seeded in November, though such late seeding is very uncertain and not to be advised. After the 1st October, it is better to seed vetches for a month and later to sow rye. The only objection we know of to the Crimson clover crop is the uncertainty of securing a stand. It is

easily killed out by drouth or frost when newly germinated. To avoid the loss of a crop on the land in such cases, we advise that wheat or winter oats be seeded with the Crimson clover, say, half a hushel to the acre. In seeding Crimson clover, it is well to sow at different times from July to the 1st October. Some of the seedings may be lost through drouth or frost, but all will not fail. It is not necessary to replot land that has been well prepared for the previous crop. Cut it up with the disc cultivator, sow the seed and roll, if the ground is dry enough. We prefer in all cases to sow some wheat or winter oats with the clover, as these grains hold the crop up and make it easier to harvest, whilst adding to the weight of the yield. We know of parties who sow Crimson clover with millet in July. The millet is ready to cut in about sixty days and is made into good hay, and the Crimson clover follows for a spring crop. For a pasture, it may be seeded with turnips or rape during this and the next month. Sow 10 lbs. of Crimson clover and 2 lbs. of turnip or rape seed to the acre. The best of the turnips can be pulled out for winter use. Some mix wheat, oats and rye also with the clover and rape, and secure excellent winter and spring grazing. Don't fail to adopt one of these plans, and thus grow a crop which will help your land and your stock, instead of crops of weeds which will deplete the fertility and make labor for another year.

#### ALFALFA.

In the spring we had a number of enquiries as to growing alfalfa from parties who desired to experiment with the crop. We then advised that in all sections of the South, except the mountain ones, alfalfa should be seeded in the early fall. We desire now to remind our readers of this, in the hope that many of them will be tempted to try the crop. It is so valuable as a feed, so great as a yielding crop, and such a permanent reliance when once established, that it is well worth a sustained effort to secure it. There is no climatic or soil reason why the crop should not succeed in the South. Given proper conditions of soil fertility, soil preparation, and the use of land having good drainage capacity, it is bound to succeed if—and this is a great if—in the South weeds are not allowed to choke out the life of the plant in the first year. It cannot fight the battle of life successfully with our abundant and aggressive weed growths, unless it receives every help that man can give it; and if the attempt is to be made to grow it this fall, no time should be lost in commencing the destruction of the weed seeds in the land. Plow the land selected—which should be preferably a good, deep loam soil, well drained—at once, and plow it deeply. Follow

Immediately with the harrow, and leave for the weeds to germinate. As soon as they have done so, harrow again on a hot sunny day, and thus kill the crop and stir up other seeds to germinate. Follow this system persistently until the end of August. Then apply 300 or 400 lbs. of bone meal to the acre and harrow in, and sow the seed broadcast from 20 to 25 lbs. to the acre, and roll to compact the soil around the seed. This should ensure a stand. In May or June next set the mower high and run it over the crop, cutting off the tops, which may be left as a mulch. If any strong weeds appear, they should be pulled out. Later in the summer the mower should again be run over the crop, set high as before, and the cutting be either made into hay or be allowed again to mulch the ground. If a good growth has been made, it may be as well to make hay of it, lest the mulch should be too heavy. After the second mowing, top dress with farm yard manure, or give another dressing of bone meal, and in each year following the crop may be cut twice or three times in the season. From four to six tons of hay per acre should be the aggregate season's yield for many years.

#### COW-PEAS AS SUPPLEMENTS TO A DEFICIENT HAY CROP.

In our last issue we strongly urged the importance of growing all the cow peas possible, not only because of their value as improvers of the land, but also because of their value as feed. The fact that the hay crop of the South has been cut short by the cold, dry spring, induces us once again to revert to this subject. It is not too late yet to sow cow peas in all parts of the South, except the mountain sections, and we strongly urge that this course be taken wherever the seed can be had, even though such seed is costly. One of our friends, who grows a large acreage of peas for hay and seed every year, says that it will pay to grow them, even though the seed costs over \$2.00 per bushel. Every farmer should endeavor, however, to avoid this heavy outlay for seed by growing his own. Plant an acre or two solely for the seed. Let these be drilled in rows eighteen inches or two feet apart, and six or eight inches apart in the rows. Such a seeding calls for a very small quantity of seed. Less than half a bushel will seed an acre. Cultivate once or twice, and the yield of seed will greatly exceed that to be got from an acre sown broadcast with a bushel or a bushel and a quarter of seed to the acre. July is the best month in which to sow for seed. The proportion of pods to vines will be greater, as will also the yield per acre, and the pods ripen more nearly all at one time. When most of the pods are ripe, at which time the vines are comparatively free from sap,

and easy to cure, cut with the ordinary grain reaper, which drops the peas in bunches. Do not have the bunches too large, but so that the wind can blow through them and the sun easily dry them. Leave in the bunches as cut for a day or two, then put up into cocks to cure out. There is an attachment for a mowing machine now offered on the market, particulars of which will be found in our advertising columns, which will enable an ordinary mower to be used instead of the reaper for saving the pea crop, and seems likely to meet a great need. Store the crop in the barn, but do not pile too thick for fear of heating, and in the winter either tramp out the peas with horses, beat them out with flails, or if you have a separator which you can run slowly enough, you can thresh them out quickly. One of our friends has, by a change of pulleys on his separator, so adapted his machine for pea threshing as to make it a perfect success. It requires a little patience in making the necessary changes of several pulleys, but the end is worth the trouble. A fair crop of peas will yield much money for the seed alone at prices ruling for the last two or three years, and we see no reason to doubt but that such prices will continue to rule, as the demand for peas for the West and North is great, and becoming larger every year.

Reverting again to the crop as a fodder and hay crop, we would urge that it be not only seeded alone and with sorghum for hay, but that it be grown with corn for the silo. Reporting on a crop of corn and peas grown together for this purpose in Delaware last year, Dr. Neale, the Director of the Delaware Experiment Station, says:

Practice on this farm makes it desirable to raise rye or crimson clover for pasture. Until June 1 these crops occupy the land which is to bear silage corn. In the spring of 1901 such land so occupied could not be planted before June 13. Seven and one-half acres were harrowed on June 21 in lieu of its first cultivation. This without doubt assisted all plants which were vigorous enough to survive, but, taken as a whole, this treatment injured still more a stand of plants already far from good. On July 4 New Era seed peas were drilled on approximately four acres of this area. Whippoorwill peas were similarly used on the rest of the field. The rows, three feet nine inches apart, were crowded by the peas to three feet three inches, and shut out sunlight and air to the detriment of the crop. For, outside rows, with New Era peas, gave thoroughly satisfactory growth, and very few pods grew on the Eras in inside rows; few, if any, grew on the Whippoorwill vines.

A field planted in this manner is deceptive in appearance. Estimates placed the crop at 14 tons per acre; the scales indicated by exact weight 11 tons only.

On June 10 a second plot, in area 2.90 acres, was drilled in Bristol corn. On July 6 Whippoorwill peas were seeded along each corn row in the usual manner. Careful replanting and repeated cultivation aided the well manured land to produce a fine looking

crop. This was again over estimated. Its true yield by scale weight was 13 tons 440 pounds per acre.

A third heavily manured field of twelve and one half acres was planted June 22 to corn and on July 5 to Whippoorwill peas. This crop was not thinned, was cultivated once only, made a remarkable growth, and misled all who estimated its possible yield. On October 3 the records placed the returns at 11 tons only per acre.

Points which characterize this crop are:

1. The appearance of the field after harvest. No weeds and no stolen crops can survive the dense shade. Twelve bushels of rye, seeded immediately before the cultivators on August 5, the date of the last working of the seven and one half acre field, came up thickly and promised well. None of this rye was visible on October 1 except along the head rows. By pasturing the stubble for a few days the land could be so cleaned that the disc harrow alone would be needed to fit it properly for wheat sowing.

2. Practical men insist that the unaided eye can detect noticeable differences in the capacity of a silo when corn and peas are substituted for corn alone. In one instance 119 tons of this mixed product was packed into silos 20 feet deep; it settled to 17 feet, then it averaged 42.2 pounds per cubic foot. King, in his *Physics of Agriculture*, p. 424, gives to ordinary corn silage, packed to this depth, 31.2 pounds per cubic foot.

In a second instance 131 tons of pea and corn silage was packed to a depth of 28 feet. It then weighed on the average 41.5 pounds per cubic foot. During the next few days it settled five feet, and thus compressed must have weighed 50.6 pounds per cubic foot. For twenty-three feet of silage from ordinary corn King credits an average weight per cubic foot of 35.3 pounds.\* Granting the substantial accuracy of these data striking results follow. For in a circular silo 17 feet in diameter, filled with settled silage to a depth of 23 feet, should be found 92 tons of corn alone or 132 tons of mixed product if it is grown in the proportion of 75 per cent. of corn and 25 per cent. of pea. This means that without expenditures of any kind the capacity of a silo may be increased by practically 43 per cent.—a point too significant to be left without further and much more exacting tests, for if true, it is in itself sufficient reason for the addition of peas to each crop of silage corn.

3. The misleading effect due to the pea vine when growing upon corn has already been noted. This stands out conspicuously when the scales are used. To illustrate—In the centre of a twelve-acre field the writer paced forty feet along a row where the corn stood well, and nearly every stalk bore a fully developed ear. The pea vines also stood normally. When the corn harvester reached this point it made three bundles of the crop growing approximately on that space. These bundles contained 38 stalks and weighed 100 pounds. Roughly speaking this means about 14 tons per acre. These bundles were opened and the corn ears, the stalks and the pea vines separated; the stalks gave 49 per cent., the unhusked ears 31 per cent., and the pea vines 20 per cent. of the total.

\*In all comparisons with King's records it should be noted that to be exact measurements should be taken two days after the silos have been filled and closed.

Care was taken to note that no ears were lost from these last bundles, a point of moment, for after the silos were filled eight two horse wagon loads of ears were collected from 12 acres; ears which had been beaten from the stalks by the compressors of the harvester. Bundles drawn from loads at the silo averaged between 24 25 per cent. of pea vine and weighed 38 pounds each. The record showing that one fourth to one fifth only of the total crop is pea vine is difficult to believe and a disappointment to those who expected heavier yields of protein per acre.

The expense of raising and storing the mixed crop of corn and cow peas is quite as important as either the quantity or the quality of the product. Exact records were kept against the plot of 2.9 acres from which, as above noted, a crop of 13.25 tons per acre was secured. Items are as follows:

For men and teams hauling and spreading 24 loads of manure.....	\$ 3 75
For men and teams plowing, harrowing, rolling and planting .....	9 87
For men and teams drilling peas and replanting corn, and three cultivations .....	6 37

or \$6.89 per acre.....	\$19 99
For taxes on land.....	\$ 1 00 per acre
For land rental, insurance, etc., .....	4 00
Total cost of raising 13.25 tons for silo 11 89	
Cost per ton, 89 cents.	

*Packing of Silage.* The plot of 2.9 acres above noted was cut and handled first in the series. All machinery was new and untested; the men, too, were unskilled. A more correct picture can be drawn from the work during the last three days of the season. In 29 hours and 23 minutes of elapsed time 131 tons were handled by 13 men and 8 horses, at an expense of \$69.07, or 52.7 cents per ton. To this add four cents for coal for each ton of silage packed, and a grand total of 57 cents per ton is gained.

The total cost of cutting and packing, added to the cost of raising the crop, makes the outlay for each ton in the silo stand at \$1.46.

*The Quality of the Silage and Its Feeding Value.* To the eye and sense of smell the silage was of good quality. It was fed liberally and with entire satisfaction to eleven milking cows and to a number of heifers, varying between 25 and 30 head.

## SILo BUILDING.

In our last issue, in response to several enquiries, we promised in this issue to give information as to the building of a silo. A silo provides the cheapest form of a storage barn for fodder crops, and enables these to be placed before the stock during the winter in such a condition of succulence and palatability as to make it possible for the highest nutritive value to be extracted by the animals. It also provides a place into which crops can be placed in all kinds of weather so that little or no risk or loss need be incurred. What is grown can be saved even though weather conditions be most adverse.

It has been urged against the silo that the construc-

tion of one and the siloing of the crops were operations requiring skilled and technical knowledge, and that the cost was great. In answer to these objections, we would say that any carpenter, with the capacity and skill required to build a framed dwelling, can build a good silo, and if the less simple form of a tub silo be decided upon, even less skill than this will suffice. The cost of a silo, even of the best construction, need never exceed \$1 per ton of capacity, and in the cheapest form should not exceed half this cost. In what other shape can so great storage capacity be obtained at so little cost? As to the skill required to make good silage, the less said the better, for any laborer who can cut up the crop to be siloed, and pack it tightly down into a practically air-tight receptacle, cannot fail to make good silage. It may be that such a laborer will at first fail to save all the silage in the best shape for food, but experience will soon lessen the percentage of loss. At the worst, not more than 10 per cent. of loss can well be sustained, and it is certain so small a percentage of loss as this is sustained in saving a feed crop of any kind in any other way.

The first point to be decided upon is the size of silo required. To arrive at this, it will be safe to estimate the consumption per day per head of cattle at 40 lbs. of silage. Multiply this by the number of cattle required to be fed and the number of days for which it is desired to provide feed, and you have the total number of pounds for which storage is required. Forty pounds may be taken as the weight of an average cubic foot of silage, so that practically each head of cattle will consume a cubic foot of silage per day. In estimating for the size of the silo, it will not, however, do to simply provide for the number of cubic feet of silage shown to be necessary for the stock to be kept. The silo must be made large enough to allow for the storage of this quantity of silage after it has settled. To meet this requirement, add one-fourth to the number of cubic feet of silage required to be stored. Whilst it is true that silage does not usually settle one fourth of its bulk, yet it is a safe rule to allow this for settling and waste. The silo may be made either round or square, but we advise that the round form be adopted as being more economical in construction and usually saving a higher percentage of the crop stored. The first and most essential point to be observed in building is to get as much depth as possible. The deeper the silo the more closely will the silage be compressed, the better the product, and the less the waste in feeding out. For the guidance of builders, we append a table giving the capacity of round silos of different sizes and depths.

Two of the best built silos we have ever seen were erected at the Virginia Experiment Station at Blacks-

burg in 1900. They are outside the barn, but connected therewith by chutes. As these silos embody the latest improvements made in silo building and satisfy every requirement of perfect storage, we append copy of the builder's specifications. We may say that if economy is to be studied, a considerable saving may be made by making the inside lining of the silo of single instead of double boarding, as called for in the specifications, and dispensing with the paper lining. This saving may be made without any risk of impairing the value of the silo as a preserver of the silage. Such a silo as that built at Blacksburg would keep silage in the coldest sections of the North. Here in the South there is little cause to fear damage from frost. Hence a thinner lining is perfectly safe.

The following is the specification referred to:

**The silos are to be constructed with an especial view to making the sides air tight. Foundation, stone; floors, earth. To be built circular in form, and be joined to stable by chutes, as shown on the drawings.**

**Sills.**—Sills to be made of two thicknesses two-inch by six inch stuff, cut to required circle in about three foot lengths. Lap and spike all joinings and bed in cement.

**Plates.**—Plates to be made of single two inch by six inch stuff, cut to required circle, halved, lapped and joined only on top of a stud, and nailed down tight.

**Studs.**—Studs to be two inches by four inches, by 24 feet long, well toe-nailed to plate, and spaced eleven and three quarter inches on centres. Take care to have all studs true and straight. Rafters to be two inches by six inches, and arranged as shown on drawing. Notch down two inches on plate and spike well at all points.

**Roof Sheathing.**—Roof to be sheathed with one inch by two inch boards, bent to circle, and the boards laid five inches from centre to centre.

**Siding.**—Outside walls to be covered with a course of five eighths by five and a half inch ship lap siding, bent to circle and nailed with two ten-penny wire nails at each end. Inside studs to be lined, first, with dry five eighths by four inch jointed boards of even thickness. Nail at each stud with two eight-penny nails. Over this lay a course of one ply tar paper. Then lay a course of dry T. and G. ceiling, five eighths inch thick and four inch face; drawn down tight by blind nailing with eight penny nails at each stud, and face nailed with two-penny nails at each stud.

**Dormer.**—Construct a dormer window in roof of each silo, as shown on drawing. Frame stoutly to rafters and provide a stout glazed sash and frame. Frame to be made of one-inch boards with half inch stop, three-inch oak sill, one by eight inch outside casing, and one by four inch inside casing. Window to be three by four feet, glazed with twelve lights, single thick glass. Hang on four inch butt hinges, and provide hasp, staple and padlock on outside.

**Doors.**—There shall be placed three two by four-foot doors in each silo; each to be in same vertical line, and each opening into chute. These doors are to be made by cutting out the inside lining; before cutting out, put on two battens to each door; two six-

inch strap hinges to each door. After this is done the door may be cut out and will fit snugly. Place a door stop all around, thereby forming a rebate for the door to fit in. Open doors into silo or chute as directed by Superintendent, and provide hasp and staple for each door.

**Ventilator.**—Place a ventilator in roof, as shown on drawing. Lower slats to be half inch by six inches, turned on angle of forty five degrees and spaced three inch centres, and wire gazed on back to prevent the entrance of birds.

**Ventilation.**—Walls are to be ventilated as follows: Siding on outside is to be run up and fit close to roof sheathing. Siding at top and bottom to be bored with one inch holes in a double row, the holes being spaced about three inches apart horizontally. Cover with bands of wire gauze to keep out mice.

**Gutter and Cornice.**—Cornice will consist simply of rafter ends and sheathing.

**Roofing.**—Same general specifications as for stable and barn will apply for silo roofing.

If any of those contemplating the erection of a silo think the cost of building one on the lines laid down in these specifications is too great, they can make the experiment of silage making and feeding at a much less cost by building a stave silo on the lines upon which the first silo was built at the Blacksburg Station. Prof. Nourse, in describing it, says:

“We obtained some green oak lumber (the only kind we could get at short notice) 16 feet long, 6 inches wide and 2 inches thick. The edges were dressed by hand; round iron bands, five in number, large enough to encircle the silo and with threads on ends, were bought and held in readiness for the plank. The silo, erected by contract, was placed in position as follows: The circle, 16 feet in diameter, was marked on the ground and short pieces of plank laid in such position as to cover the mark. Four of the long planks were then set on end on the circle and as far apart as possible. These were held in an upright position by braces in various directions. Two of the bands (made of three quarter inch iron), before mentioned, were bent as nearly in a circle as possible, and one placed about one foot from the bottom of the planks, in the upright position, and held there by driving under the band in each plank a twelve penny nail, bending it up and over the band. The ends of the iron band with the threads on them were run through blocks of cast iron, with two holes through them about two inches apart, and a nut was then placed on each end of the band, thus giving a method for tightening the planks when all were in position. A second band of iron was put about one foot from the top, and when several horses had been made high enough for a man standing on them to reach the top of the silo, then we were ready to set up the rest of the plank. These were put in until the spaces were all full; each time one was put in a nail being driven part way into the plank and bent over the band. The bands were then tightened some what, and three more bands so placed as to make the bands not quite four feet apart. By turning up the nuts on all the bands, the silo was soon tight enough for the material to be placed in. It will be noticed nothing is said of a roof. None was made. The silage was left open to the weather. The only result

of this was a slight drying of the surface—not enough to injure it.”

Prof. Nourse recommends the following changes in erecting a similar silo as a result of the experience gained:

“The lumber used was green oak. On account of its customary warping, we would not use it again if other were obtainable. We have taken out some of the planks and put in poplar. There was little loss in this, as the ones taken out were perfectly sound and fit for other purposes. Concerning the iron bands, we followed suggestions of parties who had erected similar silos, but would now do as follows: Procure (as can be usually done) partially worn tire iron from heavy wagons. Get a smith to rivet—not weld—these together so that two bands will go around the silo. Rivet to the ends of these bands short pieces of iron one half inch thick by two inches wide. Bend up three inches of this thick iron and punch two three-quarter inch holes in the turned up portion. For each band, procure two bolts a foot long and three quarters of an inch in diameter. Have threads cut on bolt nearly the entire length, and place these bolts through the holes in upturned ends, put on nut, and tighten the silo. These are stronger, cheaper and easier to work than the round bands. In the spring of 1897, we erected a silo 12 feet high by 10 feet in diameter, using poplar plank and tire bands. It was filled with oats cut just before they were beginning to turn. The result was perfect; crop kept good to the very side and in as fine condition as could be possible in any silo. To take the silage from a structure of this kind it is necessary to cut apertures at intervals. In our 16 foot one we have two places and in the 12 foot one only one from which to take the product. In refilling, we take out the cut plank and insert others.

“The cost of the 16 foot silo was as follows:

104 planks 16 feet long, 2 x 6 in. ....	\$16 64
5 iron bands, at \$2 each .....	10 00
Contract price for erecting .....	10 00
Nails, about .....	30
	<hr/> \$16 94

“The cost of the smaller silo was as follows:

Plank, valued at \$10 per thousand .....	\$ 6 30
Contract for erecting .....	5 00
4 iron bands at \$1.20 each .....	4 80
Nails, about .....	20
	<hr/> \$16 30

“The edges of the plank in the smaller silo were not dressed, as we found it entirely unnecessary. Any person can erect a silo of this sort, and if a farmer has the lumber on his farm, the actual cash outlay would be reduced to the cost of iron bands and nails.”

CAPACITY IN TONS OF SILOS OF VARIOUS SIZES.

Diam. of Silo in ft.	Depth of Silo			
	20 ft.	22 ft.	25 ft	30 ft.
10	31 tons	34 tons	40 tons	47 tons
12	45 “	49 “	56 “	65 “
14	63 “	68 “	77 “	90 “
16	80 “	90 “	105 “	130 “
18	100 “	110 “	125 “	150 “
20	125 “	135 “	155 “	185 “
22	145 “	160 “	180 “	215 “

## THE COW-PEA AND THE VELVET BEAN AS FERTILIZERS.

The following is a summary of Bulletin No. 120 of the Alabama Experiment Station. This Bulletin will be sent to all who apply for it, addressing their requests to Alabama Experiment Station, Auburn, Ala.

This Bulletin records the results of more than fifty experiments conducted at Auburn during the past five years, to ascertain the effects of cow-peas and velvet beans in the improvement of the soil. The amount of soil improvement has been determined by the increase in the yields of cotton, corn, oats, wheat and sorghum, grown as first, second, third and fourth crops after the stubble and roots of cow peas or velvet beans, or after vines, stubble and roots of these plants have been plowed under. The basis for determining the increase has been the yield of each crop on plots where no leguminous plant has recently grown.

The fertilizing value of different varieties of cow-peas was found to vary considerably, and is probably in proportion to the luxuriance of growth.

In two tests there was a slightly larger yield of corn from plowing in cow-pea vines very late in the fall than from postponing the plowing until April; but it is regarded as generally best to plow in the vines not more than a few weeks before the next crop is planted.

The average for six varieties showed that when cow-peas were at a suitable stage for mowing, 36.6 per cent. and in another case 39 per cent., of the dry weight of the plant was available for fertilizing uses in stubble, roots and fallen leaves. In the entire growth of cow-peas on one acre there was contained in one case 53.7 pounds of nitrogen, in another 69.8, and in another 87.2, an average of 70.2 pounds of nitrogen per acre, which is equivalent to the nitrogen in 1,003 pounds of cotton seed meal.

In the roots, stubble and fallen leaves on an acre there were, respectively, 11.65, 16.2 and 31.4 pounds of nitrogen, an average of 19.75 pounds of nitrogen per acre, which is equivalent to that contained in 282 pounds of cotton seed meal.

The average of three tests shows that 28 per cent. of the total nitrogen was contained in the roots, stubble and fallen leaves after the removal of the hay.

The average increase in the yields of succeeding crops was practically identical whether the fertilizing material was supplied by cow-peas or by velvet beans. Equal areas of these two plants were of practically equal value for soil improvement.

The word vines is here used as synonymous with the entire plant of the velvet bean, and with the entire plant of the cow-pea after the pods are picked.

The increase in the yield of seed cotton produced in the year immediately following the plowing in of the vines of cow-peas or velvet beans averaged in four tests 567 pounds per acre, worth (at 61 cts. per pound for lint and \$7.50 per ton for seed), \$44.17. The increase in the first cotton crop after the use as fertilizers of the vines of the summer legumes was never less than 32 per cent. and averaged 63 per cent.

In one test with corn, the increase in the first crop where velvet bean vines had been plowed in was 81 per cent., of 12.3 bushels, worth at least \$6.15 per acre. With oats, the average increase from the vines of the summer legumes in three tests averaged 17

bushels per acre, and with wheat the corresponding increase in two tests was 5.65 bushels per acre.

The increase in the yield of sorghum hay after cow-pea and velvet bean vines averaged 87 per cent., or an average gain of 2.1 tons of hay per acre, worth, at \$6.67 per ton, \$14.02.

When the vines of the cow-pea or velvet bean were utilized as hay, and only the roots and stubble employed as fertilizer, the increase in the yield per acre of the crop immediately succeeding the stubble was as follows:

208 pounds of seed cotton, or 18 per cent., worth \$5.20.

4.3 bushels of corn, or 32 per cent.

28 bushels of oats, or 334 per cent.

6.7 bushels of wheat, or 215 per cent.

2.08 tons of sorghum hay, or 57 per cent.

The largest percentage increase from either the vines or stubble of cow-peas or velvet beans was made by wheat and fall sown oats, probably because these best prevented the washing away or leaching out of the fertilizing material in the stubble or vines of the legumes.

Generally on sandy soil those crops most completely utilize the fertilizing values of the legumes, which leave the land unoccupied for the shortest interval. It is generally unadvisable for legumes to immediately succeed legumes in the rotation of crops, for non-leguminous plants, like cotton, corn, the small grains, grasses, etc., make better use of the nitrogen of the fertilizing crop.

The value of the increased product, resulting from the use of the entire legume for fertilizer, was greater with cotton and sorghum than with corn, oats or wheat.

These experiments emphasize the importance of such a rotation of crops as will require a large proportion of the cultivated land of every farm to be devoted to some leguminous plant.

Comparing the fertilizing effect of the vines with that of the stubble of the cow-pea and the velvet bean, the excess in the next crop in favor of the vines averaged as follows:

6.6 bushels of corn per acre, or 49 per cent.

.5 ton of sorghum hay, or 9 per cent.

452 pounds of seed cotton, per acre, or 40 per cent.

With these three crops, the average increase in value per acre was \$5.98 greater from vines than from stubble. With oats and wheat, the vines of these summer legumes were not superior to the stubble when the small grains were sown immediately after the legumes matured.

The fertilizing effects of the stubble of cow-peas or velvet beans was very transitory on sandy land, the average increase in the second crop of corn after the stubble being only 1.34 bushels per acre, or 12 per cent., as compared with the yield of a plot that had not borne legumes.

The fertilizing effect of the vines of cow-peas and velvet beans was less transitory than that of the stubble, and the increase was 24 to 54 per cent. in the second crop, 14 per cent. in the third crop (oats), and the favorable effect was even perceptible in the fourth crop (sorghum), grown in the same year as the third. The total increase in value of the four crops occupying certain plots during the three years after the plowing under of the vines of cow-peas and velvet beans

was \$42.97 per acre, an annual increase of \$14.32 per acre.

On the other hand, on very light soil the fertilizing effects of both stubble and vines had practically disappeared within twelve months after the plowing in of the legumes.

Corn, as the second crop, yielded 14 per cent., or 2.1 bushels more after legume vines than after legume stubble, this representing a value of \$1.05. The permanency of effect of legumes in soil improvement seems to be in proportion to the stiffness of the soil and to the mass of vegetable matter afforded by the legume, and the favorable influence of leguminous vines is apparently not less permanent than that of stable manure.

J. F. DUGGAR,  
*Alabama Experiment Station.*

### RENOVATING GALLS.

*Editor Southern Planter :*

In the June number of your valuable journal, I notice an article by W. F. Massey on the renovation of galls. I agree with him as to the deep-breaking up and top dressing to start grass, but my observation teaches me that grass thus started soon dies out; therefore I believe that something more is needed or can be done to improve on his method.

I will give my experience with galls, which I will designate as Nos. 1, 2 and 3 :

No. 1, I gave a pretty good coat of trash from the woods, consisting of leaves, bark, chips and rotten wood; plowed in deep; planted in peas and got half a crop; then gave it a dressing of trash mowed from a ditch bank, and next spring planted to corn and had a good half crop.

No. 2 treated same way, except the fall dressing; next sowed oats and got about half a crop; since then it has not been worked, but is well covered over with weeds, grass, etc.

No. 3, not having anything better at hand, by way of experiment, I laid half rotten sap pine rails in the furrows and plowed them in and planted to peas; made half a crop, and since it has laid out in a pasture, and is fairly well covered over with such wild trash as grows on the surrounding land.

I did not remove any of the pea vines; only picked the peas for seed. I did not use any manure or fertilizer, except as stated, which convinces me that plowing in trash, such as weeds, chips, partially rotted wood, bark, etc., as a mechanical agent, will go a long way in renovating galls and run down soils.

*Goochland Co., Va.* EXODES.

### COW-PEAS IN THE MOUNTAINS.

*Editor Southern Planter :*

I cannot give cow peas as much praise as some writers. I have tried them three different times for wheat and rye. Our season is too short for them up in Ashe county, as we are 3,000 feet above the sea. Ours is a grass country. I have a field that I put part in peas, one bushel to the acre, and 150 lbs. fertilizer, 10 per cent. phosphoric acid and 2 per cent. potash. I turned the peas under for wheat, and sowed one and a quarter bushels of wheat with 150 lbs. fertilizer, 16 per cent. phosphoric acid. I got twelve bushels of wheat from it. I sowed part of it to grass in spring—timothy, orchard grass and red clover; the other part I put in corn; fertilized the same as I did for wheat, and made a fair crop of corn. The next year I sowed same land to oats with same amount of fertilizer, and made a good crop. I sowed the same kind of grass seed, and to day I have the best stand of grass; I got two crops from the corn land.

Last summer I planted the peas early, so that most of them would get ripe, but the rain kept them growing, so I turned them under green and rather late for wheat in our section, and I do not think I will get my seed back. Our spring has been cold and dry.

*Ashe Co., N. C.*

JOHN DENT.

[Cow-peas are too much of a tropical crop to do well even in the South at 3,000 feet above sea level. Our correspondent would have done better with Canada peas and oats as a preparation for his wheat, corn and grass. The turning down of the green cow peas just previous to seeding the wheat, accounts largely for the failure of the wheat crop. Wheat requires a compact seed bed, which could not be had on a green cow-pea crop. Had he sown oats in the spring on a cow-pea fallow, he would have seen a good result.—Ed.]

### SORGHUM PASTURAGE.

Ninety-nine farmers and stockmen out of a hundred, says the *Texas Stockman and Farmer*, will tell you not to turn your cattle in a field of green sorghum, unless you want to kill them. J. M. Vance, Secretary of the San Antonio Fair, and a well known stock farmer, says that he believes that for the dairyman pasturing sorghum is the best and cheapest way to handle this crop, and he has been practicing this method successfully for three years. He plants three fields with sorghum for pasturage purposes, and when the cane gets in the dough state he turns his cattle on it and lets them stay in the field each day until they will eat no more. In following this method, he has never lost a single animal.

**TURNIPS.**—One of the most useful winter vegetables. Should be largely grown by farmers as well as gardeners, as they make most valuable stock feed for use all through the winter.

Pumpkins can be so easily grown in the corn field, making an extra crop, and make such healthy and nutritious feed, that they should be largely grown by every farmer.

## COST OF GROWING WHEAT IN KANSAS.

A consensus of the detailed statements of 120 representative Kansas winter wheat growers, representing fifty-six different counties, as to the cost to produce and put in the bin or car an acre crop of wheat, yielding twenty bushels, is, itemized, as shown below:

Average cost of plowing (or disking).....	\$0 96
Harrowing.....	28
Seed and seeding.....	92
Cost of harvesting and stacking (or shocking)...	1 36
Threshing and putting in bin or car.....	1 60
Wear, tear and interest on tools.....	29
Rental of land, or interest on its value.....	1 90

Total cost per acre, or twenty bushels..... \$7 31

Average of other items, gathered from those furnishing the 120 most carefully made reports quoted, are as follows:

Average number of years each of these 120 reporters has raised winter wheat in Kansas	19
Average number of acres raised by them annually during these years.....	527
Average quantity of seed sown per acre (pecks).....	4.4
Average yield per acre (bushels).....	18.2
Average value of wheat land per acre.....	\$24 18
Average value per acre of wheat for pasturage.....	1 15
Average value of straw per acre.....	81

A digest of the same items of information, taken from the interviews with eighty growers, in the thirty counties constituting what is known as the "wheat belt," which produced seventy nine per cent. of the ninety-million-bushel crop harvested in 1901, gives averages thus:

Average cost of plowing (or disking).....	\$1 00
Harrowing.....	28
Seed and seeding.....	95
Cost of harvesting and stacking (or shocking)...	1 48
Threshing and putting in bin or car.....	1 61
Wear, tear and interest on tools.....	27
Rental of land, or interest on its value.....	2 06

Total cost per acre, or twenty bushels..... \$7 65

Other averages derived from reports of the thirty wheat-belt counties are as follows:

Average number of years each of the eighty reporters has raised winter wheat in Kansas	21
Average number of acres raised by them annually during each of these years.....	613
Average quantity of seed sown per acre (pecks).....	4.4
Average yield per acre (bushels).....	18.5
Average value of wheat land per acre.....	\$25 29
Average value per acre of wheat for pasturage.....	1 07
Average value of straw per acre.....	80

From the total cost per acre, as shown in both the foregoing computations, there can rightly be deducted the value of the pasturage and straw, which amount to considerable sums, and frequently to more than one third the cost of producing the crop.

Mention the *Southern Planter* when corresponding with advertisers.

## ENQUIRER'S COLUMN.

Enquiries should be sent to the office of *The Southern Planter*, Richmond, Va., not later than the 15th of the month, for replies to appear in the next month's issue of the *Planter*.

## Sour Grass—Lime.

I have a lot which has just been cut of red clover, and wish to let it stand for next year. It has sour grass in it. I wish to know if I use agricultural lime, when and how much is the best time to use it; also, what kind of guano is the best to use as a top dressing, and at what time.

2. My land is quite sour, judging from the sorrel seen in it. I wish to apply lime; when is it best to do so, and on what crop. I follow corn with peas cut for hay, and then seed to wheat and clover.

By answering the above, you will confer a great favor.

*King and Queen Co., Va.*

WM. A. BROWN.

It does not at all follow that because you have sour grass in your clover, that your land is sour. We have seen this grass growing in the bottom of an old lime-kiln, where the soil could not possibly be sour. It is more certainly an evidence of poverty of soil than of sourness. Make the soil rich, and better grasses and clovers will crowd out the sour grass. A dressing of lime applied in the fall, say 25 to 50 bushels to the acre, would, however, be of service to the land and help the clover, though we prefer always to apply lime when working the land for a crop. In your rotation, the proper place for the lime is after you have plowed down your pea stubble and before seeding the wheat. We would apply 300 to 500 lbs. to the acre of bone meal on the clover as soon as possible.—Ed.

## Grafting and Budding Trees—Blanching Celery.

Please advise me, through your query column, how to graft and bud fruit trees and how to make the wax. Also how to blanch celery. A neighbor suggested sand. I find great difficulty in blanching Giant Pascal.

*Chesterfield Co., Va.*

A SUBSCRIBER.

In grafting, there are two chief requisites for success—the first that the graft be so set in the stock that the sap may flow upwards without interruption, and the second that the forming wood may extend downwards uninterruptedly through the inner bark. To effect these two requisites, it is needful first that the operation be performed with a sharp knife, that the vessels and pores may be cut smoothly and evenly, and the two parts be brought into immediate and even contact. Secondly, that the operation be so contrived that a permanent and considerable pressure be applied to keep all parts of these cut faces closely together. Thirdly, that the line of division between the inner bark and the wood should coincide or exactly correspond in each, for if the inner bark of the

one sets wholly on the wood of the other, the upward current through the wood and back through the bark is broken, and the graft cannot flourish or grow; and fourthly, that the wounded parts made by the operation be effectually excluded from the external air until, by the growth of the graft, the union is effected. The first requisite is best attained by keeping a keen flat-bladed knife to cut the faces and another knife for other purposes. The second requires that the jaws of the stock in cleft-grafting press with some force, but not too much against the wedge shaped sides of the graft. In whip-grafting, the tongue and slit should be firmly crowded or bound together. The third requisite is attained by close examination with the eye. The fourth is accomplished by plasters of grafting wax. Grafting wax may be made by melting together three parts of rosin, three of beeswax, and two of tallow. This wax may be applied directly when just warm enough to handle, or may be spread on sheets of muslin, and these be cut in strips and be warmed and bound round the graft. The wax should closely cover every cut surface. The two most common methods of grafting are cleft and whip-grafting. In a whip-graft the faces of the stock and the graft are cut with a long sloping cut, and then neatly laid together and bound round with the wax plasters. In cleft grafting, the stock is cut off square and then split open with a strong knife struck with a hammer, and the graft is cut into the shape of a wedge and inserted into the split in the stock and carefully fitted and bound round with wax.

Budding consists in introducing the bud of one tree with a portion of bark and a little adhering wood beneath the bark of another and upon the face of the newly forming wood. It must be performed while the stock is in a state of vigorous growth. An incision is made lengthwise through the bark of the stock and a small cut at right angles at the top, the whole somewhat resembling the letter T. A bud is then taken from a shoot of the present year's growth by shaving off the bark an inch or an inch and a half in length with a small part of the wood directly beneath the bud. The edges of the bark at the incision in the stock are then raised a little and the bud pushed downwards under the bark. A bandage of bass corn husk or other substance is wrapped round, covering all parts but the bud. The pressure should be just sufficient to keep the inserted portion closely to the stock, but not such as to bruise or crush the bark. The shoots containing the buds should be cut when so mature as to be rather firm and hard in texture. To prevent withering, the leaves must be immediately cut off, leaving about a quarter of an inch of the foot stalks of the leaves to serve as handles to the buds whilst inserting them. The bud remains dormant un-

til the following spring, when the stock is cut off two or three inches above the bud before the swelling of the bud. Budding is performed in summer; grafting in the spring.

We have never experienced any difficulty in blanching celery. In our last issue we wrote fully on the subject. When the celery is fully grown, hold the stalks together with one hand and bank the soil closely around the plant and place sufficient of it around the plant to keep it pressed closely to the plant on all sides so as to exclude light and air. Some tie the plants together with bass matting or soft cotton strips before banking the soil. We have also known growers to wrap newspapers round the plants before banking the soil. Exclude light, and the plant will blanch, though some varieties take longer than others.—ED.

#### Preparing for Wheat Seeding.

I have some fifty to seventy five acres of land I want to put in wheat this fall, and would like to know the best way of preparing for same. About one third is now covered with broomsedge, one third wheat stubble of 1901, and one third has laid out for a year or so. Will it pay to sow peas, cut the hay and plow under stubble when peas are \$1.40 to \$1.50 per bushel, and I am not prepared to handle cattle to advantage? Land now in wheat. When should same be broken for wheat again?

What fertilizers, and how much. Most of land is sandy loam, red clay subsoil, and flat, and brought ten to twelve bushels of wheat per acre, with 100 lbs. ordinary 8-2-2 fertilizer. W. A. ELIASON.

*Iredell Co., N. C.*

This land should all have been plowed in May or June and been sowed in cow peas with 250 or 300 lbs. of acid phosphate to the acre. A good crop of cowpea hay could then have been cut and a heavy stubble been turned under for the wheat; or, if the hay had not been desired, the whole crop could have been so fully matured that it could all have been turned under with safety and with great advantage. At this time of the year, and with the land yet to plow, it is doubtful whether a growth of peas sufficiently heavy can be obtained early enough to cut for hay and yet allow the land to be plowed and become sufficiently compacted for the best growth of the wheat crop; and to turn under a heavy growth of peas in full vigor of growth would be attended with much risk of injury to the wheat. Possibly the best course would be to plow and sow with peas, and when a fair growth has been made to plow the crop down, say, in the beginning of September, and apply 30 or 40 bushels of lime to the acre on the plowed land and harrow every week or ten days until time to seed the wheat. We believe it would be profitable to do this, even with peas at \$1.50 per bushel. It certainly would, if a hay crop could be secured. We would apply 150 lbs. of acid phosphate and 100 lbs. of bone meal to the acre when

seeding the wheat, and should expect to make twice as much wheat if the season was a good one as was made previously. In our next issue we shall say more on the proper preparation of land for wheat. Wheat should not follow wheat. Put the land in Crimson clover and oats, and then turn down for corn in the spring.—ED.

**Mange on Hogs—Cow-Peas—Turnips—Canning Corn—Beans, Etc.**

1st. Can hogs be cured of mange; if so, how?  
2d. I wish to sow peas in corn at last plowing, say, middle of July. How many should be sown per acre to give best results?

3d. What is the best kind of turnip to sow for winter use, and when is the best time to sow them?

4th. Can you give a receipt for canning such vegetables as corn, squash, lima and string beans, and tomatoes, so that they will keep through winter?

AN OLD SUBSCRIBER.

1st. Make an ointment of lard, sulphur and kerosene, and apply freely and frequently to the skin. At the same time give a tablespoonful of sulphur to each hog in its food twice or three times a week. This should get rid of the trouble.

2d. About half a bushel, if sown broadcast; if drilled, less than this quantity will be sufficient.

3d. The ruta бага is the best stock turnip to grow, as it keeps so much better than the other turnips. Sow in July. The purple top Aberdeen, the Red Top Globe or the White Flat Dutch, are good varieties, both for stock and domestic use. Sow in August.

4th. We can supply a little book on canning and preserving which gives receipts for putting up these vegetables; price, 40 cents. Without a proper plant for putting up these vegetables they are not very sure to keep good. We have published receipts from several ladies and have had complaints of failures, and therefore hesitate to advise home canning of these articles.—ED.

**Draining Land.**

I have on my place a bottom which I am very anxious to have drained, but so far have been unable to do anything with it. I would be glad to have your advice in the matter. The bottom, which is between two large creeks, does not overflow so badly, but the banks of the creeks are higher than the land, and when water get on it stays there. I have spent considerable money ditching, but it does not seem to do much good. I have also had the creek straightened and cleaned out for some distance below me. I am under the impression that the bed of the creek will have to be lowered in some way, say, by plowing out with oxen. If you can give me any suggestions through your journal they will be very much appreciated. I would also like to know about the cost per acre to tile drain land.

R. E. TUGGLE.

Henry Co., Va.

The only way in which you can effectually drain

this "bottom" will be to cut and tile a main drain through the "bottom" about middle of the land large enough to take all the water which finds its way into the land and carry this down the valley far enough until it delivers the water above the normal level of the creeks. Lateral drains should run obliquely into this main on each side of it, extending up to the banks of the creeks. The number and size of these, and of the main, will have to be regulated by the quantity of water to be carried. We have put lateral drains of this character as close as seven yards apart, and not found them more than sufficient with two inch tiles. It would be impossible for us to give you an idea of the cost of tile draining this land without more specific information as to the size and shape of the "bottom," and from what point you would have to procure your tiles. If you will let us have these data, we will be glad to help you. The cost of tile draining per acre varies very much, according to the size and number of tiles necessary and the depth of the drains to be cut to receive the tiles.—ED.

**English Walnut Trees Bearing.**

Please inform me through your columns whether a single English Walnut tree, growing alone, will bear fruit; and if so, how old the tree must be before coming into bearing.

ERNEST LAWFORD.

Buckingham Co., Va.

Yes. They do not usually bear until ten or twelve years old.—ED.

**Cotton Yield.**

In a prominent seed catalogue, the statement is made that Moore's Prolific cotton "will yield 40 per cent. of lint and from three to four bales of cotton per acre, when well cultivated and scientifically fertilized."

Is so large a yield possible on the average uplands of the cotton States, or is the statement intended to apply only to alluvial soils?

Will you kindly inform me just what is required on the two points of cultivation and fertilizing?

Taylor Co., Iowa.

B. F. M.

If you are looking to make anything like four bales of cotton to the acre of any variety and on any kind of land as an average crop, you are likely to be greatly disappointed. The average yield of the cotton crop is less than 200 lbs. to the acre (that is, less than half a bale). The man who makes a bale to the acre is considered an excellent grower, though there is no reason whatever why any man should not grow this quantity. We have subscribers who have made two bales to the acre on small highly enriched plots, and it may be possible that others have made more than this, but we have no record of its being done. We deal with the questions of fertilizing and cultivation of crops in our spring issues, when the subject is most

interesting and timely. At this season of the year we would only say to you, sow all the land you intend to plant in cotton with cow-peas; plow these down in the fall when ripe, and seed the land in Crimson clover, vetches and oats for a winter cover.—Ed.

#### Blight on Apple Trees.

My apple trees are affected with something like blight; the ends of new twigs die; there is a small insect that gets on the leaf and makes it curl up and die. I notice most all the apple trees in this section are affected in some way. Will you kindly give in your next issue the cause and remedy for this?

Sussex Co., Va.

W. W. ALLEN.

The trees are affected with twig blight, which we hear is very prevalent all over the State. Like pear-blight, it is a disease for which no certain remedy is known. The cause is believed to be the introduction of diseased spores from other trees by insects or the wind. All the diseased twigs should be cut off and burned. Late growth of new wood should be checked by ceasing cultivation of the orchard early.—Ed.

#### Skin Disease on Sheep.

I have a lamb that has a skin disease on its ears, eyes and lips, which I have tried to cure, but have failed so far. It is about blind, as it seems to itch very much, and the lamb scratches its ears and eyes till they bleed. I have had two or three such cases before.

Ashe Co., N. C.

JOHN DENT.

Without seeing the lamb, it is impossible for us to tell what is the nature of the disease. It is very probably caused by lice of some kind. Get a package of Laidlaw's Sheep Dip advertised in the *Planter*, and apply as directed.—Ed.

#### Killing Honeysuckle.

In our last issue we had an inquiry as to the best means of killing this shrub. We replied that we knew of no certain method. A subscriber writes us that he has killed it by pouring pork pickle or strong brine on it.

#### WHERE LARGE QUANTITIES OF CHEMICAL FERTILIZERS ARE USED.

*Editor Southern Planter:*

Outside of the trucking centres of the South it is probable that Long Island is the heaviest purchaser of chemical fertilizers in the country. It is quite common there for a number of farmers to join together and, through a purchasing agent, contract for from 300 to 1,000 tons—taking advantage of all the discounts by paying cash. While a large amount is purchased on the above plan, it by no means covers one-half the business. It is quite common for a Long Island farmer to purchase one or more cars of fertilizers for his own use, and the grade he purchases is

not a cheap or ordinary one. They have a standard, or what is better known down there as the "club fertilizer," which usually contains 3 to 4 per cent. of nitrogen, 7 per cent. phosphoric acid, and 7 per cent. potash, which is used mostly for potatoes at the rate of one ton to the acre.

The headquarters of these clubs are at Northport, Northville and Southold. The plan adopted by these clubs has been to elect a purchasing agent, who acts in connection with a board of directors who, by authority of the club, secure a chemical analysis of the soils, and on the advice of the Experiment Station select an analysis to meet the soil conditions and the demands of the crop to be raised. This same committee then corresponds with the leading manufacturers of chemical fertilizers. After securing a satisfactory price, contracts with one of them to deliver within the time stated from 100 to 500 or 1,000 tons, as the case may be, in car load lots at the different stations within the club district. The purchasing agent is usually paid 25 cents to 30 cents per ton for making the purchases, looking after the delivery and making the collections (it is a cash transaction—the farmer pays the purchasing agent for his fertilizer as soon as it is taken from the car.) The purchases are usually made in January and goods delivered during March and April, very few in May, which gets this matter off the minds of the farmers early in the season.

At Orient Point, Southold and Mattituck, where potatoes, cauliflower, asparagus, tomatoes and cabbage seed are all extensively planted, we think the grades of fertilizer in use run higher than at other points on the Island. At Orient, they use 4 per cent. ammonia, 8 per cent. phosphoric acid, and 10 and sometimes 12 per cent. potash; this is used mainly for potatoes and Brussels sprouts at the rate of one ton to the acre, which we understand gives splendid results in both the yield and quality of the crops. At Southold and Mattituck, for tomatoes, asparagus and cauliflower, they use  $4\frac{1}{2}$  per cent. nitrogen, 8 per cent. phosphoric acid, and 7 per cent. potash, in all cases not less than one ton to the acre; and in the place of mixed fertilizers, quantities of ground rock and fish scrap are used with kaint and muriate of potash.

The Long Island farmer is to be congratulated on his progressive methods generally. His intelligence is leading him forward, helping him to overcome the difficulties attendant on the cultivation of thin soils—soils that eat up humus and wear out very fast. The reconstruction of his soils is taking his attention very much at present, and he is now investigating what to use for cover crops that will meet Long Island conditions better than common clover. Crimson clover, rye or oats and cow-peas will be tried. He also seems fully alive to the needs of the plants, and understands that to meet these needs he must first have physical conditions brought about by the use of yard manure or green crops plowed under, which enables him to use larger quantities of high grade commercial fertilizers with safety and profit.

E. J. HOLLISTER.

## Trucking, Garden and Orchard.

### WORK FOR THE MONTH.

The gathering and shipping, or otherwise disposing of the vegetable and early fruit crops, will make this month a busy one. Do not let vegetables become overgrown or fruit over-ripe before gathering, and see that all products are cooled off before being packed for shipment. Ship in well ventilated packages, and see that care is taken in grading the shipments. Culls and second class products should never be shipped with the best, but in separate packages, distinctly marked "seconds." Let each package strictly conform to the marking upon it, and thus secure a reputation which will always tell upon the price.

Plant successional crops of sweet corn, Pole beans, Lima beans and tomatoes. Sow cucumbers for pickle.

Keep all growing crops well cultivated, and watch for the attacks of insects and fungoid diseases, and apply the remedies advised in our Spray Calendar promptly.

Celery plants should be transplanted from the seed bed as soon as they are large enough to handle. Set them in a fairly rich bed about four inches apart each way, to grow on for setting out in the rows next month.

In this issue will be found articles dealing with the planting of Irish potatoes for a late table crop, and with the planting of the second crop for seed, and also with the preparation and planting of the fall or late crop of cabbages.

Seed may be sown late this month for broccoli plants to be set out in September. This crop should have more attention, as the heads, which are like cauliflower, are now in demand in the markets in the fall and early winter. It is a crop as easily grown as cabbages, and requires practically the same treatment, and should be more profitable.

In this issue will be found an article dealing with the summer management of strawberry beds.

The budding of fruit trees will require attention during this month and August. In our Enquirer's Column will be found a reply dealing fully with this work. Roses bud very successfully, and those desiring good displays of these flowers should secure buds of new varieties and insert them in healthy, vigorous stocks of wild or otherwise worthless varieties.

As the early crops are cleared off the land, break

and prepare either for late crops or for seeding with Crimson clover or vetches. Do not let the land lie idle or producing only weeds. These mean loss of fertility and more work.

### SUMMER WORK ON A STRAWBERRY FARM.

*Editor Southern Planter:*

I will give the system of work which after more than twenty years experience we have adopted as best on our strawberry farms. While this system can be modified to suit the conditions prevailing in different localities, I believe that it will be found applicable to a large portion of the country.

Strawberry fields that have borne two crops are plowed under and sowed in cow-peas. And we would impress on all that success with the cow-pea—this unrivalled soil improver—depends largely on the way it is planted. It is nearly always covered too deep, the custom being to sow broadcast and plow under with turning plows. The result of this deep covering is that the peas are late in forcing their way up through the soil and that a great many, often the larger proportion, never come up at all.

If peas are to be broadcasted the land should be plowed first, the peas then evenly sown at the rate of six to eight pecks to the acre and worked in with a disk harrow. This harrowing not only covers the peas just the right depth, one to two inches, but at the same time converts the soil into an ideal seed bed.

As a rule we prefer to sow peas in rows or lists. This requires only one bushel of seed an acre. Break up the old strawberry bed or field and harrow if cloddy or turfy. The cow-pea, while exceedingly hardy when well established, requires favorable conditions of soil to start it off.

Well, the soil well harrowed, run off the rows three feet apart and sow the peas evenly. Cover then by means of a small tooth cultivator. To make the cultivator effective in this respect, remove all but the two side teeth. Then run so that these teeth will run on each side of the furrow in which the peas have been sown and near enough thereto to throw an inch or two of dirt on the seed.

Peas drilled this way will need no hoe work. Two plowings with a cultivator will suffice to make a good crop. Skillful and timely plowing of the peas will keep down the crab grass till the pea vines get large enough to smother it out. This is a most desirable thing, for the less crab grass seed that forms this summer the less crab grass to fight amid the strawberry plants next summer. And it is immensely easier and

cheaper to kill it with a plow now among the peas than with fingers and hoe amid the strawberry runners a year later. I have kept pea fields so clean of grass for two summers that when planted in strawberries the third year scarcely any crab grass at all came. This vastly simplified and cheapened the cultivation of the strawberries.

Whether drilled or broadcasted the pea vines should be turned under or cut for forage just as the pea forms. If the vines are cut the stubble should at once be plowed under. Some allow most of the peas to ripen, pick them and then cut or turn under the vines. But a field will give better results in berries when the vines are cut or plowed under before the pea matures. Maturing seed is the process that exhausts the soil with peas as with other crops.

The peas or the stubble turned under in September, the land may be prepared and again set in plants as soon as rains come to get the soil in good condition.

So much as to the fields that are to be plowed under, rotated in peas and reset in strawberries the following fall. Now as to cultivating a field that has borne only one crop and which it is desired to prepare for a crop the following spring. Bar off the rows with a turning plow leaving a strip about one foot wide. If the plants have been grown in stools or hills work them out nicely. If the matted system has been followed chop out the plants, leaving a single row along the unplowed strip, chop the plants about a foot to a foot and a half apart. Then sow 500 to 1000 lbs. cotton seed meal per acre on each side of the plants and in the furrow made in "barring off," and at once cover the meal by splitting the middle, which will throw the dirt back around the plants.

After that give shallow cultivation with a hoe and cultivator often enough to kill all weeds and grass as it comes. The cultivation of young plants should be similar to that recommended for the "barred off" plants—shallow and frequent cultivation with cultivator and hoe.

O. W. BLACKNALL.

## SECOND CROP IRISH POTATOES.

In the parts of this State south of the James River and east of this city and in Eastern North Carolina, the growing of the second crop of Irish potatoes for seed for the early spring crop should receive attention at this time. There is always a large demand for this seed in January and February, as it has been found to be more reliable and to produce better yields of the early crop than northern grown sets. There is no difficulty in raising the crop if only certain rules are followed. Let the first early crop become fully, or nearly fully, matured before digging. Sort out from this crop all the seed required of the size of an egg, or a little less. Spread these sets out in a moderately shady place, and allow them to green for a few days. Then barely cover them with a little wood's mould and pine or short straw and keep slightly damp. In a week or two they will commence to sprout, and are then ready for planting again. Lay off the rows as for the regular crop, but plow out the furrows deeply—say run the plow twice in each furrow. Fertilize lightly, if the land is not in good fertility. Plant the sprouted sets in the bottom of the furrows at the usual distance apart, say a foot or fifteen inches, and just cover the sets with soil. In a week or ten days they will begin to appear above the soil. Plow on to them then another light furrow, and so continue until the land is level. Then leave to make the crop cultivating now and again to conserve moisture and keep down weeds. They will continue to grow until frost cuts them down, when they should be dug and sorted. The largest may be used for the table, and all the medium sized ones be stored away safe from frost for sale or planting in the early spring. If the seed for this crop is not sprouted before set, there is no reliance to be placed on the stand, as the sets seem to cook instead of grow.

## LATE OR FALL CABBAGE.

Irish potatoes raised in early spring will not keep over the winter in the South. By December they are not fit for the table. To secure good table potatoes for winter and spring, northern-grown sets should be planted in July. These sets are kept in cold storage up to that time, and come out unsprouted. They should be spread out on the barn or a shed floor for a week or ten days, until the eyes start, and should then be planted. Give the land good preparation, fertilize liberally, and push the growth as much as possible by frequent cultivation and a top-dressing of nitrate of soda, so that they may come to maturity before frost. These potatoes will keep all winter, and sell well in all Southern markets.

We have several enquiries as to growing the late fall cabbages in the South. The supply of this crop for Southern markets comes largely from the North and the mountain sections of the western part of this State. Whilst these sections will always be better adapted for raising the crop than Middle and Eastern sections of this and the other Atlantic Coast States, yet it is not impossible to grow the crop in those sections. The mistake made when trying to do so usually is that the plants are raised too early and are killed in the hot summer months by drouth and insect pests. Seed should not be sown in Middle and Eastern Virginia or in Eastern North Carolina before the latter part of July or the first week in August. It should then be sown in a moist situation on a very rich seed

bed, and the plants be encouraged to make a rapid growth. Dust the plants as soon as they appear with tobacco dust and air-slaked lime to keep off the flea beetles. In the latter part of August and first week in September, plant out in rich, moist land and encourage rapid growth by frequent cultivation and a top dressing of nitrate of soda, so that the heads may form and wrap by November. The attacks of harlequin bugs may be largely prevented by sowing rows of mustard seed between the cabbages. The bugs will prefer this to the cabbages, and may there be destroyed with kerosene. The green worms should be killed by dusting with salt and air-slaked lime. The Flat Dutch is the best variety to grow for this crop.

#### CLAREMONT LATE IRISH POTATOES.

Mr. Ames, from whom we published a short article a month or two ago about a late variety of potatoes, writes us that he is being constantly written to for seed of this variety. He desires us to say that neither he or any of his neighbors have now any more of the variety left for sale.

#### CAUSTIC SODA FOR BORDEAUX MIXTURE.

The Ohio Experiment Station has recommended the use of soda Bordeaux mixture in the treatment of vineyards for grape rot and the spraying of apple trees for the bitter rot of apple. Numerous persons have inquired where the powdered caustic soda may be obtained of such tested strength that the process of testing its strength at home may be avoided. Pursuant to the wish that such source of supply might be developed, the Lawrence Publishing Co. of the Ohio Farmer, Cleveland, Ohio, have arranged to supply powdered caustic soda of tested strength at the following price f. o. b. Cleveland:

Caustic soda, 10 lb. tin at 65c.
Caustic soda, 25 lb. tin at 54c. per lb. or \$1.35 per tin.
Caustic soda, in multiples of 25 lbs., 54c. per lb.

#### AMOUNT OF CAUSTIC SODA TO USE.

Samples of the grade offered have been tested by the Experiment Station, and should be used at the rate of 1 lb. 3 oz. of the caustic soda to 4 lbs. of copper sulphate in fifty gallons of mixture, which is soda Bordeaux mixture. The formula, using this particular grade of caustic soda, is as follows:

#### SODA BORDEAUX MIXTURE.

Copper sulphate (blue vitriol).....	4 lbs.
Caustic soda (sodium hydroxid).....	1 lb. 3 oz.
Water, to make .....	50 gallons.

The solutions of copper sulphate and caustic soda should be put into the barrel or tank only after nearly filling it with water, and afterwards be thoroughly agitated by pumping the mixture back into the tank through the hose with nozzle removed. The mixing of spray preparations of this sort outside the spray tank is unnecessary—the process may be best conducted by putting the ingredients directly into the

tank—but not until water enough has been added to make them quite dilute.

Orders for the caustic soda should be addressed to the Ohio Farmer, Cleveland, O.

Inquiries for spraying directions in using caustic soda should be addressed to the

EXPERIMENT STATION,  
Wooster, O.

#### FRUIT PROSPECTS IN BEDFORD COUNTY, VA.

*Editor Southern Planter.*

I am sorry I could not find time to give you a report for the June issue. Cherries practically failed this spring. In peaches, Elberta has set a fair crop, as have Bishop's Early and Salway, but the crop, as a whole, is not more than one-fifth of a yield. The pear crop is irregular; a few varieties are loaded, but most varieties have few or none, and I should estimate the yield at one-fifth of a full crop. Japan plums are a full crop. Apples are irregular. Some Pippin orchards have a crop, others have some trees full, others bare. Winesap is generally light. Ben Davis has set a crop. York Imperials, like Pippin, are irregular. Willow Twig has a full crop. As a whole, the crop in this locality is about one-half a full yield. No hail has so far injured us, and such fruit as we have is in good condition.

Owing to ravages of *Monilia* during the abnormally wet season of last year, peach orchards show up worse this year than I have ever seen them, and I think a severe heading back of old trees will be essential to the proper supply of thrifty wood for future bearing. Apple orchards are showing some blight, but not as badly as last year. Other fruit trees are looking well, but making slow growth owing to want of rain.

Bedford Co., Va.

GEO. E. MURRELL.

#### WONDERS ON A SINGLE ACRE.

Samuel Cleek, of Orland, has the most remarkable acre in California. It embraces a barn and corral, covering 75 by 75 feet; rabbit hutch, 25 by 25 feet; residence and porches, 30 by 30 feet; two wind mill towers, 16 by 16 feet each; garden 46 by 94 feet; blackberries, 16 by 90 feet; strawberries, 65 by 90 feet; citrus nursery, 90 by 98 feet, with 2,300 trees budded; one row of dewberries, 100 feet long; four apricot trees, two oak trees, three peach trees, six fig trees, ten locust trees, thirty assorted geraniums, twelve lemon trees, seven years old, one eight-year old lime tree from which he sold 160 dozen limes last year; eight orange trees in bearing, four bread fruit trees, five pomegranate trees, a patch of bamboos, three calla lillies, four prune trees, three blue gum trees, six cypress trees, four grape vines, one English ivy, two honeysuckles, one seed bed, one violet bed, one sage bed, twelve tomato vines and thirteen stands of beans.

After making a comfortable living for himself and wife off this single acre, Mr. Cleek adds \$400 a year to his bank account.—*San Francisco Chronicle.*

## Live Stock and Dairy.



### HOLSTEINS IN NOTTOWAY CO., VA.

We have pleasure in presenting our readers with a picture of as pretty and high bred a herd of Holstein cattle as are to be found in any State in the union, and our pleasure is enhanced by the fact that this herd is to be found in Southside Virginia, in a section of country that only a few years ago was the home of nothing but the poorest bred scrub cattle, and which was said to be unsuited for anything better. The herd is the property of Mr. T. O. Sandy, of Burkville, Nottoway County, Va., and was established some six years ago by purchases made from one of the best known Holstein breeders in New York State. Since that time Mr. Sandy has made additions to his breeding stock from other well known herds, and recently has added a car load from a well known Pennsylvania, herd of the highest breeding. Mr. Sandy has now about forty head of as fine Holsteins as are to be found in the country, and some of them are making won-

derful records as milkers and cream producers. The cream from the herd is shipped to Richmond every day, whilst the separated milk is fed to calves and hogs. The health of the herd has been perfect ever since it was established, thus settling definitely the point as to the possibility of keeping pure bred stock within the limits of the quarantine lines without loss from Texas fever. Mr. Sandy has also a fine herd of Berkshire hogs and flock of Dorset sheep, and breeds Hackney horses. The farm itself is a model of what is possible to be done on a poor Southside farm. When Mr. Sandy took it in hand a few years ago it was with difficulty that he could raise feed enough to supply a few cattle. Now it is producing the heaviest crops of corn and grain, forage crops for the silo and hay for the barn and there is never any lack of abundant feed for the large number of mouths to be fed. The manure from the stock is carefully saved and applied to the land and supplemented with slag phos-

phate when and where needed. This and the adoption of a system of rotation of crops calculated to keep the supply of humus constantly on the increase in the land is the secret of Mr. Sandy's success. Such a system is all that is required to make thousands of acres in Southside Virginia equally fertile and profitable. Live stock is the key to success there as elsewhere.

#### WHICH ARE THE MORE PROFITABLE—SPRING OR FALL COWS ?

*Editor Southern Planter :*

The answer to this question depends, in a great measure, on the relative prices which can be obtained for summer and winter butter ; or milk, if milk is sold, instead of butter. It costs more to make winter butter, because more grain must be fed at that season to keep up the flow of milk. In this part of Pennsylvania, for a number of years past, it has paid best to have cows calve about the first of October, feed them well through the winter, and sell the butter as fast as made.

How long winter dairying will continue to be the more profitable will depend on how many dairymen change their practice from summer to winter dairying by having their cows calve in the fall instead of the spring. As the change cannot be made at once, but requires time, I should judge from present appearances there is no great danger of dairymen making a rush to change their practice.

Perhaps the following statement may be of interest to the readers of the *Southern Planter*: We use the Cooley cans with a graduated glass scale inserted in the side, which shows the thickness of the cream and measures it. Three spaces of cream will make a quart, and seven spaces of our cream will make a pound of butter. At the creamery, each patron's cream is frequently tested by being churned separately, and each patron can also test the scale by counting the number of spaces churned for family use, and weighing the butter. A few years since, for a period of four months, beginning May 28th, we delivered at the creamery 2,776 spaces of cream, which made 396 pounds of butter, for which we were paid once a month, at the average rate of 17 cents per pound. From September 29th to November 1st (about one month), we received 22 cents per pound. From November 1st to January 16th the following year, we were paid an average of 27 cents per pound ; from January 16th to March 16th (two months) the price paid was 25 cents per pound ; from March 16th to April 25th, the price was 22½ cents ; from April 25th to May 25th, 18 cents ; from May 25th to August 30th, 15 cents ; from August 30th to October 16th, 18 cents ; from October 16th to De-

ember 24th, 22 cents ; December 24th to March 26th (the next year), 25 cents ; from March 26th to April 28th, 19 cents ; from April 28th to May 27th, 14 cents ; from May 27th to July 3d, 13 cents ; from July 3d to September 6th, 15 cents ; from September 6th to November 11th, 21 cents ; from November 11th to December 3d, 24 cents ; from December 3d to January 9th, 25 cents. For the summer months of the first year, the average price received was about 17 cents per pound, and for the winter months 26 cents—a difference of 9 cents per pound in favor of the winter make. For the summer months of the following year, the average price was about 15 cents per pound, and for the winter months 25 cents—a difference of 10 cents per pound in favor of the winter butter. For the summer months of the next year, the average price was 14 cents per pound, and for the winter months 25 cents—a difference of 11 cents in favor of the winter butter.

We fed some bran and meal to our cows regularly, both summer and winter, but of course not half so much in the summer as in the winter. We believe it pays to feed a little wheat bran in the summer, be the pasturage ever so good. The more you can get cows to eat, by supplying a variety of foods, the more milk they will give, and the only question to be decided is, whether they give enough more to pay the additional cost of the extra feed.

My opinion is, they do ; I have no proofs to offer.

Cows have to be wintered anyhow, whether they give milk or not, and cows fresh in the fall, and fed a full milk ration of meal and bran, will not consume more than half the quantity of fodder required to winter them without it. All the grain fed to the winter cows must not be charged to the winter butter, because there is so much saving of hay or other fodder. Another thing to be considered, fall cows stabled and well fed through the winter, when they get to grass in the spring, will increase their yield of milk for some time, especially if some bran is fed in addition to the pasture, and they will not go dry so long as spring cows. Besides this, the greater part of the milking and calf feeding comes at the season of the year when farmers are not so much hurried with farm work.

Corn fodder secured at its best and in perfect order is the cheapest, and one of the very best fodders for winter dairying. Clover hay is about as good for milk production, but it must be cut and housed at the right stage of growth. Both make yellower cream than ensilage.

J. W. INGHAM.

When corresponding with advertisers, kindly mention the *Southern Planter*.

### SOME POINTERS FOR BREEDERS.

*Editor Southern Planter :*

We see every week reports of sales of pedigreed live stock, and I have been struck myself with the difference in price of Shorthorn cattle sold at the sales of W. I. Wood, C. L. Geslaugh, and E. S. Kelly, May 20th, May 21st and May 22d, all pure bred registered cattle. At E. S. Kelly's sale the top price was \$1,625 for a five year-old cow, and the lowest price was \$200 for a seven year old cow. At Geslaugh's sale the top price was \$1,525 for a four year old cow, and bottom price for a cow was \$210 for a four-year old. At Wood's sale top price was \$2,030 for a three year-old cow, and bottom price was \$115 on a two year-old heifer. The ordinary farmer asks why this great difference? and well he may; for can any breeder truthfully say that this difference exists. In reality, one represents the true value and the other a fictitious one, set by breeders who are booming the Scotch cattle. Who had better cattle in the United States than Col. Moberly? and he had this for his motto: "Straight, crooked, or cross wise, we breed the best."

Our people are non plussed on several questions pertaining to Shorthorns. Why is it that Golden Victor, Choice Goods, Lavender, Discount, and other bulls stand ahead in the prize rings over bulls that are a great deal larger, &c. In looking over a lot of cows and calves, one will say, "Now, that is a good one, she has a big bone and frame; why is it you select that cow as being the best, she isn't extra large and is too light built."

Why do not some of our leading Southern Shorthorn breeders write an article occasionally explaining these things and enlighten our people? They must assume that because they know all the whys and wherefores that the beginner or farmers do. The editors of live stock and farming journals should also explain that the cattle that win now and are selected as breeders are the small boned, smooth, quick maturing kind, and not the large, coarse framed and boned Short horns of forty years ago. You often see a farmer pass by a calf that has a good heavy coating of hair and with a hide as mellow and mossy as a sheep skin and select one that has a light covering, and sole leather skin; that is because they are not taught by those who know.

Call on some of our good Shorthorn breeders and ask them to contribute an article occasionally and your journal will do even a greater work than it has done already in educating the Southern farmer, who has been more unfortunate than his Northern and Western brother on account of the devastation of the Civil War, &c. No State in this great Union of ours should stand ahead of Old Virginia, which is adapted

by nature for a great stock country. Its climate, soil and bountiful supply of good water make it all that is required, except for a lack of interest in good stock, which is, I am glad to say, fast becoming a thing of the past.

Now, a point that every one should bear in mind, in starting a herd of cattle, hogs or a breeding stud of horses, is, that the best may, and of course will, cost a little more in the beginning, but will pay a great deal better "in the long run" than trying to get the cheapest stuff that you can find that is entitled to registry. Remember that there are said to be "black sheep in every fold," and do not buy any but the best individuals, backed by the best blood.

*Rockingham Co., Va.*

JNO. F. LEWIS.

[We wish some of our Shorthorn breeders would take Mr. Lewis' suggestions into consideration and let us hear from them. We have often requested them to do so, but they are very modest men and we cannot get them to respond. We stand ready to publish their views and to supplement them with pictures of live stock if they will send us photographs from which we can have cuts made.—ED.]

### ANGORA GOATS FOR PLEASURE AND PROFIT.

*Editor Southern Planter :*

In raising Angora goats successfully, there are a few conditions that the farmer should take care to provide. I would say, first, examine the condition of your pastures, your fences, and your shelter. These all being satisfactory, you can certainly add considerably to the income of your farm by raising a herd of Angora goats properly proportioned to the amount of suitable pasture you may have.

The State in which you live makes but little difference, as they have been successfully tried in almost every State in the Union.

They thrive on any pasture that other stock will eat, and also on brushy, weedy, rough pastures where even sheep will not do well.

Any well built perpendicular fence three feet high will turn them. Woven wire fences are preferable.

They are sure death to all kinds of shrubbery, and must be kept from your fruit trees and small bushes that you wish to preserve.

They will greatly improve any brushy, weedy pasture by killing the foul growth, thus allowing grass to take its place. I pasture my Angoras on land covered with brush and Russian thistles with but little grass interspersed. I do not permit them to feed this close enough to kill the brush, as I wish to perpetuate the brush and thistle growths for its value for Angora goat pasture. They are very fond of the young thistle and all kinds of weeds.

Shelter should be provided according to the climatic

conditions of the different States, always keeping this fact in view. They need protection more from wet than cold. In this State, with its dry, cold winters, a dry shed open on two sides is sufficient.

To be with my Angoras is one of my chief delights. Their beautiful appearance, with their long, silky fleece and graceful form, the many laughable pranks played by the frolicsome kids, are well calculated to make them one of the chief attractions of any farm.

Monte Vista, Colo.

C. E. SHOUR.

#### DEDUCTIONS FROM SHEEP-FEEDING TRIALS.

Some of the more prominent deductions from the work of the Experiment Stations in sheep feeding may be briefly pointed out as follows:

Care in the selection of the ram at the head of the flock oftentimes doubles the profits made from the lambs.

Dorset ewes breed earlier and are more prolific than Shropshire ewes, and hence are more valuable in growing winter or hot house lambs. The prolificacy of Dorset ewes is transmissible through the ram to other breeds of sheep.

Merino or other wool flocks of sheep can be converted into mutton flocks in three or four years by keeping a pure mutton ram at the head of the flock.

It pays in dollars and cents to feed lambs grain from birth, whether they are to be sold at weaning time, later in the fall, or fattened in winter and sold in spring.

After weaning lambs it does not pay to feed more than one half pound of grain per head per day until the fattening period begins in fall or winter.

Lambs with Down blood in them fatten much more rapidly than Merino lambs.

Sheep can be fattened on grain alone without any coarse fodder what ever.

Large lambs make gains faster than small ones. Lambs are much more profitably fed than yearlings. Ewe lambs fatten about as readily as wether lambs, and bring just as good prices in the market.

When well cared for, ewes can raise twin lambs without losing any more flesh than when nursing a single lamb, and under such conditions twin lambs nursing one mother gain as rapidly as when there is but one lamb nursing.

Soiling can be practiced with sheep the same as with other stock, but it is generally much more profitable to let the sheep gather their own forage.

Lambs fall pastured on rape and given some grain, gain from two and one half to three pounds per week. They also fatten more rapidly during the feeding period following than grass pastured lambs.

Sheep fatten most rapidly when allowed constant access to fresh water.

Lambs can be successfully fattened by means of a self feeder, but it is an expensive process and larger and cheaper gains can be obtained by feeding at regular intervals.

There is no profit in shearing sheep during the fattening period. Early shearing of lambs in October has given favorable results in some instances.

The cheapest grain ration for lambs, either before or

after weaning, is corn; but it is not so safely fed or so greedily eaten as when oats or peas are added.

It requires twelve to sixteen weeks to put lambs that have never had grain in good condition for market. Under good management, lambs will gain one-quarter to one half pound per day, or twenty five to thirty pounds during the feeding period. It requires eight to nine pounds of dry feed to produce one pound of gain.

Palatable rations suitable to growth as well as fattening are of more importance than the chemical composition of the ration.

The German notion formerly much taught here that the best results are obtained only when the rations are so compounded as to contain a certain definite proportion of protein to carbohydrates, is not borne out by the results secured in the station feeding experiments.

The meat of sheep fattened on silage or roots is more watery than when the sheep have been fed on dry foods.

Corn silage has no special advantage over cut dry feeds as a feeding stuff for sheep, and is about equal in feeding value to roots; but it is very much cheaper than roots and most dry fodders.

Sugar beets give from 6 to 20 per cent. better returns in fattening sheep than other roots, and stand about on a par with corn silage. Not more than three pounds per head should be fed daily.—C. B. SMITH, in *Breeders' Gazette*.

#### SALE OF JERSEYS.

Mr. T. S. Cooper held his annual sale of imported Jerseys at Coopersburg on the 30th and 31st days of May, and achieved a wonderful success. He sold 43 bulls and 120 cows. The following summary gives the results:

##### Totals and Averages.

##### MALES.

42 Island-Bred bulls	brought \$15,510—average \$369
6 Island-American bull calves	brought 360—average 60
48 Bulls, all sold,	brought \$15,870—average \$330
20 Island-Bred yearling bulls	brought \$3,915—average \$295
19 Island-Bred bull calves	brought 2,330—average 122

##### FEMALES.

54 Island Bred cows	brought \$25,090—average \$464
10 Island-Bred two-year-olds	brought 3,825—average 382
31 Island-Bred yearlings	brought 3,395—average 270
23 Island Bred calves	brought 3,890—average 169
115 Island-Bred females	brought \$41,200—average \$349
2 American-Bred heifer calves	brought 100—average 50
120 Females, all sold,	brought \$41,300—average \$344
168 Head, all sold,	brought \$57,170—average \$340

Flying Fox, the premier bull of the herd, was sold for \$7,500. Amongst the cows, Judy Fontaine's Rosette sold for \$3,100, and Agatha, of Oaklands, brought \$1,700. There were buyers present from 13 States and from Canada. Amongst Southern buyers, we notice the name of Col. A. M. Bowman, of Salem, Va., who bought Flying Fox's Golden Prince, a bull calf out of Beatrice 2d for \$330.

## KEEP PURE-BRED HOGS.

*Editor Southern Planter:*

Notwithstanding the fact that the United States Department of Agriculture has gone to the expense and trouble of issuing a 40 page Bulletin, telling Southern farmers how to make a big profit out of hogs, and warning them against keeping and raising scrubs, and despite the fact that to the most casual observer the loss sustained in feeding such stock is obvious, we still find in the South a vast number of men who continue to throw their money away in a futile attempt to make a profit out of them.

The scrub hog is undoubtedly one of the greatest drawbacks that Southern agriculture has.

The hog in the West has earned for himself the title of "mortgage lifter," but how many scrubs do you find among these "mortgage lifters?"

There is no doubt that with well bred swine bacon can be made as cheaply in the South as anywhere in the United States, and yet go into any grocery store south of Mason and Dixon's line, and you will find there "Western meat" for sale.

This is a sad commentary on the astuteness and progressive spirit of the Southern farmer.

If every scrub hog in the South were replaced with improved swine, "Western meat" would soon vanish from our markets and Southern swine raisers soon begin to climb up instead of "climbing" down.

Poland China, Chester White, Essex, Duroc-Jersey, Tamworth and Berkshires are our best known breeds of improved swine, and no doubt they are all good, but, from personal experience and observation, I believe the Poland China is by far the most popular and profitable hog we have. SOUTHERNER.

## AYRSHIRE PRIZES FOR BUTTER.

The committee in charge of the Home Dairy Test for the year ending March 31st, 1902, have made the following report:

There were seven herds tested for a full year under the direction of the various Experiment Stations, making about seventy cows in all. Two of these cows gave over 500 pounds of butter, eight gave over 400, 40 gave over 300. One cow gave over 10,000 pounds of milk, seven gave over 9,000, 20 gave over 8,000, 33 gave over 7,000, and 52 gave over 6,000 pounds of milk.

Five cows, owned by E. J. Fletcher, of Greenfield, N. H., won the first prize, giving 43,020 pounds of milk and 2,050 pounds of butter; George H. Yeaton, Dover, N. H., won second, with 42,417 pounds of milk and 1,936 pounds of butter; and W. V. Probasco, Cream Ridge, N. J., won third herd prize, with 38,326 pounds of milk and 1,834 pounds of butter.

For single cow prizes, L. S. Drew, of South Burlington, Vt., won first prize with Miss Ollie, giving 514 pounds of butter; E. J. Fletcher, Greenfield, N. H.,

won second with Durwood, giving 506 pounds; and C. M. Winslow & Son, Brandon, Vt., won third with Acelista, giving 421 pounds.

C. M. WINSLOW,  
THOMAS TURNBULL, JR.,  
JOHN W. SCOTT,  
*Committee on Home Dairy Tests.*

A sale of 53 Shorthorns by N. A. Lind, Rolfe, Ia., brought an average of \$766.63—the best in 20 years by an American breeder. Top price was \$3,880 for cow Red Crest, by Bigler & Sons, Iowa. Imported Victoria Maude brought \$2,000; imported Beaufort Princess, \$1,475; imported Roan Bess, \$1,350; 5th Mysie of Pleasant View, \$1,225; imported Village Maid 31st, \$1,100; Amanda, imported Isosda, imported Belle of the Anehers, Mysie of Beaver Creek, 3d, imported Eliza 14th and Brewster Beauty 2d, \$1,000 each; Miss Mysie, \$960; imported Duchess of Elfe, \$925; Miss Ramsden 4th, \$900; 11th Rose of Geneva, \$900; imported Vivacious, \$875; imported Mon Rose, imported Mary Ann of Lancaster and Golden Rosamund, \$800 each; bull, Fancy's Pride, \$1,000; imported Bapton Spice, \$800.

A two days' combination sale of Aberdeen Angus at Chicago last week disposed of 101 head for \$31,520, average, \$312. Fifty nine females brought \$21,350, average, \$364; 42 bulls, \$10,170, average, \$242—best in many years. Cow Belle Bloomer 2d brought highest price, \$2,000; Edgewood Belle, \$1,505; Coquette's Pride, \$950; imported Patricia of Alta, \$640; Queen Ida Midnight, \$535; Rose of Glendale 4th, \$505; Edgewood Barbara 2d, \$500; Alby 2d, \$500; Pride of Glendale 4th, \$460; Spotswood Vixen, \$450; Spotswood Bramble, \$405; Heiler Heather, \$400; bull Black Jam, Jr., \$1,000; Colonel Jam, \$910; Warder, \$700; Gay Hero, \$490; Heather Hero, \$410.

Twenty two Shorthorns sold in Chicago market last week for \$8 per cwt.—the highest price in 20 years. They were two year high grades from Mt. Pleasant, Iowa. Other consignments brought \$7.75. Some Texans brought \$7—the highest price for such from below the quarantine line.

Carrots as a winter vegetable are nearly always in profitable demand. They are also most useful for stock feed. For this purpose the White Belgian is the best to grow. A variety of winter feed is most desirable for cattle to be kept in the best condition.

Cantaloupes and Watermelons have always been one of the principal Southern crops. If for any reason all of the melons cannot be sold, they make most desirable and healthy hog and cattle feed.

When corresponding with advertisers, say that you saw the advertisement in the *Southern Planter*.

## The Poultry Yard.

### HEAT, VENTILATION AND MOISTURE.

#### The Prime Factors in Incubation.

We have much of interest presented from time to time on artificial incubation. Manufacturers, experts and scientists describe their methods and ideas as to the most approved manner of handling the incubator. On one point all agree, and that is that there is one question that is easier asked than answered. "Why do so many chicks die in the shell?" So far, the only answer has been, "because" something or other, but no plausible reason has been advanced.

One expert has admitted the fact that eggs from his own highbred stock only gave forty living chicks from one hundred and twenty eggs placed in his machine, while from the same number of eggs that came from some hens that have had the run of a farm all winter, he got eighty-four chicks. Here we have, as the most influential factor, health, strength and vigor on the one side, against close breeding, delicate nature and less vigor on the other. We must all admit that the care and confinement necessary to breeding in confined yards tends to lessening the vigor.

If it were possible to maintain equal vigor in the fowls which are kept in yards to that which fowls running at large obtain, we could begin the hatching process within our incubators with one full count in its favor. As it is, we must discount the future prior to beginning, and this count must go against the vitality or vigor of the life giving germ existing in the germ cell awaiting the influence of heat, which brings it to a living chick or to premature death. This will partially explain the start when made with eggs from the most robust or sturdy fowls, as the case may be.

The freshness of the eggs and the care they have had considerably influence the size of the air cells in the large end of the shells. As evaporation goes on, the air cell grows larger, and pushes the inner membrane or skin of the egg up about the albumen and holds the egg together. The fresher the egg when put to incubation, the smaller will be the air space during the entire period of three weeks. If the air space is large at the beginning, it will continue to grow larger all the time; if unusual heat causes unusual evaporation, all the moisture may be gone from the egg and the germ will die.

The proper amount of moisture must be contained in the egg at all times while it is in embryo or it will die. The use of moisture in the machine is not to force this moisture into the egg, but to arrest unnatural evaporation, probably on account of an unnatural degree of heat. If the water placed in the machine could find its way into the egg, it would surely kill the chick. But when the heated air is saturated with this moisture, it will not draw so much from the egg.

It is so thoroughly understood that 102° to 103° is the proper degree of heat to maintain that it is quite useless to say more of this; at the same time we may as well ask the question, "Does the hen keep them so? No, she does not." It is quite certain that eggs under a hen will not go above 104°, and seldom to that, unless the atmosphere surrounding her is warmer than this. It is also certain that the eggs on the outer edge

of the nest are not so warm as those in the center. It is also well known that the hen shifts them continually from the center out, so as to keep them all regularly and evenly heated; this warmth must at all times average under the scheduled temperature required for the machine.

Let us say that it might be better to have the range of heat a little lower than is scheduled for the correct temperature. Will not some one make the test and try a hatch between 100° and 102° and see if it will do as well? Then let some one else put moisture into the machine at the start, and hold the heat to the 102° to 104° limit, and see if this will arrest evaporation and help in the hatch. All these changes might be tried and result in benefit to us all.

The proper conditions of heat, ventilation and moisture must exist, if we hope to gain the best results. We may try and try, but the facts are that the hen will do better than any machine yet made, when handled by the average man or woman. This is the true test of the ability of an incubator to do its work properly and well. And to do this when operated by an amateur, it must have a well regulated system of heat and ventilation, and gain in some way the moisture which must saturate the heated air to prevent the drying up of the eggs. While the hen may do better at this task than the machine, much time and labor may be saved in the use of the machine, so that the gain in one way is lost in the other; and the most satisfaction will come from the use of the machine if any number of chicks are to be grown.

But with all this we are still confronted with the question of failure to hatch from one or many causes, as may be. This tells us that the system of artificial incubation is in its infancy, and here is just the very point of inquiry which requires attention. Thousands of dollars are spent each year in growing young fish and lobsters, not for the benefit of nearly so many as might be assisted if this question of artificial incubation could be solved; millions of dollars go each year to aid in dairy and sheep culture, neither of which rank with the poultry interest. It should be the determination of every man, woman and child interested in poultry to see to it that their State legislators and congressmen are shown the necessity of considering their cause.

No one can give a plausible reason as to why eggs do not hatch. If any true reason were known, the trouble would be removed or partially so at least. But the fact is that no one knows the cause of failure. This being the case, no remedy can be applied. To obviate the trouble we must know beyond all peradventure the cause, and to find this we must experiment until it is positively and absolutely located. When this is done, then, and not until then, can the remedy be applied.

If the condition of heating, ventilating and the distribution of the moisture were perfect, then equal results with the hen might be obtained; but so long as we fail in this, just so long must we continue to study and plan to do better. Each one can aid in this, and in the end better and more successful methods will come. But we may depend upon one thing, that no

matter how even the heat may be or how well the moisture may be regulated, good ventilation is an absolute necessity if we hope for good, strong, healthy chicks.

Poor or inactive ventilation will make trouble from start to finish. This is a well established fact that no one will venture to dispute. So with this one fact settled, you must feel assured of good ventilation in the machine you use. If your chicks drop down into the nursery under the egg tray and gasp for breath, you may feel assured of bad ventilation and weak chicks. If, however, they do well and enjoy the pleasures of life in seeming contentment and without any difficulties in breathing while in the nursery under the tray, it is good evidence of proper ventilation. Keep an eye to all these points as well as on the thermometer; train your eye to grasp all these conditions at a glance, for with this instant survey of the whole subject comes the ability to remedy evils when they exist.—*Country Gentleman*.

### COST OF FEEDING POULTRY.

There has been and always will be a difference of opinion as to what it costs to feed a hen a year, and the same difference of opinion is expressed as to the quantity of food consumed a year by each hen. We give below a few recent estimates gathered on the subject which show clearly the unsettled state of the question, and we are of the opinion that it is as much with the feeder as it is with the fowls:

The average estimate throughout the United States shows that it costs about \$1 a head per year to feed poultry. The unusually high prices of grains of all kinds the past winter have increased this average cost somewhat; at the same time poultry and its products have advanced in prices, which equalizes the expense. Throughout New England the record proofs show that it has cost from \$1.20 to \$1.35 per fowl, while in the West some claim to have fed their hens for considerably less than this.

One party in Pennsylvania makes the following report: The account being kept of eleven Plymouth Rocks, the records show that these hens consumed in one year 182 pounds of wheat, 101 pounds of corn, 150 pounds of buckwheat, 150 pounds mash mixture, 60 pounds of clover, 100 pounds of oats, and 150 pounds of green bone. The total cost of this was \$7.72, each hen having consumed 81 pounds as follows: 53 pounds of corn, 13 pounds of bone, 5 pounds of clover, 10 pounds of oats—a total cost of 70 cents per hen. The mash mixture which was fed to these hens was composed of two parts of buckwheat middlings, one part each of corn meal, ground oats, wheat, bran, middlings and others. To this mixture was added one part of clover, and the entire mixture was well steamed and allowed to sit over night before being fed. These records prove that these Plymouth Rock hens were very economically cared for. When we consider this is eighty-one pounds of feed per hen as against what some people claim they feed, one would be led to think that these fowls had been under fed or that others had been considerably over fed.

One gentleman in New Jersey writes that he is feeding eleven pints per day in cold weather to his twenty five fowls; on the basis that a pint is a pound, this is in round numbers almost seven ounces per day to each

hen, or 160 pounds per year, nearly double the amount reported in the other case. We cannot believe that it is possible for the average hen to consume so much as recorded in the last case, but think the first represents rather light feeding. The records at hand show that people are feeding all the way from seventeen to twenty-six pounds per day to one hundred hens. In some cases as good results have been obtained where the smaller amount has been fed as was obtained by the use of the heavier ration. This can be accounted for on the ground that one lot of fowls was better housed and kept warmer during the winter than was the other lot; also, small birds would eat less than larger fowls would demand. Then again, some over-feed and waste, while others use better judgment and feed just enough to obtain the desired results. These are reasonable, every day conclusions that all can make use of to their profit.—*The Feather*.

### FOOD FOR YOUNG TURKEYS.

June is the month for young turkeys. From all sides comes the question, How shall we save the young poults? First of all, keep them out of the damp and wet; give them plenty to eat, but do not over feed them. We clip the following from a letter of one who raises a number of turkeys each year:

"Boil some eggs very hard so they will crumble mealy; mix with the hard boiled egg as much bread-crumbs as egg, and feed this to the young poults two or three times a day. Alternate this with bread-crumbs and fine oat meal or chick food. Onions and dandelion leaves, chopped very fine, are good for green feed. As they grow older, feed broken wheat, corn and loose oat-meal; from this to whole wheat, broken corn, some millet and beef scraps. As soon as the poults are large enough, let them run about when it is dry. Never allow them to run in the wet or damp. Keep the mother hen confined till the poults are able to stand the going about with her. Feed plenty of small, fine grit; mix it with their food. Be sure they always have plenty of fresh water, and they should do well."—*Country Gentleman*.

Camphor is an infallible remedy for chicken lice. When you make your nest and put in your eggs, at the same time place in the nest with the eggs one camphorated ball, which is sufficient for the entire incubation, and your hen and little chicks will leave the nest free from all kinds of vermin. When you have placed the little ball in the nest, you need not bother any more. It will evaporate and get to be very small toward the latter part of the incubating, but, never mind, it has done its work. It is a good idea to keep one of the balls in the nest where the hens lay, as it keeps them from having scaly legs as well as keeping them free from vermin. The camphorated ball is a little white ball, and can be had from almost any drug store. I buy penny squares in Kingston, instead of the ball, and half a one is effective in the layers' nest.—*Journal of the Jamaica Agricultural Society*.

Air slacked lime is a good disinfectant, and should be scattered over the floor and yard.

## The Horse.

### ELLERSLIE (CHARLOTTESVILLE, VA.) YEARLINGS.

Captain R. J. Hancock & Son had a most successful sale of their yearlings at Brooklyn. The following gives the particulars of the sales:

Brown or bk. colt by Eon—Calais; C. H. Moore..	225
Bay colt by Aurus—Clara Belle; W. T. Towns....	200
Classics, b. c. by imp. Charaxus—Clash; F. Farrell.....	1,000
Bay colt by Aurus—Eolide; W. T. Towns.....	250
Chestnut filly by Eon—Eonette; W. T. Towns.....	650
Bay colt by Eon—Eostre; E. S. Gardner.....	200
Chestnut colt by imp. Charaxus—Generine; F. Farrell.....	3,100
Chestnut filly by imp. Charaxus—Helmwind; C. H. Moore.....	225
Bay filly by Eon—Mermaid; W. T. Towns.....	800
Bay filly by imp. Charaxus—Merry Maid; R. L. Baker.....	1,650
Black colt by Eon—Sample; W. T. Towns.....	300
Bay colt by imp. Charaxus—Sanci; R. L. Baker..	700
Total for thirteen head, \$9,400. Average per head,	\$723.

In addition to the foregoing, they sold the racing qualities of Ethorine (sister of Ethics) until the end of her four year old form for \$600. At end of that time she will be returned to Ellerslie for a brood mare. We congratulate the Messrs. Hancock on the prices realized. They are significant of the improved condition of affairs in the horse markets, and bear eloquent testimony to the sterling qualities of the Ellerslie Stud.

### NOTES.

Mr. Robert Tait, of the wholesale seed house of George Tait & Sons, Norfolk, Va., has purchased from W. J. Carter, and will place him in the stud at Spring Garden Farm, near Coolwell, Amherst county, Va., the chestnut stallion Ed. Kearney, by Tom Ochiltree, dam Medusa, by Sensation. Ed. Kearney was a good racer, winning at two, three, four and five years old, both in the East and on the Pacific Coast. He is a grand looking specimen of the thoroughbred sire, standing sixteen hands and a half inch high, and weighing 1,150 pounds. The chestnut son of Tom Ochiltree will be bred mostly to a good class of general purpose mares, with a view of producing hunters, jumpers and harness horses, which are now in high favor in the big Northern markets.

The brown mare Alcyrene, 2:27½, trial 2:19½, by Alcyone, dam Bessie Oliver, by Kearsarge, owned by W. J. Carter, foaled at Walton Farm, Falls Mills, Va., on May 27th, a large handsome bay colt by Whalebone, 7872, and has been bred to Red Leo, 2:26½, the good son of Red Wilkes and Dictator Girl that heads the Walton Farm Stud.

W. H. Nelson, of this city, has sold for export to Cuba, the black stallion Governor B., by Wilton, dam Georgetown, 2:27½, by Count Wilkes, second dam Nell, dam of Belle Vara, 2:08½, etc., by Estill Eric, and purchased to take his place in the stud the bay horse Great Stakes, 2:20, by Billy Thornhill, 2:24, dam Sweetstakes, by Sweepstakes. Great Stakes is the sire of six in the list, among them being this season's new standard performer, the bay pacing gelding Captain, 2:16½.

Charles Atkinson, who trains and drives for Captain John L. Roper, of the Foxhall Farm, Norfolk, Va., did quite well with horses bred and owned at the farm during the several race meetings held around Baltimore last month. With the bay pacing gelding Captain, 2:16½, he landed three races, and sold the horse to E. E. McCargo, of Philadelphia, and Richard M. John, of Baltimore, for \$700. Great Stakes, 2:20, the sire of Captain, formerly headed the trotting stud of Captain Roper at Foxhall Farm.

Mr. W. O. Warthen, well known and popular as the secretary of the Richmond Horse Show Association, has been appointed to the responsible position of district passenger agent of the Chesapeake and Ohio Railway, which meets with hearty approval, and he has been the subject of numerous congratulations. This well deserved promotion comes to Mr. Warthen after eighteen years' service with the road, three of which were spent in the auditing department and fifteen in the passenger agent's office. For several years he held the position as chief clerk to Mr. John D. Potts, assistant general passenger agent, who is now transferred to Cincinnati. The latter gentleman, like Mr. Warthen, was strongly interested in the affairs of the Richmond Horse Show Association, and took an active part in its councils.

Mr. P. S. Hunter, of the Otterburn Stock Farm, Loretto, Essex county, Va., reports the following list of foals, all of whom, it will be seen, were sired by Judge Morrow, the son of Vagabond, dam Moonlight, that heads the stud. Judge Morrow was a good race horse, and won some important events during his turf career:

April 14th—Bay colt, two white hind feet, blaze face; by Judge Morrow, dam Beulah Furgusson, by Don Iori.

May 9th—Bay colt, narrow stripe in face, two white hind feet; by Judge Morrow, dam Jennie McCarthy, by Duke of Magasta.

May 31st—Bay colt, two white hind feet and one forefoot white, and large star in face; by Judge Morrow, dam Vienna, by Leoratus.

Mr. William Rueger, well known as treasurer of the Deep Run Hunt Club, has bred his brown mares Dora Rueger, 4, and Thea Rueger, 3, to the imported Hackney stallion Young Nobleman, owned by Thomas Atkinson, Rocklands Farm, Gordonsville, Va. Dora Rueger and Thea Rueger are full sisters, and were bred by Mr. Rueger. They were sired by Robert

Ransom, 2:29½, dam Faustina, the thoroughbred daughter of Eolus and Warlass, by War Dance.

Mr. S. G. Atkins, of the big wholesale grocery house of Davis & Atkins, this city, is driving on the road the bay mare Marie, 2:30½, by Jolly Friar, dam Parker Holland, by Sam Purdy, but later on may enter her in a few races and give a lower record, which she can easily take. Mr. Atkins also owns the grand looking chestnut mare Red Light, 2:21½, by Red Wilkes, Jr., dam Moonlight, by Twilight, in the stable of trainer W. L. Bass, by whom she will be campaigned this season.

The chestnut mare Flora Jefferson, by Elk Nut wood, dam by Bay Diamond, in the stud of W. N. Wilmer, Plain Dealing Farm, Keene, Va., has a fine bay colt at her side by Virginia Chief, and was bred back to that black son of Kentucky Prince and Nina, by Messenger Duroc.

Mr. R. Harvey Barton, who resides near Dublin, Pulaski county, Va., has purchased from parties in Ohio, and will place him in the stud, the handsome bay pacing stallion Wilberforce, 2:21, by Pilot Wilkes, dam Nettie Green, dam of P. B. Conn, 2:17; Quay, 2:29½, etc., by Billy Green. Wilberforce jogs on a trot, but when started up strikes a pace, and can go very fast at that gait.

The bay pacing gelding Big Jim, owned by W. P. Drewry, of New York, died here recently at the Deep Run Hunt Club track, where he was worked for speed by trainer C. A. Pusey. Though a mastodon in size, he could show a two minute gait. Big Jim was by Brown Hal, the sire of Star Pointer, 1:59½; dam, the dam of Elk Tom, 2:17½, and was credited with a trial of 2:23½ at two years old.

Colonel G. Percy Hawes, of this city, has sustained quite a loss in the death, due to stomach trouble, of the bay suckling colt by Whalebone, 7872, dam Bessie W., by King Bolt.

Mr. Louis Washer, of this city, has, by the records, the fastest trotter owned here in the bay gelding Tesla, 2:12½, by Baron Wilkes, 2:18, dam the great brood mare Winnie Davis, by Strathmore. Tesla is a large, handsome horse, and faster than his record indicates, as he has shown trials under 2:10.

#### BROAD ROCK.

#### BIG ORDER FOR DRAFTERS.

What is presumed to be the largest order for draft horses has just, according to Eastern press dispatches, been placed with a firm in New York. The concern placing the order is that which now owns the Barnum circus, at present exhibiting in Europe. Next November, if the schedule is adhered to as now planned, the circus will return to the United States, and it is the intention of the proprietors to sell off all their horses before taking ship. This will necessitate the re horsing of all the wagons, and the order referred to is for 300 heavy drafters, each animal to weigh between 1,800 and 2,000 pounds. The price agreed on

is \$335 per head. The aggregate sum of money involved, therefore, is \$100,500. It is believed that this is the largest contract ever placed for heavy drafters in this country. The horses are to be delivered to the circus in the months of November, December and January next.

It is a small town indeed in the United States to day that cannot boast of its driving club and its matinee meetings. It is absolutely extraordinary what a hold the sport of racing trotters and pacers to four-wheeled vehicles has taken on the business portion of the American public. Almost every town of 2,000 or more inhabitants from Maine to the Pacific Coast and from Winnipeg to the Gulf has its matinee meetings, and in consequence the demand for all sorts of trotting and pacing road horses is enormous—far greater than it has ever been before. Attention has previously been called to this fact, but there is another point in connection therewith that is equally deserving of notice. That is the evident desire on the part of these associations or clubs to hold horse shows. Two more powerful agencies for the improvement of the harness horse could not be described. In hundreds of towns of no great size this summer horse shows will be held for the first time. For the most part these will be semi-private affairs, but for all that they advance the good work and stimulate the purchase of better horseflesh. No man at all fond of a horse likes to be beaten when he sends his favorite into the ring, and it is a foregone conclusion right now, early as it is, that hundreds of business men, now counting on winning with their best horses, will be hunting for something better in the fall. This is bound to raise the price of all good driving horses, and the breeders will reap the benefit. In fact, it is rather hard to predict at present to what heights such prices will soar in another twelvemonth, nor yet where the horses are coming from to supply this most active demand.

The demand for stallions is large. This journal is in a position to state that never in the history of the importing business has it been as brisk as it is at this time. Owners of two, three and four horses find it necessary to purchase others, and the result is that a great many tall enders are being given a chance to reproduce themselves to the great detriment of the interest as a whole. Old country breeders are as sharp a legion of men as live. They will not sell their tops without getting rid of their tails, and as a result in every large importation, or in every small one, there are some stallions that would not make good geldings. These must be got rid of, and naturally the best ones go first. The man who visits a farm with its stock depleted down to the culis and buys one of them may get a horse for little money, but he is doing himself no good whatever. It never pays to buy a poor horse, but the stallion owners seem to think that it would be a shame to let a dollar go past them. It is a shame that the progeny of such horses should be born. Bought at low figures, these horses stand at \$10 or less, and every one has all he can do. They lack weight, soundness and general breed character. They ought not to be patronized.—*Breeders' Gazette.*

## Miscellaneous.

### FOREST REMOVAL IN RELATION TO FLOODS AND FARMING.

*Editor Southern Planter :*

After every destructive flood in our rivers, some of the daily papers in the cities declare, in the most positive manner, that they are caused by the removal of the forests, and that the blame for the deluge belongs to the people who recklessly cleared so much of the country for lumber and cultivation.

During the continuance of the great flood in the Ohio river, which occurred in the month of February, 1884, and caused much suffering and loss of property, some of the daily papers of New York and other cities declared that it was produced by the denudation of the forests along the Alleghany and Monongahela rivers and their tributaries. Even *Harper's Weekly*, usually careful and exact in its statements, fell into the same error, and said: "Let us hope that next year the willful destruction of our forests will not combine with such uncontrollable causes as early freezing weather, unusual abundance of snow, and continued thaws, accompanied by rain, to produce a recurrence of these disasters that appeal to the sympathies of all."

That great flood was produced by the same causes which have produced some of the highest floods in the Susquehanna river, and not at all by the "willful destruction of our forests." Had every tree remained that stood in the region drained by the Ohio river and its tributaries before the French built Fort Duquesne, and the whole country still a wilderness, that great flood would have happened just the same, and the water would have stood seventy one feet above low water mark at Cincinnati, and not one inch lower.

Early freezing weather which freezes up the ground and closes the pores of the earth so that no water can soak into it, then a heavy fall of snow, which before the frost is out of the ground is melted with great rapidity by a warm, hard rain, producing a great volume of water (none of which can get into the ground) rushes off into the streams, and they jump over their banks and create havoc and destruction.

The highest flood ever known in the Susquehanna river, which took place March 18, 1865, was produced by exactly the same causes that afterwards made the great flood in the Ohio. The ground was frozen solid, even in the woods under the leaves; there was a large body of snow on the ground, which several thawey days had softened into "slush," and started the water to running; then came a warm rain that melted it all off in one night.

Had the whole country been an unbroken wilderness, from the Chesapeake bay to the Canada border, it would not have prevented that great flood, which damaged the writer's mills, swept off his fences, and buried his wheat growing on the flats twelve inches deep in mud and sand.

They talk about the roots of the trees, leaves, logs and rocks holding back the water. It is generally believed that the pressure of growing roots, as they increase in size, rather tend to compact the soil in the woods, and hinder, instead of helping the entrance of water into the ground. At all events, the roots of trees, leaves, logs and rocks in the woods offer but a feeble resistance to a mighty rush of waters. At the flood mentioned above (March, 1865), the leaves were swept down the side hills, and there was a creek running down across the writer's garden big enough to turn a mill. Nothing but the ground being so solidly frozen prevented the formation of a great gully.

On the 2d day of March last (1902), there was another great flood in the Susquehanna (only lacking three feet of being as high as that of 1865), and was produced by exactly the same causes and conditions. There was considerable snow, and the ground was solidly frozen under it. The snow was all rained off and the flood came, and great damage was done along the river and its branches. A sheet of water came rushing down from the hillside, flowed against the writer's house into his cellar windows, and, in spite of all he could do, nearly filled his cellar. He tried to dig a trench to carry the water around the house, but the ground was frozen too hard to accomplish it.

There was a great flood in the Susquehanna on the 15th of March, 1784, which is described by Col. John Franklin, one of the ablest leaders of the Connecticut party in the Valley of Wyoming. He says: "The uncommon rain and large quantities of snow on the mountains, together with the amazing quantity of ice in the river, swelled the stream to an unusual height—ten, and in places fifteen feet higher than it had ever been known since the settlement of the country." He states that upwards of 150 houses, with their contents, were swept away by the raging torrent and lost forever.

Some of the great inundations have been caused by rain alone, without the assistance of melted snow. One of the greatest in the Susquehanna, of which we have any account, and which was not much, if any, less than that of 1865, took place in October, 1786, and which was called the "Great Pumpkin Flood," because large numbers of pumpkins were seen float-

ing down on the turbid waters, together with shocks of corn and rail fences.

It is described by Col. John Franklin as follows: "The rain on the 5th of October, which fell in about twenty-four hours, raised the river about six feet, and in the narrows ten feet deeper than ever known. The small streams became mighty rivers and the mills are mostly swept off, and one half of all kinds of food for man and beast is forever lost. The greater part of the rain fell in the afternoon and evening of the 5th. The Susquehanna river that was fordable at 4 o'clock in the afternoon, was over the face of the earth from mountain to mountain at 6 o'clock on the morning of the 6th." According to Col. Franklin's description, this pumpkin flood was higher in the Valley of Wyoming than any flood since then, and it was all made by rain.

These great floods, which took place more than 116 years ago, could not have been caused by the "wilful destruction of our forests," for the forests had not been destroyed. The whole country, drained by the river and its tributaries, was at that time a dense wilderness of woods, except some narrow clearings along the banks.

The highest flood ever known in the Wyalusing creek, and which took off every bridge on the stream, was caused by a terrible thunder-shower in the latter part of summer. The water did not fall in drops, but solid sheets—sheet after sheet, as fast as you could count. The area covered by the rain cloud was estimated to be not much over nine square miles, and was near the head of the creek—not a drop falling at the mouth. About the centre of the storm, the water ran down a hillside of gentle slope (where there was no depression to collect it) to such a depth and with such force as to carry away bodily a rail fence until it lodged against some trees. The water came into the farm house, which stood on ground considerably higher than the main road, to such a height the inmates had to flee to the chamber for safety.

It is folly to talk about the removal of the forests being the cause of great destructive floods.

The Hon. George P. March, in his "Earth as Modified by Human Action," after having agreed that the removal of the forests have a tendency to increase disastrous torrents, gives up his case by admitting that "Floods will always occur in years of excessive precipitation, whether the surface of the soil be generally cleared or generally wooded."

Dr. J. T. Rothrock, Forestry Commissioner of Pennsylvania, says: "A very heavy rainfall always has produced, and always will produce, a freshet, no matter whether the country is cleared or wooded, and that the removal of the forest has not influenced the quantity of the rainfall."

J. W. INGHAM.

[Whilst there is no doubt considerable force in what

our friend says, yet we are convinced from observation and from reading the reports of scientific authorities, that the destruction of forests has much to do with the suddenness and frequency of floods in the valleys, and that such destruction is greatly to be deprecated and is fast calling for the interference of the government. The frequency and destructiveness of floods in the James and other Southern rivers is now much greater than it was a hundred years ago, and they come sweeping down the valleys much more quickly after even moderate rainfalls than was formerly the case. Then the mass of fibrous roots, fallen leaves, and decaying vegetable matter in the forests largely held back the waters, and they percolated into the ground through these instead of now rushing headlong over the surface, carrying soil and crops with them. Forest conservation is a subject of prime importance in regard to the climatic conditions of every section of the country.—Ed.]

#### BILTMORE FARMS, N. C.

*Editor Southern Planter :*

The season in North Carolina has, until the last ten days, been a most trying one. First of all, the winter was very severe upon the small grain and but little work could be accomplished. The spring opened very late and cold, and then we experienced a drought of over two months. All grain crops were very light, many oats not worth cutting, and while we saved our hay without a drop of rain, it was a light crop as compared with former years, with the exception of Alfalfa, which is drought proof. Corn is backward, and today, the 24th of June, the thermometer is reading 64—not exactly a growing temperature for corn.

We have been very busy occupying our new farm-plant, which has been over two years in construction. This consists of a central creamery, dairy barns, horse stables, and farm village.

Sales of stock have been good ; in fact, each year sees an improvement. A few Jerseys have been shipped out, but as we are not pushing the sales of heifers, have practically only bull calves to sell. Among the purchasers are : W. G. Tinsley, Maine ; David Reeves, of Pennsylvania ; W. L. Williamson, of Georgia ; Miss Staten and Dr. Maynard, of North Carolina ; W. T. P. Sprot and Dr. J. N. Tenhet, of South Carolina.

Berkshires sales have almost cleaned us out. Thirty seven head have been shipped to the following States : Idaho, Nebraska, Oregon, Mississippi, New York, New Jersey, Pennsylvania, Virginia, Tennessee, Kentucky, North Carolina, South Carolina and Georgia.

Sales of standard poultry, turkeys and ducks are

entirely too numerous and not of sufficient interest to the general reader to burden you with them.

We are now just winding up the planting of the ensilage crops, which, as usual, will consist of a mixture of corn and cow peas. These are grown separately and as a second crop. It is the only crop which we do not worry about, as it is as near certain as anything can be on a farm. The freshets during the winter damaged the river bottoms considerable and we are now seeding them down to grass as fast as possible, and retiring our cultivated areas to the second bot toms and hillsides.

GEORGE F. WESTON.

### "THE KETTLE CALLING THE PAN BLACK."

*Editor Southern Planter :*

Herr von Podbielski, Minister of Agriculture, has, as you know, on numerous occasions, made unkind remarks about the American hog, and, indeed, in his comments on American products in general we cannot complain of any excess of compliment. The honorable gentleman is a patriotic farmer, as well as a minister, and naturally he objects to Germany being made a dumping ground for our cheap farm produce.

In this connection, it will be of interest to Americans to hear that the Berlin Milk Dealers' Union has addressed a memorial to the Reichstag complaining that milk shipped its members from the Podbielski dairy at Karstaedt has, upon analysis, been found to be "badly watered," "in some cases scarcely resem bling the lacteal fluid." Herr von Podbielski, though, according to Berlin newspapers, in apologiz ing to the public, explains the unfortunate occurrence away by saying that the cans were put in water to be kept cool (in December and January, with the thermometer near zero), and some of them may have been in a leaky condition.

American milkmen, who, in warm weather, let their buckets of milk down into the well or cistern, are sometimes charged with using too much rope, but who would have thought that water would dare to mingle with the product of Herr von Podbielski's dairy, posing, as he does, as the great champion of purity in food products.

Poddy's chickens have come home to roost in fine condition.

S. R. M.

*Singen, Germany.*

Captain J. H. Wingate, Roanoke, Va., is driving on the road a very handsome and highly finished trotter of his own breeding in Captain Cook, three years old, by Jack Cook, dam Stamboulne, by Stamboulne. Captain Cook was bred by Captain Wingate, and is gaited right for extreme speed.

The bay mare Helice, by Norval, dam Grenada, by Onward, owned by Robert Tait, Spring Garden Farm, Coolwell, Va., has a handsome bay filly by Foxhall McGregor, and will be bred to Red Leo, 2:26 1/4.

### GOOD ROADS TALK.

Address on Road Building read before the Farmer's Club of Gloucester Co. by Percival Hicks, Esq.

[Continued from June number.]

Our highway is now laid out, graded and rounded up, and the next question which arises is, of what shall the surface be composed. It may vary all the way from steel tracks to the soil of which it is naturally formed, and its utility will vary with the material used. Supposing it to be level and one team can conveniently move 3,000 pounds on the earth of which it consists, the application of gravel will enable us to increase the load to 6,000 pounds; broken stone will carry us to 12,000 pounds, while a steel track will enable the same team to draw 60,000 pounds. To my mind it is largely a question of the funds available. Steel track will cost about \$5,000 per mile, macadam, where the stone can be obtained free of charge and of the proper quality, can be laid by Spartan economy for \$1,000, but when stone must be purchased and transported for long distances, as is the case in Tidewater Virginia, \$3,000 per mile would be a conservative estimate. Oyster shells where obtainable for 5 cents a bushel will cost in the neighborhood of \$800 per mile, exclusive of hauling and spreading them out, the cost of which will depend upon the distance from navigable water.

Where none of these materials are in the reach of the builder and he must use the soil over which the road passes, the only thing left for him to do is to study the action of clay loam and sand during the weather conditions, which normally produce the worst surface, and to combine the soils at his disposal in such a way as to obviate the worst features of his highway.

It will surprise any one not familiar with the subject to see how much can be done in this way with comparatively little expense. The key-note of the system is to mix clay with sand. Haul clay and spread it thinly upon the sandy places, and haul and spread sand upon the clay. The philosophy of this will at once become apparent to any one in driving over our roads, for no matter what the weather conditions may be whenever we find a clay hill and a sandy hollow, there is invariably a short piece of road where the two meet, if not more than a yard or two in length, that is in good condition and presents a dry, smooth and comparatively firm surface.

The ordinary loam of this country makes a fair surface at times except during the period of the frosts leaving the ground, our worst spots being unusually clayey and sandy places, often quite close together, where the haul would be short and inexpensive. It seems to me, then, that it would be wise to take advantage of the circumstances nature has placed within our reach and endeavor to improve the most impassable parts of our highway in this manner.

And now that we have hastily and somewhat superficially considered the details of surveying, construction and surfacing, I would like to take up the question of taxation.

It is, in my opinion, utterly impossible to construct good roads in Gloucester and Mathews counties with the present levy, and to continue spending it as it is now spent, is simply temporizing with calamity. The roads as now laid out and constructed, have gotten

into a condition where the present amount of money set aside for their maintenance is only sufficient to mend the bridges, fill the holes, and pay the overseer. But I also believe by making an extra levy now and employing a competent engineer to modify the present roads into something resembling the plans advocated in this paper, the present tax levy would, after the roads were put in order, be enough to keep them so for a long period of time, if not indefinitely. And now as to the mode of administration of the tax. The forced labor system has been tried and failed, and the present one of district overseers has not so far proved an eminent success, and in my opinion the reason of the inefficiency of the present system is due to want of a central authority, a controlling mind. The overseers are poorly paid, and cannot afford to devote their own time to the work. In fact, in Mathews county the overseer is not expected to use his own team or labor unless other team is unobtainable; and the consequence is that the farmers are called upon to do the work, and, generally, a different farmer for every piece of road. Consider, for a moment, the application of such a system to any line of business, constructing a railroad, for instance, every mile or so there would be change of gauge as at present there is a change in the width of the highways, every hill would be surmounted at a different grade, necessitating one engine here and five engines somewhere else to move the same train. I do not hesitate to say that any railroad, canal, electric road, toll turnpike, if constructed and managed on such a principle, would involve its promoters in financial ruin in less than one year, unless they were so situated as to prevent opposition by legislative enactment or some equally potent factor. One often hears the overseers of roads severely criticized for not furnishing the tax payers with better roads for the money, and the criticism is sometimes extended to the supervisors; but the fault is, generally speaking, with neither, for the supervisors cannot get money without increasing the road levy, and the overseer cannot have work done unless he can pay for it. The cry of good roads calls for more money and one overseer for the whole county, whose duty it should be to get on the road machine and stay there. He should own his own team and cover every mile of public road with it four times, at least, in every year. By travelling at the rate of one mile per hour, he would properly work two and a half miles of a road twenty feet wide every day, and this would be sufficient to maintain its shape and fill all holes. This would be done at a cost of \$5 per day or \$2 per mile, and I believe the present levy is about \$7.75 per mile in Gloucester and \$11.50 per mile in Mathews.

To assure success in any undertaking, a man must tackle it with all his might. A business man must make his business, a professional man must have no thought for anything but his profession. It must be to him the most engrossing and interesting pursuit if he is to succeed; and the same rule must apply to a public servant. You cannot create an office, formulate a set of rules and make it run itself. The personal factor is the prominent one in every phase of life, and the right man can give us good roads if we give him the funds to work with; but no plan, however well conceived, will do this unless conscientiously carried out to the minutest detail.

I will now be pleased to answer any questions I am able to, and to elucidate any point that I have not succeeded in making clear.

#### AN ACT TO PROTECT SHEEP AND OTHER STOCK IN THE COUNTIES OF THIS STATE.

1. Be it enacted by the General Assembly of Virginia, That it shall be the duty of the commissioners of the revenue in the counties of this State to take annually, at the time of listing the taxable property therein, a list of all dogs over three months old, showing whether male or female, with the name of the owner or person in whose possession the same is found, upon the oath or affirmation of the owner or housekeeper, or head of the family, with whom, or on whose lot or plantation, any dog or dogs may be found, as to the number of dogs such person may own or have, or as may be on his lot, plantation, or premises, whether owned by him (or her) or not, and shall return such list of dogs to the clerk's office of their respective counties at the time when they return their list of taxable property, under the like fines, penalties, and forfeitures as are now incurred by them for neglect of similar duties under existing laws as to their duties in listing and returning taxable property.

2. That in every case where the owner of the dog fails to pay by the first day of July next succeeding the return of said lists the license tax provided for in the third section of this act, it shall be the duty of the constable of the district in which said delinquent resides to kill said dog, for which he shall receive a fee of fifty cents out of the funds hereinafter provided, and to that end the said constable shall obtain annually during the month of July from the county treasurer a list of all delinquents under this act in his district, and shall, within thirty days after receiving such list, kill said dogs, unless the tax on them, together with a fee of twenty-five cents, to said constable is forthwith paid, and on his failure so to do, when practicable, he shall pay a fine of five dollars for each dog he so fails to kill. The constable shall at the expiration of the thirty days account to the treasurer of his county for all taxes collected by him under this section.

3. That when said commissioners of the revenue shall have ascertained the number of dogs, they shall assess a license tax of fifty cents per head on all male dogs and all spayed female dogs, and one dollar per head on all unspayed female dogs, and the said sums so assessed shall be collected and accounted for by the county treasurer as county levies are by law directed to be collected and accounted for, and the treasurer shall keep a separate account of the fund arising from said tax. The said fund shall be, and the same is hereby, appropriated for remunerating the inhabitants of said counties for any loss they may sustain from dogs killing or crippling their sheep, lambs, or any other stock, and for paying for the expenses necessary to carry this act into effect; and any balance remaining on hand for any year shall be appropriated to the county school fund of public schools, or to the public schools, or to the public road fund, as the board of supervisors may determine, to be used in accordance with the laws governing the disposition of such funds.

4. If it be found that the fund arising from this act for any year shall be insufficient to pay expenses, incident to execution of this law, and then to pay the whole amount of damages inflicted by dogs on the owners of sheep, lambs, or other stock property in any of said counties, each sufferer shall be paid out of said fund in proportion to the loss sustained.

5. That it shall be the duty of any justice of the peace in said counties, on the application of the owner of sheep, lambs, or other stock, or his agent, which have been killed or wounded by dogs (not his own), after the passage of this act, to issue a summons to three discreet persons, who are qualified voters (two of whom may act), who, being legally sworn, shall go forthwith on the premises where such sheep, lambs, or other stock may be and examine into the facts and justice of the claim, and appraise the amount of damages sustained by the owner; such damages not to exceed the assessed value of said sheep, lambs, or other stock, and when said sheep or other stock were not in possession of said owner at the time of assessment, the damage shall be the assessed value of sheep, lambs, or other stock of like grade and quality in the community. Where such sheep, lambs, or stock are killed or crippled, said appraisers shall return an accurate statement under their hands to a justice, who, if it appears that such sheep or other stock were killed or crippled by dogs not belonging to the owner of said sheep or other stock, shall approve the said return by endorsing the same, and shall forward all the papers to the clerk of his respective county, who shall receive the same and present them to the board of supervisors at their next meeting; provided, however, that the summons, appraisement, and other proceedings before the justice of the peace, required by this section, may be dispensed with in all cases where the owner of such sheep, lambs, or other stock, or his agent, shall produce before the board of supervisors proof satisfactory to them of the amount of his damage and his right to the benefit of this act, and upon such proof the board of supervisors shall enter on their book an allowance of said damages.

6. All payments made by the treasurer out of funds created by this act shall be on the order of the board of supervisors, certified by the clerk of said board.

7. The treasurer shall annually, at the yearly meetings of the board of supervisors, make a statement to said board of his receipts and disbursements of this fund, and said board shall then order the payment of the damages allowed by them, or such part thereof as they may be able to pay out of said fund, and all payments out of said fund shall be made within sixty days after said yearly meeting; at the expiration of said sixty days the said treasurer shall make a final settlement of this fund with the said board of supervisors, and said settlement shall be recorded by the clerk of the county.

8. The fees of officers employed in the execution of this act shall be similar to those received for like service, and when none are prescribed by law, the board of supervisors shall make such compensation as they may deem right, all of which shall be paid out of such fund.

9. This act shall not affect sections four hundred and ninety-nine, five hundred, twenty-one hundred and ninety-two, twenty-one hundred and ninety-three, twenty-two hundred and three, and thirty-seven hun-

dred and eleven of the Code of eighteen hundred and eighty seven.

10. All dogs in this State which have been assessed with a license tax pursuant to this act, and upon which the said license is not delinquent, shall be deemed personal property and may be the subject of larceny and malicious or unlawful trespass.

11. All acts or parts of acts in conflict herewith are hereby repealed.

12. Provided, however, the provisions of this act shall not apply to any incorporated city or town of this State now or hereafter having a municipal dog tax law, or to any county now having a special dog tax law.

13. This act shall be in force from its passage.

## UNDERGROUND WATERS OF SOUTHEASTERN VIRGINIA.

Important light has been thrown on the underground water resources of southeastern Virginia by a deep well recently constructed at Fort Monroe. The well was sunk to bed rock "granite" 2,346 feet, but, although several water bearing strata were penetrated, they were all found to develop flows of salt water. The results obtained from the Fort Monroe well confirm those found elsewhere in this region. Salt water only has been found in borings at Norfolk, Va., at 760 feet; at Wilmington, N. C., where bed rock was reached; at the Chamberlain Hotel, Old Point Comfort, at 947 feet, and in several wells at Crisfield in southern Maryland. These borings indicate that there are no prospects for neable underground waters in the region. Eastern Virginia is underlain by a succession of widely extended sheets of sand and clays lying in regular order on an east-sloping floor of granite or other "bed rock." This rock disappears beneath the surface along a zone passing near Petersburg, Richmond, Fredericksburg, and Washington, and, descending at a rate varying from 40 to 100 feet per mile, reaches a considerable depth near the ocean—2,246 feet at Fort Monroe. The sands of the overlying formations contain water which is abundant and fresh for the first forty to fifty miles from the west, but is now known not to be available in the extreme southeast. Numerous fine flowing wells have been obtained along the Potomac, Rappahannock, York, and James rivers from several sand horizons, but about Old Point Comfort and to the south and east the upper water-bearing sands have changed into non-water-bearing clays, and the lower sands yield only salt water—*U. S. Geological Survey.*

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# THE Southern Planter

PUBLISHED BY

THE SOUTHERN PLANTER PUBLISHING CO.,

RICHMOND, VA.

ISSUED ON 1ST OF EACH MONTH.

J. F. JACKSON,

Editor and General Manager.

B. MORGAN SHEPHERD,  
BUSINESS MANAGER.

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## Binders for the Planter.

We have received a new supply of binders for the Planter, and shall be glad to send one holding the numbers for a year to any one sending us 25 cents in stamps or coin.

## PUBLISHER'S NOTES.

### To Our Readers.

At this time of the year, farmers, like other people, begin to feel the necessity of a holiday, and as the work of planting the crops and of harvesting the earliest ones is practically over in July and does not press again until September, the opportunity is afforded to give tired humanity a rest. Usually, amongst farmers this rest is sought in the holding of picnics, meetings of farmers' clubs and visits to friends in other sections. All these occasions give the opportunity to our friends to give us a helping hand at little trouble to themselves. There are thousands of farmers throughout the South who do not yet read an agricultural paper and who are every day losing money by not doing so. Very many of these only want the matter represented to them by some friend who knows the value of such a paper. May we not ask our readers to avail themselves of the opportunity afforded by such gatherings as are mentioned to bring the merits of THE PLANTER to the notice of the friends whom they may meet? Say a word in reason for the old journal, and secure us each at least one new subscriber and more if possible. In doing this, each one will be doing something which we shall greatly appreciate and value, whilst at the same time he will be doing himself a good turn. The wider our circulation the greater the sources from whence we gather the information which goes to make the journal useful to all. Hence, the more subscribers we get the more valuable the journal becomes to each reader. We shall be glad to send copies to all who may ask for them for distribution at meetings or to be handed to friends. Do not fail to point out that the price is only 50 cents per year, and that for this paltry sum each subscriber gets in the year a

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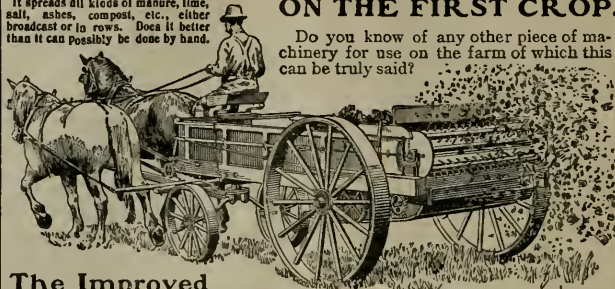
MAGAZINES.

The July Century is a "Summer Fiction Number," containing contributions in this field from popular writers and from newcomers. There is a short story by the late Paul Leicester Ford, entitled "Wanted: A Chaperon," with illustrations by Gilbert, probably the last piece of completed fiction by the author of "Janice Meredith." To Dr. Weir Mitchell's group of "Little Stories" is added a piquant sketch entitled, "A Dilemma," setting forth a "lady or the tiger"-ish problem; David Gray, author of "Gallops" contributes a car-horse story, entitled "Ting-A-Ling"; and Frank Norris a story of the frontier West, entitled "The Passing of Cock-Eye Blacklock"; Harry Stillwell Edwards, author of "Two Runaways," prints a rollicking story of rival negro churches in the South, "The Little Unpleasantness at New Hope." There are also stories by Louise Collier Wilcox, Will N. Harben and Charles Bryant Howard, the last a bit of West Indian local color. The variety of this list is further extended by the fourth part of the "Confession of a Wife" by Mary Adams, the theme of which is Estrangement, as those of the preceding portions have been respectively, Courtship, Marriage and Motherhood.

Outside of fiction there is much seasonal material, the most conspicuous being an illustrated article on "The Volcano Systems of the Western Hemisphere," by Professor Robert T. Hill of the U. S. Geological Survey, who has recently been exploring the field of volcanic devastation in Martinique. Apropos of the expected retirement of the Marquis of Salisbury, Julian Ralph contributes a paper on England's Premier, of whom an attractive and vigorous portrait in tint is printed as the frontispiece of the number. The third of Ray Stannard Baker's papers on "The Great Southwest" has the timely topic of Irrigation, which is fur-

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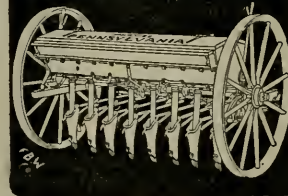
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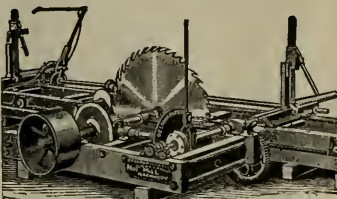
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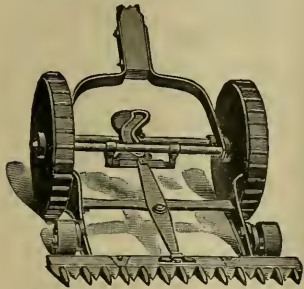
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ther illuminated by Mr. Maxfield Parish's pictures. Mrs. Sarah Y. Stevenson writes of "Prince Louis Napoleon and the Nicaragua Canal," in which, it seems, the Prince was much interested, and Jas. D. Hague, a "Captain of Industry," gives "A Personal Recollection of Carlyle," with appropriate mention of the Prince Henry medal, for which Mr. Hague contributed the gold of which it was made.

Two summer topics are "The Strange Adventures of a Blue Jay Family," by Frank M. Chapman of the American Museum of Natural History, and "A Campaign Against the Mosquito," by Dr. L. O. Howard of the Agricultural Department, who gives a note on "The Growing Interest in Mosquito Extermination," and by Henry Clay Weeks, who describes the "Operations at Oyster Bay, L. I." Two articles of special interest are "Curious Electrical Forms," by Anabel Parker, illustrated from photographs of the experiments of T. Burton Kinraide, of Boston, and a personal and critical appreciation of "Eugene Field, the Humorist," by Francis Wilson, the actor, with interesting pictures and facsimiles. Among the poems are "The Heart of Truth," by L. Frank Tooker, and a tribute by Julie M. Lippman "To Our 'Merry Chanter'" (Frank R. Stockton), to whom also an editorial article is devoted.

Lippincott's Magazine for July is given over to fiction, with but one exception in favor of a timely subject. The complete novel this month is written by Mabel Nelson Thurston, whose fame is won as a short-story writer. This more important achievement places her among the elect as a novelist. The title "On the Road to Arcady" is an invitingly cool one, well

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chosen for warm weather. A sub-title suggests itself: "The Career of Ethelwyn"—Ethelwyn being a coquette whose "hair curls, eyelashes curl, mouth curls up, even her giances curl," the author declares, and in a wading episode it is discovered that "her toes are the curliest of all." She visits a cousin at her Forest-Arden home near Washington city, who dreads Ethelwyn's advent into her Paradise. When the train of "followers" also appears, her heart sinks. Of course, Ethelwyn marries the man she is not suspected of caring for, but before this happens there is an abundance of adventure and flirtation. The tale abounds in whimsical humor and is just the right sort to while away idle summer hours.

Following the novel are half a dozen first-rate stories varied in length and subject. Beulah Marie Dix, the author of "Hugh Gwyeth," contributes a tale of love and bravery in very New England days. Its title is "The Love of Danyse de Vaudrecoeur." A story of smart New York society by Annet Andrews, called "A Lady, A Mortal, and the Four Hundred," is the experience of an English girl who has a position as companion. She thinks "Americans treat the members of their own household much as Christians are supposed to treat their Maker, from whom no secrets are hidden." An amusing Southern story (without dialect) is called "The Rev. Pilgreen's Wooing," by Matt Crim, whose loving sympathy for her homely neighbors in the South is evident in all her stories. "A Sovereign Remedy," by Francis Willing Wharton, is very up-to-date in theme. A millionaire's daughter, tired of having every wish gratified, is dying of sheer ennui. Her father unwittingly hits upon the key to the situation and the girl is saved from herself. This is remarkably clever—even from a source where so much may be expected. Caroline Ticknor has written nothing with more human feeling than her story called "Antoine's Loves." The book-worm and the widow are real types. Ella Middleton Tybont contributes a darkey tale called "At Fiddler's Bridge." It has a preacher for its hero and is keenly humorous.

A paper called "Bridging the Depths," by Percie W. Hart, tells how the ocean cables are laid, and tells it to be understood.

With the present number the Forum begins not only a new volume but a new series, having been transformed from a monthly into a quarterly. The general character of the magazine is the same and its high standard is maintained, but its purposes are more specifically those of a review and outlook. It is divided into nine departments, each conducted by a specialist who writes a critical exposition of such events of the last three months as come within his own sphere. These reviews include in most cases estimates of general tendencies as well as comments on specific incidents. In the issue for July-September, "American Politics" are discussed by Henry Litchfield West, "Foreign Affairs" by A. Maurice Low, "Finance" by A. D. Noyes, "Applied Science" by Henry Harrison Sipple, "The American Drama" by John Corbin, "Literature" by Frank Jewett



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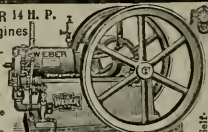
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Disks roll over or cut through trash and cover all the seed.

The Disc does better work in hard or soft ground than any Hoe or Shoe Drill. The Superior Disc and Superior Feed make seeding easy and good results certain.

You run no risk when you buy a Superior. It is the drill for drilling all crops—Wheat, Oats, Cow Peas, Corn, etc., as well as all Grasses.

Patents sustained in highest Courts. Your request on a postal card will bring Illustrated Catalogue No. 16.

**SUPERIOR DRILL CO.**  
Springfield, Ohio, U. S. A.

## With a SUPERIOR DISC DRILL

## RED RIPPER HAY . . PRESS



Full circle. Double stroke. Light draught. Very simple and durable. Will make 20 neat and compact bales per hour. Recommended by Georgia State Farm. Sold for about half the price of other presses of equal capacity.

Write to-day to

**SIKES BROS. & CO., Manufa., Helena, Ga.**

## DEDERICK'S Columbian Improved Box Press.

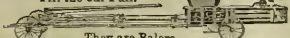
This press meets the requirements of those desiring to use a deep Box Press, and is adapted to bale all kinds of material ballable. Easy to feed same, and economical. Leaves material in the best form, and makes compact bales to load cars to maximum. We make all styles of Upright as well as Horizontal presses. Send for our catalogue, giving full description, prices, etc.

P. K. Dederick's Sons,  
39 Third St.,  
Albany, N. Y.



## "ELI" BALING PRESSES

Fill the Car Full.



They are Balers, not mere bundlers. The bales are even in size and so compact that they put full weights in car. That saves freight. That is like "finding money." Largest feed pressing. Requires less power than any similar machine of same capacity. Made in 35 styles, and sizes for horse or steam power. Illustrated catalogue mailed free.

COLUMBIA PLOW CO., 115 1/2 Hempshire St., QUINCY, ILL.

Mather, Jr., "Architectural Art" by Prof. A. D. F. Hamlin, "Educational Events" by Ossian H. Lang, and "Educational Research" by the editor, Dr. J. M. Rice. In addition to these reviews, the new number contains three special articles of the type that appeared in the former series—viz., "Chinese Exclusion," by Hon. Chas. Denby; "Germany as a World Power," by Wolf von Schierbrand, and "Sir Walter Besant," by Prof. W. B. Trent. It should be mentioned that the size of the magazine has been permanently increased from 128 pages to 160.

Jack London is the author of "The Cruise of the Dazzler," the long-story-complete-in-one-number, which appears in the July St. Nicholas. It tells the exciting adventures of a runaway boy in a cruise on the Pacific Coast. Though the hero receives many a hard knock, the voyage is not without happy results, and he benefits by his brief experience at sea. The other features of the number are full of interest for the little ones.

### HOW OFTEN?

No matter how long a paint lasts, the owner of a house that needs repainting is likely to wish it had lasted longer. The painter, on the other hand—for painters are human—has many arguments ready to prove that houses should be repainted at least once in every five years, and he may not look with entire favor on a paint which proposes to dispense with his services for ten or fifteen years. I have on my house, for example, a tin roof that has stood without repainting for over fifteen years, and it is still in tolerable condition, but I have never heard the paint which was used recommended by a painter. They say the paint lasts well enough, but the tin corrodes under it. This may be so, but mine did not.

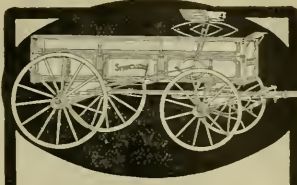
Similar opposition is manifested towards zinc white and zinc combination paints: "Oh, yes, they look pretty and last a long time," say the painters, "but they will crack." This also may be true, but it is not my experience, and I have had a good deal of painting done (for experiment) with these materials during the past few years, and have examined work extending over the past twenty-five years.

How often, then, ought a home to be repainted? As often as it needs it. In other words, when examination shows that the paint no longer sheds but absorbs water, and consequently has ceased to fulfill its office of protection. With straight lead and oil this will scarcely run beyond three years, though, in exceptional cases, it is said sometimes to give good service for five years.

With a good zinc combination paint, the lowest limit ought not to fall short of five years, and in exceptional cases it may run up to fifteen or twenty years, or even more, with ten years perhaps as a fair average.

In regard to painting, it pays to remember always that it is the labor rather than the material that costs, so it is always economical to select high grade paint and thus save the cost of one repainting within a given period.

STANTON DUDLEY.



## Half a Century at Studebakers

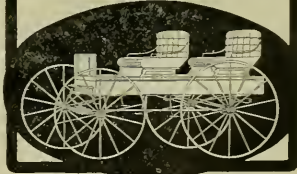
We use this space to remind you that the fiftieth year of wagon making has just been passed at Studebakers. Their wagons used everywhere are the best in the world. The people say so, and they keep the Studebakers busy. It is useless to say more about anything the merits of which are so well known.

Studebakers also make a full line of all kinds of vehicles, harness, etc. They control the entire output of the World Buggy Co. and make the "Lizzer Line" of vehicles. All dealers handle Studebaker goods. Write us for catalogue.

**Studebaker Bros. Mfg. Co.**  
South Bend, Ind.

### REPOSITORIES:

Chicago, New York, San Francisco, Kansas City, Denver, Salt Lake City, Portland, Ore.



### THE IMPROVED


## SCREW STUMP PULLER

Write to Prices.



**Chamberlin Mfg. Co., Utica, N. Y., U. S. A.**

A Neat BINDER for your back number can be had for 25 cents. Address the Business Office.



## COOPER SHEEP DIP

**STANDARD OF THE WORLD**

for 60 years. Used on 250 millions annually. Superior to all other kinds. No smell. Benefits while it cures. Keeps flock clean a long time. Increases growth and quality of wool. Used by large majority of sheep breeders in all countries.

Sold by all leading druggists and general merchants everywhere.

If local druggist cannot supply, send \$1.75 for \$2 (100 gal.) pkt. to **WM. COOPER & NEPHEWS, CHICAGO.**

## ORNAMENTAL LAWN FENCE



Buy from manufacturers direct and save the Dealer's Profit of 20 to 30 per cent. We sell more Ornamental Fences than any other firm in the business. Why? Because we are not "cheap" but the best material is used, we sell direct to the user at **FACTORY PRICES** and guarantee every foot of our fence. We make special prices to Churches, Genesic and large Parks. Send us your address. We will take pleasure in mailing you our 14 page color catalog on Ornamental Fencing, free. If you are interested in Farm Fencing send for our 42 page Catalogue. Address **COILED SPRING FENCE CO., Winchester, Ind. U. S. A.**

## HARD STEEL WIRE FENCE



Heavy lateral wires, heavy hard steel stays, coiled spring wire, Sure Grip lock. In strength, appearance, and durability, the Hard Steel cannot be excelled. Write for catalogue and prices. **THE HARD STEEL WIRE FENCE CO., Cuyahoga Falls, Ohio.**

## A Good Way




to begin fall fencing is to write for our catalog. **PAGE WOVEN WIRE FENCE CO., ADRIAN, MICH.**

## FARM FENCE



**DOW** PRICE AND QUALITY WILL PLEASE YOU—WRITE US NOW. **\*DOW WIRE WORKS—LOUISVILLE, KY.**

## FENCE! STRONGEST MADE.



Build—strong, Chicken-tight. Sold to the Farmer at Wholesale Prices. Fully Warranted. Catalog Free. **COILED SPRING FENCE CO., Box 62 Winchester, Indiana, U. S. A.**

## WROUGHT IRON PIPE



Good condition, used short time only, new threads and couplings for Steam, Gas or Water; sizes from 1/2 to 12 inch diameter. Our price per foot on 4 inch is \$1 on 1 inch 35c. Write for free catalogue No. 166. **CHICAGO HOUSE WRECKING CO., P. O. Box 25th and Iron Sts., CHICAGO.**

### THE DISC DRILL.

WHAT IT HAS ACCOMPLISHED FOR THE FARMER.

For years the drill-makers were trying to invent some attachment for hoe-drills, or to adjust hoe-drills, by means of a zig-zag or shifting attachment that would make the machine work better in foul ground. Those things did not lessen the labor on the part of the men to any extent. Finally the disc drill was perfected, and not only proved a success in foul ground, but demonstrated the fact that it planted the seed at a more uniform depth than the hoe drill. The fact that the work of seeding was so greatly reduced brought the disc drill into great popularity. In the Western countries, especially in Western Kansas, where it is the custom to plow the ground but once in every two or three years, and where the trash would accumulate to such an extent that it would render seeding a very difficult task, and the results exceedingly uncertain and unsatisfactory with the hoe-drill, the disc drill was welcomed on every hand, because by its use one man could do more work in a day, and do it easier and with more assurance of a successful crop than could possibly be done with the hoe-drill in three days and with three men. The experimental stage is past and the demand for disc drills is growing greater each year. It is predicted by many that the day is not far distant when they will entirely replace hoe-drills. However this may be, the disc drill has made possible the seeding of a much greater acreage. This is especially true of Kansas and the Western countries, where wheat is sown in unplowed stubble fields. The discs cut into the hard ground, and do not choke in trash where the hoe-drill would not work at all. The first successful disc drill was introduced by the Superior Drill Company, of Springfield, O. It has been on the market for eight years, and after several years of litigation the Superior patents were sustained by the highest courts.

### SPLIT HICKORY VEHICLES.

The Ohio Carriage Manufacturing Co., of Cincinnati, Ohio, write us that they have done a good business this year with their celebrated Split Hickory Vehicles. Their plan of sending a buggy out on 30 days' free trial strikes us as being an exceedingly liberal proposition, and is, no doubt, largely responsible for the enormous increase in the business of this firm. If you have not done so, we would advise you to drop them a postal and get their catalogue, which explains their plan of doing business fully. Address them at Station 41, Cincinnati, Ohio.

### COTTON AND TOBACCO SPRAYER.

The Ripple Hardware Co., Grafton, Ill., are advertising a Compressed Air Cotton and Tobacco Sprayer on another page. This Sprayer is also used for white-washing buildings. Guaranteed to do its work in a satisfactory manner. As this firm wants agents, you had better look up the advertisement and write for their terms, etc.

## Poor Soils



are made richer and more productive and rich soils retain their crop-producing powers, by the use of fertilizers with a liberal percentage of

## Potash.

Write for our books—sent free—which give all details.

GERMAN KALI WORKS, 93 Nassau Street, New York City.

## Canvas Goods


WATERPROOF AND PLAIN **STACK, WAGON, IMPLEMENT, BINDER AND HORSE COVERS,**

**HAY CASKS, TENTS** LOW PRICES. CIRCULARS AND SAMPLES.

**HENRY DERBY,** 124 Chambers St., New York, N. Y.

## STEEL ROOFING

**FREIGHT CHARGES PAID BY US**



Strictly new, perfect, Semi-Hardened Steel Sheets, 2 feet wide, 6 feet long. The best Roofing, Siding or ceiling you ever saw. No experience necessary to lay it. An ordinary painter or hatcher the only tool you need. We furnish nails free and paint roofing two sides. Comes either flat, corrugated or "V" crimped. Boltered free of all charges to all points in the U. S., east of the Mississippi River and North of the Ohio River

**AT \$2.25 PER SQUARE**

Prices to other points on application. A square means 100 square feet. Write for free Catalogue No. 166 **CHICAGO HOUSE WRECKING CO., W. 35th and Iron Sts., Chicago**

## FOR SALE

Six-horse Power, Fick Engine and Boller, mounted; Also Twenty-inch Ohio Enslage Cutter, with Sixteen-foot Swivel Carrier, also mounted—both in first-class order.

D. THOMPSON, Arcurus, Va.

## POTATO PLANTER

Cheapest Potato Planter on the market. Send for circular. Address **J. R. STEETZ,** Station D. R. No. 1, Milwaukee, Wis.

## FOR SALE DAIRY FARM and HERD.

Farm containing 83½ acres, together with Fine Dairy Herd of 45 Cows, Horses, Dairy Wagons, General Equipment. Modern Dairy Machinery; Well-established Milk route for 150 gallons Milk daily. Five room dwelling; Cow Barns, silo and other necessary buildings; also telephone communication.

Farm located about one mile from city of Danville.

This is one of the best opportunities for Dairying in this section of country.

This Property is on market, on account of death of the late Joseph Coates.

For further particulars apply to

**RICHARD COATES, Danville, Va.**

Executor of JOSEPH COATES, deceased.

## CHEAP FARM

In Halifax Co., Virginia. I would like to sell you my **SPLENDID FARM** of 500 acres at a sacrifice, as my business engagements compel me to be away. This is a splendid farm, well watered and easily cultivated; new stable and granary; large old-fashioned dwelling at intersection of 2 county roads; R. R. close by; easy access to leading markets; less than \$7000 will buy it. Buyer can take stock, implements, crops, for little additional cost. Write for further particulars to

**BARGAIN, care Southern Planter,  
RICHMOND, VA.**

## FOR SALE

At a Sacrifice.

### A DESIRABLE FARM in CHARLOTTE CO., VA.

One mile north of Keysville, on the line of the Northern Railway, about half-way between Richmond and Danville, containing about 300 acres. It is light gray soil and easy to cultivate, being well adapted to fine tobacco, corn, wheat, oats, clover, grass, etc., and is especially suited for stock-raising and fruit growing. It is a very healthy location—nothing like chills and fevers or malaria having ever appeared there. For price, terms, etc., apply to

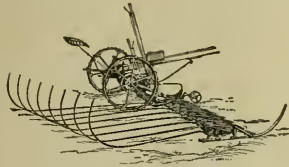
J. G. HANKINS, Box 636 Richmond, Va.

## A BARGAIN IN 63 ACRES ... OF LAND

In sight of Richmond, Va. Fine large house with modern improvements; fine large barn and other improvements; large orchard; society the best. Will be sold cheap with stock and crops. Would make a fine dairy farm. Address **OAK SHADE, care Southern Planter.**

### A PEA-HARVESTER.

The alarming advance in the price of peas this season has renewed the demand for a pea-harvester. How to harvest peas successfully and economically has long been a problem to the farmer, and is especially important now that the crop is so valuable.



Herewith is a cut of a machine gotten up expressly for the purpose of harvesting down or tangled crops, and has been used for the past five seasons with great success in the pea growing districts of Michigan, Wisconsin and New York.

The machine, in brief, consist of a lifter and a windrower, which are readily attached to the cutter-bar of any farm-mower.

The lifter is composed of seven malleable fingers or guards which fasten on the front of the bar, an outside divider, and a shoe. The guards pick up the short or tangled vines, the divider holding the outside down, and thus the stalks are in position for the knives. The shoe and wheel carry the bar over "dead furrows" or rough places.

The windrower, which fastens on behind the bar, consists of curved steel rods, graduating in length from five to eight feet, so that as the crop is received upon it, it is crowd ed off into a continuous windrow just outside the next path of the team.

This ingenious device is the product of a Michigan concern—the Vine and Root Machinery Company of Port Huron, Mich. This company has discovered the value of their machine to the Southern farmers, and are placing them on the market here this season for the first time. They claim to have spent their "experimental stage" at home, and now offer the South the machine in an improved and perfected condition.

The capacity of the machine is equal to that of about 10 men with scythes, and it shells few peas.

The value of such an implement cannot be over-estimated. It has made pea harvesting as easy as "haying," and the pea-growers will certainly appreciate it.

### KING CORN IS COMING.

"Not for triumphs in the battle,  
And renown among the warriors,  
But for profit of the people."

King Corn is coming with a message of prosperity and plenty to the growers of the king of cereals. He brings a notice of double profit to the corn-growers of the world. Readers of *Southern Planter* should write to McCormick Harvesting Machine Company, Chicago, U. S. A., for "King Corn," a finely illustrated book, which tells how to double the value of the corn crop.

## HOMES AND THE PLACE TO FIND THEM.

No place in the United States can a man do so well at farming, for the money invested, as in Virginia. Lands are cheap; climate good, and the best of markets close at hand. It is the State of all others, for a comfortable all the year round home. The James River Valley Colonization and Improvement Company offer superior advantages to land purchasers. For free 36 page land pamphlet, address

W. A. PARSONS, Vinita, Va.

## ..Magnificent Estate..

Known as the Hampstead Farm, situated on the Pamunkey river, for sale. Contains nearly 1600 acres, 800 of which is river bottom land, the remainder being upland and timber. Large deposits of green sand marl; brick barn with wood stable attached; also houses for sheep, etc. Splendid dwelling said to have cost \$50,000. Property now owned by stock company. Price, \$20 per acre, on easy terms. For further particulars, address

"PAMUNKEY," care Southern Planter.

WE HAVE A LARGE LIST OF

### FRUIT, POULTRY AND TRUCK FARMS.

Ten, Fifty and One Hundred Acres each, with good buildings, close to steam and trolley lines, easy access to the city. Also

### GRAIN AND STOCK FARMS

From 100 to 1,000 acres at low prices, all the way from \$5 to \$50 per acre. Write for

THE VIRGINIA LAND AGENCY, Richmond, Va.  
J. R. HOCKADAY, Manager.

## FARM FOR SALE

In Bladen county, N. C. Consisting of 104 acres, 70 acres cleared and in good state of cultivation. A new five-room house, barn, stalls and gin house, 1 tenant house, 2 wells of good water, 1½ miles from steamer landing on Cape Fear river. Convenient to church and school; healthy and good neighborhood; 34 acres of native timber; stock and all necessary implements at a bargain, as I wish to go Cuba. Address J. R. SQUIRES, Squires, N. C.

## FINE FARMS

in the great fruit, grain and stock section of VIRGINIA. Best climate and water in the U. S. Near great markets, with best educational advantages. For further information, address

ALBEMARLE IMMIGRATION CO.,  
SAM'L B. WOODS, Pres. Charlottesville, Va.

## VIRGINIA FARMS

\$3 PER ACRE AND UPWARDS.

EASY PAYMENT CATALOGUE FREE.

GEO. E. CRAWFORD & CO., Richmond, Va.  
Established 1875.

## Virginia Farms

All prices and sizes. Free list on application.

WM. B. PIZZINI CO., Richmond, Va.

## GO SOUTH.


For full particulars write to A. JEFFERS,  
Norfolk, Va.

## STEM-WIND WATCH, CHAIN AND CHARM

You can get a Stem-Wind, Nickel-Plated Watch, warranted, also Chain and Charm for selling 19 packages of Blaine at 10c each. Send name and address to once a week forward you the Blaine and our large Premium List, postpaid. No money required. **BLAINE MFG. CO., Box 631, Concord Junction, Mass.**



**Agents and Dealers**  
 wanted to sell Rippley's 4 and 5 Gallon Compressed Air Sprayers, Large Orchard Sprayers, Spraying Solutions and Breeders Supplies. We can keep you busy the year around. Large 1902 catalog and terms free.  
**RIPPLEY H.D.W. CO.,**  
 Box 233, Grays, Ill.



**SAN JOSE SCALE** and other insects can be controlled by using **Good's Caustic Potash Whale Oil Soap, No. 3.**

It also prevents Curl Leaf. Endorsed by entomologists. This soap is a fertilizer as well as insecticide. 50 lb. kegs, \$2.50; 100 lb. kegs, \$4.50. Half barrels, 270 lbs., at 3 1/2c. per lb. barrels, 425 lbs., at 3 1/2c. Large quantities special rates. Send for circular.

**JAMES GOOD,**  
 PHILADELPHIA, PA.

939-41 N. Front St.,

**FRAZER**  
**Axle Grease** Best in the world.  
 Its wearing qualities are unsurpassed, actually outlasting 3 bxs. any other brand. Not affected by heat. Get the Genuine.  
 FOR SALE BY ALL DEALERS.

**AGRICULTURAL LIME**  
**and BUILDERS' LIME**

Send for Circulars and Price-List.

**FELLSWORTH LIME WORKS**

REEVES CATT, Agent,  
 Bodley, Augusta County, Va.

**PALMORE'S**

**Law and Collection Association,**

Established 1884. Claims collected in all parts of the United States. No collection—no charge.

P. O. Box 503. 905 1/2 East Main Street  
 RICHMOND, VIRGINIA.

**..WANTED..**

By practical Poultryman, correspondence with a man with capital who will establish a Poultry and Pekin Duck plant. Good interest on the money so invested. Have handled successfully various makes of Incubators and Brooding Systems. Am a married man, no children. Can give No. 1 references as to character and ability, and same required.

Address **POULTRYMAN,**  
 care Southern Planter.

**Position Wanted**

By a single man, a working manager or foreman. Up-to-date in farming, dairying, butter-making, gardening, cattle, sheep, swine, poultry-raising and bees.

R S., care Southern Planter.

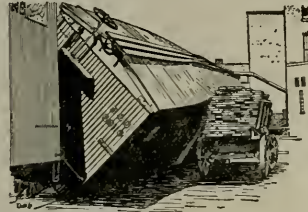
**..WANTED..**

A young, unmarried, white man to take charge of chickens on my farm near Richmond.

FARMER, Box 901, Richmond, Va.

**AN OBJECT LESSON.**

A long time ago it was learned that the most direct and forcible way of teaching was by object lesson. We are presenting an object lesson herewith, and its teaching is so self-evident as scarcely to need any comment from us. In the cut accompanying this article will be seen a large freight car overturned and resting upon a loaded wagon. This little accident occurred a few days ago in the freight yards of the Studebaker Bros. Manufacturing Co., of South Bend, Ind. The wagon, which is a standard Studebaker, differing in no sense from multiplied thousands of the same kind in daily use, just happened to be standing in a way to catch the full force of the impact from the overturned car. It will be observed that while the wagon is itself heavily loaded with lumber, it sustained not the slightest injury. The car, however, did not escape so easily. The cut, which is a strict re-



production from a photograph taken a few moments after the accident occurred, shows that the car was stov in on the side and that the roof is torn loose clean up to the center where even the running board is displaced and broken. This peculiar accident serves to show in a much better way than it could be otherwise stated just how strong and thoroughly dependable the Studebaker wagons are.

However, this case will not occasion much surprise to those hundreds of our readers who have been using Studebaker wagons and are therefore well acquainted with their unusual merits. Undoubtedly some of the users of Studebaker wagons can cite cases where they have stood even more severe tests than did this one without being in any way injured. The standing of such tests as these finds a good and sufficient reason in the great care in selecting the best of material and the employment of the best procurable labor characteristics of the Studebaker institution. They know how to build wagons at Studebaker's, having been engaged in that one line for more than fifty years. In addition to their full and complete line of heavy wagons they also manufacture every style and variety of light vehicle and single and double harness, both light and heavy, for all purposes. Practically, every dealer in the country can supply you with the Studebaker goods.

**KILL THE WEEDS.**

The Clipper Lawn Mower, advertised elsewhere in this issue, is claimed by its makers to be the best thing to kill the weeds on your lawn. Look up the advertisement.

**FOR SALE—Registered and High-Grade ANGORA GOATS.**



From 1 to car-load lots. Kids in season.

**JEREMY IMPROVEMENT CO. Saxe, Charlotte Co., Va.**

**ANGORA GOATS** are handsome, hardy and profitable. For large circular address **E. W. COLE & CO., Kenion, Ohio.**

**CLOVER HILL FARM.**

**EGGS FOR HATCHING**

**BARRED WHITE ROCKS, BROWN and WHITE LEGHORNS, S. C. LEGHORNS.** 75c. per setting of 15; 3 settings, \$2. Rose Comb Brown Leghorns, \$1 per setting. A few more cockerels of above varieties for sale. Also a Yearling Jersey Bull, entitled to registry.

**J. B. JOHNSON, Clover Hill Farm, Manassas, Va.**

**EGGS**

From Pure-Bred Fowls, Cheap.

The Imperial Fruit and Poultry Farm is in a position to offer Eggs from pure bred B. P. Rocks and S. C. B. Leghorns at 50c. setting of 15. Reference furnished.

**P. H. HEYDENREICH, Prop., Staunton, Va.**

**COLLIE PUPS!**

By prize-winning imported sires and trained dams. Eligible. Fit for bench, ranch or farm. Price, \$10, either sex. Also a book on the care and training of the Collie for all practical uses. Price, 50c. Copy of book free to purchaser of Collie.

Stock Farm, "MAPLEMONT," Albany, Ver.

**"Feeds and Feeding"**

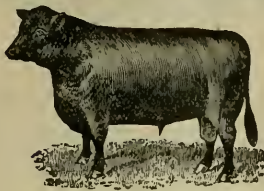
Prof. Henry's Great Book for Farmers and Stockmen.

Delivered anywhere for \$2.00  
 With the SOUTHERN PLANTER, 2.25

**THE KEELEY INSTITUTE GREENSBORO, N.C.**

For the treatment of THE LIQUOR, OPIUM, MORPHINE and other Drug Addictions. The Tobacco Habit, Nerve Exhaustion

## FINE STOCK AT A BARGAIN.



Nine head fine reg. Angora Goats; One buck six does, two kids, price for the lot \$130.  
One reg. Dorset Buck Lamb, \$20. One 3 yr old Southdown Buck, \$10. One grade Dorset Buck Lamb, \$6.

One reg. Aberdeen-Angus Heifer coming 3 yrs, bred to our Imported herd bull, Rubican Migno 2nd, No 4121, price, \$125, a very fine individual.

One trotting bred brown gelding, coming 4 yrs. old, 15½ hands, weight 1000. Trim as a fawn, and dashing in style and action. His record opens with a 3 minute gait under the lines and his future is full of promise.

One extra fine pair of well matched black mare mules, 6 years old, weight 1240 and 1280. Gentle as the gentlest family horse, strikingly trim, finely proportioned, and exceptionally quick. A faultless team.  
Two registered Aberdeen-Angus bull calves.

To dispose of surplus stock we offer all the above animals cheap.

Address W. M. WATKINS & SONS,

Coitage Valley Stock Farm,

Randolph, Charlotte Co., Va.

## FINE ANGUS BULL FOR SALE.

6 years old, solid back, wt. about 1,300 lbs. Very gentle. Guaranteed sire breeder. Price on cars, Columbia, Va., C. and O. R. R., \$100. Registry and transfer certificates furnished.

C. E. JONES, Carysbrook, Va.

## ANGUS BULL CALVES

Registered and unrecorded. Stock first-class, and breeding the best.

## SHROPSHIRE SHEEP

First class yearling rams, and ewes of all ages. Several FINE FARMS for sale.

WARREN RICE, - Winchester, Va.

## ESSEX PIGS

Some extra fine pigs, from \$10 to \$15 per pair, and from two to four months old. All stock offered for sale are eligible to registry. Your orders solicited.

Address

L. G. JONES, Bethania, N. C.

## TAMWORTH

And POLAND-CHINA PIGS For Sale.

From registered stock. 8 weeks old, \$5.00 Apply to

J. C. GRAVES, - Barboursville, Va.

## REGISTERED BERKSHIRES.

Fine lot of Pigs now ready.

Can furnish pairs not akin.

J. T. OLIVER, Allen's Level, Buck. Co., Va.

## A GREAT FARMERS' CONVENTION

The East Tennessee Farmers' Convention, recently held in Knoxville, was a record-breaker in every sense of the word. Ex-Governor Hoard, Mr. T. B. Terry and other distinguished visitors pronounced it the most successful meeting they had ever known in their wide experience. The weather was beautiful, though a trifle springy, and the country, in its fresh, surly verdure, lent additional charms to the many natural beauties of the landscape.

The meeting opened auspiciously, and the programme was carried out with promptness and dispatch. Sufficient variety was given to the different sessions through the medium of music furnished by the University band and glee club, whose selections seemed to find favor with the large crowd.

The attendance was surprisingly large, reaching an aggregate of at least 800, not including the families of the delegates who were in attendance. The University chapel, although it can seat more than 550 at a time, was not large enough to accommodate the crowd. The best evidence of the enthusiasm which characterized the meeting is found in the fact that the large attendance was maintained up to the very close of the three days' session. Never before in the history of the institution was the attendance so uniformly distributed over the State, there being a number of representatives even from the Western section, and almost every one of the thirty-four counties in East Tennessee had a large delegation. Thus, the spirit and the work of the organization will have a much wider and more lasting influence than ever before, and the good resulting from such a meeting can never be correctly estimated.

The addresses were all short, sharp and incisive, and every speaker seemed to have put his best thought and endeavor into the preparation of a paper that would give the farmers the information needed in the most direct and practical manner, and although some of the speakers could not be present, every one who was absent prepared and sent a paper as an evidence of his good intentions. Owing to the fact that the meeting represents all the agricultural and stock interests of the Middle South, the subjects were grouped and discussed under various topics. At the present meeting attention was directed particularly to the discussion of dairy husbandry, soil maintenance and improvement, the best grasses and clovers for Southern conditions, the construction of silos and crops for the same, stock husbandry, including the feeding of beef cattle, the maintenance of sheep and the breeding of horses. The educational needs of our people were not neglected. The public school interests were ably presented, and the subject of agricultural education in the State University, and the importance of extending the usefulness of the Experiment Station by giving it much needed State support, were fully explained, and the opinion unanimously expressed was that the State could not afford to neglect the education of its farmers, or the proper support of its Experiment Station, in order that both the College of Agriculture and the Station might serve



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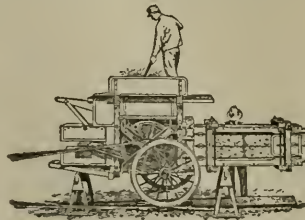
The general discussion of the various topics and the question-box were features of the Convention, and it was very gratifying to see the keen intelligence and interest displayed by the delegates. Their questions and answers showed a knowledge and appreciation of the subjects they were debating, and are tangible evidence that our people are grasping the relation of scientific facts to farm management, and that they will employ the information so gained to the best advantage and to the rapid and material improvement of agricultural practice in East Tennessee.

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There is a certain satisfaction always experienced in having been the first to do a certain thing. This is more particularly true when that certain thing proves to be something of undoubted value and which has been a great benefaction to mankind. This observation is called out by having recently seen a copy of the 1902 catalogue of P. K. Dederick's Sons of Albany, N. Y. These people will be known and remembered by our readers as the manufacturers of the well known and world famous Dederick Presses. This business was established in 1860 and a medal was granted to the founder, Peter K. Dederick, by the U. S. Agricultural Society as early as 1862. Taken in all, domestic and foreign, nearly 300 patents have been granted this gentleman in the line of baling presses and their various improvements. Since Mr. Dederick still gives his personal supervision to the business of manufacturing these presses, and it is only reasonable to assume that the inventor of a machine knows better than anybody else how to build it, this accounts in a great measure for the superiority of the Dederick machines.



We are giving herewith a cut of Dederick's New Two Wheel Continuous Belt Press, which is the latest of their production. Limitations of space prevent our giving a full description here, but these will be found in the catalogue and special circulars of the Dederick's. They will take pleasure in mailing these to all interested inquirers. Write for them.

To make cows pay, use Sharples Cream Separators. Book "Business Dairying" & Cat. 305 free. W. Chester, Pa.

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Animals  
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THE HISTORY OF A SPRIG OF GERANIUM—A STORY FOR YOUNG FOLKS.

BY MARY WASHINGTON.

[Continued from June number.]

CHAPTER II.

One bright evening, as Anna sat out on the porch, with the May sunshine falling lovingly over her little family of plants, she arose and began to water them by a contrivance she had invented herself, in the absence of a watering-pot. She had stuck the bottom of a tin can full of small holes, punched through with a little nail, and she poured water from a dipper through this perforated can. A lady driving by at the moment, noticed the ingenious little contrivance, and smiled at it. Something also in the pale face of the girl seemed to attract her observant eye, for she checked up her horse, and made some remarks on the fineness of the geraniums. A little girl sitting by her, in the phæton whispered "Mama, I wish I had one of those little geraniums in the tin cans," on which the lady asked Anna if she would be willing to part with one of her small geraniums. "I don't know, Ma'am," stammered Anna, quite startled and confused at having so novel an idea presented to her. "I suppose I could spare one," she added, after a moment's reflection.

"What do you ask for it?" was the next question. But Anna was so utterly ignorant in all matters of traffic that she was quite at a loss how to answer, and felt quite dazed when the kind lady slipped 25 cents into her hand, about double what she would have given a regular florist for the plant, but the wan, fragile look of the girl inclined her to be liberal. Anna's delight and excitement were so great that she could scarcely sleep that night. Jay Gould and Vanderbilt could scarcely have been more perplexed about the investment of their millions than she about her twenty-five cents. Not only was the possession of so large a sum very exciting in itself, but it was still more exciting as opening a new vista to her. It had never occurred to her before that it was possible for her to make flowers a source of profit. She had thought that her weak eyes and frail health cut her off from all hope of supporting herself, or helping her parents. Now she began to indulge in a day dream of being able to supply her own wants, at least in part, and thus lighten the burden on her parents. She knew that the necessary medicine and medical attendance for her took quite a considerable part of their slender earnings, and this thought had often pained the sensitive and unselfish child.

I have already mentioned an aunt of Anna's, who being more well-to-do than the rest of the family, was considered quite an authority by them all. She and her husband tended a market garden for a gentleman, a few miles from town, and she marketed the articles raised on the farm. Anna resolved to consult this aunt about the investment of her funds, and hailed her, for this



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purpose, the first time she saw her market wagon go by, "Why don't you spend it in flowers?" said Aunt Jane (probably because she saw this answer was expected.) "Pears like you set more store by them than anything else."

"I would like to spend it in flowers," said Anna, something that I could raise easily and stand some chance of selling. What would be a good thing for me to get?

"Something scarlet, child. That takes people's eye. If you could raise any bright, showy flowers, and make 'em up in nice little bouquets, I might manage to sell 'em for you, at market."

"Oh, Aunt Jane!" exclaimed Anna, clasping her hands in ecstasy at the prospect.

"Yes, child flowers sell mighty well, in market and so do plants. Folks bring little bunches there to sell at ten cents a bunch, and the ladies who come to market always buy them. It saves them a long walk or ride to the florist's, and it is cheaper than getting them from a florist. Young folks, especially courting couples, will get high priced flowers from a florist, but settled ladies who come marketing buy the bright, cheap bunches of flowers there to give to their children, or put on the table at meals. As I told you, something scarlet is especially apt to take their eye. Suppose you buy a scarlet geranium with your money?"

"Very well, aunt, take it and do the best you can with it."

When Aunt Jane returned, a few hours later, she brought in triumph not only a fine young scarlet geranium, but a paper of scarlet sage seed. "I got this geranium from a woman who has a stall next to mine, and she let me have it cheap, so I had five cents left and bought you this paper of scarlet sage seed. But mercy, child!" you will be obliged to have a flower border for summer, and how are you to make one out of this hard earth!

This was indeed a serious obstacle, and Anna's countenance fell wofully, but Aunt Jane, who was fruitful in expedients, devised a plan. If you will get your pa and the boys to dig out a deep trench," said she, "and carry the earth away in

# BERKSHIRES.

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ROBT. G. D. POTTAGE,  
"Creekside."

THOS. S. WHITE, Lexington, Va.

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Young Boars ready for service.

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Parties will be met at train with conveyance, if we are notified in time. We are always glad to show our stock.

wheel barrows, I will get Mr. Akers to let me bring you some rich earth in bags, and you can get street sweepings and mix with it, and make you a good, rich border."

Mr. Stevens and the boys declared themselves willing to dig the trench, and gradually, as aunt Jane brought several bags of rich earth on every trip, the gap was filled, and Anna had a nice flower bed. Her mother, seeing how deeply she was interested in raising flowers, squeezed out twenty five cents of her earnings to be invested in flower seeds, the prettiest and showest of the annual kind, China asters, zinnias, Drummond phlox and others, and Mrs. Akers, becoming interested in Anna, through Aunt Jane's accounts, sent liberal contributions to the flower border. By the last of August, it commenced to look so bright and sweet that persons driving by would pause to notice it. The work on it was growing rather too heavy for Anna, without assistance, but her brothers, who were very fond of her, and who had something of her love for flowers, helped her to work, weed and water them. Indeed, the neighbors too were beginning to be interested in her undertaking, and to take pride and pleasure in it. Other boys besides her brothers would sometimes proffer their help, and one neighbor who kept a small hen house, and another (the *Nabob* of the precinct) who kept a cow, made her valuable presents of manure for her border. In return, she often carried flowers into humble homes around her where no flowers had ever been seen to enter before. In saving her seed, in the autumn, she laid by a sufficient stock to give to such neighbors as felt disposed to try flower culture, and so contagious is example that the next year, several homes in the vicinity of Anna's, were brightened by little flower beds, or pots of flowers; but this is anticipating.

The original geranium put out so many off-shoots on being moved into the flower bed that Anna took numerous slips from it and set them out, her aunt selling them at ten cents apiece, after they had gotten well started to growing. Late in the summer and early in the autumn, she was able also to make up bright, pretty little bouquets, which her aunt sold for her. In October, the scarlet sage blossomed gloriously, and never did the sum of five cents yield a richer return. She made gorgeous bouquets of these, with an outside fringe of geranium leaves, and they sold readily.

[To be continued.]

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"I dunno," said the man languidly.

"Why don't you know?" demanded the vital young lady sharply.

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Maine Experiment Station, Orono, Me. Bulletin 82. Orchard Notes.

Michigan Experiment Station, Agricultural College, Mich. Bulletin 197. Sugar Beet Experiments, 1901.


Bulletin 198. Sand Lucerne.

Bulletin 199. Cow-Peas, Soy Beans and Winter Vetch.

Bulletin 200. Some Insects of the year 1901.

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**ROUEN GESE.**—Ganders, \$2.50. Geese, \$2.50. Eggs, per sitting, \$3.00.

WILLIAM L. JR., No. 21058, half brother of Axtell, will serve a limited number of mares for \$25 the season. Mares boarded at lowest figures per month.

- cal Analyses of Feeds, Foods, Grass, etc.  
 Bulletin 128. Twentieth Annual Report, 1901.  
 Bulletin 130. Spraying for Grape Rot.  
 Pennsylvania Experiment Station, State College, Pa. Bulletin 59. Pennsylvania Sugar Beets in 1901.  
 Rhode Island Experiment Station. Kingston, R. I. Bulletin 83. Improving an Orchard.  
 South Carolina Experiment Station, Clemson College, S. C. Bulletin 68. A Chemical Study of the Sea Island Cotton Seed.  
 Bulletin 70. Analysis of Commercial Fertilizers.  
 Virginia State Horticultural Society. Annual Report, 1902.  
 Virginia Crop Pest Commission. Third Report of State Entomologist and Pathologist on the San Jose Scale, and the Administration of the Crop Pest Laws.  
 Circular to Nurserymen as to Shipment of Nursery Stock.  
 Virginia Weather Bureau, Richmond, Va. Report for May, 1902.  
 Wyoming Experiment Station, Laramie, Wyo. Bulletin 50. Native Vines in Wyoming.  
 West Indian Department of Agriculture, Barbados, W. I. Agricultural News, June, 1902.

#### CENSUS BULLETINS.

- No. 175. Manufacturers. Gloves and Mittens. Leather.  
 No. 176. Manufacturers. Bicycles and Tricycles.  
 No. 177. Agriculture. Colorado.  
 No. 178. Agriculture. North Carolina.  
 No. 179. Agriculture. New York.  
 No. 180. Manufacturers. Alcoholic Liquors.  
 No. 181. Agriculture. Georgia.  
 No. 182. Agriculture. Indiana.  
 No. 183. Agriculture. Michigan.  
 No. 184. Agriculture. North Dakota.  
 No. 185. Agriculture. Idaho.  
 No. 186. Agriculture. Indian Territory.  
 No. 187. Agriculture. Nevada.

#### CATALOGUES.

A. B. Farquhar Co., York, Pa. Pennsylvania Low Down Drills, Hoe and Disc Force Feed Grain and Fertilizer.

Heebner & Sons, Lansdale, Pa. Horse Powers, Threshers, Feed and Ensilage Cutters. Stratton & Bragg, of Petersburg, Va., whose advertisement will be found in our columns, are general agents for this firm.

Studebaker Bros. Manufacturing Co., South Bend, Ind. The leading Wagon Makers of the world. A Half Century of Growth—a pretty souvenir of a visit to the works.

De Laval Separator Co., 74 Cortland street, New York. Good Butter—its source and how it is made—a little handbook for the butter maker.

Manlove Gate Co., Milton, Ind. The Manlove Self-Opening Gates  
 Lynnwood Stock Farm, Rockingham county, Va., John F. Lewis, proprietor. Percheron Horses, Shorthorn Cattle and Berkshire Hogs.

**The BEST Threshing Outfit**

for a thresherman to buy and for a farmer to use is the Farquhar Celebrated AJAX THRESHING ENGINE and the FARQUHAR SEPARATOR. Engines made in sizes 4, 6, 8 and 10, and combine the advantages of all successful engines. Easy steamers and develop more than rated horse-power. Have driver's seat, foot-brake and two injectors. SEPARATORS of all sizes and sizes for merchant threshing or farm use. Farquhar machines have all late improvements, they thresh and clean all kinds of grain perfectly.

Catalogue of Engines, Threshing Machinery  
Saw Mills, Agricultural Implements, free.

**A. B. Farquhar Co., Ltd**  
YORK, PA.



#### "ELLERSLIE."

## SHORTHORNS

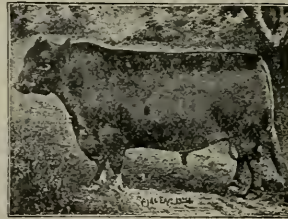
124204 A H. B.; out of registered cows which have been selected for milking as well as beef qualities.

## SOUTHDOWNS

DRUID HILL PARK (Baltimore) flock. These are unregistered but are first-class in every respect.

REMEMBER.—We do not ask fancy, but farmers' prices. Our stock is not in show ring but working condition.

**R. J. HANCOCK & SON, CHARLOTTEVILLE, VA.**



#### FOR SALE ON GLEN FARM.

**POLLED DURHAM  
CATTLE, SHROPSHIRE  
AND  
SOUTHDOWN  
SHEEP. Also  
POLAND-CHINA  
HOGS.**



JOHN S. FUNK, Singer's Glen, Va.

## The Middle South WOOL BOOK

A Treasure of Practical Information for the Home and Farm



Presented by the  
LEAKSVILLE WOOLEN  
MILLS, Leaksville  
N. C.  
Edition of 1900

FULL SIZE, 7 1/2 x 5 1/4 INCHES  
 .. BOUND IN CLOTH ..  
 .. STAMPED IN GOLD ..

#### DO NOT DISPOSE OF YOUR WOOL



until you write to the LEAKSVILLE WOOLEN MILLS, Leaksville, N. C., for samples and catalogue containing liberal offers for the season of 1902.

A handsome line of Dress Goods, Flannels, Tailor-made Skirts, Blankets, Coverlets, Carpets, Rugs, Cassimeres, Jeans, Buggy Robes and Knitting Yarns, exchanged for Wool, or manufactured on the cash plan. We pay freight on wool sent to the mills. A valuable book sent free in every package of manufactured goods.



**LEAKSVILLE WOOLEN  
MILLS, :: LEAKSVILLE, N. C.**

The Virginia State Horticultural Society—President, S. B. Woods, Charlottesville, Va.; Walter Whateley, Crozet, Va.; Secretary and Treasurer; H. L. Price, Blacksburg, Va.; Recording Secretary—has just issued its annual report for the year 1901. It is a volume of some 250 pages, containing a verbatim report of the proceedings of the Annual Convention held in Richmond, January 7th and 8th, 1902. The addresses then delivered and the reports made by the several committees are full of information of the highest value to every fruit grower, and should be carefully read and filed away for reference. The membership of the Society steadily increases, but is not near so large as it ought to be in a State having such great fruit interests as Virginia. We trust to see the list largely augmented. Each member receives free a copy of the annual report, and this alone is well worth the membership fee of \$1. Besides this, he gets the benefit of all reduced rates of freight, etc., secured through the exertions of the Society, and these have already been very substantial. The stronger the Society becomes the more powerful it will be in exertion of influence in the Legislature and with the transportation companies, and the greater the benefits which will accrue to the members.

#### THE PETALUMA INCUBATOR COMPANY.

Thousands of our readers have doubtless noticed the advertisement of the Petaluma Incubator in the *Southern Planter* from year to year. This machine, which is in use in every civilized country in the world, has been virtually manufactured by Mr. L. C. Byce as his own private business. On May 10th, the Petaluma Incubator Company was incorporated under the laws of California. This Company, with Mr. Byce as President, is composed principally of his employes for the past four to 14 years. Our readers will, therefore, see that there is really no change in the management or makers of the Petaluma. We wish the new firm much success in the future, and hope it will become as great a factor in the poultry world as it has been in building up its own town of Petaluma, Cal.

#### YANKEE METHODS GALL EUROPE.

MCCORMICK REAPERS SCORE SUCCESS AT PRAQUE IMPLEMENT SHOW.

At the annual Bohemian agricultural and implement fair now open in Prague the methods of American exhibitors, especially those of the McCormick Harvesting Machine Company, of Chicago, angered their German and Austrian competitors.

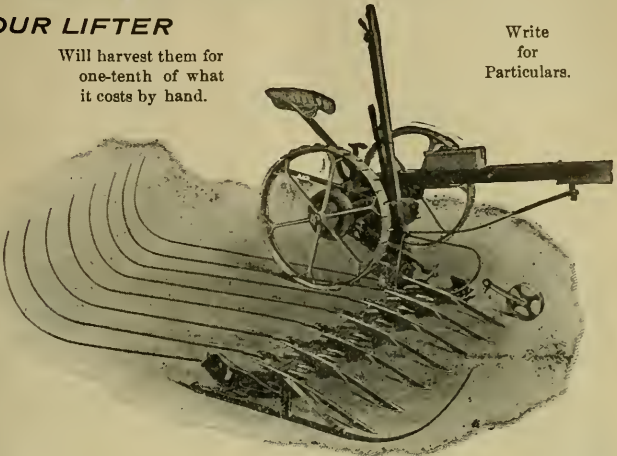
The McCormick Company showed reapers, mowers and binders in operation and monopolized the attention of the visitors. The German and Austrian firms appealed against these "underhand methods," but the police refused to interfere. The Americans secured 90 per cent. of the orders, and for a time it looked as though the Europeans would provoke a riot.—*Chicago News*.

## PEAS ARE AS GOOD AS COLD THIS YEAR.

### OUR LIFTER

Will harvest them for one-tenth of what it costs by hand.

Write for Particulars.



THE VINE AND ROOT MACHINERY COMPANY, Port Huron, Michigan.  
Manufacturers of Pea, Bean, Beet and Chicory Farm Tools, and  
"THE MEAD" Full Circle, 2-Stroke Hay Press.

## St. LAMBERT JERSEYS

We have for sale a number of YOUNG BULLS from cows with butter tests ranging from 16 to 24 lbs. per week, and yielding from 5 to 6 gallons of milk per day.

We have more high testing ST. LAMBERT COWS than can be found in any herd in the United States or Canada.

## INDIAN GAME FOWLS

We have also for sale a choice lot of INDIAN GAME CHICKENS—male and female. Also some choice WHITE WYANDOTTE COCKERELS. The Indian Game and White Wyandottes are the best general purpose fowls.

BOWMONT FARMS, SALEM, VA.

## The Chesapeake & Ohio Railway

EXTENDING FROM CINCINNATI AND LOUISVILLE, AND

THROUGH ITS CONNECTIONS

THE BIG FOUR SYSTEM, from Chicago, St. Louis, Peoria, Indianapolis, Sandusky and Cleveland;

THE OHIO CENTRAL LINES, from Toledo and Columbus;

THE CINCINNATI, HAMILTON & DAYTON, from Detroit, Toledo, Lima and Dayton—

FORMS THE MOST DIRECT And from Five to Twelve Hours the Quickest ROUTE.

TO STAUNTON, LYNCHBURG, CHARLOTTESTVILLE, RICHMOND, PETERSBURG, NORFOLK,

And Principal Virginia Points.

H. W. FULLER, Gen. Pass. Agt. C. & O. Ry., Washington, D. C.

**FILSTON FARM.**

Mr. Gardiner, of the Filston Farm writes that owing to the demand for young and mature stock in Berkshires and Jerseys, and his wish to have the stock intended for sale raised to the best advantage in point of looks, and delivered promptly, as well as to the fact that owing to the calls on his time by numerous visitors to the farm at Glen-coe, who are always welcome, he has called in his neighbor, Mr. E. M. Gillet, of Verona, who has made a reputation as a breeder of Berkshires, to take charge of the sales department of the farm.

In order to meet the call for young stock, twenty-five head of the best heifers of this and last year's calving have been set aside for sale—some very fine aged cows, and the usual stock of bull calves.

The herd of Berkshires has been augmented by purchase, as well as the retention of some of the very best young females. The herd is in splendid condition. The sows that have farrowed have averaged over eight pigs each right along, and the imported boars in service are unexcelled in their desirable qualities.

Mr. Gillet will answer all inquiries regarding the stock; he will show every courtesy to visitors, who are always welcome, and give his personal attention to the crating and shipping of stock sold.

The Filston Farm, located just north of Baltimore, is most favorable for cheap shipments, North, East and South. While its locality has been greatly in its favor, the character of the stock that has been maintained is, I believe, unequalled.

For several years the advertisements of the Mead Cycle Company have appeared in the columns of the *Southern Planter*. Every year the business of this company has grown until now it exceeds 50,000 bicycles sold through mail orders all over the world each year. The Mead Cycle Company keeps its factories running all winter storing up wheels of the finest quality, and is always ready in the spring and summer to fill orders promptly at prices which are lower than any manufacturer selling on the old plan, through local dealers, can deliver a wheel of even inferior quality. The Mead Cycle Company can ship any wheel at any price the same day the order is received. Readers of this paper can be assured of prompt and honorable treatment. When writing for catalogues and prices mention the *Southern Planter* and address Mead Cycle Company, Dept. P. 390 Chicago.

**INTERNATIONAL STOCK FOOD.**

Have you ever tried it? If not, you had better do so at once. It is the standard of thousands of the largest stock-men in the United States. In the advertisement of the International Stock Food Company, Minneapolis, Minn., and answer the three questions and get the valuable book they offer free.

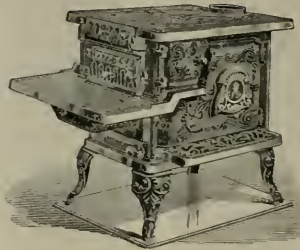
If you want a harvesting machine that is reliable—one that will work successfully in all conditions of grain—buy the McCormick.

IT'S TRUE IT'S HOT, BUT NOW IS THE TIME TO BUY A STOVE.

**Our FITZ LEE Cook Stoves**

**STILL LEAD.**

MADE IN SIX SIZES. SOLD TO YOU AT WHOLESALE PRICES.



FURNITURE OF  
all Descriptions.  
MATTINGS, RUGS,  
OIL CLOTH.

Serviceable  
CHAIRS, ROCKERS,  
TABLES, REFRIG-  
ERATORS, IRON  
BEDS.

THE PRICES ON OUR ENTIRE LINE IS THE LOWEST. WRITE FOR THEM; WILL ANSWER PROMPTLY.

**M. ROSENBLOOM & SON, The Mail Order House,**  
1536 E. Main Street, Adjoining New Main Street Depot, RICHMOND, VA.

CHARTERED 1870.

**Merchants National Bank**

OF RICHMOND, VA.

Designated Depository of the United States, City of Richmond and Commonwealth of Virginia.  
Being the Largest Depository for Banks between Baltimore and New Orleans, this Bank offers superior facilities for direct and quick collections.

Capital Stock, \$300,000.00  
Surplus and Profits, \$531,000.00

JNO. P. BRANCH, President. JNO. K. BRANCH, Vice-President. JOHN F. GLENN, Cashier.  
DIRECTORS.—John P. Branch, B. E. Munford, Chas. S. Stringfellow, Thos. B. Scott, B. W. Branch, Fred. W. Scott, Jas. H. Dooley, Jno. K. Branch, A. S. Buford, R. C. Morton, Andrew Pizzini, Jr., J. P. George, Alex. Hamilton, Sam'l. T. Morgan.

**The Southside Manufacturing Company,**  
PETERSBURG, VIRGINIA.

WE MAKE . . . .

BASKETS AND CARRIERS for Peaches, Tomatoes, Grapes, Plums, Canteloupes, Egg Plants, Mushrooms, Egg Settings, etc. Sole owners of

The NEW MOTT Patent Nesting Tomato Carrier and the SOUTHSIDE 6-Basket Nesting and Panel End Carriers

If interested send for our 1902 Catalogue and prices.

When you write to an advertiser, always say you saw the advertisement in THE SOUTHERN PLANTER.

## BILTMORE FARMS, - BILTMORE, N. C.

*Headquarters for GOLDEN LAD JERSEYS,*

*Also get of TREVARTH and GEN. MARIGOLD.* \* \* \*

**GOLDEN LAD'S SUCCESSOR**, First and sweepstakes over all at the Pan-American Exposition, the champion JERSEY BULL OF AMERICA, and out of Golden Ora, our great prize-winning cow, both born and developed on these Farms, is among our service bulls.

Biltmore Jerseys are a combination of large and persistent milking qualities with an individuality that wins in the show ring.

**SPECIALTY.** Write for descriptive circular of the best lot of young bull calves ever offered, both for breeding and individuality. They are by noted sires and out of large and tested selected dams. Many of these calves are fit to show and win in any company.



### BILTMORE POULTRY YARDS.



**SPECIALTY.** Write for descriptive circular of eggs from our prize-winning pens. Over 50 yards to select from, made up of the winners at the leading shows for the last two seasons. If you want winners you must breed from winners.

*Headquarters for the best IMPORTED ENGLISH BERKSHIRES.*

APPLY TO BILTMORE FARMS, BILTMORE, N. C.

## AINSLIE CARRIAGE CO.,

Nos. 8, 10 and 12 Tenth St., RICHMOND, VA.

Stock now complete with latest styles of vehicles. Can build to order, in a short time, any description of

**Carriages, Trucks and Delivery Wagons.**

Repairing and Repainting done as low as first-class work will permit. See our stock before you purchase. It will pay you.

**Builders of the Best Class of Carriages for Town and Country.**

Pedigrees traced and tabulated. Catalogues compiled and circulars prepared. Special attention given registration matters pertaining to thoroughbred and trotting horses

..BY..

**W. J. CARTER (Broad Rock),**

P. O. Box 929, RICHMOND, VA.

Correspondent of

RICHMOND TIMES, Richmond, Va.  
SOUTHERN PLANTER, Richmond, Va.  
SPIRIT OF THE TIMES, New York.  
KENTUCKY STOCK FARM, Lexington, Ky.

REFERENCES.—Mr. A. B. Gwathmey, Cotton Exchange, New York; Mr. W. N. Wilmer, of Wilmer & Canfield, Lawyers, 49 Wall St., New York; Col. E. M. Murchison, Banker, Wilmington, N. C.; Mr. L. Banks Holt, Proprietor Oneida Cotton Mills and Alamance Farm, Stag Hamm, N. C.; Col. B. Cameron, Fairintosh Stud Farm, Stagville, N. C.; Maj. F. P. Johnson, President National Trotting Association, Lexington, Ky.; Mr. Thos. N. Carter, President Metropolitan Bank, Richmond, Va.; Mr. Jas. Cox, Belgravia Stock Farm, Mt. Jackson, Va.; Capt. John L. Roper, Foxhall Stock Farm, Norfolk, Va.; Capt. B. J. Hancock, Ellerslie Stud Farm, Charlottesville, Va.; Sam'l Walton, Walton Farm, Falls Mills, Va.

## The *Locomobile*

**A HORSELESS CARRIAGE**

Is a special feature of my business this season.

**BUCCIES, CARRIAGES and RUNABOUTS.**  
**All Kinds Pleasure and Business Vehicles.**

It will pay you to see my stock before purchasing elsewhere. Rubber Tiring, Bike Work and all kinds of Repairing done.

ESTABLISHED 1840.

**W. C. SMITH, 314 N. 5th St., Richmond, Va.**

1902.

IN THE STUD.

1902.

## *Ed. Kearney,*

The property of Robert Tait, 78 Commercial Place, Norfolk, Va.

Chestnut horse, 16.0j hands high, weight 1,150 pounds. By Tom Ochiltree, son of Lexington and Katona; dam Medusa, by Sensation, second dam Hilda, by imp. Eclipse. (For extension of pedigree see Amer. Stud Book, Vol. 6, page 740).

ED. KEARNEY was a fine race horse, and won a number of races both in the East and in California. He is a grand specimen of the thoroughbred stallion. No horse sires finer colts from all classes of mares.

ED. KEARNEY will stand for mares during 1902, at \$10.00 the season, Cash at time of service.

Address

**ROBERT TAIT,**

Spring Garden Farm, COOLWELL P. O., AMHERST CO., VA.

**GLEN FARM.**

Editor Southern Planter :

Enclosed you will find advertisement which I want inserted in *The Southern Planter*. I have the only herd of Polled Durham cattle in the State. These cattle are all red or roan, and all registered. I have been breeding and shipping sheep and hogs for a number of years, and they have always given satisfaction.

JOHN S. FUNK.

Singer's Glen, Va., June 25, 1902.

For a long time past a record has been kept of the sheep dips used upon clips of Australian wool fetching the highest prices for the year on the London Wool Exchange and this record brings out the fact that the Cooper Sheep Dip has carried off the honors uninterruptedly for many years. In Australia where there is no scab Cooper Dip is chiefly used for improving the condition and commercial value of the clip.

**IT DOES THE WORK.**

SABILLASVILLE MD., Dec. 7, 1900.

Newton's Heave and Ditemper Cure was used on a horse that had the heaves for three years, with marvelous results. You would not believe he was the same horse.

Yours truly, WALTER SCOTT.

**GETTING THE WIDOW.**

Gettin' married is a sight easier to them that's been through it once than to others. It's surprisin' to me that she ain't been snapped up 'fore this time. She always was a likely, peart girl, an' could 'a' took her pick an' choice 'fore she married Alph. Jephson. If you ever take a notion to a widder, Mr. Pilgreen, don't sit round waitin' for her to forget her first husband. It's right nice to have such feelin's, but somebody else'll get the widder.—MATT CRIM, in the *July Lippincott's*.

**A PRAYER.**

A little girl was spending the summer at a fashionable watering-place, and one morning, as she played upon the veranda of the hotel where her mother was stopping, she heard a lengthy conversation upon the fashions of the day and the absolute necessity of stylishness in dress if one hoped to be a success in society. One lady went so far as to say that stylishness was far more important than beauty.

That night, as the child said her usual prayer, she added with great earnestness, "And, O dear Lord, do please make me stylish."—*July Lippincott's Magazine*.

# Seed House of the South.

- RED CLOVER.
- MAMMOTH CLOVER.
- CRIM-ON CLOVER.
- WHITE CLOVER.
- LUCERNE CLOVER.
- ALSYKE CLOVER.
- BOKHARA CLOVER.
- JAPAN CLOVER.
- BUR CLOVER.



- TIMOTHY.
- ORCHARD GRASS.
- RED TOP OF HERDS GRASS.
- KENTUCKY BLUE GRASS.
- RANDALL GRASS.
- TALL MEADOW OAT GRASS.
- JOHNSON GRASS.
- GERMAN MILLET.
- BUCKWHEAT.
- OATS and
- CANE SEED.

"Whatsoever One Soweth, That Shall He Reap."

We sell strictly reliable FIELD AND GARDEN SEEDS of every variety at Lowest Market rates, included in which are RAGLAND'S PEDIGREE TOBACCO SEEDS.

WE ALSO SELL

## Our Own Brands of Fertilizers

For Tobacco, Corn, Wheat, Potatoes, &c.

Pure Raw-Bone Meal, Nova Scotia and Virginia Plaster and Fertilizing Materials generally.

Parties wishing to purchase will find it to their interest to price our goods. Samples sent by mail when desired.

**Wm. A. Miller & Son,** 1016 Main Street LYNCHBURG, VA.

## Headquarters for Nursery Stock.

WHOLESALE AND RETAIL.

We make a specialty of handling dealers' orders.

ALL STOCK TRUE TO NAME.

- |           |             |               |                |
|-----------|-------------|---------------|----------------|
| Apples,   | Nectarines, | Pecans,       | Ornamental and |
| Pears,    | Cherry,     | Chestnuts,    | Shade Trees,   |
| Peach,    | Quinces,    | Walnuts,      | Evergreens,    |
| Plum,     | Almonds,    | Small Fruits, | Roses, Etc.    |
| Apricots, |             |               |                |

CALIFORNIA PRIVET, for Hedging.

WRITE FOR CATALOGUE.

..AGENTS WANTED..

**FRANKLIN DAVIS NURSERY CO.,** Baltimore, Md.

## STUMP PULLER

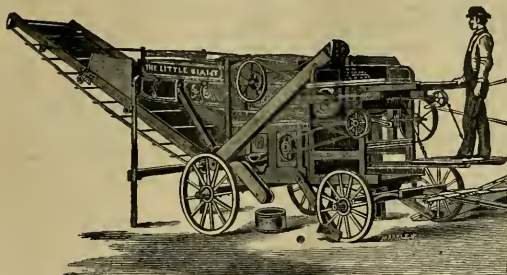


Most Powerful, Handiest and Strongest Built in the World.

We make 4 kinds in sizes to suit all needs and of any desired strength. Saves time and does the work right. The operation of pulling stumps and trees by our methods is simple and easy. Send for Free Catalogue.

CHICAGO STUMP MACHINE MFG. CO., 226 La Salle Street, Chicago, Ill.

The most popular Machines in use for Grain Threshing and Peanut Picking are the

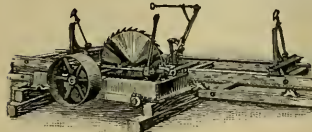


## PENNSYLVANIA and LITTLE GIANT

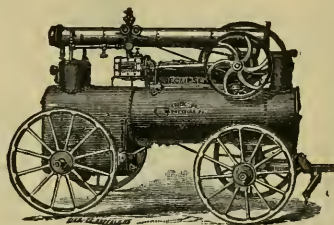
Machines, and they have splendid improvements for 1902. They are built in first class manner, and are strong and durable. We guarantee them to do the work satisfactorily. We will mail descriptive catalogue and testimonials, and quote prices on application.

**TRACTION ENGINES, PORTABLE ENGINES,  
STATIONARY ENGINES, GASOLINE ENGINES.**

**SAW MILLS, Capacity 2,000 to 25,000 ft. per day. RUBBER BELTING, LEATHER BELTING, and MILL SUPPLIES, IRON PIPE, PIPE FITTINGS, VALVES. FARMER'S \$125 Saw Mill, Cuts 2,000 ft. Lumber a day with only 4 h. p.**



**COTTON GINS, BUGGIES and TENNESSEE FARM WAGONS.**



**STRATTON & BRAGG, 20 and 22 N. Sycamore St., Petersburg, Va.**

# How is Your Wheat?

ONE CENT Invested in a postal card and addressed to THE CARDWELL MACHINE COMPANY, Richmond, Va., will bring you circulars regarding

## Cardwell's Thresher and Cleaner

They are SIMPLE, DURABLE and EASY TO WORK. Capacity, 200 to 1000 bushels of wheat per day, according to size and character of grain.

**THE CARDWELL MACHINE CO.,** Nineteenth and Cary Sts. RICHMOND, VIRGINIA.

# OUR PRICE-LIST

Of Fruit and Ornamental Trees, Small Fruit Plants, Roses, Shrubs, etc., etc., for the Fall of 1902 is now ready. The assortment we offer is one of the most complete in America, and consists only of the reliable and tested varieties. OUR PRICES are very reasonable, consistent with products of the HIGHEST QUALITY. A copy of this list, and our general catalogue, will be sent FREE for the asking.

## TURNIP AND SPINACH SEED

By the ounce, pound, or one-hundred pounds. Let us know the quantity you will require. Our prices will be interesting.

## BEE KEEPERS SUPPLIES.

Hives, Smokers, Veils, etc., etc. Our prices are low enough. Ask for special catalogue of these goods.

## PLANT-FOODS, POULTRY FOODS, INSECTICIDES, LAWN FERTILIZERS.

ANYTHING you need in Seeds, Nursery Stock, or other supplies, write us about it. OUR REFERENCES, any business house in this City.

### THE NURSERY & SEED COMPANY, Charleston, W. Va.

# WE SAVE YOU MONEY!

YOU CAN ALWAYS DEPEND ON GETTING THE CHOICEST GROCERIES FOR THE LEAST MONEY AT THIS STORE. IT'S JUST AS NATURAL FOR US TO LEAD IN VARIETY AND VALUE AS IT IS FOR OTHERS TO FOLLOW.

We get Cash for Goods and give the Best Goods that Cash can Buy. A Saving of 25 per cent. Guaranteed on all Purchases.

All Mail Orders Carefully Packed and Shipped on Same Day Received. Remittances Must Accompany all Mail Orders.

### SPECIAL QUOTATIONS!

On every \$100 worth of goods YOU SAVE \$20.00! COMPARE PRICES.

I have an overstock of the following goods which must be moved at once. Stop buying on credit. I sell you for cash, and in buying from me you buy direct from the manufacturer.

80,000 bushels Choice Feed Oats.....	\$ 52
16,000 " " " " " " Corp.....	78
10,000 " " " " " " Water Ground Meal.....	73
10,000 pounds Pork Butts.....	10
50,000 pounds Bacon Sides.....	10
40,000 pounds Pure Sides.....	12 1/2
85 Tierces Lard.....	11 1/2
300 bbls. N. C. Cut Herrings.....	10 1/2
60 " " N. C. Molasses, new crop.....	5 75
40 " " Porto Rico, something fine.....	23 00
500 boxes Full Cream Cheese.....	11 00
8,000 bags Finest Golden Rio Coffee.....	8 1/2
604 bags Finest Laguna Yra Green Coffee.....	4
10,000 lbs. Roasted Mocha and Java Coffee.....	10 1/2
1,000 bxs. Finest Laundry Soap (100 bars).....	2 25
603 barrels Water White Kerosene Oil.....	10 1/2
9,000 boxes Choice Timothy Hay.....	60
9,000 S-b. Cans Tomatoes, per dozen.....	1 20

sell it to you in 1 to 4 1/2 gallon packages at the same price as you pay for a barrel; then you can measure your goods and you know just how much you get. I make no charge for packages.	
Fine Old Gibson XXX Pure Rye Whiskey, 4 years old, 4 1/2 gallon lots.....	\$2 25
Pure Old Clemmens, Mountain Dew, in 4 1/2 gallon packages, 3 years old, per gal.....	1 65
Pure Blackberry Brandy, 4 1/2 gal. lots, &.....	60
Finest Juniper Gin, 4 1/2 gallon lots.....	1 55
Old Northampton Apple Brandy, Pure Apple Juice, per gallon.....	2 00
North Carolina Corn Whiskey, 3 years old, pure goods, 4 1/2 gallon lots.....	1 55
100,000 Fine Havana Cigars, per box of 50.....	1 50

### SUGAR.

Best American Granulated Sugar.....	4 1/2
White A Sugar, per pound.....	4 1/2
Cut Loaf.....	6
Powdered.....	6
Light Brown Sugar, 6 lbs. for.....	25

We sell entirely for CASH, send Money-Order or Registered Letter to insure safe delivery.

When you have calls for, or if you can sell Green Vegetables or Dried Fruits, I can supply your wants at cost.

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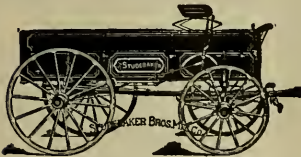
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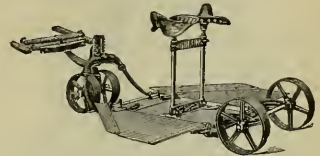
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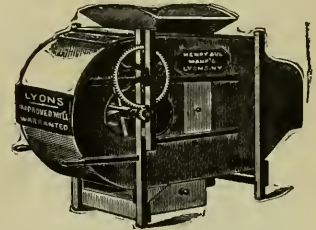
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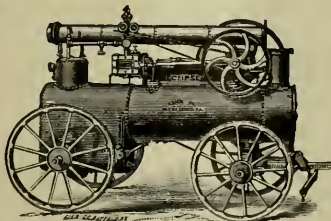
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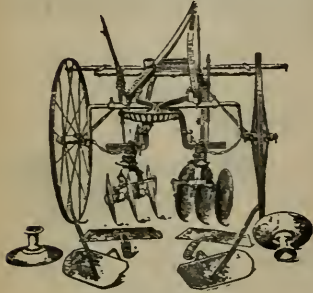
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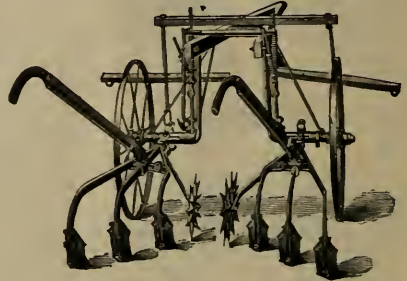
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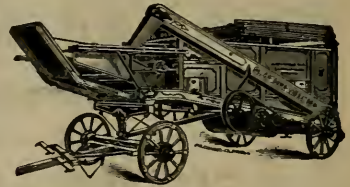
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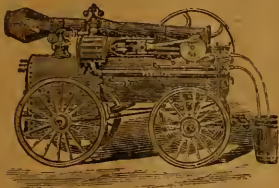
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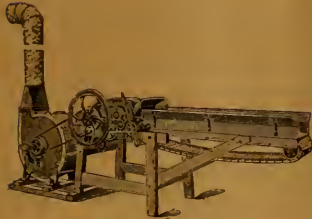
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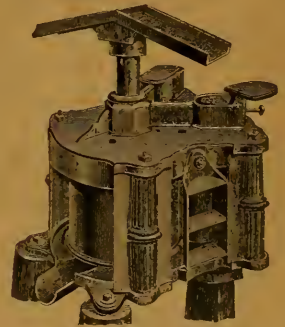
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Agriculture is the nursing mother of the Arts.--XENOPHON.

Tillage and pasturage are the two breasts of the State.--SULLY.

63d Year.

Richmond, September, 1902.

No. 9.

## Farm Management.

### WORK FOR THE MONTH.

Since the month of August came in up to this writing (21st August) nearly the whole of the Southern States have received good and much needed rains without being subjected to floods. The temperature has, however, been in most sections much below normal. In Middle Virginia, the second week in August was the coldest ever known at this season of the year. Notwithstanding this, crops have made good progress, the ground being warm when the rain fell on it, and thus in a condition to push on the growth when the needed moisture was supplied. The indications now are that we shall have an average crop of corn throughout the country grown on the largest acreage ever planted to that crop. In the Southern States, where about one-third of the total crop is grown, the yield will be shortened by the unfavorable weather we had at and just after planting time, but the acreage is larger than usual, and hence we shall have probably about the average supply. This shortening of the yield by a cold and backward spring emphasizes what we have so often said as to not being in too great a hurry to plant corn in cold wet land. Far better to give the land more cultivation and plant a little later when the soil is warmed, and when the growth can be continuous from planting to maturity. Corn once set back, especially when this set-back occurs soon after planting, rarely makes a good crop, however propitious the season may be. Cotton and tobacco, whilst promising to be average crops on the

whole, are yet very varied in different sections even of the same county. Sweet potatoes promise an excellent crop in Tidewater and on the Eastern Shore. Peanuts have improved considerably since the rains. Abundant crops of forage plants are being harvested—peas, Soy beans and sorghum having made a great growth since the rains. Corn for the silo is making a fine crop. The fruit crop, with the exception of pears and grapes, is comparatively a failure in this State and North Carolina. Water-melons and canteloupes have been and still are very plentiful. The melon crop in Tidewater Virginia has now become quite an important factor in the agricultural economy of that section, several hundred thousand melons having this year been shipped from thence to New York and other Northern markets.

The work of preparing the land for the seeding of the wheat crop should have attention. In this issue will be found an article dealing fully with this subject, to which we refer our readers.

The land for the winter oat crop should be got ready and the crop be sown in this and the following month. As a rule, the seeding of winter oats is delayed much too long, and as a consequence, much of it is killed out during the winter. One of the best farmers in the middle section of Virginia, who always made a great crop of winter oats, told us some years ago that after thirty years' experience in growing it he always

found that he made the best crop when sown in September. We have known him to make seventy five bushels to the acre year after year. He plowed deeply, prepared a fine seed bed, and covered the oats deep. In the winter he usually top dressed the crop with farm-yard manure, and rarely suffered from winter killing. There is no reason whatever (except the carelessness of farmers in seeding the crop late and putting it on the poorest land on the farm) why such poor yields of this crop should be made as are common in the South. If it is worth growing at all, and it certainly is, as both the grain and the straw are valuable as feed, it is worth while to give it an opportunity to do its best. If the land is poor, give it a dressing of acid phosphate, say, 300 or 400 lbs. to the acre. Do not sow poor, light seed. There are several new varieties now being offered which promise to be valuable. In Tennessee, the Culberson oat made seventy-three bushels to the acre, seeded October 3d. It matured earlier by fully two weeks than any other variety.

In some sections of this State winter barley is now being grown, and promises to become a popular crop. It makes good winter and spring grazing. It should be sown during September or early in October. At the Tennessee Station, seeded on September 17th, it made a yield of thirty bushels to the acre, and it has made on good land in that State seventy one bushels to the acre.

The work of seeding grass should be pushed on as fast as possible. In our August issue we wrote very fully on this subject, and to that issue we refer our readers. In connection with this subject of hay-growing in the South we note from the latest returns of the Department of Agriculture that the Southern States make an average yield of hay greater than many of the Northern and Western States, and that, on land not selling for one half the average price of the land in those States, thus effectually disposing of the objection that we cannot grow hay in the South.

Continue the work of seeding Crimson clover and Sand vetch, as advised in our August issue. Seed with a mixture of wheat or oats, or both. This will give winter and spring grazing an early forage crop for feeding green, or good hay, and if not wanted for any of these purposes will be worth all it costs to produce, to turn down to supply humus and plant-food for the corn crop next year. In this issue will be found an article dealing with the subject of humus and its importance in improving the lands of the South.

Give attention to the harvesting of the forage crops

as they mature. Do not allow the cow-peas to stand until all the leaves and most of the peas are on the ground. Cut when the first pods are turning yellow and cure, as advised in our last issue, or try the method advised in this issue by Mr. Blacknall. Sorghum makes the nicest feed when cut when the seed is just forming or a little before this time. If allowed to mature the seed much of the nutriment is removed from the stalk and leaves and stored in the seed. Millet should be cut when in bloom and before seed forms. The seed is injurious to most horses and to many cattle. If Kafir corn or sorghum is allowed to stand until the seed matures it should be threshed out before the fodder is fed to stock and be ground into meal for feed. If fed on the stalk very much of it will be wasted by passing through the animals undigested.

Rape and turnips may still be sown for pasturage, though it is getting late for them to make much growth unless the fall is a fine one. If the winter is not a severe one rape will stand through it and make good pasturage again in the spring.

When filling the silo do not hurry the work. Cut half a day and fill half a day. In this way the silo will hold much more, and better, sweeter silage will be made. Cover the silage with coarse marsh grass or with cut straw and chaff to the depth of a foot or eighteen inches. Water this well and pack solid and it will soon mat together with mold and form a perfect cover for preserving the silage.

Do not waste time pulling fodder. Cut the corn down at the root as soon as the grain is glazed and dented and set up in shocks. In this way both fodder and grain will be saved and both make good feed. No farmer can afford to waste corn-stalks. Properly used and saved they contain a very large proportion of the feeding value of the crops.

Weeds will grow apace on the stubble fields now that there is so much moisture in the ground. Have them cut down with the mower before they seed and either leave as a mulch or dry and cure for feed. There is very considerable nutriment in many weeds, and they make, when nicely cured, a great help in providing quantity if not quality of feed for young stock in winter. Especially are they relished by sheep in the winter, and they do them good.

As opportunity offers, set the plows to work breaking land intended to be cropped next year. There is no fear of plowing too deep at this time of the year. Turn up some of the subsoil on to the top and let it be weathered; it will by next spring be ready to give

up some of its unexhausted plant food for the benefit of the crops. When the subsoil is a good one or a hard pan, break it with a subsoil plow, and thus add to the available feeding ground of the crops, and form a reservoir for the storage of water, and thus prevent washing and gullyng of the land. When too late to sow Crimson clover, vetches or wheat or oats on these plowed lands sow rye at the rate of a bushel to the acre. This will serve as a crop to conserve fertility and prevent the leaching of plant-food from the soil. It will also add humus to the land when turned under in the spring.

Have all barns, stables, sheds and houses thoroughly overhauled and put into a good state of repair before the cold nights come on. It is very little good taking up cattle out of pastures and housing them in leaking, drafty buildings. They are better out of doors than in such places. A few hours spent with some lumber and nails would make many a building comfortable which now is almost worse than useless.

Have all manure cleaned out of the stables, pens and yards, and put upon the poor places in the fields. Then use the lime wash bucket and brush freely in side and outside the buildings (unless the outside be painted). Lime is a great destroyer of germs of disease and sweetener of the atmosphere. A coat of paint applied to the outside of the house and barn would add much to its appearance and preserve the lumber. A few hundred dollars spent in paint to be applied to the farm houses and buildings in the South would add hundreds of thousands of dollars to the selling value of Southern farms.

#### WHEAT SEEDING.

In our last issue we remarked that whilst it was too early to begin sowing wheat or winter oats in August it was none too early to begin the work of preparing the land for these crops. This work of preparation we hope has been in progress on many farms during August. The land where not too wet has been in fine condition for plowing—the showery weather we had having softened the surface whilst the abnormal coolness of the air has made work pleasant and comparatively easy for the teams. The importance of well fitting the land for seeding wheat is not half appreciated as it ought to be. Exhaustive experiments conducted both in this country and in England have conclusively shown that perfect preparation of the land before seeding is of much greater influence on the yield than the quantity of fertilizer applied. When once the seed is sown in the case of wheat and oats the work of cultivation practically is at an end. In

the production of corn, cotton or tobacco, and of potatoes and other crops the work of cultivation is carried on simultaneously with the growth of the crop, and often continues until the crop is almost grown. If this be necessary to secure a good yield in the case of these crops seeded in April and May, and we know it to be so, then how important is it that in the case of wheat and oats seeded in September, October and November, and so seeded as that after cultivation is practically impossible except to the extent of harrowing the field over once in spring, and even this is often neglected, that the land should be so prepared before seeding as that the crop may be able to secure the necessary food for its perfection. This it cannot possibly do unless the land be deeply broken and the surface soil to the depth of four or five inches be so fined as to permit of the rootlets of the plant penetrating it easily, and the action of the air and the moisture of the atmosphere being admitted to render soluble the plant food contained in each grain of soil. Professor Hunnicutt, in discussing this question of preparation, says: "We once selected one acre in a twenty-acre field, an average spot, and plowed and harrowed this acre fourteen times right along before we quit. We then planted and cultivated this acre just as we did the rest of the field, running the rows right along through it. The yield was much more than double any other acre. This has continued to be true for five years in all kinds of crops. All through the growing season this acre can be distinguished as far as you can see the field. All crops grow off quicker and yield heavier. 'Culture is manure' is true." In an experiment made in South Dakota three plats on which wheat had been grown continuously for five years received different cultural treatment. The first was plowed three to four inches deep and given ordinary cultivation; the second was plowed six to seven inches deep, but otherwise treated as the first; the third was given better cultivation, and was spring plowed 6 to 7 inches deep. The yields for the three plats were 4 bushels, 7 bushels, and 13 bushels per acre respectively. In previous experiments harrowing after fall plowing, rolling, and harrowing after spring plowing, and harrowing again when the wheat was six inches high increased the yield  $4\frac{1}{2}$  bushels per acre as compared with only such cultivation as was necessary to put in the crop. The result of these and other similar experiments go to show that the question with the farmer ought not to be is this land fit to be seeded, but rather can I not make it much fitter by giving one or two extra rollings and harrowings. Whilst this costs something in labor, labor even at present prices is usually cheaper than fertilizer and much more certain in its results. That it is important to avail ourselves of everything that can increase the yield of

wheat in the Southern States if the crop is to be produced profitably is evidenced by the average yields quoted in our last issue, viz. : Virginia, 11 bushels to the acre; North Carolina, 8 bushels to the acre, and for South Carolina 8 bushels to the acre. For this year the estimates just published give for Virginia, North and South Carolina slightly over five bushels to the acre, for Georgia and Tennessee slightly over six bushels to the acre, for West Virginia seven bushels to the acre, and for Kentucky nine bushels to the acre. Maryland is estimated at fourteen bushels to the acre. Yields such as these cannot be profitable. That they can be easily improved upon is conclusively shown by the report on the crop of this year of Mr. Bellwood, grown in Virginia, published in this issue, where seventy five acres of land made an average of twenty nine bushels to the acre, and some part of the area made over forty bushels. This crop was made without the use of any fertilizer, and on land that only a few years ago was regarded as poor and worn out, and which has been brought up to its present state of fertility solely by the use of leguminous crops, deep and perfect cultivation, and a sound system of rotation of crops. Having said this much in enforcement of the importance of good and early preparation of the land, it may be well for us now to point out what are the essentials for securing a profitable crop of wheat. This we would state in this order: 1st, land of good fertility; 2d, land broken deeply and early enough to allow it to become well consolidated before being seeded; 3d, land with the surface soil to the depth of three or four inches as finely broken as can be done; 4th, land seeded as early as can safely be done to avoid injury from the fly; 5th, the seed sown to be of a variety suited to the climatic conditions of the section and well cleaned and freed from small and light grains. That land of good fertility is needed is evidenced by the fact that a crop of thirty bushels of wheat to the acre with an average production of straw takes from the soil 45 pounds of nitrogen, 22½ pounds of phosphoric acid, 25 pounds of potash, and 10½ pounds of lime. This amount of plant food must be in an available condition, and to secure this it is necessary that either the soil must naturally be fertile or it must have these constituents added in due proportion. The availability of the plant food is largely determined by the fineness of the preparation of the seed-bed. Whilst nitrogen is the element called for in largest proportion, yet numerous experiments have gone to prove that phosphoric acid is the constituent most largely controlling the yield of wheat. At the Virginia Experiment Station, as the result of a series of tests, Professor Nourse reports "that the greatest yields of both grain and straw have been produced on plots fertilized with all three elements—

nitrogen, phosphoric acid and potash—but that the most effective of these has been phosphoric acid. From a financial standpoint, the results obtained show that nitrogen and potash, used alone or combined, have on the Station soils resulted in loss. Phosphoric acid alone has proven more profitable than applications of potash, phosphoric acid and nitrogen combined, though the yield per acre has been less. The greatest profit resulted from the combined use of phosphoric acid and potash. In experiments conducted at the Tennessee Experiment Station with winter wheat after bare fallow it was shown that the cost of the increase per bushel was 19 cents with 250 pounds of acid phosphate per acre in two applications, 26 cents with 10 tons of barnyard manure applied in 1900 and 5 tons in 1901, and 32 cents with an application of 50 bushels of lime in 1900, while accompanied by a crop of cow-peas plowed under 50 bushels of lime applied in 1900 reduced the cost of increased yield per bushel to 16 cents, 250 pounds of basic slag to 17 cents, and the same amount of Tennessee and South Carolina acid phosphates to 16 and 20 cents. The phosphates gave good results in all cases. To supply the quantity of plant food needed by a 30 bushel crop of wheat would call for the application of 300 pounds of nitrate of soda or 600 pounds of cotton seed meal, 200 pounds of 12 per cent. acid phosphate, and 50 pounds of muriate of potash to the acre. As crops are seldom capable of utilizing more than 50 to 75 per cent. of the plant food supplied by a fertilizer to secure the amount of food which the crop calls for, either much more than these quantities must be applied or there must be a reserve of food in the soil which good cultivation must render available. The nitrogen called for can be well supplied by a crop of clover or cow-peas plowed down, but to be effective this should be done at least six weeks or two months before the land is seeded, or otherwise a sufficiently consolidated seed-bed cannot be obtained and the value of the clover or cow-peas is largely neutralized by the spongy seed-bed. If this cannot be done then the crop of clover or cow-peas should be made into hay and the stubble only be turned down. This stubble and the roots of the plants will largely supply the nitrogen called for. As showing the value of cow-peas as a preparation for wheat where wheat was grown continuously on the same ground for three years, each crop preceded by a crop of cow-peas, the crop gave an increased yield of 46 per cent. as compared with breaking the stubble and not sowing peas. The phosphoric acid required can be supplied either by acid phosphate or bone meal, or by a combination of the two. Wherever the supply of nitrogen is deficient bone meal should be used, as it provides some 4 or 5 per cent. of nitrogen in addition to the phosphoric acid. Whilst potash is shown to be quite

largely called for, yet from the fact that the best wheat lands usually contain a large proportion of clay which is naturally rich in potash, though often in an unavailable form, this element can usually be secured by a dressing of lime, say of 50 bushels to the acre, and this has the additional advantage of almost invariably securing a good stand of clover in the wheat. When applying lime and phosphate to the land previous to seeding a crop the lime should be applied as soon as the land is plowed and be harrowed in and become mixed with the soil for a week or two before the phosphate is applied, as it has a tendency, if brought into immediate contact with the phosphate, to revert it and thus render it less available. Where land is very deficient in nitrogen, as in land lacking in humus or upon which neither cow-peas nor clover have been grown, it is better only to supply sufficient in the fertilizer applied at seeding time to give the wheat a start and then to give a top dressing of nitrate of soda in the spring, say 100 pounds to the acre, when the plant has started growth.

As to the time of seeding. We would urge earlier seeding than is often practiced, yet at the same time caution in not seeding so early as to incur the risk of fly in the crop. Usually this may be secured by seeding after the first frost. It is of importance to secure a good growth of the plant before the hard frosts set in, as this largely prevents heaving of the crop and winter killing. Wherever the fly has been prevalent a catch crop of wheat, say a strip across the field, should be sown in September. The flies will attack this and can then be plowed down and destroyed. As to the variety to be sown, experiments have clearly demonstrated that there is practically no difference in yield between the bearded and smooth varieties. Amongst the best yielding varieties in recent experiments in the South are Fulcaster, Poole, Mediterranean, Currell's Prolific and Harvest King. These have all given yields of from 30 to 37 bushels to the acre.

#### HUMUS THE GREAT RENOVATOR OF THE SOIL.

The greatest need of all the land of the South is humus. Humus is decayed vegetable matter, and is the prime agent in promoting fertility in the soil. In its absence lands rich in all the elements of plant food fail to produce good crops. Analysis may show the soil to have more phosphoric acid and potash in it than could be exhausted from it by a long series of crops, and yet it will fail to produce, nor can it be induced to do so by the application of fertilizers of any kind unless and until filled with humus. The soil without humus is practically a dead soil, and a dead soil is an unproductive one. Leave a piece of

land which has been rendered unproductive by constant cropping without the return of any plant food uncared for and unworked, and nature will set about its renovation by the restoration of humus. Weeds and the lowest forms of plant life will commence to grow, young forest trees will get a start, and the dead leaves and vegetable matter will each year be added to the soil. These, in process of time, will restore the fertility of the land, but the process is a slow one. But it must be imitated by man if the soil is ever again to become a profitable one. The humus in all our Southern lands has been exhausted mainly by constant cropping in clean hoed crops and by the continuous growing of one or two crops.

In experiments conducted in Minnesota, it was found that continuous wheat growing for eight years caused an annual loss of over 2,000 lbs. per acre of humus due to the fermentation and decomposition of organic matter in the soil. This loss of humus changed the physical properties of the soil, causing it to be less retentive of moisture, lighter in color, and heavier in weight per cubic foot. During times of drought, the soil from the continuous wheat plot contained less water than the soil from the plot which produced wheat in rotation with clover. Humus conserves the moisture of the soil, while the rotation of the crops, the use of farm manures and the growing of clover and other leguminous crops conserves the humus of the soil. One of the great objects served by humus is that of forming a home for the millions of microbic forms of life upon which it is now known depends largely the conversion of the soil elements into available plant food. In the absence of humus these forms cannot exist and multiply, and without them plants cannot get their food. Another object served is the formation of humic acid, which is a powerful solvent of the mineral plant food, either naturally existing in the soil or applied to it in the form of fertilizer. A third object is the keeping open of the soil so that the oxygen of the air can penetrate it and carry its life-giving properties to the plant roots. This humus being, then, of such importance in restoring and maintaining the fertility of land, it is of the highest moment to the farmer that he shall know how to secure it. It may be done in several ways. If his land is near a city, he may buy manure from the city stables. This is the course largely adopted by truckers who need very large supplies of humus in their soils to enable them to produce quickly the vegetable crops which they supply to the cities. This method of supplying humus making matter to the soil is too costly and incapable of adoption by the general farmer. Where a large head of live stock is kept on the farm, and all the manure is carefully saved, large supplies of humus-making matter may be added to the land

each year; and this is one of the great advantages secured in keeping a large head of live stock even when the price of beef and mutton is low in the markets. There are thousands of farmers in England and Scotland who, in years of even average prices for meat, make but little profit on their live stock beyond that secured in the manure made by the stock. But this manure keeps their lands rich and enables them to make heavy crops of wheat, barley and oats without any purchased fertilizer, and therein is profit. The average yield of wheat in England is over thirty bushels to the acre, as against about fourteen in this country. Such a yield would not be possible unless the land was filled with humus. The South needs much to follow in this line, for now, and we believe for several years to come, there is not only profit to be had in the manure made, but in the meat produced. A third method of adding humus to the soil is by the growth of leguminous and forage crops. This method can and should be adopted by every farmer. It is the quickest way in which the work can be done, as here we can grow two, at least, of these crops in every year. By keeping the land covered with these crops, both in winter and summer, we promote the nitrification of the soil, prevent leaching of available plant food, and at the same time, when the crop or stubble is plowed down, add rapidly to the humus content of the soil. During the spring and summer months, we have been urging the growth of these leguminous and forage crops as food for stock. We now urge the growth of Crimson clover, Sand vetch, Winter vetch, and mixed with these or separately, wheat, oats and rye as food for the soil and as savers of the fertility in the soil which will otherwise be leached away by the winter and spring rains. At the cost of about a dollar, as much Crimson clover, vetch, and wheat, oat or rye seed can be had as will seed an acre, and the labor cost need not amount to as much more. For this two dollars humus making matter can be had worth to the permanent fertility of the land many times the cost. Let this work be attended to during this and the two following months. It will be time and money well spent.

#### WHEAT CROP AT DREWRY'S BLUFF, VA.

In our July issue we published an article on the value of leguminous crops, good preparation, and a sound system of rotation as factors in the successful production of wheat. The crop of wheat which led to the writing of that article was one of 75 acres grown by Mr. Bellwood on his farm at Drewry's Bluff, Va. We then estimated the crop at an average of 25 bushels to the acre. Some part of it we thought would go much beyond that yield and a small part less. Re-

cently the crop has been threshed out and has given an average yield of a little over 29 bushels to the acre. One part of the crop yielded 40 bushels to the acre, and a small part only 24 bushels. The point about this crop of most interest is that on no part of the land has any fertilizer been applied for many years—in fact, never since Mr. Bellwood owned the place. The land has been brought up to its present state of fertility by the adoption of a system of rotation under which at least one and often two leguminous crops have been produced between each grain crop. This, with deep plowing, fine preparation of the land, and early seeding of the crop has brought about the result stated.

#### CURING PEA-VINE HAY.

*Editor Southern Planter:*

The cow-pea is worth as much as the cotton plant to the country, perhaps more, for it thrives much farther north and thrives in vast regions in which cotton will not grow at all. The cow-pea has a three fold value. Greatest of all is that it increases the fertility of every acre on which it is grown and increases it faster and more economically than any other crop as easily, surely and widely grown. Then the pea itself is of a high value as stock food, nor do men with sound appetites despise it. Third, as a forage the pea vine hay is beyond comparison the best food that we have ever used. Shredded as we shred it its actual value to us is fully twice that of average timothy hay. Of course a chemical analysis does not show that difference, though I believe it shows a considerable difference, in favor of pea vine hay. In estimating its value I consider the great relish of all the animals for it, their superior condition and working capacity, and the lessened ration of grain that will keep them up while fed on it.

The value of pea vine hay as a forage depends very largely upon its proper curing; probably more so than any other forage whatever. The curing of it is the simplest, easiest thing in the world. I don't know how I came to adopt it, unless it was owing to my belief that the best things are the simplest things, the best ways the simplest ways. Nevertheless, this mode of curing is of incalculable value to us. For it not only cures the hay perfectly, but there is no worry, no element of uncertainty as in all other modes.

We cut the pea vines with a mower drawn by two horses. One machine well handled will cut nearly ten acres a day. A cutting blade could, of course, be used for a small acreage. Right behind our mower follows a force putting up stack poles. Any ten foot pole will answer as it has to stand only a short while. The pole set we nail a strip of wood—readily riven from

pine or any wood that splits easily—about four feet long, placing it about one foot above the ground, and immediately above another similar strip nailed cross wise the first. These strips serve to keep the bottom of the stack of vines from resting on the ground and rotting in wet seasons. Brush will answer as well or even better though it is not practicable where a great many stack poles are to be protected. We put up about 2000 stacks every fall. We have cured vines without any rotting at all when no protection at all was used at the bottom of the stack.

Well, the stack poles planted, we follow right behind the mower and make stacks of the vines as high as the poles and about four feet in diameter, sloping and smoothing the stacks at the top so as to shed water.

No more attention or thought need be given the stacks until the vines are sufficiently cured to be threshed and shredded. And a beautiful and most excellent lot of forage you will have, too. All cured green and sweet. It tastes sweet—almost like sugar cane. The shredding should be done as soon after the vines are cured as practicable, as the longer the stacks stand the deeper the weather affects the vines. Besides, bad weather is apt to come later in the fall and hinder the shredding.

We have found the mode to work perfectly even in seasons like 1901—the wettest ever known here. My neighbors, who let their vines lay to cure or even to wilt, had them badly damaged. We went right ahead reaping and stacking every hour that the standing vines were not actually wet with rain and lost not an armful of forage.

Having thus to our complete satisfaction settled the vexatious matter of curing the hay, we plant one hundred acres of peas annually. The result is that we have an abundance of excellent forage to use and much to sell. Our work animals are the wonder and admiration of the neighborhood, though their work is the heaviest in the country, our two hundred acres of strawberries requiring at least eight plowings from May to September to keep them perfectly clean. I have calculated that one horse in giving these eight plowings would have to travel nearly 5,000 miles.

The stubble fields from which the vines are cut are plowed under as soon as practicable and in October or November plowed again and prepared for strawberries. When the strawberries come off the field is again drilled to peas. By this rotation our land, the poorest in the country, it was said when we started, has become about the best. The peas fit the soil for any crop, but they seem just the thing to put it in perfect tilth for strawberries which revel and flourish like the green bay tree. And thus the pea has become the salvation of our land and of ourselves.

O. W. BLACKNALL.

Kittrell, N. C.

## ARE OUR FARMS BECOMING IMPOVERISHED?

*Editor Southern Planter:*

The idea is prevalent with many persons, and especially with those who write for the agricultural press, that the ground is becoming impoverished, the soil getting less fertile, and the farms producing less and less. We know that some of the fertility at the surface is being carried off in farm crops, and that some of the manure spread on the fields is carried down with the rain water below the reach of the deepest rooted plants, or the best turning plow. We behold the creeks and rivers at flood time loaded with rich sediment swept from the hillsides and surface of the cultivated fields, and bearing it down to the ocean, where it is destined to remain until in some future age of the world it is elevated by subterranean heat from beneath the waves, to become the prairies of a new continent.

Of the immense amount of fertility carried down by the rivers forming vast deltas at their mouths, and the never ceasing flow of sewage from the great cities, only a small proportion is ever returned to the farms in the shape of fish, oysters, clams, and sea-weeds.

Of the vast quantity of food for man and beast shipped from the farms to the cities, only a fraction is ever returned to restore the fertility it removed, and this fraction seldom reaches the farms from which the food came.

From this point of view, the whole tillable earth, sooner or later, is sure to become a barren, and the period of universal starvation for man and beast will not fail to arrive.

Professor Julius Hensel, of Germany, says: "The yield of the ground is steadily decreasing." Dr. Galen Wilson says: "The farms in New York, and probably those in most of the old settled States, are depreciating in available fertility." They cite us to the abandoned farms in New England, and the impoverished fields of the South, as the omen of the approaching day of wrath, the beginning of the end.

These people seem to forget, or do not properly consider, that the creative agencies which first formed the soils are still as active as ever; that the work of soil refinement is still going on as vigorously as at the beginning; that the rocks are crumbling to atoms, and the atoms rotting down to fine, soluble, fertile earths. The Report of the Commissioner of Patents for 1861 says: "The constant penetration of minerals and rocks by water, with alternate freezing and thawing, breaks up and disintegrates them, setting free their potash, lime, phosphoric and silicic acids, &c., for plants. Chemical analysis informs us that the soil contains immense quantities of nitrogenous organic matter, in which the nitrogen is not in a state assim-

lable by plants. The constant variations of moisture to which this is subjected under the varying influences of temperature serve to break up these organic compounds, to set free carbonic acid and ammonia and nitric acid from them for the roots of the growing plants."

It was the assistance of superior tillage which Jethro Tull and the Rev. Mr. Smith, of England, gave to these natural agencies to dissolve the organic compounds, that enabled them to farm so many years without the use of fertilizers of any kind, and thereby claim that tillage is manure.

The earth receives back and absorbs the fertilizing gases which escape in the process of fermentation and decay. The nitrogen which ascends from the steaming dunghill is not lost from the world, although it may be lost from that particular farm. It descends again with the rain and snow, and no doubt is some times absorbed by the earth when carried over the fields by the wind.

Dry earth renders inodorous the stench from the privy vault, and in the economy of nature the earth purifies the air, and in purifying it obtains some of the materials wanted for the formation of plants. Clover and other leguminous plants obtain nitrogen from the atmosphere in unlimited quantities, and nitrogen is one of the most important and indispensable ingredients of a fertile soil.

It is frequently asserted that the yield of all crops is far below the average of years ago. This is not true in regard to the farm on which I live, which has been cultivated a hundred years, and I think produces as good crops as ever it did. The farms on the opposite side of the river from mine have been cultivated still longer, and so far as I can see produce as abundant crops as ever when the cultivation is good.

The yield of farm crops varies, as everybody knows, in different years according to the favorableness or unfavorableness of the seasons. The average yields of wheat per acre in the United States in the year 1866, according to the Report of the Commissioner of Agriculture, was 9.9 bushels, and for the year 1898 15.3 bushels.

According to the census of 1880, the average yield of wheat per acre in the United States was 13 bushels, and by the census of 1890, 14 bushels.

The Secretary of Agriculture, in his Report for 1892, says: "The yield on *old* land is increasing, and on new land decreasing. New England in the few fields cultivated obtains more per acre than the richest soils of the West." He explains the falling off in the yield of western lands thus: "The yield declines in the newest and richest soils, not because of soil exhaustion, but because of its fatness in stimulating weeds."

If the soil was wearing out, and the land becoming impoverished, as Dr. Hensel alleges, then the impoverishment would be most apparent in Europe, which has been under cultivation for two thousand years. The average yield of wheat per acre for the last five years preceding 1900 was in Hungary 17.4 bushels; France, 19.5 bushels; Germany, 26.1 bushels, and in Great Britain 32.2 bushels.

Fertility will continue to escape into the sea, as it has done ever since the rivers began to run, and cities were built on their banks. Fertility will continue to sink into the earth below the reach of the roots of plants, but with good farming the natural recuperation will go on, good crops will continue to be raised, and the fields grow richer instead of poorer.

J. W. INGHAM.

### COMPLETE AND INCOMPLETE FERTILIZERS.

*Editor Southern Planter:*

A complete fertilizer is one which contains the three essential plant food ingredients—nitrogen, phosphoric acid and potash. Correspondingly, every fertilizer which is lacking in any one of these ingredients, is of necessity an incomplete fertilizer. A complete fertilizer is made by mixing together certain raw materials which contain phosphoric acid, nitrogen and potash. The most common of the raw materials used as sources of plant food are nitrate of soda, sulphate of ammonia, tankage, fish scrap, dried blood and cottonseed meal as sources of nitrogen. The phosphoric acid is obtained mostly from acid phosphate, dissolved bone or bone meal. For potash we have to look to Germany, from which country are exported great quantities of potash salts, these salts most commonly appearing on the market in the form of muriate of potash, sulphate of potash, sulphate of potash-magnesia, and kainit.

Some farmers buy their fertilizers already compounded, while others purchase the materials separately and mix them at home. In either case it is equally essential that the fertilizer applied should be properly balanced; most of the bad results obtained are due either to an inequality in the composition of the fertilizers, or else to an irjudicious application of the manure. No farmer can tell exactly what fertilizer will give the best results upon his particular soil unless he has made some experiments and observations on his own account. It is true that experimenting requires care and attention, but nevertheless, after the farmer has once ascertained what proportion of plant food ingredients will produce the most profitable returns, the increased yields will more than compensate him for the time and trouble involved.

No special rules can be laid down for applying the

fertilizers, though it is a generally recognized fact that manures for fruits and vegetables should contain a liberal percentage of potash. Potash exercises a marked influence on both the quantity and quality of the produce; this ingredient, however, should be well backed up with phosphoric acid in order to produce the best results. As for the nitrogen, much study should be given to the amount of this ingredient to be used, for if an excess is applied it is liable to produce a rank growth of foliage at the expense of the fruit or grain, whichever the case may be.

It often happens that the physical condition of the soil is such that the fertilizers will not produce paying results, and in some cases an application of lime at the rate of 2,000 pounds per acre will prove quite beneficial.

It will pay the farmer to keep his soil well supplied with organic matter through the cultivation of one or the other of the leguminous crops, clover or peas, for every well informed farmer now-a days knows that as these crops possess the property of absorbing nitrogen from the air, the soil on which they are grown needs only to be fertilized with potash and phosphate, thus saving the expense of applying nitrogen, the most costly ingredient of all.

GEO. K. WILSON.

[It will not pay any farmer to use commercial fertilizers unless his soil is well supplied with humus from decayed vegetable matter. This and not fertilizers is what nearly all the land of the South most needs. The leguminous crops most quickly supply this need, but vegetable matter of any kind can be utilized for the purpose. No straw, grass or weeds should be burnt, but be all turned under.—ED.]

THE COST OF WHEAT PRODUCTION IN THE SOUTH.

*Editor Southern Planter :*

For some time I have been a subscriber to your valuable journal. I have watched and read all articles written on "Preparing the Seed-Bed for Wheat," "Harvesting the Wheat," &c., but have never seen anything in regard to the cost of producing the same, except in your July issue, "Cost of Growing Wheat in Kansas." That is too far from home for us to feel that it is the cost of our grain.

For several years I have kept an account with my wheat crop, charging up each night the actual amount of labor for the day, with twenty-five cents added for board, and each horse twenty cents a day for feed.

The following statement is for the year 1899-1900, when corn was worth \$1.50 per barrel; hay, \$10 per ton; bran, \$20 per ton; labor, \$10 and \$12 per month, or 50c. per day, both with board. These figures are not intended for the farmer who owns his farm and operates it himself, but for the man who rents and gives as rent one half of the crop, the landlord furnishing one half seed wheat and one half fertilizer. I will not go into full details, but simply give the totals. I take the liberty of sending this with the

hope that it will interest some one enough to make a reply, and thereby help me and some other young farmers.

I would ask each farmer, Do you know what it costs you to raise a bushel of wheat on your farm? If you do not, just begin this year, and see for your own satisfaction.

*Cost of Production, 1899-1900—126 acres.*

Stubble fallow.....	33	acres
Corn ground.....	47	"
Wire grass pasture.....	46	"
	126	"

Plowing, dragging, raking and carting off wire grass, scooping water leads and drilling wheat .....	\$ 91 75
Feed for stock .....	53 20
Fertilizer and freight (one-half).....	142 00
Seed wheat (one-half).....	91 50
Freight and drayage, seed wheat, (one-half) .....	4 25
	<hr/> \$382 70

*Harvesting :*

Extra labor, at \$1.00.....	14 00
Regular labor.....	7 00
Feed for stock .....	5 60
Twine .....	22 00
	<hr/> \$48 60

*Threshing :*

2,261 bushels of wheat, at 4c.....	\$ 90 52
Extra labor.....	22 00
Regular labor.....	5 00
Feed for home stock.....	2 80
Mending bags.....	46
Board for labor.....	9 80
Feed for extra stock.....	3 20
Three tons of coal.....	8 00
	<hr/> \$141 78

*Summary :*

Preparing ground, seeding fertilizer, seed wheat, &c.....	\$ 382 70
Harvesting .....	48 70
Threshing.....	141 78
Freight and commission on 1020.75 bushels wheat shipped (one half).....	47 98
Freight and commission on 75 bus. shipped.....	3 33

Total cost.....	\$624 39
Cost per acre.....	4 96
Total quantity of wheat grown, 2,362 bushels (measured by weight).	
Tenant's share of wheat, 1,181 bushels.	
Cost per bushel to market.....	53
Sale of 1096 bushels.....	806 42
Seed, 85 " .....	62 41

1181 "	
Total returns.....	\$868 83
Total cost.....	624 39

Net profit 126 acres.....	\$244 44
Net profit 1 acre.....	1 94
Net profit 1 bushel.....	20

*Crop of 1900 and 1901—92 acres :*

Total cost .....	\$426 46
Cost per acre.....	4 64
Cost per bushel to market.....	56
Net profit 1 bushel.....	11

*Crop of 1901 and 1902—60 acres :*

Total cost .....	\$343 46
Cost per acre.....	5 72
(Extra ditching and grubbing, more preparing of land on account of wire grass).	
Cost per bushel to market.....	66
Net profit 1 bushel.....	12

*Crop of 1899 and 1900—Fertilizer used, 272 lbs. per acre ; seed wheat, 1½ bushels per acre.*

*Crop of 1900 and 1901—Fertilizer used, 300 lbs. per acre ; seed wheat, 1½ bushels per acre.*

*Crop of 1901 and 1902—Fertilizer used, 320 lbs. per acre ; seed wheat, 1½ bushels per acre.*

*Composition of Fertilizer used—*

200 pounds	muriate potash.
100 “	“ magnesia.
400 “	tankage.
1300 “	S. C. Rock.

2000

I send you this statement, and should like to get the ideas of some experienced farmers as to why they sow wheat when they know their land will not produce an average of more than 20 bushels per acre, and along with it sow grass to be killed to a great extent when they cut wheat by the hot sun.

*Queen Anne Co., Md.*

A SUBSCRIBER.

In past years we have published similar statements to the above, showing the cost of producing wheat in the South. They, like this one, have gone to prove conclusively that producing only 20 or 25 bushels to the acre cannot result in a living profit when either rent or interest on the value of the land is taken into account. In the case of our correspondent the owner of the land was the party best paid. He got a good rent for his land. The lesson taught by the above statement is the one we have been endeavoring to enforce for years. Grow wheat on land specially adapted for its production. Prepare the land better. There is more in the preparation of the land before seeding than in the fertilizer used. Adopt and follow a system of rotation that will bring at least one leguminous crop in between each wheat crop, and better still, two, and thus grow the nitrogen needed, rather than have to buy it, and thus reduce the cost of fertilizer to the phosphoric acid required. We doubt much the need of potash for the wheat crop on land specially adapted to wheat. This should be land with a good percentage of clay in its composition, and clay is almost always rich enough in potash if it is only rendered available by the use of lime every few years, say once in five years, fifty bushels to the acre. This also will ensure clover, which will give the nitrogen needed by the wheat.—ED.

## HOW TO FARM CLAY SOILS.

## An Old English Authority on Clays.

*Editor Southern Planter :*

I have never had much experience in farming clay, because I have only a small patch on my farm, and that is not pure clay, but pure enough to coalesce and run together when wet, and become solid as unbaked brick when dry.

Clay soil has been pulverized by some natural agency like glacial action, or the ceaseless movement of tides and waves in former ages. "The mills of the gods grind slow, but they grind exceeding fine." The fineness of clay is its virtue and its bane. The finer the particles of the soil, the more readily the roots of plants can extract from it the materials for their formation, and I believe they take up some of the fine soil itself to construct their solid parts. The gigantic trees of California were not built up from merely water and air. Wheat plants have to have lime to stiffen the straw. The trouble is the finer the particles of the soil the closer they can crowd together when wet, and the harder the land will become when dry.

In *Hale's Husbandry*, published in London in 1758, it is said : "All clay lands are known by these qualities ; they hold the water that falls on them, and when thoroughly wetted are a great while before they are dry ; in the same manner, when thoroughly dry, they are not soon wetted. In a dry season the land cracks ; if it be plowed when wet, it sticks like mortar ; in a dry season, the plow tears it up in great hard clods, which are all clay at the bottom. For this reason where the coat of soil (the top soil) is not thick, the farmer must not plow deep, for he will injure his land by mixing the clay among it. Clayey soils require a great deal of industry and care, as well as knowledge in dressing and management ; but when the toughness is overcome so that the farmer can get his grain into them and see it well covered, they very often yield large crops. The mixed soil over these beds of clay is generally of considerable thickness. This is happy for the farmer, as it gives him the liberty of plowing deep, which this kind of land requires more than any other.

The first method for improving this soil is by frequent repeating of these deep plowings to break and separate clods over and over, as the sun and air calcine them. To this is to be added the assistance of dressings. It is the particular quality of this clay that it will receive all kinds of manures, and be improved by them ; but the labor must be equal to the expense, for without this frequent plowing, nothing will take effect upon it. In Northamptonshire they manure it with lime rubbish to some advantage ; in Hertfordshire they use soot and ashes ; but that

which agrees best of all with its nature is chalk. It may be remarked of clayey soils in general, that although no ground is so stubborn or so barren when neglected, none has so many good qualities when it has been thoroughly wrought. The more tough and stubborn these soils are, the richer they prove when they are thoroughly subdued."

The reader will pardon me for making so long an extract from a book, as the book is an old one and out of print, and shows that agricultural science had arrived at a high degree of perfection in Great Britain 144 years ago, and that the farmers of England at that time knew the best method of handling different soils.

It sounds a little strange to American ears to hear of putting *chalk* on land for manure, but chalk is more plentiful in England than plaster in the State of New York, and is no doubt, as stated by Hale, the best fertilizer for heavy clay lands. Throughout the extensive chalk district in England the practice of spreading this substance over the surface of the land has prevailed from the remotest times. In the case of the Lincolnshire wolds, once as celebrated for desolate barrenness as they are now for high culture and smiling fertility, chalking was one of the important means of bringing about this wonderful improvement.

Clay is sometimes called alumine, or argillaceous earth. It is the worst kind of soil with which a farmer has to contend. It can be ameliorated by a mixture of sand, or any other substance like rotten manure, which serves to keep the particles of clay separate, thereby destroying its tenacity and ability to harden.

Clay soils are benefited by being plowed in the fall, the winter freezing tending to loosen the clods.

I knew a man who put 200 tons of river sand and ten tons of fine manure on his clay garden, and made it as mellow as the garden of Eden.

A certain proportion of clay is indispensable for the formation of the best soils. A good wheat soil must contain at least 18 per cent. of clay. Good grass land requires at least 30 per cent. of clay.

J. W. INGHAM.

#### GRASS SEEDING AND HAY PRODUCTION.

In our last issue we wrote at some length on this subject. In connection with what we then said, we think that the following article, contributed by Mr. Clark, of Higganum, Conn., to the *American Cultivator*, may be read with interest and profit. Mr. Clark has made a reputation during the last few years as the producer of the heaviest crops of hay in the country:

"I had hoped to give you some points on my grass crop of this year while it was growing, but lack of

time prevented. The early spring was cold and dry, so that the use of fertilizers was not as effective as it would otherwise have been. In fact, while later on we had plenty of rain, it was so cold that the grass crop of the entire eastern and northern sections is, as a whole, rather light. Too many farmers depend on the Lord for making a crop of grass without aid.

Some changes in my field give me 14½ acres, on which I sowed \$208 worth of fertilizers, a little less than \$16 worth per acre, or \$3.25 per ton of hay produced. The total product was 128,874 pounds.

Five acres of the field were badly washed by a cloudburst the last of August, in 1901. This was reseeded the tenth of September, which gave but little time to cultivate, aerate and renew the soil. This portion of the field produced but 2½ tons to the acre, and one acre in a shady orchard produced but little over two tons.

Of this field 1½ acres produced 10,947 pounds; 4½ acres produced 46,134 pounds; 2½ acres newly sown, produced 27,107 pounds, while seven eighths of an acre yielded 11,850 pounds or at the rate of 13,331 pounds to the acre.

This field has been seeded thirteen years, and thirteen first crops and twelve second crops (a total of 102 tons) have been taken from one seeding. On one section of five eighths of an acre the yield was 8545 pounds, or at the rate of 13,672 pounds to the acre. The two sections, seven-eighths of an acre and five eighths of an acre, or a total of 1½ acres, gave over ten tons to the first crop, and for the second crop I hope for four to five tons more. These two sections are natural grass lands, with clay, gravel, hardpan soil, with just grade enough to carry off the water from the surface, moist, wet, underdrained, with no vegetable matter. "Cold, wet, unproductive"—that was its record.

Land that will carry subsoil water is wanted. Man provides the rest. The cost of producing a ton of hay on this kind of land is less than \$2, or less than \$4 per ton in the barn. On an experimental piece of one-half acre, which was cut up with the "Double Action Harrow," which has been seeded two years, taken up Sept. 1, 1901, and seeded fifteen days later, the product was 4810 pounds, or at the rate of, 9620 pounds per acre.

As above stated the total yield from the 14½ acres was 128,874 pounds of well cured hay. I have the exact cost of a ton of dry hay, including fertilizer, spreading, cutting, curing and putting the hay in the barn, which is \$4.95. I call it \$5 per ton. Seven acres of this were reseeded from the tenth to the fifteenth of September, 1901 when it should have been seeded Sept. 1, 1901, and would have given a better crop. The total yield of the seven acres of new seeded ground was 46,674 pounds, or an average of 7778 pounds, which is 212 pounds less than four tons to the acre, nine months from the day of seeding, and that under very unfavorable circumstances.

This is conclusive evidence to me that if we want to grow grass we had better sow grass seed, and if wheat, rye or other grain, or, in fact, any other crop, we had better sow them by themselves to achieve success, for it is certain that a proper grass stand cannot be obtained with any other crop.

My grass crop this year confirms more fully, if possible, three things: First, that grass should always be sown by itself; second, that timothy and red top in

equal parts are correct proportions; and third, that intense cultivation is absolutely necessary for success.

The outlook, this year, for a second crop is good. I am now sowing the fertilizer for that crop. I fertilize for every crop, and use one third each of bone, muriate of potash and nitrate of soda, as per instructions in my grass circular.

The truth of my statements in relation to grass culture have been questioned. To all such questioners, I would say the facts which I have found are utterly beyond what any of us would have thought possible to obtain twenty years ago. Nevertheless, my statements are true. Those who come here and examine for themselves (and there are hundreds of visitors) go away convinced of the fact.

I have personally answered more than twenty thousand letters, and sent out more than twenty thousand circulars concerning the grass culture in the last two years. I have a sufficient supply of circulars yet on hand, and to all who would like my experience, and who will send a two cent stamp, I will send a circular and cheerfully answer any questions they may ask. On the other hand, if they desire to visit me here I will cheerfully give them my time and any information possible. This is no toy. You would not think so if you had stood by me while pitching on forty two of the sixty six loads which were put into the barn on the twelfth day of July. I will report later about my second crop of hay."

#### ENQUIRER'S COLUMN.

Enquiries should be sent to the office of *The Southern Planter*, Richmond, Va., not later than the 15th of the month, for replies to appear in the next month's issue of the *Planter*.

#### Onion Growing.

Please state through the *Planter* when onions should be planted, what variety for market, etc. How would rich low land suit, which is subject to overflow?

*Mecklenburg Co., Va.*

OLD SUBSCRIBER.

Onions may be grown either from sets or seed planted or sown in the fall or spring, according to the variety. They require rich, loam land, but should not be planted or sown on land subject to overflow. The land should be well drained and finely worked, and be kept free from weeds. The Yellow Potato onion is one of the best varieties for fall planting. This onion is always grown from sets, as it does not make seed. Plant the sets in September or October in rows eighteen inches apart and nine inches apart in the row, and cover about an inch deep. This onion makes a fine crop for selling in the early spring market green, or it may be allowed to ripen, and will be ready for shipping in June. Early White Pearl, Yellow Danvers, and Silver Skin sets may also be set out in the fall, but are more usually planted in spring, except in the warm trucking sections of Tidewater.

Onions grown from seed may be raised either by sowing the seed in beds in the fall, say, in September,

and transplanting in October or November or in the spring, into rows twelve to fifteen inches apart and four to six inches apart in the rows, or the seed may be sown thinly in the rows in spring and be there allowed to grow to maturity. The best varieties of the seed onions are White Bermuda, White Pearl, Southport Globe, Yellow Danvers, or Red Wethersfield.—Ed.

#### Preventing Washing of Land.

A new comer into the hill section of the Piedmont range of Virginia, I am an enquirer for information, through your valuable publication, as to the best method of cultivation or preparation of these lands to prevent so large a portion of the surface soil washing off. From a limited experience and observation, it appears this question is of great importance to every farmer.

I wish to keep my land open for orchard culture. In the new fields it is important to prepare properly before setting the trees.

T. W. DEXTER.

*Albemarle Co., Va.*

The true remedy for the washing of the hill lands of the South is deep plowing and subsoiling and the filling of the soil with humus. The soil washes off because the subsoil is so compact that the water (falling on the surface) cannot get into it, and because the soil itself is so devoid of vegetable matter that it cannot absorb and hold the rainfall. Plow deep and subsoil wherever possible, and then sow Crimson clover (10 lbs. to the acre), Hairy vetch or English vetch (25 to 30 lbs. to the acre), with half or three quarters of a bushel of wheat, oats or rye, or a mixture of all three grains, in the early fall (September or October). Plow this crop down in the spring and follow with cow-peas, or a mixture of cow-peas and sorghum, in May or June. This crop may either be cut for hay or be grazed with hogs or cattle or be plowed down in the fall and be followed again with Crimson clover and the mixed grains, in the fall. This second crop may be either grazed or cut for hay or plowed down, as the condition of the soil would seem to warrant, and the land may then be put into corn or other forage crops and be seeded to grass and red clover in August or September. A dressing of farm-yard manure each year, or the application of 300 or 400 lbs. to the acre of acid phosphate, will greatly help to secure a heavy crop of the Crimson clover and cow-peas, and thus make more vegetable matter to put into the soil. Always plow deep and keep the subsoil open.—Ed.

#### Lame Horse—Flies on Cattle.

1. I have a fine young mare, lame in her hip, which is worse when trotting and very sensitive to touch and has been so for several months. I have no idea what causes the trouble, as she has been kindly handled. Two years ago, when I was riding her, she slipped on a hillside and sprained my ankle,

but I don't think she injured her hip there, for it never seemed to bother her until months after. Any remedy you would advise would be gratefully received.

2. Do you know of any preparation on the market that will actually kill flies on cattle? I use as a spray, a preparation of "Kill Fly," but it only drives them away without killing them.

I enjoy the *Planter* greatly, and think any farmer who does without it makes a big mistake.

Richmond Co., Va. W. GRAY BROCKENBROUGH.

1. The lameness is most probably caused by some injury to the hip joint caused by the accident you refer to. We would apply fly-blisters to the sensitive part and give her rest.

2. We believe all the fly remedies on the market are merely repellants, and not destructive to flies. This is the character of those of which we have had reports. Their efficiency depends on the length of time during which their odor or stickiness makes them objectionable to the flies.—ED.

#### Bermuda Grass.

When should Bermuda Grass seed be sown? Please answer in the *Planter*.

Grayson Co., Va.

J. D. PERKINS.

Bermuda grass should always be seeded in spring, and even then it is a very uncertain crop. Bermuda grass makes no seed in this country. The imported seed is mostly got from Australia. The best way to secure a Bermuda sod is to get a sack of the roots from an old sod. These can be had from farmers generally for the asking or from seedsmen. The roots should then be run through a chaff cutting machine, and the cuttings be dropped in the furrow behind the plow a foot or eighteen inches apart two or three bits in a place. They will soon take root and make a sod.—ED.

#### Grass for Name.

Find enclosed a sample of grass for name (top and root). Is it of any value as a forage plant? I found several bunches in my garden.

LENA E. CRAETREE.

The sample sent is so small and so immature that we are unable to identify it. Send a plant with the seed stalk either in flower or just beginning to ripen, and we will name it and give its value.—ED.

#### The Draft of Wagons.

In answer to "Observant Farmer," page 476, August issue, I would say that about the same principles govern both the wagon and the locomotive, viz., power for the wagon requires that the line of draft correspond with the square of horse's shoulder. On this line he can pull more and do it easier. This is why front wheels are lower to get the hitch or load in

line with power. Then we make the hind wheel larger as it rolls easier. We make the body narrow as it turns around shorter. This is the philosophy of the wagon. In the case of the locomotive with low drive wheels a larger boiler can be used and at the same time be kept within limits of safety from overturning. That is the philosophy of the locomotive.

He is right as to farming not being an exact science. One thing is sure, when the right conditions for a crop to grow are secured then it will grow to perfection.

Nottoway Co., Va.

H. H.

#### Sick Hogs.

I have had hogs affected in the same way as those of J. H. Moore's, of Surry, and have always found clipping off the tail and the ear on the affected side to relieve them in a short while. I think it is caused by a flow of too much blood to the head.

Goochland Co., Va.

N. S. W.

#### Saving Alfalfa Seed.

I think I can give Mr. N. H. Calhoun the information he asks in regard to saving alfalfa seed. I have raised it in Kansas and Canada. The crop needs cutting when most of the seed is ripe. If you wait for it to quit blooming much seed will be lost. Then handle as clover. The seed comes out easy. Any machine that will thresh timothy will thresh it. It is not necessary to have a clover huller in order to get all the seed.

Surry Co., Va.

D. MENZEL.

#### Tobacco Curing by Flues.

We want information to teach us how to use the flue in the tobacco barn all in detail. How and where the flue ought to be set?

Dinwiddie Co., Va.

JOSEPH SEDIVY.

A barn for flue curing tobacco must be made tight, all cracks being closed. The furnace is set at one end with the fire-box opening on the outside of the barn, so that it can be fired without opening the barn. The flue runs across the barn and returns back to the chimney, which is set at the end near the furnace outside the barn. These flues and furnaces are made of sheet-iron, and are supplied by the hardware men in all the cities in the bright tobacco sections. The tobacco is hung in the barn in as fresh a state as possible and the firing begins immediately, so that the heat will ascend into the tobacco whilst the leaves are stiff. Three days are needed to cure a barn, and it takes from two to three cords of wood. It requires very careful judgment and observation to cure bright tobacco properly, and the work should not be attempted without the supervision of an expert curer or the tobacco may be ruined. Nothing but experience can teach the true way. When the fires are started a thermometer is hung on a level with the bottom leaves and is carefully watched day and night, and the plants are carefully examined at frequent intervals. The heat must

be increased very gradually but must never be checked. It must never be so intense as to cause sweating. The first process in the curing is to maintain a temperature of 80° or 90° until the leaf is yellowed. This requires from eighteen to thirty six hours. After the yellowing the heat is raised 5° or 10° at a time, and held at each stage for one or two hours until it has attained a temperature of 115° or 120°, where it is held for several hours until the leaf is thoroughly cured. After this the stalk has to be cured by raising the temperature to 160°, to 175° by stages of 5 or 10 degrees per hour, and keeping the temperature at this point until the stalk is thoroughly cured. After this the barn is opened and the fires go out. The tobacco is then taken down and bulked on the sticks in piles. It is left in this way several days and then rehung, being crowded very close to prevent injury from atmospheric changes. The leaves are afterwards stripped from the stalks and bulked down and left for one or two months when the color becomes fixed and the slight greenish tinge is removed.—Ed.

#### Rat Poison.

Will you kindly advise me through your columns the name and address of the manufacturers of the Pasteur's rat poison you mentioned in the *Planter* some months ago as I wish to do some exterminating along these lines.

"CABIN POINT."

Pasteur Vaccine Company, Limited, Chicago, Ill. nois.—Ed.

#### Canada Peas.

1. What is the proper time to seed Canada peas in this section?

2. Where can I get seed, and what is the best variety?

3. Give time of harvest.

I have been told I could sow these peas here in December or January and harvest the crop in June.

Washington Co., Va.

A. S.

1. Canada peas in your section should be sown in January or February, as soon as the land will work. They should be put in deep, say have four or five inches cover, and it is well always to sow a light seedling of oats with them to hold them up. The peas should be sown first and be well covered either by putting them in with a drill or plowing them down, and the oats be then seeded and harrowed in.

2. Wood & Sons, of this city, Seedsmen.

3. The crop is ready for harvesting in June. It is a cool weather crop. The peas mildew as soon as the hot weather sets in.—Ed.

#### Ginseng.

Please publish in your next issue whether "ginseng" can be raised profitably or not in this section. What

will be the price of seed, and where can they be obtained?

Sussex Co., Va.

G. W. EPPES.

We have no doubt but that ginseng can be grown in this State, but whether profitably or not we cannot say. It is a crop that requires several years to grow in order that the roots may reach a marketable size. The seed and full information as to growing the crop can be had from the American Ginseng Gardens, Rose Hill, New York, who advertised in the *Planter* last spring.—Ed.

#### Cow-Peas for Seed—Crimson Clover.

Please tell me in your next issue, if you can conveniently do so, how to raise and harvest cow-peas for seed. What machinery is required? Can they be harvested and threshed by machinery? Also please answer the same questions with regard to Crimson clover. How many bushels of cow-peas ought I to expect from an acre of land that will grow five barrels of corn (25 bushels shelled corn) without manure or fertilizer of any kind? How many bushels of Crimson clover from the same land? Could I seed my corn land at its last working to Crimson clover, harvest the seed from same in the spring, then seed to cow peas and mature the cow pea seed? The farm is in Anne Arundel county, Maryland, midway between Washington and Baltimore. I trust that you will not refer me to manufacturers of machines claiming to harvest and thresh cow-peas, but tell me exactly how the work is done where the cow pea is grown for seed.

Anne Arundel Co., Md.

F. E. BANKHAGER, JR.

If you will refer to page 396, July issue 1902, you will find full instructions as to growing cow-peas for seed and also as to threshing out the seed. This article is based on information given us by a subscriber who grows a large quantity of peas for the seed every year. He told us a few days ago that he had made, threshing the peas with his grain separator, a perfect success. By running the same at about one third the speed he runs it for threshing wheat and the removal of part of the concaves he last year threshed out between 100 and 200 bushels of seed with the loss of less than 10 bushels of broken peas. You should make from 15 to 25 bushels of cow peas per acre on such land as you describe. Crimson clover makes about the same quantity of seed per acre as red clover and requires to be handled in the same way if to be sold. If for use only at home many of our subscribers merely knock out the seed with a flail and sow it unhusked. It requires more to be sown per acre when used in this way, but grows just as well.

You can seed your corn land in Crimson clover at the last working and harvest the same and follow with cow-peas in time to mature seed peas.—Ed.

When corresponding with advertisers, kindly mention the *Southern Planter*.

## Trucking, Garden and Orchard.

### WORK FOR THE MONTH.

The harvesting shipping and storing of the crops raised in the garden, orchard and truck patches is work which will call for constant attention during this and the following month. See to it that no damaged or unsound products are shipped or stored. Let these be used at once either in the house or be given to the stock. If shipped they will heavily reduce the price for which the consignment will sell, and if stored they will soon infect the sound products and cause loss of the whole. All fruit, roots and vegetables should be picked, dug and cut only when dry and then be stored temporarily in a cool, dry airy room or shed, not in too large bulk, and be there kept until they have passed through the sweat or heating which they will naturally enter upon. If the quantity is too large to store under cover, pile in heaps and cover with straw and boards to keep out the rain. When the sweating is over let the products be carefully sorted over again and all showing any indication of unsoundness be culled out and the rest be shipped or stored. Apples and pears keep best stored in slatted bins or ventilated barrels in cold, dry airy rooms where the frost can be excluded. Roots keep best stored in cellars or pits covered well with dry straw. Onions keep best on slatted shelves.

The land should be got ready for winter kale, spinach and cabbage crops. Prepare thoroughly and make it rich with farm-yard manure and high-grade fertilizer. All these crops call for plenty of potash in the soil. Kale and spinach should be seeded in the rows where they are intended to grow and mature, and the rows should be wide enough apart to permit of cultivation. Seed lightly, so that the plants may have room to grow. Cabbage plants should be raised in beds and be set out in the rows in October and November. If plants for late fall cabbage have been raised as we advised in last months' issue they should now be planted out in the rows and their growth be pushed by frequent cultivation and the application of a dressing of nitrate of soda at the rate of 100 pounds to the acre. Cabbage plants intended for the early spring crop should not be raised on too rich land. The object is to grow short, stout, well-rooted plants, and this can best be done by not making the land too rich but by preparing it well and giving a light manuring and giving the plants room to grow. When raised in this way the plants will grow right away when transplanted into the rows.

Potato onion sets should be planted out this month

in rich well prepared land. Set in rows 15 or 18 inches apart and 8 inches apart in the rows. These onions make the earliest crop of green onions for bunching for the spring markets. Sets of the seed varieties, like Yellow Danvers and Silver Skin, may be set out during this and the following month in mild localities or where they can be protected by mats or brush in hard spells of weather.

Seed may be sown in beds to raise plants of the different seed varieties of onions for planting out in the spring. These beds should be where they can be covered with mats or brush in the winter or hard spells of weather. Sow the seed thinly. The Bermuda, White Globe, Yellow Danvers and Red Wethersfield are good varieties to sow.

Lettuce seed should be sown to raise plants for the cold frames and hot-beds and for setting out in the spring. Make the beds where they will be sheltered from the coldest weather and where they can be protected with mats or brush in the winter.

Radish seed may be sown for the fall crop.

Strawberries may be planted out during this and the following month. In this issue will be found an article dealing more fully with this crop.

Clean up all trash, vines and vegetable refuse of every kind, and either burn or compost with hot farm-yard manure, so that insect life and fungoid disease germs may be destroyed.

Sow Crimson clover on all vacant land to conserve and improve fertility.

### A WORD OF ENCOURAGEMENT TO COUNTRY GARDENERS.

*Editor Southern Planter :*

I read with interest your Trucking and Gardening Department, and think, as I guess many do, that I could do so much were I near market, but there is something we can do even twenty-five miles from a market with no way of transportation except weekly market wagons. I have a quarter of an acre enclosed for a garden. I raise two crops on all of it except on the butter bean and tomato land. Sometimes I set the tomato plants in the onion patch and thus get two crops there. Besides furnishing an abundant supply of vegetables for a family of nine or ten the year round I sell \$8 to \$10

worth from it every year. We sell a few quarts of strawberries and a dollar's worth or two of onions, a bushel or two of early Irish potatoes, which always pay well if very early, then early cabbage, and butter beans, 40 or 50 quarts of beans at from 8 to 15 cents per quart. I raise the dwarf beans as they take less room and bear earlier. I plant my potato land to Navy beans; they always sell well dry. This garden is worked entirely by the women and children of the family after the land is broken in the spring with the plow, so you see we get our pin money out of it after enjoying all the nice vegetables and small fruits, with a few hours of healthful exercise in the early morning and late evening.

*Goochland Co., Va.*

A CONSTANT READER.

## STRAWBERRY CULTURE.

### Late Summer Work.

*Editor Southern Planter:*

Stir the soil by shallow culture as soon after each packing rain as it is in proper condition. This serves a two-fold purpose. It kills all grass and weeds easily and long before they attain dangerous proportion. and what is equally, if not more valuable, is that it conserves moisture by breaking the crust and destroying the pores or capillaries by means of which the water in the soil passes upward to the surface to be lost by evaporation.

We break the middles of the rows with a small tooth cultivator and stir around and between the plants with light hand hoes, taking pains not to go too deep, especially near the plants. An inch deep near the plants increasing gradually to about two inches farther off is about right. Where there is not much grass to cut up, forked potato hoes answer the purpose perfectly.

The runners should also have careful attention at this season. If the soil is rich and the season wet they crawl about almost like snakes. If the stool or hill system, the best with most varieties, is to be followed, the runners must be clipped off as fast as they appear. If allowed to grow and dangle on the parent plant, it is weakened and the coming crop lessened thereby. We have never seen but one runner cutting device that worked well—a boy with a knife and an eye on the boy. It is exceedingly fast and simple work if done in time and costs but little. Runner-cutting machines do not cut the runners close enough to the old plant. They must always be cut between the old plant and the first joint, else a plant will form at the joint and dangle there a most harmful parasite till winter kills it.

Look well after the borders of your strawberry fields

and the ditch banks. Dig up or mow down all weeds before they get large enough to "draw" the neighboring plants. The dryer the season the worse the "drawing." Trees also do much harm this way by sending their roots in the strawberry fields, robbing them of moisture and nourishment. It is a good plan to cut these pilfering roots. We do it by means of a sharp spade driven down deep around the outer border of the field next to the trees, using a mattock or grubbing hoe when a root is found too large for the spade to cut.

O. W. BLACKNALL.

*Kittrell, N. C.*

## PRUNING ORCHARDS

*Editor Southern Planter:*

I see a number of items in the *Planter* in relation to the pruning of apple trees, and as to the proper time, to induce wood growth and bearing.

Having been raised on a farm where fruit culture was a considerable item, and having on my own account renovated and improved two large orchards, the trees varying from eight to twenty-five years in age, my experience may be of service. I have always thought the best time to prune a tree was when the knife was sharp and the tree needed the application. Young trees sometimes make too much wood, these I would shorten in August. If they did not make growth enough, I would apply more fertilizer and give good and frequent cultivation.

Experience teaches me that the greatest reason for trees not bearing is a lack of sufficient nourishment. As to cutting rings of bark off the limbs to induce bearing, this is too much like cutting the cow's ears off to increase her milking qualities. I also notice that many young trees are spoiled by pruning too much in the centre of the top. That will injure the bearing. The head should only be sufficiently opened to admit plenty of air and prevent overlapping limbs.

Frequently the trees get too close and matted on the outside.

From where I write I can see some apple trees that are so matted that a bird can hardly fly in, yet in the centre there is a large open space where there are no limbs for apples to grow on. In such a case I would train limbs to fill in the centre and open or thin the outside. I recollect an orchard that did not commence to bear till the trees were sixteen years old, and evidently the reason was too much centre pruning as the trees had plenty of care, good cultivation and fertilization.

In renovating my orchards I first pruned to suit my taste. Some of the older trees were moss grown. That was removed with a moss scraper after rains. I manured the land well, but did not let any come nearer

than three feet of the trunks of the trees. Next to the trees I put rotted chip dirt, and when the leaves were well started I gave the trees a good coat of lime wash, being careful to spill a good deal around the roots. Then I plowed the land and planted a hoed crop, and in the fall seeded to rye and clover.

One of these orchards had been condemned as a non-bearer, but since treatment it has produced as well as any in the community, only having failed two years in fifteen.

A large fruit grower once told me never to sow rye in an orchard. What harm could result from rye more than any other crop?

Goochland Co., Va.

EXODES.

#### HOW TO RAISE A GOOD CROP OF STRAWBERRIES NEXT SPRING FROM PLANTS SET THIS FALL.

With a little extra pains in preparing the soil and setting the plants a very good crop of strawberries may be gathered next spring from plants set this fall. The largest and earliest berries are always produced by fall set plants.

Wherever practicable the best forerunner of the strawberry is the cow pea. The peas should have been sown, or better still, drilled, early in June. About September 1st the pea vines can be cut for forage. As the fertilizing properties of the pea vine reside largely in the roots it probably, as a rule, pays better to make forage of the vines than to plow them under, especially as the plowing under of a rank crop of pea vines is a difficult and uncertain job. Still if it can be successfully accomplished and the soil contains but little vegetable matter, it will pay better to plow under than to cut the vines.

#### PREPARE THE SOIL THOROUGHLY.

This thorough preparation is very simple in light soil. It consists simply in plowing to a depth of six or eight inches. On stiff, cloddy soil it is more difficult. Thorough preparation, then, consists of completely pulverizing these clods. This can usually be pretty well done by harrowing, though rolling makes it more complete.

This done, one must decide as to what system of culture he will follow—the intensive system or ordinary field culture. The intensive system means more plants at the beginning, more manure, and more cultivation, and at the end more berries.

If I had an acre or more or less than an acre, and wished to obtain from it the best possible results in strawberries, I would proceed as follows, the soil being prepared as above recommended:

Scatter broadcast stable manure at the rate of 100 to 200 good loads an acre. If I had 100 or 200 bushels of wood ashes I would put them in, too, taking pains to scatter both very evenly and to mix well with the soil by repeated plowing and cross plowing. Lacking these, I should apply broadcast cotton-seed meal at the rate of 2,000 to 4,000 lbs. per acre. If preferred, 200, to 300 bushels of cotton seed can be used instead

of the meal, but if the seed are used they must first be thoroughly "killed" by wetting and leaving in piles until fermentation kills the germ. If not, the seed will endeavor to make cotton instead of fertilizer. I have known them to come up even when sown "unkilled" in cold weather. Ashes will also go very well with the cotton seed or meal.

It must be borne in mind that this is very heavy manuring, and that such heavy manuring is safe in fall planting only when it is thoroughly mixed with the soil. Unless this is done, too much manure would be likely to come in immediate contact with the plant roots and do great harm if the weather should be dry.

The next thing is to get stout, vigorous well rooted plants. Much depends on good plants of good varieties. The growing season is now limited, and a plant large and stout when set, besides being surer to live and quicker to grow off, has in its size a very great advantage. It will even be larger in proportion when berry time comes than a small plant would be.

September and October are the best months for fall planting. The ground properly prepared and good plants obtained, set them fifteen inches apart and let the rows be fifteen inches apart, but between every series of three rows leave two feet for a walkway for cultivating and gathering berries. Unless the soil is naturally wet, raise no bed on which to set the plants, but let all be on a level. If necessary to raise the bed a little, the walking space between the beds must be broader, say two and a half feet. Set the plants by means of a line, opening holes large and deep enough to admit of spreading the roots in a vertical position; press the earth firmly around the roots. If the soil is dry at planting, pour water in the holes before setting the plants.

Unless the soil is infested by winter-growing weeds, very little cultivation will be needed till the spring; still, if a hard packing rain should fall soon after planting, a light working with hand hoes promotes growth.

If the liberal quantities of manure mentioned have been applied, no more will be needed before berry time, but if only the stable manure or only the cotton seed or meal has been applied, it will pay to apply around or between the plants a month before the time for them to bloom, either a liberal quantity of ashes or a soluble fertilizer rich in potash. When the ingredients can be obtained, the following formula gives a perfect top dressing manure for average soils per acre:

Nitrate of soda . . . . .	100 lbs.
Sulphate of potash . . . . .	100 lbs.
Acid phosphate or dissolved bone . . . . .	300 lbs.

The nitrate of soda can be omitted if the heavy application of stable manure or cotton-seed meal was used.

Care must be taken to destroy all weeds by shallow cultivation early in the spring. A mulch should be applied just before growth begins in the spring. This mulch is to keep the berries clean, and should be evenly spread just deep enough to hide the plants when spread. The first rain will beat it down neatly around the plants. If weeds push up through the mulch, pull them out. Pine straw, whenever obtainable, makes the best mulch, but almost any kind of straw or litter can be used.

At the North, and especially on wet soils given to heaving in heavy freezes, it is best to mulch the plants well as soon as very cold weather sets in and remove the mulch in early spring, scattering it then around and between the plants.

For ordinary field culture, the plants should be set in rows two and a half or three feet apart and twelve or fifteen inches apart in the row. The same plan as to manuring can be followed, using it in such quantities as practicable. If cotton seed meal or the seed is used in only moderate quantities, say 500 to 800 lbs. meal or fifty bushels of seed per acre, it should be applied in the drill, mixing it well with the soil by running a cultivator down the row before the lists are made. These lists should be knocked down very low, about level. Follow same plan of culture as given for intensive culture. O. W. BLACKNALL.

### PEAR BLIGHT.

The disease known as pear blight, and little understood until within a few years past, has been more than usually prevalent the present season. The leaves on some branch—usually a shoot of the present season's growth—die and the shoot soon turns black. Frequently this extends farther down to the older wood, and if no effort is made to stop the malady the tree dies outright. Sometimes it will stop one season, to begin again and run its entire course to the death of the tree next year.

The remedy is cutting and burning the affected branch, and this should be done as soon as possible. The cutting should be some distance below the point at which the disease seems to stop—six to twelve inches—so as to be certain of removing all the diseased wood. This sometimes disfigures the tree, but it is an effectual remedy if done properly and without delay.

The remedy is now known to be bacterial; a microscopic fungus; and it may be transmitted from one tree to another; which explains the burning part of the treatment recommended above. Even a knife used on a diseased branch will infect a healthy tree by cutting into it, unless the implement is disinfected. The simplest method of disinfection is by passing the knife blade slowly through the flame of a lamp, and this should be done at once.

The same malady affects some of the apple trees, and the quince trees occasionally, but it is not nearly so virulent, rarely or never killing the tree but stopping with shoots of the current season's growth. In this case it is called twig blight, and the remedy is the same.

Nearly or quite all varieties of the pear are subject to the blight, but some more than others, and some are so very liable to the disease that they are passing out of cultivation. Of this class are Limon, Adams, Pitmaston, Idaho, Brandywine, Collins, Paradise d'Automne, Hoosic, Moyamensing, Selleck, Kingsesing, Edmonds, Giffard, Glout morceau, Rostiezer, and a number of others. Even the fine old Flemish Beauty is so uncertain—or rather so certain to blight—that it is being passed by.

Of those which are but little affected with blight, Seckel and Tyson may be said to stand at the head. Howell would generally be placed with them, and may

as well be now, but this blighty season it is somewhat affected. Kleffer, when introduced twenty years or so ago, was said never to blight. But it will blight sometimes, though not a great deal. One of the most deservedly popular varieties, Bartlett, blights occasionally, but usually yields to prompt treatment. Its daughter, Clapp's Favorite, a very fine pear, understood to be a cross with Flemish Beauty, is nearly as subject to the disease as the latter variety. To the list of those little affected may be added also Bloodgood, which ripens the latter part of July, just before Tyson, and Anjou (formerly called Beurre d'Anjou), a late fall variety.

R. J. B.

### THE DEWBERRY.

The growing of dewberries formed an interesting discussion at the meeting of the Missouri Horticultural Society. This fruit is considered by many to have an especially timely value to the fruit grower, as it ripens right after the strawberries and takes a useful place as a money maker when no funds are coming in from the sale of other fruits. There were not many present who had much experience in raising the dewberry, and probably from the lack of familiarity with this fruit, it was looked upon with more or less disfavor. Still, the fruit had its friends, who were emphatic in asserting that when the plants received proper attention they were great money makers. The cultivation of this berry should be much the same as for the strawberry, but preference should be given to gravelly soil.

L. A. Goodman, of Kansas City, Secretary of the Society, told a remarkable story about the dewberry. He said, a man who had great faith in the profits of this berry planted thirty five acres, with the utmost confidence that he was going to make a fortune. After experimenting for two or three years with indifferent success, he became disgusted and plowed up the patch on account of borers. The following year he had a mammoth crop of dewberries and realized a large sum of money. He picked the berries for two or three years, and supposing that he had come to the end of his crop, he mowed down the vines and then set fire to the patch. He was astonished to see the following year that he had another tremendous crop of dewberries. Two or three years later he repeated the experiment of mowing and burning, and it was followed by splendid results. The past year he gathered fifteen carloads of dewberries, and they sold for \$2 a crate.

### Apples and Pears Cracking.

When you can find space will you please give some reason for pears and apples cracking on the trees. I am sure many of your readers would fully appreciate some advice on the subject, I among the rest.

Chesterfield Co., Va.

H. D.

The cracking of the fruit is caused usually by a fungoid disease. Spraying the trees and fruit with Bordeaux mixture will kill the spores and thus obviate the trouble. The spraying should begin before the trees are in leaf and be continued at intervals until the fruit is well grown.

## Live Stock and Dairy.

### MAKING HOG MEAT IN THE SOUTH.

I desire to become a successful meat raiser—something like 6,000 lbs. per annum. Please give me some advice on this.

J. S. WILSON.

*Wilson Co., N. C.*

We take it that you use the word "meat" in the sense usually understood in the South—that is, hog meat—and hence reply as follows: Making pork or bacon in the South, if it is to be done properly and so as to compete in the market with Western meat, must be conducted on quite a different system from that adopted in the West. There the hog is merely a machine used to convert 10 to 20 cent corn into a marketable product at a profit, and the more corn he can eat the more he is appreciated. Here we cannot afford to feed 50 to 75 cent corn to make meat to sell at from four to five cents a pound. We must make our hog meat in some other way, so that only the minimum of corn shall be needed to fit it for home consumption or the market. This nature has provided that we may and can do if we only properly second her efforts. The hog in the South must be a grazing animal and not a corn eating machine; and the duty of each farmer is to provide such a succession of forage crops as shall permit of this grazing being carried on nearly the whole of the year, and for the balance of the year to be supplemented with root crops. In this way hog meat can be made at the minimum of cost and the consumption of corn be reduced to only that small quantity required to harden the meat just before killing. This system also admits of constant improvement of the land by the growth and grazing of these crops; and it is also healthier for the animals, rendering immunity from hog cholera almost certain if only supplemented with pure well or spring water. The crops required to carry out this idea are cow-peas, Soy beans, Canada peas, vetches, sorghum, corn, artichokes, peanuts, sweet potatoes, and turnips. These should be so planted in rotation as to come on in succession to supply the need of the hogs. To make the business easy of management, a piece of land large enough to grow the crops needed for the quantity of hogs to be kept should be divided into four or five fields and these open into a road so that the hogs can be turned into any field at will without crossing the fields. Each field or the road leading to the fields should have an abundant and constant supply of pure spring water accessible to the hogs, and shade should be provided either in the fields or accessible from the road to which the hogs can resort at any time. This time of the year is the proper one to set about the arrangement of the fields and the seeding of the first

crops. Let the fields be well fenced as a preliminary to any work of seeding. The hogs must be made to realize that they have got to stay where put, or they will make trouble for themselves and their owners. A good fence round each field soon accomplishes this end. To carry the number of hogs required to make 6,000 lbs. of meat, ten or twelve acres of good land should be divided into five fields. Two of these fields should be seeded as soon as possible with Crimson clover and Winter oats and wheat mixed together, say 10 lbs. of clover and half or three quarters of a bushel of the grain per acre. Next month sow another field with Sand vetch or English vetch and wheat, and in November or early in December, sow another field with Canada peas and oats, wheat or rye mixed. In February, or as soon in the spring as possible, sow the other field with rape. Put the hogs on to the Crimson clover and wheat first as soon as it is fit to graze. When the vetches and wheat are fit to pasture, take the hogs off the Crimson clover and put them on the vetches. Later, put them on the Canada peas. If more Crimson clover was seeded than was grazed, make into hay or turn down to improve the land. Plant one of the Crimson clover fields with sorghum in April or May, and the other one with artichokes in the same months. The vetches, rape and sorghum will provide pasturage until corn, sorghum, Soy beans and cow-peas are ready; these crops being planted on the different fields as the earlier crops are grazed off. When the first sorghum has been fed off, plow the field and seed to rape, or rape and ruta bagas or turnips for fall and early winter feeding. The artichokes will make winter feed to be rooted out by the hogs themselves. With such a variety and rotation of crops as is here suggested, supplemented if need be to carry the hogs always on full feed by peanuts and sweet potatoes in sections adapted to their growth, a herd of thirty or forty hogs can be grown and fattened every year, needing only a few bushels of corn to harden the meat just before killing. A prime requisite for success, however, is a herd of well-bred hogs. Razorbacks will not fill the bill. Get Berkshires, Essex, Jersey or Tamworths by preference for a hot climate. White hogs are good, but better for a cooler section than the South.

### SALE OF SHORTHORNS AT HAMILTON, ONTARIO, CANADA.

At the opening sale of the Hamilton Stock Yards, Aug. 13th, 58 head of Shorthorns, consigned by a number of breeders, made the following excellent prices:

53 females sold for	\$21,520; an average of \$406.04
5 bulls sold for	3,155; an average of 631.00
58 head sold for	24,675; an average of 425.43



### ALFALFA—STOMACH-WORMS IN SHEEP.

*Editor Southern Planter:*

We note what you say in relation to clipping alfalfa. We are large growers of alfalfa, my brother, Joseph E. Wing, being perhaps the first man to grow it on a large scale in the United States east of the Mississippi river. We clip it with the mower the first year, as you suggest, but *never* clip it high up, rather as close as the mower can be set, as that destroys more effectually the weeds and does not harm the alfalfa. We find that it needs rich soil; soil that has had a good deal of stable manure is best. We have some clay soil, limestone, not naturally very fertile but well manured, from which we have already this year cut two crops of at least three tons per acre, and it has now the third crop standing about ready to cut—a crop that will make over a ton—with the prospect of a fourth cutting in October. We have cut this season already near two hundred tons. Next year we expect to sow down forty acres more to this plant, the most profitable we have ever tried.

I note also your article on stomach-worms in sheep. No doubt it is true that cure is difficult and costly, though we have in the past had good success with gasoline treatment, which my brother discovered; but the only satisfactory treatment is prevention of infection, and that is easy. In Virginia, lambs ought to

be fat and gone to market before they could well be infected—pushed forward with grain and grass for June markets, or July at latest. The ewe lambs that are retained on the farm for breeders, should not be allowed to graze on the small grass plots that sheep graze over every year; infection is certain if they do, stagnant water or not; but should be kept in fields of oats, clover, alfalfa or new pastures. We find alfalfa pastures nearly a certain preventive of stomach-worms, and early weaning of lambs makes them strong and resistant. Late dropped lambs are the most apt to succumb. Weaned lambs should be put in the corn-field, the clover field—anywhere where no old sheep have run, for old sheep carry over the stomach worm germs and infect the grass and the lambs in that manner.

I send you a photograph of some of our ewe lambs, Dorsets, going to pasture; the leading one was a very early lamb, and was shorn in spring. This bunch of lambs, without a grain of artificial feeding, weighed, August 4th, 120 lbs. They are now out of reach of parasites, on fresh alfalfa meadow. They do not need water on this succulent food.

Woodland Farm, Ohio.

WILLIS O. WING.

### ROUGHNESS FOR WINTERING STEERS.

Attention was directed in a recent article to the increased gains on two year old steers on full feed by using such roughness as clover and cow-peas instead of timothy, and reference was made to the great difference of opinion in regard to the value of different kinds of roughness for full feeding. The man who winters cattle largely on roughness with a limited amount of grain, has long since learned that his steers will go to pasture in the spring weighing considerably more and in much more thrifty condition if the roughness be clover, cow pea or alfalfa hay instead of timothy, millet or sorghum. The results of work along this line at the Missouri Station for a number of years show a larger difference, however, in favor of the clover than is commonly supposed to exist, as will be shown in the following summary of the first trial—December, 1899, to April, 1900, one hundred and one days, four yearling steers in one lot, fed four pounds shelled corn daily and all the roughness they would eat:

Timothy Lot—	Pounds.
Corn eaten .....	1,612
Timothy hay eaten .....	6,753
Total gain per lot.....	262
Average daily gain per steer .....	.65
Cow-pea Lot—	
Corn eaten.....	1,612
Cow-pea hay eaten.....	7,757
Total gain.....	622
Average daily gain per steer.....	1.54

Second trial—January to April, 1901; eighty days; six pounds shelled corn each daily and all the roughness they would eat; four steers in each lot:

Timothy Lot—	Pounds.
Corn eaten.....	1,920
Hay eaten.....	4,943
Total gain per lot.....	318
Average daily gain per steer.....	1
Clover Lot—	
Corn eaten.....	1,920
Hay eaten.....	5,719
Total gain per lot.....	641
Average daily gain per steer.....	2
Millet Lot—	
Corn eaten.....	1,920
Hay eaten.....	3,941
Total gain per lot.....	119
Average daily gain per steer.....	.37
Sorghum Lot—	
Corn eaten.....	1,920
Hay eaten.....	4,727
Total gain per lot.....	166
Average daily gain per steer.....	.52
Third trial—December, 1901, to April, 1902; 120 days; six pounds of shelled corn daily and all the roughness they would eat; four steers in each lot:	
Timothy Lot—	Pounds.
Corn eaten.....	2,880
Hay eaten.....	8,152
Total gain per lot.....	658
Average daily gain per steer.....	1.37
Clover Lot—	
Corn eaten.....	2,880
Hay eaten.....	9,123
Total gain per lot.....	929
Average daily gain per steer.....	1.92
Alfalfa Lot—	
Corn eaten.....	2,880
Hay eaten.....	8,148
Total gain per lot.....	780
Average daily gain per steer.....	1.63
Sorghum Lot—	
Corn eaten.....	2,880
Hay eaten.....	16,080
Total gain per lot.....	617
Average daily gain per steer.....	1.28

The superiority of hays such as clover, cow peas or alfalfa carrying a relatively large amount of protein over such hays as timothy, millet and sorghum, is strikingly shown in every trial, and agrees with the results referred to in a previous article, where the experiment was made with older cattle on full feed. In the first trial the gain produced by twenty nine bushels of corn and timothy hay was 262 pounds, while this amount of corn with cow pea hay produced a gain of 622 pounds, or more than two and one-third times as much. In the second trial, thirty-four bushels of corn and timothy hay made 318 pounds of gain; the same quantity of corn and all the clover they would eat produced 641 pounds, or a little more than twice as much. When this amount of corn was fed in connection with millet, the gain was only 119 pounds, or little more than one sixth as much as with clover, while sorghum and corn showed a gain of 166 pounds, or a little more than one fourth as much as clover.

In the third trial, the best gain is shown for timothy that we have ever been able to get, yet the gain for

this lot was 658 pounds, while the same amount of corn and clover shows a gain of 928 pounds, or over 40 per cent. more. In this trial, too, a better showing is made for sorghum than in the previous one, yet the gain for this lot was only 617 pounds as compared with 928 for clover, or a difference of over 50 per cent. in favor of clover. It will be noted also that it required but 9,123 pounds of clover to make the gain, while 16,080 pounds of sorghum were eaten for 617 pounds of gain. As in the case of the older cattle on full feed, the clover and alfalfa steers carried more bloom, shed their winter coats earlier, and showed every evidence of superior thrift and vigor.

Note the gains made by the steers on clover. In one trial, two pounds per day on considerably less than half feed, and in another trial 1.92 pounds, or practically two pounds. In winter we are usually content with two pounds on the average on full feed with older and larger cattle. Not only so, but the manure made by the clover is much richer and more valuable than that made from timothy or sorghum or millet. Thus, when we buy clover we add fertility to the farm rapidly, and when we grow clover, cow peas or alfalfa, we improve the soil even more rapidly, whereas when we grow timothy, sorghum or millet, the soil is impoverished.

In the light of these facts, it would seem that all farmers and stockmen would endeavor to grow more clover and under no circumstances sell any such material, and that if they have any hay to dispose of timothy should be sold, especially since it usually brings from one to two dollars per ton more on the market, does not carry off the farm so much fertility, and is not nearly so valuable to feed. Yet, cases where men sell their clover and keep their timothy for feed are not especially rare. In a subsequent article, the question of combining clover with corn fodder to bring its feeding value up will be considered.—H. J. WATERS, in *Breeders' Gazette*.

#### PREVENTING AND CURING TEXAS FEVER.

I feel under such obligation to you and those who have written for your columns during the past three years that it seems proper to report my results for the benefit of some other beginner. I think I have demonstrated that it is possible to raise good stock here in the South and to conquer the tick. First, I lost about \$1,000 worth of cattle by the tick before I knew what the trouble was. Last year I cured the few cases of tick fever that I had and this year not a tick has appeared on any stock. My method of clearing the farm of ticks has been this: The cattle were inspected almost daily during the entire season and no tick was allowed to mature and drop off. I prevented this by washing my cattle with a strong solution composed of water, kerosene oil and sulphur. If this solution is applied thoroughly it will kill the young ticks and the old ones as well. And if no ticks are allowed to mature and drop in the pastures the farm will soon be free of ticks.

But the tick gets in his work and kills his cow before you know he is present. It is therefore necessary to cure the sick animal. The finest cow in my herd today had last summer as bad a case of fever as I ever saw. My treatment was this: First the usual liberal drench of salts; then follow this with liberal drenches

of sulphur. I have lost only one animal since I began this treatment—and have saved quite a number. So I believe it is a remedy, properly so called.

How is a man whose farm is infested with ticks to start breeding good cattle? I proceeded this way: I bought an Aberdeen Angus bull one year old. I had a plot of grass—wire grass and clover in an old orchard, about one acre. I ran a wire about 100 feet long from one tree to another—then the ring at the end of the bull's chain was put on this wire. The bull could pass from tree to tree and graze about thirty feet on either side of the wire. As often as necessary the wire was moved. This gave the bull shade, exercise and his grass. The cows were brought to him. I have a fine bunch of twenty black calves, and now my bull is in the pasture and doing well.

Thus it seems to me that I am now safe in going ahead and selling all my grade cattle and putting in their places pure-bred cattle. And this is my next step.—H. H. Williams, Orange county, N. C., in *Breeders' Gazette*.

#### SOME RECENT RECORDS AND SALES OF GUERNSEY CATTLE.

The following records of Guernsey cows have recently been made in accord with the requirements for entry in The Advanced Register of Guernsey Cattle. These records were made under the supervision of an Agricultural Experiment Station or Public Institution. Three of the records are of cows that were members of the Guernsey herd in the Pan-American Model Dairy Breed Test. These are Mary Marshall, Cassiopela and Vega, whose owners carried forward their year's record after return:

Mary Marshall, 5604, owned formerly by Ezra Michener, of Cartersville, Pa., and now by A. C. Loring, of Minneapolis, Minn. Year's record, 8212.57 lbs. milk; 468.40 lbs. butter fat.

Cassiopela, 4855, owned by James Logan Fisher, of Philadelphia, Pa. Year's record, 8528.23 lbs. milk; 365.15 lbs. butter fat.

Vega, 7214, owned by Messrs. M. M. & E. J. Hollingsworth, Landenburg, Pa. Year's record, 7617.94 lbs. milk; 361.31 lbs. butter fat.

Maggie Hastings, 10503, owned by Ezra Michener, Cartersville, Pa. Year's record, 6590.78 lbs. milk; 313.57 lbs. butter fat.

Queen Bee, 6168, owned by Ezra Michener, Cartersville, Pa. Year's record, 6954.15 lbs. milk; 364 lbs. butter fat.

Cottie, of Elm Place, 14167, owned by G. B. Tallman, Perry, N. Y. Year's record, 7710.5 lbs. milk; 352.63 lbs. butter fat. This animal was but three years old. She calved in May, 1901. Her record commenced June 1, and she dropped another calf April 18 1902, being dry from March 24 until calving.

Elite, of Maplehurst, 8452, owned by G. B. Tallman, Perry, N. Y. Year's record, 9197.35 lbs. milk; 472.06 lbs. butter fat.

Dairymaid, of Elm Place, 14197, owned by G. B. Tallman, Perry, N. Y. Year's record, 9045.8 lbs. milk; 473.37 lbs. butter fat.

Belle Oceanie, 10069, owned by G. B. Tallman, Perry, N. Y. Year's record, 9152.9 lbs. milk; 487.36 lbs. butter fat.

Portia, of Maplehurst, 10071, owned by G. B. Tallman, Perry, N. Y. Year's record, 11622.65 lbs. milk; 602.37 lbs. butter fat.

Mr. Tallman has recently sold a number of animals to A. C. Loring, of Minneapolis. He writes of this sale: The price received for Portia is \$1,000. Pride of Maplehurst, No. 10070 (whose year's record is nearly completed and who will enter The Advanced Register), and her daughter, Katrida, of Elm Place, 14198, bring me \$1,000. For Elite, of Maplehurst 2d, 15057, a four weeks calf from Elite, of Maplehurst, 8452, is paid \$300. Mr. Loring secures 10 head of this Maplehurst family of Mr. Sisson and myself—any one of them carrying about 75 per cent. of the same blood of all the others, and any one of them giving promise of making cows capable of 500 pounds or over of butter fat, and carrying perfect udders. Mr. Murphy selected them and has displayed much skill and good judgment. There are about thirty females in this family, and only one among the number but carries a perfect udder. I have secured the balance of the family, including a full brother to Portia Malcolm, of Maplehurst 5626.

WM. H. CALDWELL, *Secretary*.

Peterboro, N. H.

#### COMBINATION SALE OF SHORTHORNS, POLLED ANGUS AND HEREFORDS IN VIRGINIA.

In our advertising columns will be found notice of a combination sale of pure bred cattle, which has been arranged to be held at the Fair of the Southwest Virginia Agricultural and Live Stock Association at Radford, Va., on October 14th. Amongst the noted breeders of the Southwest who have promised consignments are Major W. W. Bentley, Major Cowan, Mr. J. R. H. Bell, and Mr. Morgan. This will afford an opportunity for farmers to buy some of the choicest bred stock in the country, and should not be missed.

The export trade in horses has fallen away to almost nothing and yet prices paid on the open market are larger than they have ever been at this summer season of the year. It is obvious that the supply is very short and that the domestic demand is all sufficient to absorb all offerings. A few years ago horses were going beyond the seas at the rate of over 2 000 a month, and the summer dullness prevailed at the same time. This season the market is brisker than it has ever been and there is hardly a horse being shipped to foreign ports from any one of the great Western markets. It is plain, then, that the supply is so short that the domestic demand can take care of it in most excellent shape, and that for some time we need not look for any great competition from the foreigners. The truth of the matter is that prices are now so high for all desirable horses in this market that exporters cannot pay them and make anything at the other end. The season promised to be a great one in the export trade of carriage horses, but the postponement of the coronation of King Edward left many British dealers with more horses on hand than they could handle, and

then and there the British demand ceased. It was thought at that time that some fall in prices would follow the stoppage of all British orders in the American market, but it has turned out that the domestic demand has been far more than sufficient since then to take everything offered at rising values. Never in the middle of summer has the general market been so good.—*Breeders' Gazette.*

#### SELECTING A RAM.

To the breeder who produces pure bred sheep for the trade, or the farmer whose only aim it is to make the small flock pay in mutton and wool, the selection of a ram to head the flock is of supreme importance. By observation of the laws which govern reproduction of the animal kingdom, we are persuaded that in breeding the ram represents half the flock, if not more. When he is an animal the product of skilful breeding, and is individually prepotent, his character will be stamped upon the progeny to a high degree. This being true, it becomes necessary that in his selection only those characteristics are found to predominate which it is desired to reproduce. His pedigree, too, should show that he is descended from stock the distinctive peculiarities of which it will be no mistake to have stamped upon the progeny.

Thus it is that the successful breeder of sheep must have an ideal; he should know exactly what he wants, and in his efforts to attain it minor points must be sacrificed. With this ideal in mind a breeder, in choosing a ram, must not forget the qualities of the ewes with which he is to be mated. If there are weaknesses in the flock that have become prominent, the animal selected as its head should be one which gives promise of correcting them. In this connection, breed, type, size, constitution and quality of bone, wool and flesh should receive the closest consideration. The type and size will depend upon the breed selected, but strong constitution will only be seen in large heart girth, full chest, muscular neck, prominent eyes, and bright pink colored skin.

It is not unusual, especially at local shows, to meet sheep which, although registered, still possess characters better fitting their identification with some other breed. Such is simply a result of unintelligent mating, and goes to show that before success can be achieved a breeder must be a judge of the breed of his choice.

With the farmer whose only object it is to produce mutton and wool, one of the commonest errors is in selecting young and untested rams to head the flock. This mistake is usually seen in an absence of increase when the breeding season arrives. The head of the flock should be known to be a stock getter, and that of the right kind. The difference between the price of a lamb and a well tried shearing ram will not be much, and the older the sire, up to a reasonable limit, the greater the vigor possessed by the young things when they arrive. If for any reason a suitable yearling or older ram cannot be secured and it is found necessary to depend upon a ram lamb, he should be a strong and vigorous one, in good condition, and should be sparingly used, not more than twenty to twenty-five ewes being bred to him in the season, while he should be fed regularly during the service season a little grain, such as oats, peas and bran, to keep up his strength.—*Farmers' Advocate, Can.*



DEKOL 2d BUTTER BOY 3d.

The above picture is from a photograph of DeKol 2d Butter Boy 3d, No. 2, 29299, H. F. H. B., now owned by Thos. Fassitt & Sons, Sylmar, Md., taken on the day he was 1 year old.

He is sired by DeKol 2d Butter Boy 3d, a son of old Dekol 2d. Official test at 11 years old, 26 lbs. 9.21 oz. butter in 7 days, then the largest official test made. He is sired by Manar DeKol, a son of Netherland Hengeweld. At 8 years old she made an official record of 26 lbs. 10.66 oz. butter in 7 days. The dam of DeKol 2d Butter Boy 3d No. 2, Aaggie Lily's Pietertje Netherland, official record at 8 years 20 lbs. 3 oz. from 3 teats, the other quarter being lost from being stepped on. The average test of the milk for the week during the test was 4.2 per cent. and 60 lbs. of milk per day.

This young animal was placed at the farm as one of the service bulls of the above herd at a very long price, and the Messrs. Fassitt are expecting great results from his get.

#### FEEDING HOGS INDOORS.

In order to determine the value of indoor and outside feeding, the Ontario agricultural college fed hogs of several breeds out of doors and in a hog lot. Both those outside and in were fed twice a day what grain meal they would eat readily. This meal consisted of two parts barley to one part middlings by weight. The inside hogs were fed all they would eat of green feed, tares and rape being cut and taken to them. The hogs on the outside were allowed to pasture on rape and tares. Results show that the hogs outside ate more meal and made slower gains than those fed inside.

When corresponding with advertisers, kindly mention the *Southern Planter*.

## The Poultry Yard.

### THE BREEDING OF THE PEKIN DUCK.

#### The Care and Marketing of Ducklings.

(CONTINUED.)

*Editor Southern Planter.*

Many failures in raising ducks (as well as other poultry) are due to inexperienced persons launching into the business, conducting it in a haphazard go-as-you-please sort of way. A great injury too is done by the publication of a lot of "rot" pertaining to the business by theorists and idle writers, and this causes a number of innocent persons to engage in it, and the result is failure and disappointment along the line, and these cases are really a detriment and injury to the legitimate poultry business. When it comes down to the practical and hard work side of the question these very same writers do not know whether they would be right in feeding their chicks cracked wheat or "China nest eggs." The Pekin duck thrives wonderfully well in the South, and would be found very profitable handled on a large scale. Running water for them to bathe in is better for their thrift, as it is natural for a duck to dabble in water, although some large raisers do not have this facility and claim they do well. A duck can stand up to a trough of water and clean himself better than you can wash him in a bath tub.

Duck eggs being clear are more readily tested than dark shelled eggs. The eggs begin to pip on the 25th day of incubation, and require from two to three days for the hatch to clear the shell and nicely dry off; the youngsters are then ready to be transferred to the brooders, which should be for a few days kept at from 90 to 92 degrees, as they do not require quite as much heat at first as newly hatched chicks.

For the first few days we feed a mixture of corn meal, bran and middlings, equal parts, or sufficient middlings to hold the mess together. Add to this some coarse and sharp sand. Do not neglect the sand, as it is very essential. Place in their pens a box of sharp sand. Give them water, either in galvanized iron fountains or "V" shaped troughs made of 2 x 3 stuff, which increase in size as the birds grow. Tack a strip over this, allowing them to get their bill but no more into the water.

Be careful not to feed an overplus of corn meal in the feed of ducklings the first ten days, as it is fatal.

During cold weather always give them tepid water. After the fourth or fifth day put a little ground beef scrap in their feed. Only a little at first or it may cause diarrhoea. Increase the scrap as they grow. At

the age of ten to twelve weeks, when they are ready to fatten, give them 10 to 12 per cent. beef scrap in their feed.

Ducklings will stand crowding in their pens better than chicks, but thrive best when in small lots. Do not shut them up too close in their brooders at night because some theorist said so. Use some judgment, a little horse sense, proper feed, and your ducklings will grow surprisingly fast.

Their great aim in life seems to be to eat, drink and grow. If confined in yards in the hot spring and summer months without shade ducklings often die from sunstroke. They fall on their backs, flounder around, and soon pass to the happy hunting grounds.

Trestle benches, with 1 x 12 x 16 foot boards placed on them, make a good temporary shade. It is a good plan to keep a lantern burning in your breeding houses at night for ducks. The nervous disposition of the Pekin duck causes them to injure each other in crowding and piling up, which they are sure to do at the slightest noise unless properly lighted. It is amusing to see the manoeuvres they go through on a dark night at any unusual noise when not sufficiently lighted.

Ducklings are also timid creatures, easily scared to stampeding, and a crowd of visitors not exercising care when going among them will scare a days' growth off a thousand ducklings in less time than it takes to write it.

Regularity in feeding should be strictly adhered to at all times. If you carry no timepiece your ducks will apprise you of the time of day.

A corn meal, beef scrap fed Pekin ducks at the age of ten to twelve weeks of age will satisfy the taste of the most fastidious.

They can be forced to weigh from 10 to 12 pounds per pair at this age, and can be raised to marketable age for from 8 to 9 cents per pound, according to the price of grain, in different parts of the country, and the earliest ducklings in February and March bring from 30 to 40 cents per pound in New York.

The popularity of this delicious meat has grown rapidly during the last few years.

Ducklings should be fattened for market at 10 to 12 weeks of age, or before the pin feathers begin to shoot. They should be killed when ready for market by sticking with a sharp knife through roof of the mouth, penetrating the brain; well bled, and immediately scalded and picked.

After picking clean off pin feathers, place in cool water for a few hours. Before packing they should be placed in tubs of ice water to plump and until all animal heat is out. Then tag, weigh and pack in sugar

barrels. Fill the barrel to within six inches of the top; the space left fill with crushed ice.

The feathers are quite an item in paying for the picking and marketing. They bring from 40 to 45 cents per pound.

Ducklings should be shipped with head and feet on, and should never be drawn, except for special customers.

Rockingham Co., N. C.

WALTER P. LAIRD.

### PRESERVATION OF EGGS.

In a commercial way, cold storage is the cheapest method of preserving eggs, but for the housekeeper and small poultryman a storage house is impracticable. Some other method of preserving a few dozen eggs is needed, so that when eggs are cheap and plenty in summer, they can be laid down and taken up and used during the winter, when fresh eggs are a luxury. This subject has received considerable attention from Experiment Stations and others interested, and the latest information is given by the Rhode Island report recently issued.

Among the methods employed were the use of water-glass or silicate of soda, table salt, slaked lime and salt brine, vaseline, dried wood ashes, finely ground gypsum, powdered sulphur, brimstone fumes and sulphur, permanganate of potash, salicylic acid and salt brine. In each case fresh eggs were carefully gathered and placed in stone jars, which were kept in a closet where the temperature ranged from 62 to 67 degrees in summer. They were covered with the liquid preservative, where such were used, or packed in dry material, as the case might be. Vaseline was rubbed over the shell with a cloth, while in the brimstone fumes and sulphur experiment, the eggs were subjected to the fumes of burnt brimstone an hour, and then packed in flowers of sulphur.

The eggs were packed for a period of ten and a half months, when they were examined. Those preserved with waterglass or with the lime, water and salt brine, were all good for culinary purposes, but the rest were all spoiled. Further experiments with the waterglass were tried, and it was found that as little as 3 per cent. solution was effective. Either wooden, earthen or glass receptacles will do to hold the eggs, which should be washed clean, laid in carefully, and then covered with the solution of waterglass and water. After a time the waterglass forms a white precipitation upon the shell, which is readily washed off when the eggs are taken out for use.

After being preserved in this for ten and a half months the whites of the eggs were clear, but not so limpid as those of fresh eggs. The yolks appeared normal in color and condition. The air cell was not enlarged. The taste was slightly flat, or at least not perfectly fresh, but they were suitable for culinary use and probably as good as most crate eggs commonly found in market.

In preparing the lime water and salt brine solution, one pound quicklime and one half pound table salt were thoroughly mixed with boiling water. After slaking and settling, the clear solution was drawn off and poured over the eggs. The eggs kept as well in

this as in the waterglass, the whites beat up nicely, but had a slightly salt taste. This method of preserving eggs is somewhat cheaper than the waterglass, which, however, is not very expensive if a 5 per cent. solution is used.—*American Agriculturist*.

### SOME TIMELY HINTS.

The sooner you dig out the old earth floors in your hen houses and fill in new, the better condition will the floors be in for winter. It is best to dig out six or eight inches of the old earth so as to remove all the taint and bad odor that may be in the ground. Remove this to some spot of land that needs fertilizing, and bring in some fresh earth to fill in with. A clay soil which will pack closely is best. Pack it in as close and hard as possible. Use a heavy maul or tamper, so as to have a good solid floor. On top of this—when it has had time to dry a little—put six or eight inches of dry loam or sandy soil. This will make the very best kind of a winter floor for your hens, and the sooner it is fixed the drier it will be for winter. Don't forget to clean up the whole interior, including nest boxes and all, when fixing the floors, and do it thoroughly and well.

If the roof leaks, fix it at once. Don't let the wet and damp spoil the whole winter's prospects. Have all leaks and wind holes closed at once, so that the inside of the house will have a good chance to get thoroughly dry while the weather is warm. Keep the windows and doors open for ventilation—just so the rain does not come in. Fix up the dropping boards and the roosts. Have new nest boxes if needed, and put the nests up off of the floor in an out of the way dark place, so that the hens will not be tempted to eat the eggs. Temptation often leads us into trouble. Just so with the hens. If the nests are located with the entrance to them a little way from and out of the line of vision, the "out of sight, out of mind" rule will help to keep them from learning to eat the eggs. While at it, paint the nests, roosts, dropping board, and all places where lice may be, with some good louse paint.

### POULTRY KEEPING PROFITABLE.

Professor A. G. Gilbert, of the Ottawa Experimental Farm, in answer to the question, "Why is poultry valuable to the farmer?" gives the following reasons:

1. Because he ought by their means to convert a great deal of the waste of his farm into money in the shape of eggs and chicks for market.
2. Because, with intelligent management, they ought to be all year revenue producers, with the exception of perhaps two months during the moulting season.
3. Because poultry will yield him a quicker return for the capital invested than any of the other departments of agriculture.
4. Because the manure from the poultry house will make a valuable compost for use in either vegetable garden or orchard. The birds themselves, if allowed to run in plum or apple orchard, will destroy all injurious insect life.
5. Because while cereals and fruits can only be successfully grown in certain sections, poultry can be

raised for table use or layers of eggs in all parts of the country.

6. Because its poultry raising is an employment in which the farmer's wife and daughters can engage and leave him free to attend to other departments.

7. Because it will bring him the best results in the shape of new-laid eggs during the winter season, when the farmer has most time on his hands.

8. Because to start poultry raising on the farm requires little or no capital. By good management, poultry can be made, with little cost, a valuable adjunct to the farm.—*Farmers' Advocate, Can.*

### ONE CAUSE OF FAILURE IN POULTRY KEEPING.

[Extract from a Lecture by John H. Robinson, of the Connecticut Agricultural College.]

I could give numerous instances where people have deliberately gone contrary to the known teachings of experience, because that experience not being personal to themselves, they could not realize the danger and folly of rejecting its lessons. Had they learned the business first under a competent instructor they would not have been likely to go badly wrong, for the habit of doing a thing right often keeps one out of trouble, even if he does not understand the reasons for the method he uses—and has never seen a practical demonstration of the consequences of doing that particular thing in some wrong way. Some one has said, "Success does not consist in never making mistakes, but in never making the same mistake twice." I don't think that assertion will bear a very close analysis; very few generalizations of the kind will; but it certainly has a great deal of truth in it.

As I look back over the years when I was learning poultry keeping—experience made largely of mistakes—I recall that at the close of each season I used to note, in reviewing that season's work, that my marked progress had been principally along the one or two lines in which I had found most discouragement and loss in the previous season, and to which I had therefore given most thought and attention. And in the next season work on those lines was comparatively easy, had perhaps advanced to the mechanical stage, and more time could be given to some other troublesome matter.

This was progress, and there was a certain satisfaction in working things out for oneself, but it was a slow and laborious progress, and the cost was enormously greater than if I had learned the business in the right way.

There is another way in which poultry keeping is hard for most people—and very hard for some—which few think of until they learn it by experience.

The business is very confining, and so in times becomes monotonous.

Then it becomes a question of whether the poultry keeper can take up some form of recreation that can be adapted to such leisure as he can secure, and furnish relaxation which will break the monotony of his work without interfering with it. If he cannot do this—and if he is of such a disposition that he cannot stand the monotony of the life, he is very apt to begin to cut his duty here and there to get time for favorite

pleasures, and when he does this the finish of his venture is only a question of time.

The poultry keeper—like all who have the care of live stock—has to give the real needs of his stock precedence over all ordinary claims upon his time and attention. The care of the stock will frequently require long days of labor extended far into the night, loss of sleep, and denial of many pleasures.

"Business first" must be his invariable rule, for there is no other line of work in which the penalties of slight infringements of that rule are more sure or more quickly felt. Whoever finds it too hard to follow that rule will fail in poultry keeping.

Limber neck is a complaint common to chickens in the Middle and Southern States. It is caused by ptomaine poisoning from eating putrid flesh. The disease is a paralysis of the neck, and death is not caused by maggots gnawing through the craw, as is commonly supposed. Poultry keepers in England and France feed their birds on maggots, but where maggots are, the poison which causes this trouble is likely to be found. I have found turpentine a good remedy, but probably the most effectual is venetian red, say half a teaspoonful to each bird daily. Mix this with dough and roll into strips one inch long.—W. B. DOAK, Hamblen County, Tenn.

Dampness causes much mortality among chicks which are hatched under hens.

The temperature of the brooder should never be allowed to fall below 90 degrees.

Good stock always finds a ready market, while poor stock is not in demand at any price.

The hen may not be a "mortgage lifter," but given a chance she will scratch one badly.

Never crowd too many fowls into one house or yard. Overcrowded flocks are always failures.

Suitable buildings and proper attention are indispensable to success in the poultry business.

Sunshine is a chicken grower; give the early chicks the benefit of this and face the coops south.

Young chicks should have some kind of green food, and a little ground bone will be good for them.

It is a pretty well established fact that hens will lay more eggs with no rooster about to bother them.

In selecting a breed for practical purposes, the plumage should be a matter of secondary consideration.

Don't defer the afternoon mash too late. Remember the days are short, and the hens go to roost early.

Young ducks do not need a swimming place, but the water fount should be deep enough so that they can immerse their bills above their nostrils.

When setting the hens, or starting the incubators, have all the eggs as near the same age as possible; you will get a more uniform hatch.

Among mixed breeds we occasionally find as good a layer as we do of any stock, but the majority are usually inferior layers.

## The Horse.

ONLINE, 2:04, DEAD.

*Editor Southern Planter:*

After thirty-six hours of sickness, and constantly attended by two of the best veterinary surgeons of our city, we lost our famous pacing stallion and sire, Online, 2:04, on August 16th. Post mortem examination proved that he died of volvulus of the smaller intestine. This, of course, is sure death, and there was not a possible chance to save him. About 20 feet of the intestine was twisted, which is very unusual. We have buried him on our International Stock Food Farm, and he rests on the bank of the beautiful Minnesota river, where a stone will be erected in honor of his greatness.

He is not only a great loss to our farm, but the entire horse-world regret his early death, as he was proving to be a phenomenal sire of fast pacers. Minnesota and the entire Northwest highly appreciated this remarkable World's Champion pacing stallion. He had held the four-year-old stallion pacing record for eight years, and although a young horse he had 17 in the 2:25 list and many more ready to enter.

INTERNATIONAL STOCK FOOD CO.

Minneapolis, Minn.

### NOTES.

In charge of the veteran trainer and driver, C. A. Pusey, at the mile track of the Deep Run Hunt Club, about a dozen trotters and pacers are quartered, most of whom are owned by members of the Club. Those with records are the big bay gelding Rustler, 2:15½, by Hustler Russell, who trotted to his record in 1902, and is being shaped up for the races again, and the bay pacing mare Steed, 2:22½, by Marvellous, whose owner, Mr. Langhorne Putney, has been driving on the road. She can show a mile under 2:15, and reel of quarters at a 2:10 clip handily. Thiol, the bay mare, by Egwood, 2:18½, dam by Woodburn Hambletonian, is owned by John K. Branch, of the banking house of Thomas Branch & Co., by whom she was bred. If this erratic daughter of Egwood ever becomes steady she should make a great matinee performer for Mr. Branch, as he can drive with the skill of a professional, and Thiol has a wonderful turn of speed. Ephraim is a bay gelding, 4, by Toodles, Jr., dam by Willis, and could trot better than 2:30 as a two year old. Wharton is also a bay gelding, but a year younger than Ephraim, and by Gregorian, out of Gretna Green, dam of J. S., 2:24½, by Aberdeen. The chestnut stallion Estuary is a full brother to Marique, 2:14½, and a horse of the richest breeding, being by Expedition, 2:15½, out of the great brood mare Wavelet, by Belmont, second dam far famed Waterwitch. He is five years old, and has worked miles around 2:20 and halves and quarters at a much faster clip this season. Pusey likes him well. Surprise is a nice looking bay gelding,

whose breeding has not yet been given Pusey, but the horse is very fast, and when right 2:15 will not stop him. Leveret, the bay gelding, by A. L. Kempland, out of Laurel B., dam of Laurels, 2:13½, has gotten big and strong, while steady in company and able to show a half in 1:07 without much effort. He is owned by Mr. W. H. Miles, and later on may be taken to the races along with Rustler and Lizzie S. The latter is a nice looking bay mare with good manners and a level head. Mr. Thomas Atkinson owns her. She is entered at several of the Baltimore meetings and seems good enough to win start.

The annual show of the Rockingham Horse and Colt Show Association took place at Harrisonburg, Va., on the 13th and 14th instants and was a decided success, the attendance being larger and the exhibits of a higher character than during previous years. Held at Lake Park, the new and beautiful grounds of the Association, which are right near town, and in the midst of an attractive and prosperous farming locality, the show attracted thousands each day, especially on the second one, when the grand stand was packed and the crowd in general larger than was ever seen even at the old fashioned fairs that in their day were all the rage. Perfect weather conditions prevailed and no two men on the grounds were in higher feather over the condition of affairs than President J. S. Harnsberger and Dr. John A. Myers, who combines the duties of secretary and treasurer. E. W. Twaddell, of Philadelphia; J. B. Andrews, W. W. Sanford and W. J. Carter judged the show horses, and likewise rendered decisions, when a couple of running and harness races were run off during each afternoon. The latter was a popular feature and well received by the masses. That the Horse Show is an educator was clearly demonstrated by the fact that breeders of the Valley of Virginia are fast becoming alive to present day demands for high-bred horses, and many of the specimens of youngsters exhibited may be looked upon as grand prospects for future honors on the turf and in the show ring. During former years mostly cattle and draft horses were bred in this section, but now trotters, thoroughbreds, hackneys, hunters, jumpers and gaited saddle horses come in for a large share of attention, and in the near future their production for the big markets promises to become a most important feature of the far famed Shenandoah Valley.

An ailing leg has at least caused retirement during the present season of Gold Bur, the son of Bursar, 2:17, that was bred by W. C. West, Onancock, Va. The handsome chestnut gelding has been a consistent performer right along since his first race in June, and at Albany on July 31st got second money in the Keeler Hotel Stakes and a new record of 2:13½, a reduction of 3½ seconds from his former mark. At Poughkeepsie, on the 7th instant, Gold Bur won a couple of heats in the 2:17 class, trotting, and then his leg caused trouble and the chestnut gelding caught the flag. Gold Bur is one of the best looking trotters ever sent out from Virginia, and well bred too, as his sire, the dead Bursar, has gotten speed, and the dam, Bertie, pro-

duced Lamp Girl, 2:09, the fastest of Virginia bred trotters.

The McComb Brothers—James and John—of the Glencove Farm, a fine estate of over 400 acres, near Somerset, Orange county, Va., report a good season in the way of sales made of hunters, jumpers and gaited saddle horses. Lady Golden, the chestnut mare, by Golden Denmark, went to New York; Lady May, the brown mare, by Fessler, was purchased by a gentleman in Brooklyn, while the two heavy weights, Skyrocket, a bay gelding, 16:1, 1100 pounds, and Franklin, a black gelding, 16, 1150 pounds, also went North and have given great satisfaction to their new owners. The stallions in use at Glencove are Golden Denmark, the saddle bred stallion, who is highly prized, and Abdel Kader, Jr., by Abdel Kader, the thoroughbred son of Imp. Australian, that for years ruled as premier sire at famous Bullfield Farm, in Hanover county. Abdel Kader, Jr., is not strictly thorough bred, but is a horse of exquisite quality and finish, and his get make fine hunters and steeple chase horses. The finest three year old at the farm, and one good enough to show in any company is Lightfoot, the black gelding that has won either first or second prizes all along the line of Virginia horse shows this season. Lightfoot was sired by Fessler, dam by Castleman, son of Woodford Mambrino.

Mr. J. S. Curtis, of the Mayfield Stud, Leesburg, Va., has five entries in the English Derby of 1903. Mr. Curtis, who is widely known as the "South African Millionaire," maintains a racing stable in England. The Mayfield Stud at one time assumed large proportions, but in 1901 the greater portion of the brood mares were disposed of along with several of the stallions, and the sires now in use are imported Minceamt, son of St. Augustine and Cutlet, by Nun-cham, and imported Bevenute, by Galopin, out of Queen of Diamonds, by King of Trumps.

One of the most highly prized brood mares in the noted Ellerslie Stud of R. J. Hancock & Son, Charlottesville, Va., is Mermaid, the chestnut daughter of imported St. Blaise and Palmetto, by Virgil. By Eolus she produced Merry Day, the chestnut horse with lightning speed and many victories to his credit, now a member of the Annita Stud of A. D. Payne, Charlottesville, while by Eon, son of Eolus, she threw Eonic, winner of the rich Burns Handicap in California this season. Minetauer, bay colt, 2, full brother to Eonic, won at Brighton Beach recently. Mermaid's foal of 1902 is chestnut filly, full sister to Eonic.

The brown mare Princess of Ridgefield, by Prince Belmont, dam Ida Wise, by Bijardo, second dam by Walker Morrill, the sire of Lamp Girl, 2:09, was sent by her owner, Dr. J. C. Walton, Reidsville, N. C., to the court of Lynne Bel, 2:10½, this season, at Flemington, N. J. By that great young sire of speed, Princess of Ridgefield, who is a large, handsome mare, should throw a choice foal. Lynne Bel figures as the sire of this season's winner, General Johnson, Meadow Bel and other good ones.

Among the trotters owned by F. C. Smith, of Stanton, Va., are the roan mare Marion Shaw, full sister to Annie S. Lawson, 2:20, by Prince Orloff, son of Messenger Durco, and Walton Wonder, the chestnut colt, foaled November 17, 1901, by Red Leo, 2:26½, out of Perrette, 2:23½, by Juror, 2:24½. Walton Wonder was bred at Walton farm, Falls Mills, Va., where his sire heads the stud, and the dam Perrette is a member of the brood mare band.

Richmond is the Mecca to which the cohorts will look during the week of October 14th to 18th, which are the dates of our Horse Show, and it promises to be a grand affair. The new auditorium at Reservoir Park will surpass any building of the kind in the South, while facilities for handling large crowds are excellent, as three car street lines centre there. Already every box seat has been engaged and applications are being daily received for season tickets. The entry list promises to be large and of a select character, which encourages the management to look forward to a most successful result.

In the brown filly Brilliant, one year old, by Arnon, thoroughbred son of imported Charaxus and Wayward, by Eolus, Mrs. Allen Potts has a youngster of rare form and finish. The exquisite quality of this filly has been a subject of remark, and wherever exhibited she has carried off the blue ribbon. Brilliant was bred at Castle Hall, Cobham, Va., where her sire and dam are owned, the latter being by a Revenue horse from an imported hackney mare.

W. W. Sanford, of the Woodley farm, Madison Run, Orange county, Va., has lost by death, due to a broken ankle which necessitated his being destroyed, the grand looking thoroughbred stallion Lachland, brown horse, by Spendthrift, out of imported Landrinio, dam of Mexican, by The Arrow. This horse was purchased early in the season from J. W. Colt, Genesee, N. Y., and placed in the stud with a view of siring hunters, jumpers and steeplechase horses, for which his fine size and conformation seemingly made him well fitted.

At the Charlottesville Horse Show the first prize in the class for harness stallions went to the chestnut horse Aebineer, 30,992, bred and owned by Mr. William N. Wilmer, of the Plain Dealing Stud, Keene, Albemarle county, Va. Aebineer was sired by Virginia Chief, son of Kentucky Prince, out of Aebina, by Alban, second dam Violet, dam of Version, 2:19½, and Bonnie E., 2:29½, by Electioneer, 125.

In the bay horse Iron Crown, thoroughbred son of Onondaga and Empress, by imported Emperor, A. S. Craven, of the Greenwood Stud, Greenwood, Va., has a stallion that promises to make an excellent sire of hunters, jumpers and steeplechase horses. Iron Crown stands 16:1 and weighs 1,100 pounds.

BROADBROCK.

When corresponding with advertisers, say that you saw the advertisement in the *Southern Planter*.

## Miscellaneous.

### CEMENT FLOORS FOR STABLES AND BARN.

In our notes on Work for the Month, we have suggested that this is a very proper time to see to the repairs and renovation of the barns and stables. In connection with this work there is one improvement which we should like to see much more frequently than we do—viz.: the introduction of cement floors into stables and barns. The use of these floors enables all the liquid manure to be saved, and this is the most valuable part of the voidings of the stock, and they also result in the making of much more manure and that of a much more valuable character. Another argument in their favor is that they are of permanent value. Once put down they practically last forever. The work of laying such a floor can easily be done by any man of intelligence almost as well as by an expert, and this materially reduces the cost. The cement required is the only item of cost on most farms, and this is not anything like so costly as many imagine. Here in Richmond the price of Portland cement is \$2.10 per barrel. A barrel of cement will make the concrete and give the finishing coat to one hundred square feet of floor in a cow house or hog pen. This allows for three inches of concrete and a half inch of finished surface. In a horse stable or where heavy traffic is to be hauled over it, the concrete should be five inches deep and the surfacing one inch. This would call for nearly two barrels of cement to the one hundred feet. The process of preparing for the floor and mixing and laying the cement is simple. Level the floor space by taking out sufficient soil to allow for filling in four to six inches of gravel or broken stone, and on top of this the three to five inches of concrete. This will bring your floor to its present level. In laying out the floor, if you desire the drainage to run towards any particular point for convenience of removal by drain or otherwise, see that you provide the necessary fall to this point. When the place is ready for the foundation, fill this in and tamp solid and level. Then take broken or crushed stone, no piece larger than an inch in diameter, use eight parts of this crushed stone and four parts of fine clean gravel from which you have screened the sand for mixing your finishing coat or topping, using a screen with quarter-inch meshes, and one part of cement. The mixing must be thorough. Build up a conical heap containing anywhere from twenty-five to fifty cubic feet, measuring the gravel, sand and cement and pouring them on alternately; then shovel it over four times, mixing it thoroughly, or perhaps a better way is for one man to use a shovel and another a fine-toothed rake, and as each shovelful is thrown on the

heap pass the rake back and forth on it. This mixing should be done dry. When thoroughly mixed shovel it over another time, having some one with a watering pot sprinkle as you do so. It should not be wet enough to drip, but should be thoroughly dampened so that the cement will adhere to every pebble or bit of stone in it. When thoroughly mixed and moistened throughout, lay the concrete on the foundation to the depth required and tamp solid and level. Then after this has dried a few hours, mix the finishing coat made of the fine sand sifted out of the stone, and cement in the proportions of nearly half and half to the consistency of mortar and spread over the concrete, leveling it with a straight edge. If desired, this surfacing may be ridged or roughened by marking it off in square or in parallel lines. This prevents stock slipping on the floor. In forty eight hours the floor will be hard enough to use, but will be better to wait longer.

### AGRICULTURAL STATISTICS OF VIRGINIA AND NORTH CAROLINA.

We are just in receipt of the census office reports on the agricultural situation in Virginia and North Carolina as prepared for the 12th census of the United States. From these reports we take the following information:

#### VIRGINIA.

The farms of Virginia, June 1, 1900, numbered 167,886, and were valued at \$271,578,200. Of this amount \$70,963,120, or 26.1 per cent., represents the value of buildings, and \$200,615,080, or 73.9 per cent., the value of land and improvements other than buildings. On the same date the value of farm implements and machinery was \$9,911,040, and of live stock, \$42,026,737. These values, added to that of farms, give \$323,515,977, the "total value of farm property."

The products derived from domestic animals, poultry, and bees, including animals sold and animals slaughtered on farms, are referred to in this bulletin as "animal products." The total value of all such products, together with the value of all crops, is termed "total value of farm products." This value for 1899 was \$86,548,545, of which amount \$27,846,803, or 32.2 per cent., represents the value of animal products, and \$58,701,742, or 67.8 per cent., the value of crops, including forest products cut or produced on farms. The "total value of farm products" for 1899 exceeds that for 1889 by \$44,304,087, or 104.9 per cent.

The "gross farm income" is obtained by deducting from the total value of farm products the value of the products fed to live stock on the farms of the producers. In 1899 the reported value of products fed was \$13,002,810, leaving \$73,545,735 as the gross farm in-

come for that year. The ratio which this amount bears to the "total value of farm property" is referred to in this bulletin as the "percentage of gross income upon investment." For Virginia, in 1899, it was 22.7 per cent.

As no reports of expenditures for taxes, interest, insurance, feed for stock, and similar items have been obtained by any census, no statement of net farm income can be given.

#### NORTH CAROLINA.

The farms of North Carolina, June 1, 1900, numbered 224,637, and had a value of \$194,655,920. Of this amount \$52,700,080, or 27.1 per cent., represents the value of buildings, and \$141,955,840, or 72.9 per cent., the value of land and improvements other than buildings. On the same date the value of farm implements and machinery was \$9,072,600, and that of live stock, \$30,106,173. These values, added to that of farms, give \$233,834,693, the "total value of farm property."

The products derived from domestic animals, poultry and bees, including animals sold and animals slaughtered on the farms, are referred to in this bulletin as "animal products." The total value of all such products, together with the value of all crops, is termed "total value of farm products." This value for 1899 was \$89,309,638, of which amount \$20,684,727, or 23.2 per cent., represents the value of animal products, and \$68,624,911, or 76.8 per cent., the value of crops, including forest products cut or produced on farms. The "total value of farm products" for 1899 exceeds that reported for 1889 by \$39,239,108, or 78.4 per cent.

The value of "net farm products," or the "gross farm income," is obtained by deducting from the total value of farm products the value of the products fed to live stock on the farms of the producers. In 1899, the reported value of products fed was \$10,108,890, leaving \$79,200,748 as the gross farm income for that year. The ratio which this latter amount bears to the "total value of farm property" is referred to as the "percentage of gross income upon investment." For North Carolina in 1899, it was 33.9 per cent.

As no reports of expenditures for taxes, interest, insurance, feed for stock, and similar items have been obtained by any census, no statement of net farm income can be given.

From these reports it will be seen that the gross return on investments made in farm property in Virginia amounts to 22 per cent., and in North Carolina to 33 per cent. These returns compare very favorably with the gross returns made on investments in like property in Northern and Western States. In New York, the gross return is 17 per cent.; in Pennsylvania, 14 per cent.; in Illinois, 13 per cent.; in Indiana, 15 per cent. The total area of Virginia farms is 19,907,805 acres, of which 10,094,805 are improved. The total area of North Carolina farms is 22,749,356 acres, of which only 8,327,106 are improved. The total amount paid for labor on Virginia farms in 1899 was \$7,790,720, and on North Carolina farms, \$5,185,167. The amount paid for fertilizers in Virginia in 1899, was \$3,681,790, and in North Carolina, \$4,479,030.

## VIRGINIA AS A HOME FOR THE FARMER.

*Editor Southern Planter :*

I am a new resident of the State, coming from Ohio. Whilst in Ohio recently on a visit, I was asked by many why I ever came to Virginia. I could only say that I thought there were good opportunities in Virginia for a man with small means.

Since my return home I have received a copy of the Year-Book of the Department of Agriculture, and I find upon a little investigation that Virginia is second to no State in value of product raised per acre. Iowa the Year-Book shows was the banner State for hay in 1900, producing 5,006,470 tons. The average value of the hay produced was for ten years \$7.15 per acre. Virginia, in 1900, produced 507,873 tons, with an average value for ten years of \$12.00 per acre.

Iowa was also the banner corn State in 1900, producing 350,859,948 bushels, with an average value for ten years of \$5.87 of corn per acre. Virginia in 1900 produced 28,183,760 bushels, with an average value per acre for ten years of \$7.93.

Illinois was the banner oats State for 1900, with a crop of 133,642,884 bushels, with an average value per acre for ten years of \$7.39. Virginia produced in 1900 5,167,568 bushels, with an average value of \$4.76 per acre for ten years.

Kansas was the banner wheat State in 1900, with a crop of 82,488,655 bushels, with an average value per acre for ten years of \$7.26. Virginia produced 9,421,932 bushels in the same year, with an average value per acre for ten years of \$7.68.

New York was the banner potato State in 1900, carrying off the position with a crop of 27,481,356 bushels of the tubers, with an average value for ten years of \$34.81 per acre. Virginia produced the same year 2,223,778 bushels, with an average value per acre for ten years of \$36.26.

New York was the banner buckwheat State in the year 1900, producing 3,280,158 bushels, with an average value for ten years of \$8.26 per acre. Virginia in 1900 produced only 58,812 bushels, with an average value for ten years of \$7.18 per acre.

The land upon which the Iowa farmer raised his hay and corn is to-day worth from \$40 to \$60 per acre. Land that will produce an average crop of hay and corn in Virginia can be bought for from \$5 to \$15 per acre, and yet an acre of hay in Virginia for the past ten years has been worth \$4.88 more in Virginia than in Iowa.

The Iowa farmer gets from his \$40 to \$60 land but \$5.87 worth of corn per acre, on a ten years' average, with the best of culture. Virginia, with the poorest system of culture in the world for corn, raises \$2.06 worth of corn more to the acre than Iowa on a ten years' average.

In the State of Illinois an acre of land that will produce an average crop will cost from \$50 to \$60, and yet the Illinois farmer on a ten years' average can only produce \$2.63, more oats to an acre than Virginia. If one half of the Virginia farmers would only work a tobacco stubble, and scatter on it about three pecks of oats to the acre, and cover with a brush, as is quite frequently done in Virginia, they would produce more oats than the Illinois farmer.

Kansas, with her broad acres of grain, her sulky plows, self binders, and land worth \$30 to \$50 per acre, just falls short 48 cents per acre of producing as much wheat to the acre as Old Virginia.

New York, where land sells at any and all prices, but where land that will produce an average crop of anything is worth from \$10 to \$100 or more per acre, just falls short of producing as much value in potatoes to the acre as Virginia by \$1.39 on ten years' average. She beats us on buckwheat \$1.08 per acre for a ten years' average, but look at the difference in the value of the land. Did Virginia farmers but work and manure her land as the farmers of Iowa do their corn land or make her hay as they do in Iowa, or the farmers of Illinois or the farmers of Kansas their wheat, or the farmers of New York their potatoes, she would stand at the head of all these States in production and value.

Charlotte Co., Va.

J. H. HARPSTED.

## THE LABOR SITUATION IN GERMANY.

Editor Southern Planter:

Accounts of the prevailing condition of the working classes in Germany that I have seen in recent American newspapers are, as far as my observation goes, considerably exaggerated. They seem to have been taken mostly from German party organs that are either misinformed or that misrepresent the situation to further political objects. During the past winter many workmen were, it is true, out of employment as a result of a commercial crisis, and there was consequently a good deal of suffering, which public appropriations and private charity only partially relieved, but with the opening of spring there was a marked change for the better. The reports of the labor bureaus and of the state sick, accident and old age insurance department, which are entirely trustworthy, indicate that there is now work at what are here called fair wages for all who seek it. Sixty thousand Italians who have come into this country in the past few months are all busy on the railroads and in the building trades, and in many agricultural districts there is the usual very perceptible want of farm hands. In Central and Southern Germany, where the small farms

are tilled in a patriarchal way by the owners and their families, this want is scarcely felt; but with the large landowners of the North it is of such a serious character that it has to be supplied by the importation of laborers, chiefly from Russia and the Austrian Empire. Every year, in March, thousands of men, women and half grown children are brought in and located on the big estates, mostly in the northeast provinces of Prussia, where they are allowed to remain until November, but must then leave German territory as the government refuses them the right of domicile. The intelligence office, in connection with the Board of Agriculture of the Province of Rosen, announces that it can furnish "foreign summer help" at the following rates:

*Russians*.—Men, daily wages, M\*. 1.50; women and boys, M. 1.00. Men, in harvest, wages, M. 1.75; women and boys, in harvest, M. 1.25; with 25 lbs. of potatoes per person per week and one-half liter† of skimmed milk daily; cost of transportation per person to the Prussian border, M. 2.00; in groups of more than 10, M. 1.50.

*Gallicians*.—Men, monthly wages up to, M. 20; strong boys, monthly wages up to, M. 18; weak boys and women, monthly wages up to, M. 16; with farm produce to the value of 40 pf. per person per day; cost of transportation per person to the Prussian border, M. 5.

*Hungarians*—with guarantee against breach of contract, in groups of not under 20 persons: Men, daily wages, 85 pf.; women, 68 pf.; men, in harvest, wages, M. 1.36; women, M. 1.02; with farm produce to the value of 40 pf. per person daily; cost of transportation to the Prussian border per person, M. 7.

The lodgings provided for them are for the most part far from being comfortable, but they are better than the poor creatures are used to at home.

The young men from the rural districts in Germany, after serving their two or three years in the army, do not generally return to farm work, but go to the cities and industrial centres, where they are much better paid, housed and fed. They seem, too, to dread the monotony and dreariness of country life. On the whole, though, the standard of living among farm laborers in Germany is, I think, gradually rising.

SAM'L ROLFE MILLAR.

Singen-Baden, Germany.

\* 1 Mark of 100 pfennig=24 cents (about.) † 1 Liter=1 quart and ½ gill.

Farmers can often save next year's repair bills by housing all machinery and implements when this season's work is over. Don't forget to use the oil can first though.

## ALFALFA.

In introducing this crop in our agriculture there are a few things that ought to be considered by the farmers. In the first place alfalfa is a crop which when seeded must remain for several years at least before plowing up for corn or other crops. It takes almost two and sometimes three years to get a stand. After once securing a stand, with no unfavorable conditions of soil and climate, the value of the crop will increase from year to year. As the roots increase in length and size the crown develops more buds, until a single root will support a large number of stems. One plant hanging in my office was pulled out of a three year old field and has fifteen stems. Further than this we have found it very difficult to plow up an alfalfa field, the roots dulling the plow so that it was necessary to sharpen the share frequently. All things considered, then, the farmer should carefully locate the alfalfa field where it can remain permanently or for many years at any rate. It does not seem to fit in with our crop rotation, where a short round of corn with a leguminous crop is desirable.

Alfalfa is a leguminous crop and it is believed that its growth adds to the fertility of the soil, besides putting it in good mechanical condition. The root tubercles take the free nitrogen from the atmosphere adding this valuable element of plant food to the soil where other crops may use it. The roots penetrating the subsoil break up the hard clay soils, allowing the air to circulate, making the insoluble plant food in the sub-surface and subsoil available for grain crops. At the same time the growth of the plants is very rapid, making it necessary to cut three and even four times in a single season. On several Illinois alfalfa fields over three years old four crops were harvested last year. The crop should be cut when about one tenth of the plants are in bloom. Professor H. M. Cottrell, of Kansas, who has gone more deeply into this subject than any other experimenter, says that by allowing the crop to ripen the plants will die and the stand be injured so much that the field will rapidly become unprofitable. He states that in fields which have become patchy the disc run over the field in the early spring, the discs set straight so as not to plow up the ground, but so as to split open the alfalfa crowns, will increase the number of plants, and consequently revive an otherwise dying crop. In a recent visit to an alfalfa field within two miles of the Illinois Experiment Station Prof. Cottrell stated that cutting early was the most important point connected with the successful growing of the crop.

It is thought that sandy soils with gravelly subsoils in which the water level does not come nearer than eight or ten feet of the surface is best adapted to this crop. The facts are that no general rule, no definite directions can be given whereby the farmer can tell whether alfalfa will be successful on his farm or not. The only way to find out is to try it. In experimenting it is a good plan to try it on a small scale, perhaps a field of an acre or five acres. If the crop proves to be a success it can be easily extended; if a failure there will be a correspondingly small loss. It is only fair to sow the crop on good soil. The seed resembles that of clover very much and is very small, consequently the young plants are delicate and easily killed. Therefore, in order to get the small plants

established it is necessary to have a rich surface soil properly prepared.—A. D. SHAMEL, *Ill. Exp't Station, in Breeders' Gazette.*

## AIR-CURING TOBACCO.

If you have any information as to curing tobacco without smoke we would be glad if you let it appear, if you can, in your next issue. The time for curing is rapidly approaching, and I am satisfied that there is a good percentage of our tobacco more valuable without smoke than with it.

*Prince Edward Co., Va.*

C. S.

Tobacco curing without artificial heat, either from open fires or flues, requires well ventilated barns with doors or openings through which the flow of air can be regulated. The tobacco after being cut is usually hung on scaffolds in the field to wilt and color for a few days. It is then taken to the barns and hung up four or five plants on a stick, sufficiently apart to admit of the circulation of the air through the whole of the plants. In this way it gradually cures until fit to take down and bulk. The secret of success in this method of curing is careful supervision of the ventilation of the barn, so as to keep up a constant change of air until the curing is completed.

## HOW TO CURE THE NEW CROP OF TOBACCO

L. B. Vaughan & Co., the well known tobacco commission firm of this city, give the following advice to tobacco growers:

For such tobacco as Orinoco we advise sun and air cure of red color free from fire or smoke smell. For shipping or strips, when White Stem, Pryor, or One Snucker has been raised, we advise brown or dark red.

In all cases, as far as possible, avoid smoke or fire smell, and where flues or stoves are used, if possible, use charcoal. There can be but one opinion, and that is, that the world's taste is turning to milder tobacco without smoke. During curing of air or sun-cured tobacco, wet, damp, hot spells will cause such tobacco to mould. To avoid this, air-tight wood stoves should be used to give heat, mostly to cause circulation.

## AN UNEVEN APPLE CROP.

Special data secured from orchardists, dealers and handlers, supplementing the regular returns of our own corps of observers, confirm American Agriculturist's previous reports of only a moderate apple crop of indifferent quality in the western centres of production, while here in the east condition irregular. During July the prospect was distinctly lowered in practically every apple producing district between the Alleghany and the Rocky mountains.

Too much rain, too little sunshine, and a continued dropping of fruit is the constant burden of western reports, and the crop may now be classed as ranging from complete failure up to a moderate yield, a full crop nowhere, and an average promise from only one State—Michigan.

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J. F. JACKSON,

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B. MORGAN SHEPHERD,  
BUSINESS MANAGER.

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We invite Farmers to write us on any agricultural topic. We are always pleased to receive practical articles. Criticism of Articles, Suggestions How to Improve THE PLANTER, Descriptions of New Grains, Roots, or Vegetables not generally known, Particulars of Experiments Tried, or Improved Methods of Cultivation are each and all welcome. Contributions sent us must not be furnished other papers until after they have appeared in our columns. Rejected matter will be returned on receipt of postage.

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A Neat BINDER for your back numbers can be had for 25 cents. Address the Business Office.

## PUBLISHER'S NOTES.

### Winter Reading Matter.

The long evenings are now commencing, and occupation for them should be provided. The best use to make of them is to arrange for a systematic course of reading on various agricultural questions of moment to the farmer. In each section of the State there will be some subject of primary importance. Look up or enquire for the best authorities on the question, and order the book or books to be sent you. We shall be glad to advise farmers on these questions and to supply the books at the lowest possible price—much less when taken in conjunction with THE PLANTER—than they can be bought for elsewhere. See to it that your subscription to THE PLANTER is promptly renewed, and if not already a subscriber, send in your name and address, and that of two or three of your neighbors, and we will send the journal to you and them at a reduced price. For 50c. we will send you THE PLANTER to the end of the year 1903. Each issue will be found of the utmost interest and value to every farmer in the South. If your subscription expires at the end of the year, or in January, send in your renewal now, so that it can receive attention when we are not so overwhelmed with business as in midwinter. We have many thousand subscriptions expiring in December and January, and the work of handling them all at that time cannot be got through without delay, and the new subscriptions sent in at that time are so numerous that mistakes are unavoidable and delay unpreventable. Subscribe now, and avoid this.

### Binders for the Planter.

We have received a new supply of binders for the Planter, and shall be glad to send one holding the numbers for a year to any one sending us 25 cents in stamps or coin.

## WOOD'S "TRADE MARK"

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are the best that can be obtained—free from weed seeds and impurities and of strong germinating qualities. It is very important if you desire to secure good stands and good crops to purchase the highest grade Seeds obtainable. This you can always do by purchasing Wood's "Trade Mark Brand" of Farm Seeds.

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## THE KEMP MANURE SPREADER.

During much of the time that commercial fertilizers have been gaining their foothold in recent years, farmers have read of their relative values and experimented to a large extent unmindful of the land energy lying neglected in the manure pile in their own yards. With the perfecting of machinery for the mechanical spreading of manure, an awakening has come about as to the real wealth of the fertilizer the farmer has in his own possession. Not only has he been caused to put a higher estimate on the value of the manure pile, but he has imbibed the idea that it may be made to cover a far greater area than formerly, distributing its wealth more generously without corresponding deprivation to any part.

Much of this increased estimate on the manure pile has resulted because of the Kemp Manure Spreader being abroad in the land. It has been a forcible and practical teacher. When one of these machines is taken into a new community it makes it quickly apparent to progressive farmers that they must avail themselves of this most valuable implement to retrieve the losses they have unintentionally and perhaps unknowingly been suffering. They see as never before a great saving of time in the spreading of manure. They see the work systematically done with less labor. They are able to appreciate the fact that when the manure is all torn apart and uniformly distributed the hungry soil is able to appropriate every part of the nourishment and the benefits be widely extended. The story is retold with emphasis in the growing crop. The result is that after the advent of the first Kemp into a community numerous others quickly follow. The Kemp Manure Spreader made by the Kemp & Burpee Mfg. Co., of Syracuse, N. Y., is claimed by many people to be the typical machine manufactured for this purpose. It spreads any kind of fertilizer as well as manure, and no matter what its condition, whether lumpy, strawy, coarse or wet, it is perfectly at home in its work, tearing apart pulverizing and distributing finely and evenly over the ground. If this mention even suggests a purchase, it will have served a good purpose to any one who has manure to spread. Mechanical distribution

## JAMES G. TINSLEY &amp; CO.,

Branch Virginia-Carolina Chemical Co.

MANUFACTURERS AND IMPORTERS OF

## FERTILIZERS,

RICHMOND, VA.

—  
..BRANDS..

Stonewall Tobacco Fertilizer, Stonewall Guano,  
Powhatan Corn Guano,  
Stonewall Acid Phosphate,  
Wheat and Grass Fertilizer,  
Tinsley's Bone and Potash Mixture,  
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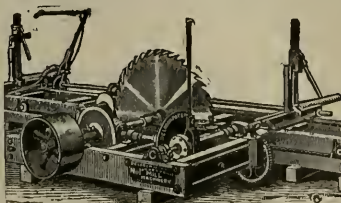
Call on your Local Dealer, and if he cannot furnish you, write to us.

## ARMOUR'S ANIMAL FERTILIZER

Came from the Farm  
Should Go Back on the Farm  
Put It Back  
It's Natural Plant Food

Feed Your Plants —  
They Will Then Feed You

The Armour Fertilizer Works  
CHICAGO AND BALTIMORE.



### Farmers' \$125 Saw Mill.

Cuts 2000 ft. lumber a day with only 4 h. p.

Our large, handsome catalogue tells all about the famous DeLoach Variable Friction Feed Saw Mills, 4 to 100 h. p., \$125 up. DeLoach Saw Mill Machinery, Planers, Shingle, Lath and Corn Mills, Water Wheels, etc. Write for catalogue and price f. o. b. your depot. DELOACH MILL MFG. CO., Box 600, Atlanta, Ga. (Branch, 120 Liberty St., New York.)

# The Waterloo



**Beat 'em All.**

**3-Horse  
Power  
Pumper.**

The best engine for the money on the market to-day.

Every engine fully guaranteed.

Write to-day for Catalogue.

We also have stationary and portable engines.

**WATERLOO GAS ENGINE CO.,**  
P. O. Box 56. WATERLOO, IOWA.

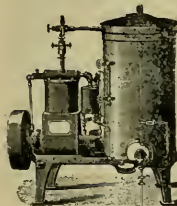
After Being on the Market **TEN YEARS,**

## The ACME Engine Still Leads

For Churning, Cutting & Grinding Feed, Filling Silos, Sawing Wood, Elevating Water, and all Farm and General Uses where

Small Power is Required.  
Fuel, Kerosene Oil.

No Skilled Engineer required.



**ROCHESTER MACHINE TOOL WORKS,**  
No. 17 Frank St., Rochester, N. Y.

## The MIETZ & WEISS Kerosene Engines.

Cheapest and Safest Power Known. For pumping and electric lighting, grinding corn separating cream, sawing wood, and all power purposes. Also sizes from 1 to 60 horse-power.



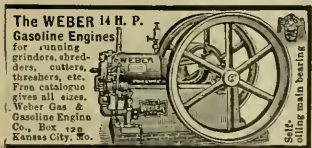
er. Highest award for direct coupled generator set. Gold Medal, Paris Exposition, 1900. Pan-American Exposition, 1901. Send for catalogue.

A. MIETZ, 128 Mott Street, New York.

## ENGINES, BOILERS AND MACHINERY.



When you want good rebuilt machinery at bargain prices, write for our Catalogue, No. 166 Wecarry all kinds of engines (gas, gasoline and steam power), boilers, pumps, and mill supplies in general.  
**CHICAGO HOUSE WHEELING CO.**  
West 5th and Iron Sts., Chicago.



**The WEBER 14 H. P.  
Gasoline Engines**  
for churning, grinders, shredders, cutters, threshers, etc.  
Free catalogue gives all sizes.  
Weber Gas & Gasoline Engine Co., Box 122  
Kansas City, Mo.

Self-rolling main bearing.

is coming to be an imperative necessity with every one who farms. A good way to get ready for a purchase which you are sure to recognize sooner or later as a necessity, is to send and get the Kemp catalog, which the company will gladly forward you free for the asking. Kindly mention this paper.

## LITTLETON FEMALE COLLEGE.

Littleton Female College, Littleton, N. C., is one of the best located schools in the South. It is immediately on the Seaboard Air Line railroad between Raleigh and Weldon, N. C., in the midst of a region of noted mineral springs, where many people go every year in quest of health, and where the pure water, bracing atmosphere and splendid climate easily make it one of the most desirable places for a Female College to be found anywhere. The new building now about completed is a very handsome structure, and presents an imposing appearance from the railroad which forms the Northern boundary of the large and beautiful campus.

## THE MONEY MAKERS.

The old adage says that "you cannot eat your cake and have it too," but modern science has proved the fallacy of the saying. The modern farmer can procure machines that will enable him to turn his corn into beef and still have the corn left to sell. Machines that will enable the farmer to be absolutely independent regardless of the hay crop.

No better feed can be found for fattening stock than shredded corn fodder, as has been proved beyond a doubt by the experiments of the last few years.

And the "money makers" are the machines that enable the farmer to quickly and economically prepare corn fodder.

The "Ideal Line" of corn machines manufactured by Deering Harvester Company, of Chicago, are the best and most reliable "money makers."

The Deering Ideal Corn Binder, the Deering Corn Shocker and the Deering Huskers and Shredders are made in the largest harvester works in the world and contain every modern and up-to-date improvement.

The juice of any acid fruit can be made into syrup by adding a pound of white sugar to every pint of juice and boiling ten minutes. Seal in pint cans.

An excellent filter can be made from a common flower pot. Close the opening with a sponge, then put in an inch thick layer of powdered charcoal, an inch layer of silver sand, two inches of gravel and small stones.

Many housewives object to using the baking powder on the market, owing to the possibility of adulteration. Will such try the following formula? Sift three times a quarter of a pound of flour, a quarter of a pound of baking soda and half a pound of cream tartar. Store in an air-tight can.

To remove plum, grape and berry stains, pour through boiling water and leave in the water until cold. Peach and sweet apple stains should be washed first in cold water. Saturate grass stains with molasses and rub it in well.

# Wagon World Awheel.



Half a million of these steel wheels have been sent out on our own wagons and to fit other wagons. It is the wheel that determines the life of any wagon, and this is the longest lived wheel made. Do you want a low down Handy Wagon to use about the place? We will fit out your old wagon with Electric Wheel's of any size and any shape tire, straight or staggered spokes. No cracked hubs, no loose spokes, no rotten felloes. Resisting. Write for the big new catalogue. It's free.

**Electric Wheel Co., Box 146 Quincy, Ills.**



**WE'LL PAY THE FREIGHT** and send 4 Heavy Wheels, Steel Tire on, \$12.25 With Rubber Tires, \$15.00, 1 mfg. wheel \$1 to 4 in. tread. Top Boggies, \$25.75; Harness, \$1.50. Write for catalogue. Learn how to buy vehicles and parts direct. Wagon Umbrella FREE. W. V. BOUL, Cincinnati, O.

## IMPERIAL Pulverizer, Clod Crusher and Roller.



Leads them all.

Send for circulars.

**THE PETERSON MFG. CO., Kent, Ohio.**

## BAILEY'S HYDRAULIC RAM

Runs 24 hours a day and 365 days a year



40 years experience. Water for HOUSE; water for STOCK; Water for IRRIGATION. Once started costs but ONE CENT per month. As simple as a wheelbarrow and as efficient as a Corliss Engine. Information and instruction in plain terms. Prices on ram or complete outfit by return mail. Address

**PRYCE W. BAILEY, Expert. Seneca Falls, N. Y.**

## IT PUMPS IT UP.



No matter how far away or how steep the hill the

**RIFE HYDRAULIC ENGINE**

will force the water up and put it where you want it, most convenient for use. Will fill a storage tank any height above the source of supply, when water may be drawn through buildings, dairy houses, stables, yards, etc. by gravity process. It runs itself. Never stops. Will force up the pure water of spring with the muddy water of a brook without mixing. Write us your needs and we'll send plans and estimates of cost.  
**RIFE ENGINE CO., 128 Liberty Street, New York, N. Y.**

## MELONEY'S AUTOMATIC



**Milk Cooler and Aerator**

Cools and aerates milk with or without ice. Removes animal and garlic odors. Made of sheet copper and coated with outside. Simple plain construction. Easy to clean. Guaranteed. Everything for the dairy or creamery. Send for catalogue "Bestor" dairy supplies.  
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# Law and Collection Association,

Established 1884. Claims collected in all parts of the United States. No collection—no charge.

P. O. Box 503. 905 1/2 East Main Street  
RICHMOND, VIRGINIA.

**RUPTURE CURED, TRUSS FREE.**  
You pay \$4 when cured. No cure, no pay. ALEX. SPEIRS, Box 84, Westbrook, Maine.

# A BOY DOES A MAN'S WORK



## SUPERIOR DISC DRILLS

REQUIRE NO EXTRA HELP  
IN TRASHY GROUND.  
Discs roll over or cut through trash  
and cover all the seed.

The Disc does better work in hard or soft ground than any Hoe or Shoe Drill. The Superior Disc and Superior Feed make seeding easy and good results certain.

You run no risk when you buy a Superior. It is the drill for drilling all crops—Wheat, Oats, Cow Peas, Corn, etc., as well as all Grasses.

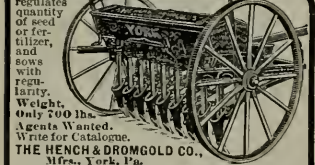
Patents sustained in highest Courts. Your request on a postal card will bring Illustrated Catalogue No. 16.

**SUPERIOR DRILL CO.**  
Springfield, Ohio, U. S. A.

With a  
**SUPERIOR DISC DRILL**

# GRAIN and FERTILIZER DRILL

The YORK FORCE FEED DRILL combines lightness with strength. Most complete drill made. No complex gearing to get out of order. Bearings are close to ground. Fully Guaranteed.



# STEEL ROOFING

FREIGHT CHARGES PAID BY US

Strictly new, perfect, Semi-Hardened Steel Sheets, 5 feet wide, 6 feet long. The best roofing, siding or ceiling you can see. No experience necessary to lay it. An ordinary hammer or hatchet the only tools you need. We furnish nails free and paint roofing two sides. Comes either flat, corrugated or "V" crimped. Delivered free of all charges to all points in the U. S., east of the Mississippi River and North of the Ohio River.

**AT \$2.25 PER SQUARE**  
Prices in other points on application. A square means 100 square feet. Write for free Catalogue No. 168  
CHICAGO HOUSE WRECKING CO., W. 35th and Iron Sts., Chicago

# THE HAYNOR INSTITUTE GREENSBORO, N.C.

For the treatment of THE LIQUOR, OPIUM, MORPHINE and other Drug Addictions. The Tobacco Habit, Nerve Exhaustion

## THE TROUBLE ABOUT ZINC.

It is surprising how much ignorance is scattered promiscuously about, even among people supposed to be experts. As a matter of fact, the average painter, though he knows all that is necessary to know about painting, knows pitifully little about paints, and the most celebrated architects are but little better informed. The first trouble about zinc paints, therefore, is the ignorance of professional paint users.

The second difficulty is that they will not utilize the knowledge they have. It is fatal to any paint, but especially to a zinc paint, to apply it to a moist or even an imperfectly dried surface, yet painting is done in all weathers, and the paint blamed for the consequences. Again, each coat ought to be what the painters call "bone dry" before the next is applied, yet we see three coats applied in a single week by professional painters. To accomplish this feat of celerity the very life is burned out of the paint by strong dryers.

The third trouble with zinc is that it is not so slippery under the brush as lead, and journeyman painters, not liking hard work, thin it until there is more liquid than paint on the surface.

These are the reasons why an ordinary farm hand, ignorant of the turpentine tank and unacquainted with the benzine can, working at his leisure and putting on "the next coat" when he finds time, will frequently surpass in the serviceability of results more than the accredited adept; yes, with the poorest zinc combination obtainable in ready mixed paints will surpass the best results of the latter with his favorite brand of strictly pure lead.

STANTON DUDLEY.

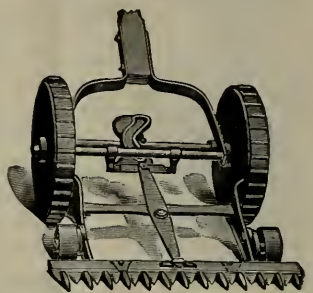
You ought to have a little good whiskey in the house. For accidents, fainting spells, exhaustion, and other emergency uses, it relieves and revives. But you must have good whiskey, pure whiskey, for poor whiskey, adulterated whiskey, is injurious. *Hayner Whiskey* is just what you need, for it goes direct from the distillery to you, with all its original strength, richness and flavor, carries a *United States Registered Distiller's Guarantee of Purity and Age*, and saves you the enormous profit of the dealers. Read the offer of The Hayner Distilling Company elsewhere in this journal. They are a reputable house, have a paid-up capital of half a million dollars, been in business over thirty-six years, and will do exactly as they say.

NEW MIDWAY, Mn., Aug. 8, 1902.  
*Editor Southern Planter:*

I wish to state that my advertisement in the *Southern Planter* has sold my entire flock of Dorsets. I also sold ram lambs in Virginia and North Carolina. My entire flock of prize Dorsets went to Messrs. Dickerson and McClure, of Augusta county. It included in part the champion pair of aged ewes in England and America; also the imported ram "Locust Grove," a great prize winner in England and America. The most of these sheep were imported from England. I disposed of them in order to make room for a new importation. Yours truly, N. S. BURRIER.

# THE MOWER

THAT WILL KILL ALL THE WEEDS IN YOUR LAWNS.



If you keep the weeds cut so they do not go to seed, and cut your grass without breaking the small feeders of roots, the grass will become thick and weeds will disappear. THE CLIPPER WILL DO IT. Send for catalogue and prices.

CLIPPER LAWN MOWER CO., Inc.,  
NORRISTOWN, PA.

## ORNAMENTAL LAWN FENCE



Buy from manufacturers direct and save the Dealer's Profit of 20 to 25 per cent. We make many designs, and sell more Ornamental Fence than any other two firms in the business. Why? Because we are not "cheap" but the best material and we sell direct to you at factory prices and guarantee 2 1/2 to 3 1/2 cts. a foot of fence. We make special prices to Churches, Cemeteries and large Parks. Send us your address. We will take pleasure in mailing you our large 32 page catalogue on Ornamental Fencing, free. If you are interested in Farm Fencing send for our 42 page Catalogue. Address Box Q COILED SPRING FENCE CO., Winchester, Ind. U. S. A.

## HARD STEEL

**WIRE FENCE**  
Heavy lateral wires, heavy hard steel stays, coiled spring wire, Sure Grip lock. In strength, appearance, and durability, the Hard Steel cannot be excelled. Write for catalogue and prices. THE HARD STEEL WIRE FENCE CO., Cuyahoga Falls, Ohio.



## WHY BUY ANY

other fence, if you believe THE PAGE is best? PAGE WOVEN WIRE FENCE CO., ADRIAN, MICH.

**DOW FARM FENCE**  
PRICE AND QUALITY WILL PLEASE YOU—WRITE US NOW.  
DOW WIRE WORKS—LOUISVILLE, KY.

**FENCE! STRONGEST MADE!**  
Eight. Sold to the Farmer at Wholesale Prices. Fully Warranted. Catalogue Free.  
COILED SPRING FENCE CO., Box 65 Winchester, Indiana, U. S. A.

For Sale or Exchange for the Best Offer  
**HAWKEYE STUMP MACHINE, A COTTON GIN and a 300-EGG MONARCH INCUBATOR**  
W. E. THOMAS, Nassawadox, Va.


MAGAZINES.

Following upon the "human documents" concerning the West Indian eruptions which were printed in The Century for August, the September number presents the results of the scientific investigations made by Professors Robert T. Hill and Israel C. Russell, who, it will be remembered, were on the Dixie relief expedition which visited the islands in the latter part of May. The personal impressions and conclusions of these geologists are supplemented by maps and a large number of photographs taken by themselves and others.

It is a far cry from Martinique to the scene of Mr. James D. Hague's article, which is the leading one in the number and is entitled "Our Equatorial Islands." It is largely occupied with the Guano Islands in the Pacific which once belonged to the United States, and the ownership of some of which seems still to be in dispute with Great Britain, chiefly Jarvis and Baker's. Mr. Hague writes from personal knowledge of these islands, and his article has a number of curious features, such as the method of mooring the snips, sending letters by kite line, and the ways of catching the tropic birds. The paper is illustrated in a novel way, chiefly with pictures of these birds, by C. L. Bull.

The leading artistic feature is Mr. Cole's wood engraving in the Old Spanish Masters series, the subject chosen being the central portion of the famous picture, "The Lances," or "The Surrender of Breda," by Velasquez, in the Prado Museum, Madrid. The second part of "The Biography of a Prairie Girl," by Eleanor Gates, proves to be an idyl of child's life in the West, with pictures of Miss Cory, who, like the author, is a Western woman. Sylvester Baxter contributes a paper on "Civic Improvement in Street and Highway," with pictures by Guerin; J. B. Bishop gives his "Personal Recollections of E. L. Godkin," with whom he was associated on the editorial staff of the New York Evening Post; Miss Belle Vinnege Drake records the details of "A Visit to the Empress Dowager" in Peking; J. M. Gleason publishes notes about "Three Strange Animals"—the Maned Wolf, the Black Leopard, and the Serval—with pictures of all three; and the sixth portion of "Confessions of a Wife" carries the complications of the domestic tragedy to the point of intensity. President Hadley contributes a short article on "The Twofold Cause of Betting"; Professor Woodberry a critical estimate of the poetry of William Watson, of which an example is printed in "A Ballad of Semmerwater," with decorations by Henry McCarter; and there is a paper by the author of "Elizabeth and Her German Garden," entitled "On the Giving of Books," her first contribution to an American magazine.

Ellen Olney Kirk's new novel is published entire in the September number of Lippincott's Magazine. It is a comedy particularly suited to lazy early-autumn days when readers want sauce piquante served as well with literary food as with every-day meals. The story is American,




Thirty-five bushels of wheat contain thirty pounds of

# Potash

Our books contain many valuable facts and suggestions for farmers. The books are free; send name and address to

GERMAN KALI WORKS  
93 Nassau St., New York



## RED RIPPER HAY PRESS



Full circle. Double stroke. Light draught. Very simple and durable. Will make 20 neat and compact bales per hour. Recommended by Georgia State Farm.

Price, \$60 cash on cars at factory. Write to-day to  
**SIKES BROS. & CO., Manufs., Helena, Ga.**

### DERICK'S Columbian Improved BOX PRESS.

This press meets the requirements of those who desire to use a Deep Box Press, and it is adapted to bale all kinds of material salable. Easy to feed same, and economical. Leaves material in the best form, and makes compact bales to lend cars to maximum. We make all styles of Upright as well as Horizontal presses. Send for our catalogue, giving full description, prices, etc.



P. N. Derick's Sons,  
59 Third St.,  
Albany, N. Y.

### SAVE THE FREIGHT,

that is, the excess freight you will have to pay if you ship loosely baled hay.




STEAM AND HORSE POWER makes tight bales that pack the car perfectly. 36 styles and sizes. All steel-tightest and strongest. Illustrated catalogue mailed free.

**COLLINS FLOW CO., 1185 Hampshire St., QUINCY, ILL.**

## POTATO PLANTER

Cheapest Potato Planter on the market. Send for circular. Address J. R. STEITZ, Station D. R. No. 1., Milwaukee, Wis.

Warranted to give satisfaction.



## GOMBAULT'S CAUSTIC BALSAM

A safe, speedy and positive cure for

Curb, Splint, Sweeney, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a HUMAN REMEDY for Rheumatism, Sprains, Sore Throat, etc., it is invaluable.

Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

THE LAWRENCE-WILLIAMS COMPANY, Cleveland, Ohio.

DEATH TO HEAVES Guaranteed



Newton's Heave, Cough, Disemper and Indigestion Cure. A veterinary specific for wind, throat and stomach troubles. Strong recommendations, \$1 per can. Dealers, mail or express. Co. Newton Horse Remedy Co. (T) Toledo, Ohio.

## AGRICULTURAL and BUILDERS' LIME

Send for Circulars and Price-List.

### FELLSWORTH LIME WORKS

REEVES CATT, Agent,  
Bodley, Augusta County, Va.

### SAN JOSE SCALE

and other insects can be controlled by using

### Good's Caustic Potash Whale Oil Soap, No. 3.

It also prevents Curd Leaf. Endorsed by eminent entomologists. This soap is a fertilizer as well as insecticide. 50 lb. kegs, \$2.50; 100 lb. kegs, \$4.50. Half barrels, 270 lbs., at 35¢. per lb.; barrels, 425 lbs., at 35¢. Large quantities, special rates. Send for circular.

**JAMES GOOD,**  
939-41 N. Front St., PHILADELPHIA, PA.



### WROUGHT IRON PIPE

Good condition, used short time only; new threads and couplings; for Steam, Gas or Water; sizes from 1/2 to 12 inch diameter. Our price per foot on 1/2 inch is 8¢; on 1 inch 8 1/2¢. Write for free catalogue No. 108.

**CHICAGO HOUSE WRECKING CO.,**  
W. 35th and Iron Sts., CHICAGO.

### ANGORA GOATS

are handsome, hardy and profitable. For large circular address E. W. COLE & CO., Kenion, Ohio.

..ELMWOOD NURSERIES..

**ASPARAGUS**

100,000 2-yr.-old Asparagus roots, 5 varieties. A special rate of \$3.50 per 1000 for 2 mos. for BARR's, PALMETTO, CONOVER.

**APPLES**

A large general assortment, including WINESAPS and YORK IMPERIALS.

**Splendid Assortment of Ornamental, Shade and Fruit Trees.**

**EGGS** from B. P. Rocks, Light Brahmas, Brown Leghorns, at \$1.00 per 13.

WRITE FOR OUR CATALOGUE.

J. B. WATKINS & BRO., Hallsboro, Va.

**APPLE TREES**

The Bonavista Nurseries will have some exceptionally fine apple trees for orchard this year. Wine Saps, Paragon (M. R. Twig), York Imperial (J. F. Winter), Albemarle Pippin, etc.

We did not have a complaint last season. Every tree is perfect and guaranteed, taken from the nursery block the day it is shipped, carefully packed.

Our prices are the lowest.

CHAS. F. HACKETT, Manager,  
Greenwood, Va.

WOOD'S SEEDS.

IF YOU WANT FINE

**STRAWBERRIES**

FOR HOME USE,

Plant Excelsior, William Belt and Aroma. These three varieties will give you a splendid crop of the finest fruit from the earliest to the latest. Price of plants, 60 cts. per 100. In 1,000 lots and over, \$3.50 per 1,000.

Our Fall Catalogue gives full descriptions of all the best varieties of Strawberries both for market and home use. Catalogue mailed free, write for it.

T. W. WOOD & SONS,  
Seedsmen, Richmond, Va.

**FRAZER**

Best in the world.

Its wearing qualities are unsurpassed, actually outlasting 3 lbs. of any other brand. Not affected by heat. Get the Genuine.

FOR SALE BY ALL DEALERS.

with a heroine "exquisite beyond all women!" Having at stake a fortune, she carries out an original scheme to marry the man she loves. Humor is paramount, and the plot stimulates, while that same charming human sentiment is evident which characterized Mrs. Kirk's earlier success, "The Story of Margaret Kent."

Besides the complete novel Lippincott's has a fine showing of short stories: Josiah Flynt contributes "The 'Won't Go Home'" which is a rattling good tale of a steam calliope and a party of speculators in the far Orient. Ina Brevoort Roberts's name to the list leads one to expect something extraordinarily good, remembering that she is the author of "The Lifting of a Finger." Her present story, "The Fifth Wheel," fully justifies this hope. "The Hidden Man," by Karl Edwin Harriman, is a first-rate story of a Western tramp, treated with vigor. The extreme pathos of Jennette Lee's story is offset by a happy ending. Its title, "A Judgment on Them," refers to a man and wife who dwell under one roof but who have not spoken to each other for ten years. A Mormon story by Lily Munsell is called "The Undoing of Apostle Jones." The underlying tragedy is brightened by a fourth wife's determination to see fair play. Albert Payson Terhune writes a tale about honor on a newspaper. This is entitled "A Park Row Galahad," and is an instance where a reporter learns that he "cannot serve two masters." It holds the interest throughout.

Eben E. Rexford always gives seasonable points on the subject of his specialty—gardening in all its branches. In the September Lippincott's he takes Time by the forelock in writing about "Fall Work in the Garden." He tells just the things people want most to know at this season, and tells them clearly and untechnically.

Hilarity Hall" is the name of the long story by Carolyn Wells in the September St. Nicholas. It has to do with the lively adventures of eight girls who take a seaside cottage for the summer. An ideal girl's story.

This is only one of the many good things in this number. Particularly interesting is "The Little Colonel," the story of an Indian fight by Mrs. Guy V. Henry. "How the Weather is Foretold," by Clifford Howard is an entertaining account of Uncle Sam's weather bureau and its conduct. "A Little Journey Through the Air" is an illustrated account of a queer railroad abroad where the cars travel suspended in mid air.

Probably the best boy's story in the magazine is "Marty Brown—Mascot," Ralph Henry Barbour. Marty is a snub-nosed lad who takes care of the players' bats. One day he played a more important part; and how he came to be the hero of a hard-fought game is the story that is told. There are a lot of clever rhymes, and also that very important department "The Young Folk's League," with its capital contributions from the young readers themselves.

When corresponding with advertisers, kindly mention that you saw their advertisement in the *Southern Planter*.

In a  
Glass of Water.

Put a handful of *glazed coffee* in a glass of water, wash off the coating, look at it; smell it! Is it fit to drink? Give

**LION COFFEE**

the same test. It leaves the water bright and clear, because it's just *pure coffee*.

The sealed package insures uniform quality and freshness.

**VIRGINIA POLYTECHNIC INSTITUTE**

(State Agricultural and Mechanical College), at Blacksburg, Va.

A Southern Institute of Technology.

Thirty Instructors. Thoroughly equipped Shops, Laboratories and Infirmary. Farm of four hundred acres. Steam heating and electric lights in dormitories. Degree courses in Agriculture, Horticulture, Civil, Mechanical and Electrical Engineering, Applied Chemistry and General Science. Shorter courses in Practical Agriculture and Practical Mechanics.

Total cost of Session of Nine Months, including Tuition and other fees, Board, Washing, Text-Books, Medical Attendance, etc., about \$210. Cost to State students, about \$150.

Next Session begins September 22, 1932. For catalogue and other information, apply to

J. M. McBRIDE, Ph. D., Lt. D., President.

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Located on North River, Gloucester County, Va., for sale at a reasonable figure. Comprises 720 acres, 640 open and available to plow, well watered and suitable to all grains and grasses. Well adapted to grazing of both sheep and cattle. Fine shade, good house (11 rooms), large porches and cellar. Fifteen acre lawn, young orchard in bearing. Necessary out buildings; Post-office 1 mile from house; Good fences, large oyster shore. An ideal home and farm. Sale by division. Information by corresponding with D. P. SANDERS, Gloucester, Va. JOHN SANDERS, James Store, Va.

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From 100 to 1,000 acres at low prices, all the way from \$5 to \$50 per acre. Write for Catalogue.

THE VIRGINIA LAND AGENCY, Richmond, Va.  
J. E. HOCKADAY, Manager.

**WHAT TO DO IN AN EMERGENCY.**

When an accident occurs there are certain things that may be done that will prevent the injury from becoming greater while waiting for the doctor. An inexperienced worker should not try to remove the patient unless it is imperative, or unless the weather is a cause of discomfort or danger; but even when moving is unavoidable, do not move the injured person farther than is absolutely necessary. Such aid as can be given should be given as quickly as possible, so that moving may not aggravate the trouble. Then lift the patient upon anything on which he may be placed in a flat position, first throwing over the improvised litter something soft. When it is possible to have two or three assistants for this moving one should devote his attention to protecting the wounded part.

In case of an accident from fire the most important thing to remember is that the air must be excluded from the burnt surface. In wounds of every description cleanliness is one of the healing factors; but in a burn the wound may be irritated by pulling away anything that may seem to be sticking to it. If any foreign substances, such as bits of clothing, should seem to be simply lying on the wound, they may be carefully picked off. If there are blisters, they must be pricked immediately and the water from them absorbed by old linen. Then the wound should be covered with sweet oil, vaseline, or any pure oil or ointment, and a cloth saturated with oil laid over it. Or one may use molasses, or the white of an egg, or dust flour over the surface.

One of the best remedies for such emergencies is "carrou-oil" which is made by stirring equal parts of lime-water and linseed oil into a thick paste.

A burn from grease or oil should be treated as an ordinary burn. One from an acid should be washed with warm water, or, if it is possible to get baking soda or common washing soda, put a pinch of it into the water and wash the wound with the solution. The object is to remove any of the acid that has not eaten into the wound. Then the wound should be dressed with oil.

Many persons die from shock whose burns are not fatal, consequently the patients should have absolute rest. Loosen the clothing and give stimulants in small doses, or hot coffee, hot milk—anything that is warm and nourishing. Keep the patient comfortably warm, applying hot-water bottles if the limbs seem cold. When coffee is used it should be made very strong, and given without cream or sugar.

An ordinary cut will stop bleeding upon the application of hot water or ice. If the blood shows signs of drying let it remain, as nothing will stop bleeding more effectively.

If blood spurts from a cut it is evidence that either a vein or an artery has been severed. In that case, take a handkerchief or a strip of cloth and tie it around the limb an inch or two above the wound—"above" meaning between the wound and the heart; the bandage being put on loosely enough to admit of insert-

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no matter where it is. Send description, state price and learn how. Est. '96. Highest references. Offices in cities.  
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Known as the Hampstead Farm, situated on the Pamunkey river, for sale. Contains nearly 800 acres, 80 of which is river bottom land, the remainder being upland and timber. Large deposits of green sand marl; brick barn with wood stable attached; also houses for sheep, etc. Splendid dwelling said to have cost \$50,000. Property now owned by stock company. Price, \$20 per acre, on easy terms. For further particulars, address

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Is the title of a new pamphlet issued by the Norfolk and Western Railway Company. We will gladly mail you a copy.

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One trotting bred brown gelding, coming 4 yrs. old, 15½ hands, weight 1000. Trim as a fawn, and dashing in style and action. Can negotiate a mile in 3 minutes under the lines without effort. His future is big with promise. Stewy, hardy and tough. With just a bit more of age and service will make a model family horse. On any city market he would go "like hot cakes" at \$20. To sell at once we will take \$15.00.

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Two superb, reg. Aberdeen-Angus bull calves, One reg. Dorset Buck, 1 yrs. old. Very large, fine and vigorous. Price, \$25.

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Sixteen S. roshshire-southdown (cross) Ewes, 2 and 3 yrs. old. In fine condition. Price, \$3.50.

Six Shropshire-Southdown (cross) Ewe Lambs. Price, \$3.

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Nine head beautiful, reg. Angora Goats; One Buck; Price, \$21. Six Does; Price, \$12 each. Two Buck Kids; Price, \$10 each. Lump price of nine goats, \$100.

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One Kemp Manure Spreader, good as new, with drill attachment. Price, \$90.

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PLANT BED CLOTH,  
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CANVAS GOODS,  
WATERPROOF AND PLAIN  
STACK, WAGON,

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COVERS,  
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Prices low. Send for Circulars  
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## RED POLL

Bull calf for sale. Four years old August 9th. Purebred, and will be recorded in coming Vol. Red Poll H. B. Will keep for purchaser until October 1st. Price, \$50 f. o. b. Christiansburg.

W. S. FOSTER. - Blacksburg, Va.

ing a stick or cane between the bandage and the limb. Twist the stick so that every turn the bandage is drawn tighter. This must go on until the bleeding either stops or materially diminishes. Then the bandage must be held in place, and a similar one, perhaps not quite so tight, applied below the wound. In this way the bleeding from the other end is controlled. But the bandage must not be allowed to remain on the limb too long or the results may prove disastrous.

Sometimes the wound is in a place where it is impossible to apply a bandage; in that case press the lips or sides of the wound together with the fingers, and keep them firmly closed by pressure.

For a dog bite no treatment is necessary unless the dog is mad. Of course, it is better to have the wound washed out with warm water and covered, so as to keep it perfectly clean; but beyond this there is nothing really necessary. If the dog is "mad," or there is a suspicion that it is mad, the wound should be cauterized.

A fainting fit is more alarming than serious. Lay the patient flat on a bed, or upon the floor, having the head, if possible, a trifle lower than the body. This can be managed, even when the patient has fallen upon the floor, by slipping under the body a pillow, blanket, or rug. See that there is plenty of fresh air, dash cold water in the face, hold ammonia under the nostrils, and when the patient is conscious give some strong coffee, or half a teaspoonful of aromatic spirits of ammonia in a little water. Do not try to make the patient swallow the stimulant just as he is recovering consciousness; there is great danger of choking him. After consciousness is restored demand that the patient shall rest.

Another form of unconsciousness is that which is caused by inhaling smoke or poisonous gases. Under such circumstances the patient should be given air at once, and the act of breathing stimulated by baring the chest and pouring on it first ice-cold water, then water a little hotter than the hand will bear, then the cold again, and so on. Afterward give a stimulant and rub the limbs and body briskly.

The symptoms of sunstroke are easily recognized. The patient breathes heavily, is flushed, and his temperature rises until he appears to be in a burning fever. He may be either conscious or unconscious. In either case the clothing should be stripped off, so that cold water or ice may be applied to the whole surface of the body. If ice can be obtained apply it to the head, binding it on with a handkerchief; dash cold water on the chest and body, and rub the whole body with ice or cold water. When consciousness has been restored, and the patient has cooled off, let him rest in a cool, quiet place.

An American and an Irishman were riding together, and coming across an old galloway by the wayside, Jonathan thought he would have a quiet laugh at Paddy's expense. "You see that, I calculate," said he, pointing to the galloway. "Now, where would you be if the galloway had its due?" Paddy replied: "Riding alone."

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## JERSEY HERD

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BULL CALVES, for the first time, Heifers bred to Imported Golden Peter, and Heifer Calves and a few aged Cows.

BERKSHIRES, all ages, sired by Imported Storm King, or Imported Esau 2nd, size, good shape and large litters.

Visitors welcome. Address for Book of The Farm, or prices

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Has for sale a large number of nice young registered A. J. C. C.

JERSEY BULLS  
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None better bred in the South. Combining closely the best noted and up-to-date blood in America. Bulls 10 to 12 months old, \$25.00. Heifers, same age, \$35.00. POLAND-CHINA PIGS, \$50.00 each. Send check and get what you want.

T. P. BRASWELL, Prop., Battletown, N. C.

● DAIRY HERD.  
AT A BARGAIN!

Desiring to retire from active business, I offer, for immediate sale, my entire herd of 44 pure bred

## JERSEY CATTLE.

36 of which are under 4 years old. I will also sell all equipment of the Dairy, consisting of Engine, Boller, Separator, Refrigerator, Butter Worker, Cans, etc. \$2,250 will take everything. The purchaser of the above can also purchase or rent 250 acres of my farm on which to continue the business. For further particulars address

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Holstein and Jersey Cattle,  
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Wishing to reduce my stock, will sell cheap. Every thing from Oak Hill Farm is guaranteed first-class, and as represented. Address - Oak Hill Station SAM'L HAIRSTON,  
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Two to six months old ..... \$1.00  
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Old ones, per pair ..... 5.00

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Pure MAMMOTH BRONZE TURKEYS, TOULOUSE GEES, BARRED PLYMOUTH ROCK CHICKENS, GUINEAS AND PEA FOWLS. Eggs in season except from Pea Fowls and Geese.

Enclose stamp for reply.

Mrs. W. F. JACKSON, - Olga, Amelia Co., Va.

**THIS RUNT GAINED 360 LBS. IN 160 DAYS.  
BY EATING "INTERNATIONAL STOCK FOOD."**



**YOU CANNOT DENY ACTUAL FACTS**

A Wonderful Growth of 360 Pounds in 160 Days by a "Runt" That Had Been Badly Stunted for Nearly 2 Years and Only Weighed 60 Lbs.

DOW CITY, IOWA.

International Stock Food Co., Minneapolis, Minn.  
DEAR SIR:—I have a runt 2 years old which only weighs 60 pounds. It stands 18 inches high, 42 inches long, and 4 inches wide on widest part of the back. I would like to try "International Stock Food" and see if it will make this runt grow. Four of my neighbors owned it before I got it, and none of them could make it grow. I enclose a photograph which shows this hog is too weak to stand alone, and it will not eat.

F. C. HOWORTH.

DEAR SIR:—I enclose a photograph of the "runt" taken five months after our commencing to feed "International Stock Food." It weighs 420 lbs. and has developed into a fine looking hog. "International Stock Food" is a remarkable preparation for making hogs grow, and the two photographs I mail are positive proof. Yours truly, F. C. HOWORTH.

"International Stock Food" is prepared from Herbs, Seeds, Roots and Bark.

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IT CONTAINS 183 LARGE FINE ENGRAVINGS OF HORSES, CATTLE, SHEEP, GOATS, HOGS, POULTRY, ETC.

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**V. P. I. Farm Bulletin**

Nice BERKSHIRE PIGS for sale now. Also a few DORSET RAM LAMBS left.

D. O. NOURSE, Prof. of Agr.  
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Reg. Poland-China Hogs  
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Stock of all ages for sale. Stock as represented or money refunded.

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Thoroughbred Horses  
AND SHORTHORN CATTLE,  
Pure Southdown Sheep  
and Berkshire Pigs.

FOR SALE. R. J. HANCOCK & SON,  
CHARLOTTESVILLE, VA.

ARCADIA FARM.  
COLLIE PUPS, BERKSHIRE PIGS and  
INDIAN GAME FOWLS.  
FOR SALE.

E. M. BALL, - - - EMORY, VA.

**ELIJAH'S TRIBULATIONS WITH HIS MULE.**  
BY M. W. EARLY.

A certain "Afro-American" citizen, by the name of Elijah, became the proud and happy possessor of a mule, on the strength of which he rented a piece of land and pitched a considerable crop. This land lay near a railway station, and for several months after he rented it, the local freight train passed there every day, exactly at noon, giving a shrill whistle as it passed, which served Elijah as a signal to unhitch the mule, and refresh both that animal and himself by dinner and an hour's rest. "Bless dat ole whistle," he would exclaim with a chuckle. "Pain't no use my havin' no watch nor clock! Dat whistle tells me de time jest as good, and my ole mule got so much sense. He knows it jest as well as I do. He stop his work whenever he hear dat whistle, and gin to look for his dinner."

Things worked smoothly along till all of a sudden, the schedule was changed and the freight train commenced to pass at 9 o'clock in the forenoon. The instant its piercing whistle was heard, the mule stopped short in the middle of a furrow, shaking himself as if to get rid of his harness.

"Gee up, ole fellow," called Elijah, coaxingly and encouragingly. "Get up and go on." But no, the mule, with that obstinacy characteristic of his tribe, took a firm stand and refused to budge. Having exhausted coaxing, Elijah next tried the persuasive power of a cudgel which he laid on with such heavy thwacks that the mule made a sudden bound, and dashed off, plow and all, not to complete the furrow, however, for he made a straight shoot for the stable where he was in the habit of being fed, and when at length, Elijah, panting and exhausted,

**PIT GAMES**

RED HORSE and IRISH REDS.

I have a fine lot of these Chickens for sale. April hatched, and well-grown. Cockerels \$1.00, Pullets 75 cents each, 1 Cockerel and 2 Pullets, \$2.00.

A. S. CRAVEN, - Greenwood, Va.

**EGGS**

From Pure-Bred Fowls, Cheap.

The Imperial Fruit and Poultry Farm is in a position to offer Eggs from pure bred B. P. Rocks and S. C. B. Leghorns at 50c. setting of 15. Reference furnished.

P. H. HEYDENREICH, Prop., Staunton, Va.

**BROWN LEGHORNS**

(Single Comb.)

Well-bred and good layers. Fine farm raised young stock for sale. Prices reasonable. Buy now and get the pick.

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GRASSMERE STOCK FARM, Glen Allen, Va.

**TROTTING, SADDLE and HIGH STEPPING HORSES**

Educated, bought and sold on commission, and kept by the month or year. High-class POULTRY and BELGIAN HARES for sale at reasonable rates. Write for circulars: no trouble to answer questions. Satisfaction guaranteed.

CHANDLER QUINTIN, Veterinarian,  
40 yrs. experience on the best stock farms in America.

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High-Class  
Animals  
Ready for  
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## BERKSHIRES.

Young stock for sale at all times.  
Information and terms upon application.

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BRIGGS, CLARKE CO., VA.

## POLAND-CHINA

Pigs, eligible to registration, 5 weeks  
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## HEREFORDS.

Grade calves, either sex, \$25.00.

J. C. GRAVES, Barboursville,  
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H. ARMSTRONG, - Lantz Mills, Va.

## DORSET HORNED SHEEP.

I offer thoroughbred and high-grade  
years; 7/8 of this most popular breed; also  
300 grade EWES, suitable for raising  
hot-house or winter Lambs. Rams  
turned with them in May.

SAM'L T. HENINGER, Burke's Garden, Va.

## WOODLAND FARM DORSETS.

Virginia has a good many of our Dorsets,  
and we note our old customers writing for  
more. That's because we send out only good  
ones.

Joseph E. and Willis O. Wing,  
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## SHEEP

50 breeding ewes for sale; also 1 reg.  
Southdown Ram. None older than 4  
years; 7/8 Shropshire-down, fine stock.  
Likewise, some Chinese and Toulouse  
Geese, fine birds.

THOS. SHOOSMITH,  
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## ANGUS BULL CALVES

Registered and unrecorded. Stock first-  
class, and breeding the best.

## SHROPSHIRE SHEEP

First class yearling rams, and ewes of  
all ages. Several FINE FARMS for sale.

WARREN RICE, - Winchester, Va.

caught up with him, he had taken his stand, stolidly in the stall from which neither persuasion nor beating could dislodge him. After "wrestlin'" an hour with the stubborn brute, Elijah was forced to give in a feed him, as his strong will was not equal to the mule's strong "won't." By the time the mule had finished eating, it was nearly eleven, and as Elijah's dinner would be ready at twelve, he hardly thought it worth while to return to work before he had eaten himself, so altogether nearly four hours elapsed before both he and the mule were ready to resume work. The next day, the mule stopped again, when he heard the freight car whistle, and not another stroke of work would he do till he had been fed and allowed to rest an hour, and every day the same thing happened, till Elijah grew to bate that freight car whistle as much as the vanquished Saxons had ever hated the Norman Curfew. He was in despair. His crop was getting behind time, and everything were thrown into perfect confusion and discomfort by the mule's obdurate course of conduct. Elijah went to the freight car conductor and made him a piteous appeal to return to the 12 o'clock schedule, declaring "Yon done broke me up, Bos, wid your nine o'clock whistle. You done ruined me." But though the conductor sympathized with his woful plight, he assured him he was obliged to obey orders, and was powerless to change the schedule, so Elijah got small comfort from him.

There was a negro in the neighborhood who had long had hankering for Elijah's fine young mule. He thought now was his opportunity, and resolved to shyly take advantage of it. He lived a few miles back of the railroad, out of sound of the whistle. With assumed carelessness, he dropped in, from time to time, and watched Elijah's harassment and perplexity. One day when the latter was especially worried (having missed a good dinner of fat possum by being too much pressed with his work to stop both at nine and twelve o'clock) the wily negro remarked, as if by a sudden inspiration, "I tell you what we mought do, brother Elijah, as you seem to be in such a bother," "What?" asked the old man, eagerly. "I mought take your worrisome ole mule off your hands and let you have my sorrel horse."

"Yes, but my mule is a heap younger and stronger dan your ole sorrel," replied Elijah, wofully.

"Dat may be so, brother 'Lijah. I ain't 'sputin' your word, but what good does dat do you, if your mule got to stop work ebry mornin' at nine o'clock? Now, my horse ain't got no foolishness 'bout de car whistle. You can take her out at 12 o'clock, or any hour dat suits you, and she ain't gwine to resist you." The wily tempter kept reiterating his arguments till after many days, Elijah made the concession of saying "he would see about it," on the strength of which his friend came next morning, mounted on his Rosinante and in high hopes that he would be able to consummate the swap that very morning and carry the mule home with him, and so perchance he might have done had not the sacrifice been averted at the last moment by the lucky

## THOROUGHBRED

## O. I. C. PIGS

FOR SALE. Prices Right.

F. S. MICHIE, CHARLOTTESVILLE, VA.

## Fine Shropshire...

Ram and Ewe Lambs for sale. Apply to  
ALVIN LEE HANSON, Grayson, Chas. Co., Md.

## For Sale Regist'd DEVON BULL CALVES

From beef and milk producing herds.  
W. E. THOMAS, Nassawadox, Va.



## JACKS FOR SALE.

1 to 6 yrs. old. Fine Jacks a  
specialty. Write for  
what you want.

W. E. KNIGHT & CO.,  
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## \$250 WILL BUY JACK, "STARLIGHT,"

As fine a Jack as there is in  
the State.

Six years old, 15 hands high, weighs about  
1000 lbs., black, with white points, kind and  
gentle, broke to harness, an unusual sure foot  
getter, will pay for himself in one season.  
Satisfactory reasons for selling.

J. W. and T. H. MASSEY, Hampton, Va.

## ..ESSEX PIGS..



Some extra fine  
pigs, from \$10 to \$15  
per pair, and 2 to 4  
months old. All  
stock offered for  
sale are eligible to  
registry. Your or-  
ders solicited.

Address L. G. JONES, BETHANIA, N. C.

## BERKSHIRE PIGS..

I have for sale 40 thoroughbred  
Berkshire Pigs, from 4 to 6 weeks  
old. These are fine pigs; will sell  
in lots to suit. Prices cheap.  
Address

H. SWINEFORD, - Richmond, Va.

## EAST RIVER SIDE SHORTHORNS.

Choice bull and heifer calves for sale.  
Will make price very low for next 60  
days.

JAMES F. CLEMMER, Summerdean, Va.

## S. B. ADKINS & CO.

4 and 6 Governor Street,  
RICHMOND, VA.

EXPERT BOOKBINDERS  
and Commercial Printers.

Mention the Southern Planter when  
writing advertisers.

chance of Elijah's landlord happening to ride by, and being called on by Elijah as referee in the swop. Seeing the old negro's deep distress at the prospect of parting with his beloved though obdurate mule, the gentl-man good naturedly proposed a temporary swop of mules between Elijah and himself, only to hold good till the crop was wound up in the autumn. With great joy and relief, Elijah accepted this obliging offer, while his friend slunk away, discomfited at having the chalice dashed from his lips. By hard labor Elijah managed to catch up with his work and save his crop from destruction. As soon as he had gathered it in he joyfully resumed possession of his mule, and went off way into the interior of the country, far from the vexing sound of the car whistle.

**CHOATE'S COUNSEL.**

It seems always to have lain within the power of the distinguished lawyer and humorist, Rufus Choate, to lead a choleric client from ways of anger into the paths of peace.

Just before the war a Southern gentleman was dining with a friend in one of the best hotels of Boston. He was of French Creole extraction, and his name was Delacour.

The waiter was a colored man, and the Southerner gave his orders in a very dominating fashion, finding fault freely with what was put before him and the way in which it was served. Finally the waiter became incensed and told Mr. Delacour to go to a place warm and remote. The latter sprang furiously to his feet and would have shot the offender dead if he had not been restrained by his wiser friend, who said:

"You can't do that sort of thing here. You will have to remember where you are."

"Do you suppose that I am going to put up with such insolence and not be revenged?" said the enraged man.

"Certainly not. But do it by process of law."

The landlord was first interviewed and the waiter discharged. That was not sufficient to satisfy the wounded feelings of Mr. Delacour. He asked who was the best lawyer in the city, and was told it was Rufus Choate. Making his way to his office, he said:

"Mr. Choate, I want to engage you in a case. What will your retaining fee be?"

"About fifty dollars."


The check was made out and handed over.

"Now," said the lawyer, "what are the facts in the case?"

He was told. Said Mr. Choate thoughtfully:

"I know the United States law on the subject well, and I know the law of the Commonwealth of Massachusetts, and I can assure you, sir, that there is no power on earth strong enough to force you to go to that place if you don't want to go. And if I were you I wouldn't."

"Well," said the Southerner, accepting the situation, "I think I'll take your advice," and they parted good friends.—**HARRIET BOYER, in September Lippincott's.**



**Ripley's Compressed Air Sprayer**  
 Finest Sprayer ever invented for spraying cotton and tobacco, trees, and whitewashing buildings, etc. Tested to 60 lbs. pressure. Has a safety valve. Can't burst. One minute's pumping will discharge contents of Sprayer in the form of a mist, covering every part of the foliage. Made of Galvanized Iron and Copper. Has a brass cylinder pump. Prices—5-gal. Galvanized, \$5.50; 4-gallon Galvanized, \$5.00; 5-gallon Copper, \$8.00; 4-gallon Copper, \$7.00; special pipe and nozzle for spraying underneath cotton, tobacco and shrubbery, 70c.  
 Agents and Dealers Wanted to Sell the Sprayers.  
 Write for Catalogue and Discounts.  
**RIPLLEY HARDWARE COMPANY,**  
 Manufacturer of Sprayers and Spraying Mixtures,  
 Box 70, Grafton, Ills.

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Cattle of NETHERLAND, DEKOL, CLOTHILDE and PIETERTJE families. Heavy milkers and rich in butter-fat. Stock of all ages for sale.

**REGISTERED BERKSHIRES.**

From the noted strains, Imported Headlight, Lord Highclere and Sunrise. PLYMOUTH ROCK CHICKENS.

N. B.—in the Stud: The Imported Hackney Stallion, "The Duke," registered in E. H. S. B. and A. H. S. B. Address

**T. O. SANDY, Burkeville, Virginia.**

Norfolk and Western and Southern R. R.

**DEVON COWS....**

Ten young DEVON COWS, thoroughbreds and high-grades with Calves by their sides. Want to sell them during this month. Can be seen if day's notice is given. Also JERSEY CATTLE and several YOUNG GUERNSEY BULLS. BERKSHIRE PIGS not akin. Several young BOARS ready for service.

**M. B. ROWE & CO., Fredericksburg, Va.**

LET ME HAVE YOUR ORDERS PROMPTLY FOR FALL SHIPMENT OF



**BERKSHIRES**



Imported SIR JOHN BULL and UNCLE SAM have become so famous that their pigs are often booked before birth. My supply did not meet the demand by one-third the past season.

A nice lot of Pure Blood BROWN LEGHORNS for sale cheap; also Pure Blood ENGLISH SETTER PUPS at home made price—snow-whites and white and tans.

**THOS. S. WHITE, - Lexington, Va.**

**BALE YOUR OWN HAY,**

Finishes a perfect bale of standard size, either light or heavy. Write for descriptive circulars. Little Giant Hay Press Co., Dallas, Tex.

Millet, Sorghum, Pea Vines, etc., with a LITTLE GIANT, the only perfected high capacity hand power PRESS on the market.

### WHERE HE MADE HIS MISTAKE

One of the store windows down town displays an elaborate set of furniture of a style and arrangement that would be suitable either for a wedding-chamber or the sleeping-room of a wealthy bachelor. On a soft Turkish rug stands a richly-carved bedstead with a bed upon it seemingly ready for use, several fragile chairs with gilt frames, a big lounging chair, and a handsome dressing-case with a lofty mirror. Scattered about in picturesque confusion are many dainty bits of bric-a-brac.

A motley crowd stood in front of the window the other night, gazing admiringly at this picture of comfort. In the center of the crowd stood a big man with long flowing side whiskers. He was talking in a loud voice to a modest-appearing woman who clung to his arm.

"It's wonderful how they get up things nowadays," the man was saying. "Why, when I was a boy no one would ever think of chipping out grooves and hollows in a good solid piece of walnut like that bedstead there, and nobody would dare to put gilt on a chair for fear of ruining his friend's clothes. And just look at the images! Them's downright deceitful. Anybody can tell that the cat over there wasn't real. Everything about her's so natural except her tail, which is too short. Nobody ever seen a regular live cat with a tail like that. It's honest to have it that way, though, for it shows the firm's trying to do business on the square basis, and ain't trying to deceive no one—"

The big man's discourse came to a sudden end, for the cat rose to its feet, stretched itself lazily, and walked away.

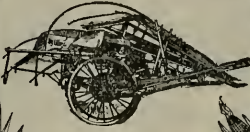
Dissolve half a pound of the best glue in a teacupful and a half of water, add a teacupful of moderately strong vinegar and mix thoroughly. Keep in the dark and closely sealed, and it can be used without warming, unless in the coldest weather.

To make waterproof glue, soak it in water until softened through, but preserve the shape. Heat slowly in lincseed oil until dissolved, then mix thoroughly. To make fire-proof glue, pour water over good glue and let it remain over night, then slowly melt and add white lead to make the right consistency. This will withstand fire but not boiling water. To fasten labels to tin, take a good yellow glue, break it into small pieces, cover with water and leave three or four hours. pour off the water, place the glue in a wide-mouthed bottle or pint can, and cover with acetic acid. Set in warm water until dissolved, and incorporate the two by stirring.


On another page of this issue of our paper will be found the advertisement of Heebner & Sons, of Lansdale, Pa. As will be observed by the advertisement itself, these people are manufacturers of Threshing Machines and Tread-Powers. This does not, however, embrace their entire line of goods as they also manufacture the Union Feed and Ensilage Cutters, Feed Grinders, Peanut Pickers, etc. Heebner & Sons are not unknown to our readers, as they have advertised with us each season for many years.

# THE MONEY MAKERS

**CUT YOUR CORN WITH THE  
DEERING IDEAL CORN BINDER**



**SHRED YOUR STALKS WITH THE  
DEERING HUSKERS & SHREDDERS**



**"THE IDEAL LINE"**  
**DEERING CORN MACHINES**  
**ARE MONEY MAKERS**  
 DEERING HARVESTER COMPANY CHICAGO, U.S.A.  
WORLD'S GREATEST MANUFACTURERS OF  
 GRASS, GRAIN AND CORN HARVESTERS,  
 SHREDDERS & TWINE.

## St. LAMBERT JERSEYS

We have for sale a number of YOUNG BULLS from cows with butter tests ranging from 16 to 24 lbs. per week, and yielding from 5 to 6 gallons of milk per day.

We have more high testing ST. LAMBERT COWS than can be found in any herd in the United States or Canada.

## INDIAN GAME FOWLS

We have also for sale a choice lot of INDIAN GAME CHICKENS—male and female. Also some choice WHITE WYANDOTTE COCKERELS. The Indian Game and White Wyandottes are the best general purpose fowls.

BOWMONT FARMS, SALBEM, VA.

## POLAND-CHINAS.



TECUMSEH G, 49283.

I have a limited number of pigs by my fine boars, "TECUMSEH G," 49283, and "MONARCH," 48705, and can furnish pairs not akin or related to those previously purchased. Young boars and sows of all ages. Send to headquarters and get the best from the oldest and largest herd of Poland-Chinas in this State at one-half Western prices. Address **J. B. GRAY, Fredericksburg, Va.**

When corresponding with advertisers, always mention  
The Southern Planter.

There are very few firms in any kind of business in this country to day who have been at it longer than this one. They have been working along their chosen lines for more than sixty years, and it is very much to their credit to state that the Heehner goods are more popular to-day than ever before. Wherever they are known they are accepted as the synonym of superiority and honesty both as to design and material and also as to working ability. Write for their new catalogue and kindly mention this paper.

#### LITTLE GIANT HAY PRESS.

A novel device and one of evident merit, which is winning its way to the front with great strides, is the Little Giant Hand Hay Baler, manufactured by the Little Giant Press Co., of Dallas, Texas.

For years implement builders have given their thought, time and experiments to the designing and constructing of a practical and inexpensive appliance for the baling of hay and other kindred material. Thousands of tons of hay are lost to the farmer annually, because he feels that he cannot afford to purchase a high-priced power press. The Little Giant was designed to overcome this difficulty, and is pronounced by its scores of friends as a complete success. The firm will mail free of charge an exhaustively illustrated catalogue to interested inquirers.

#### AN OLD MAID.

In the suburbs of Madison, Wisconsin—if that charming little city may be said to have suburbs—dwells Aunt Piteah Ann. She is a thrifty old soul who, when her cabin needed repairs recently, was well able to hire a fellow-African to mend it. In the course of his labors this dusky carpenter noticed that there were several children playing about.

"Whose chillun is dose?" he asked.

"Dem's mah chillun," replied Aunt Piteah with pride.

"Is dat so? Whey's yo' husban'?"

"Why, now, I tell yo'. I ain' got no husban'. I says to mahse'f, I does, a long time ago, I says I do' wan' no husban's in mine. No, sah. When yo' got a husban' he always wan's tuh be a-med-din' in the bringin' up the chilluns, an' w'at good is he, anyhow? Yo' answer me dat. He ain' no good—only fer me tuh suppo't. No, suh, I don' wan' no husban's in mine. I'se an' old maid. Dat's what I is.—JOHN SWAIN, in the *September Lippincott's*.

Mention the *Southern Planter* when corresponding with advertisers.

## COLLIE PUPS!

By prize-winning imported sires and trained dams. Eligible. Fit for bench, ranch or farm. Price, \$10, either sex. Also a book on the care and training of the Collie for all practical uses. Price, 30c. Copy of book free to purchaser of Collie.

Stock Farm, "MAPLEMONT," Albany, Ver.

# GREAT JOINT PUBLIC SALE OF SHORTHORNS, ABERDEEN-ANGUS and HEREFORD CATTLE

At the Annual Fair of the S. W. Va. Ag'l and  
Live Stock Association at

Radford, Va., October 14th, 1902.

Messrs. W. W. Bentley and J. T. Cowan will contribute about 30 head of Shorthorns. Mr. J. R. K. Bell will offer about 12 Aberdeen-Angus. Mr. H. L. Morgan will have a nice bunch of Herefords. (Other breeders will also contribute to this sale, but at this date, 22d, cannot say what number).

The quality of this Stock will be unsurpassed; all young and splendid individuals, and from the best breeders in S. W. Va. Parties desiring something very choice cannot afford to miss this sale.

Catalogue ready about October 1st. Send your name NOW for it.

ADDRESS W. W. BENTLEY, Pulaski City, Va.

**C. C. Taliasterro,**  
NATIONS,  
VA.  
1902

**"MOUNT SHARON  
HEREFORD CATTLE  
& MUSCOVY DUCKS"**

**STOCK FARM."**

**REG. BRED SHROPSHIRE SHEEP  
REG. BRED POLAND-CHINA PIGS.**

**REG. BRED BRONZE TURKEYS**




**NOW OFFERS FOR SALE**

**HEREFORD CATTLE.**—Calves, entitled to registration, \$75 to \$100. Grade Calves by "Sir Edward" \$25 to \$40.

**SHROPSHIRE SHEEP.**—Bucks, one year old and over, \$15 to \$30. Buck Lambs, July delivery, \$10, and \$12. Ewe Lambs, July delivery, \$8, and \$10.

**POLAND-CHINA HOGS.**—Pigs, six weeks old, \$5. Pigs, two or three months old, \$7.50. Pigs, five months and over, \$15 to \$20.

**M. BRONZE TURKEYS.**—Toms, \$1. Hens, \$3. Eggs, per sitting of 12, when in season, \$1.

**MUSCOVY DUCKS.**—Pure White Drakes, \$1.25. Pure White Ducks, \$1. Pairs, \$2.25; tricos, \$3

**BARRED PLYMOUTH ROCKS.**

**ROUEN GEESE.**—Ganders, \$2.50. Geese, \$2.50. Eggs, per sitting, \$3.00

WILLIAM L, JR., No. 21058, half brother of Axtell, will serve a limited number of mares for \$25 the season. Mares boarded at lowest figures per month.

## REPORTS.

- U. S. Department of Agriculture, Washington, D. C. Public Road Enquiries. Bulletin 32. Proceedings of the Third Annual Good Roads Convention of the State of New York.
- Farmers' Bulletin No. 157. The Propagation of Plants.
- Farmers' Bulletin No. 158. How to Build Small Irrigation Ditches.
- California Experiment Station, Berkeley, Cal. Report of Work of the Agricultural Experiment Station of California for the years 1898-1901.
- Bulletin No. 141. Experiments with Deciduous Plants.
- Cornell Experiment Station, Ithaca, N. Y. Bulletin 203. The Care and Handling of Milk.
- Delaware Experiment Station, Newark, Del. Bulletin 56. Some Destructive Caterpillars.
- Bulletin 57. Sundry Notes on Plant Diseases.
- Illinois Experiment Station, Urbana, Ill. Bulletin 73. Comparison of Silage and Shock Corn for Wintering Calves for Beef Production.
- Bulletin 74. Standard Milk and Cream.
- Bulletin 75. Standardization of Milk and Cream.
- Bulletin 77. Bitter Rot of Apples.
- Kansas Experiment Station, Manhattan, Kan. Bulletin 100. Grapes.
- Maine Experiment Station, Orono, Me. Bulletin 84. Cereal Breakfast Foods
- Maryland Experiment Station, College Park, Md. Agricultural College Quarterly.
- New Mexico Experiment Station, Mesilla Park, N. M. Twelfth Annual Register.
- Rhode Island Experiment Station, Kingston, R. I. Bulletin 85. Analyses of Commercial Fertilizers.
- South Carolina Experiment Station, Clemson College, S. C. Bulletin 72. Texas Fever.
- Bulletin 73. Analyses of Commercial Fertilizers.
- Virginia Department of Agriculture, Richmond, Va. Bulletin No. 10. Analyses of Fertilizers.
- Virginia Weather Service, Richmond, Va. Report for July.
- Wyoming Experiment Station, Laramie, Wyo. Bulletin 51. Sheep Feeding on the Range. Lamb Feeding.
- Bulletin 52. Experiment on Evaporation.
- Bulletin 53. The Measurement of Water for Irrigation.
- West Indian Bulletin. The Agricultural Department of the West Indies. Vol. 3, No. 2.
- Condensed Report of the Annual Meeting of the Holstein-Friesian Association of America, F. L. Houghton, Secretary, Putney, Vt.
- First Annual Report of the Illinois Corn Growers Association, Campaign, Ill.

To make cows pay, use Sharples Cream Separators. Book "Business Dairying" & Cat. 305 free. W. Chester, Pa.

# IT RIDES ON -



# ITS OWN WHEELS

## NO DULL DISCS!

Hitch your team to it—just the same as to any vehicle—throw over the levers and ride anywhere. No loading on wagon or sled. *Cultivates all the ground.* Independent Discs. Depth secured by pressure. Angle of Discs does not change. Made strong. Does better work and more of it than any other Harrow ever made.

*A BOY DOES A MAN'S WORK  
WITH A SUPERIOR DISC HARROW.*

**SUPERIOR DRILL CO.  
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Our new book No. 16 tells all about it. IT'S FREE.

# DISC HARROW.

## BACON HALL FARM.

# HEREFORD REGISTERED CATTLE

"TOP" BREEDING, CALVES NOT AKIN.

MOTTO—Satisfaction or No Sale.

E. M. GILLET & SON, Verona, Balto. Co., Md.

## HEREFORD CATTLE....

FOR SALE: Bulls, Cows in Calf, Bull Calves, Heifer Calves.

PRICES RIGHT.

SEE JUNE NUMBER.

MURRAY BOOCOCK, Keswick, Va.

# HEREFORDS

## Registered Herefords

YOUNG BULLS AND HEIFERS  
NOT AKIN FOR SALE BY  
STONEHURST FRUIT & STOCK FARM,  
Union Mills, Virginia.

## BILTMORE FARMS, - BILTMORE, N. C.

### Headquarters for GOLDEN LAD JERSEYS,

Also get of *TREVARTH* and *GEN. MARIGOLD.* \* \* \*

*GOLDEN LAD'S SUCCESSOR*, First and sweepstakes over all at the Pan-American Exposition, the champion JERSEY BULL OF AMERICA, and out of Golden Ora, our great prize-winning cow, both born and developed on these Farms, is among our service bulls.

Biltmore Jerseys are a combination of large and persistent milking qualities with an individuality that wins in the show ring.

**SPECIALTY.** Write for descriptive circular of the best lot of young bull calves ever offered, both for breeding and individuality. They are by noted sires and out of large and tested selected dams. Many of these calves are fit to show and win in any company.



### BILTMORE POULTRY YARDS.

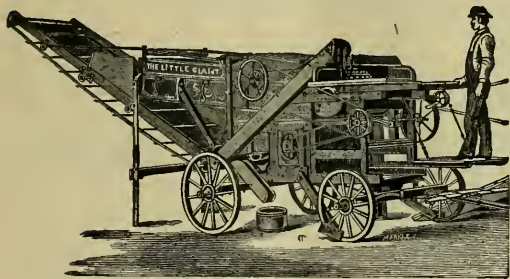


**SPECIALTY.** Write for descriptive circular of eggs from our prize-winning pens. Over 50 yards to select from, made up of the winners at the leading shows for the last two seasons. If you want winners you must breed from winners.

Headquarters for the best IMPORTED ENGLISH BERKSHIRES.

APPLY TO *BILTMORE FARMS, BILTMORE, N. C.*

The most popular Machine in use for Grain Threshing and Peanut Picking are the



## HEEBNER'S, LITTLE GIANT AND PENNSYLVANIA.

Machines, and they have splendid improvements for 1902. They are built in first class manner, and are strong and durable. We guarantee them to do the work satisfactorily.

We will mail descriptive catalogue and testimonials, and quote prices on application.

**TRACTION ENGINES, PORTABLE ENGINES,  
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**SAW MILLS,** Capacity 2,000 to 25,000 ft. per day.

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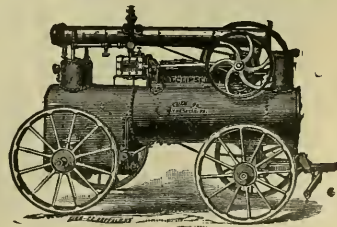
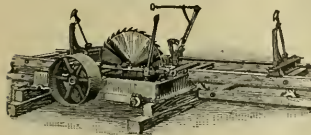
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**STRATTON & BRAGG, 20 and 22 N. Sycamore St., Petersburg, Va.**

## BOOKS AND PAMPHLETS.

Poultry Architecture. Compiled by G. B. Fiske. 130 pages. To meet the constantly increasing demand for information about the construction of inexpensive poultry houses, the author has compiled this book; his chief aim having been to give designs of sufficient variety to suit conditions everywhere. These plans have been carefully selected from a much larger number, and only those are given which are in successful use and which are adapted to the needs of practical poultry keepers. Published by Orange Judd Co., New York. Price, 50 cents.

Standard Perfection Poultry Book. By C. C. Shoemaker. A standard work on poultry, ducks and geese, containing a description of all the varieties, with instructions as to their disease, breeding and care, incubators, brooders, etc. Published by Fred. J. Drake & Co., Chicago. Price, 50 cents.

These two books should be in the hands of every poultry keeper. We can supply them at the prices quoted.

The Business of Farming in Virginia. A Study of some of our Agricultural Resources, by Dr. Paul Scherer, issued by the Norfolk and Western Railway Company, Roanoke, Va. This is a useful little pamphlet for those seeking to know more about the State of Virginia. It will be sent on application.

## CATALOGUES.

The Nursery & Seed Co., Charleston, W. Va. Price list of fruit and ornamental trees, small fruits, etc.

Angora goats. Jos. M. Neil, Charleston, W. Va.

American Seeds. Pinehurst Nurseries, Pinehurst, N. C.

## PREMIUM LISTS.

South Carolina State Fair, Columbia, S. C. Premium list of the Thirty-fourth Annual Fair, October 28th to 31st, 1902.

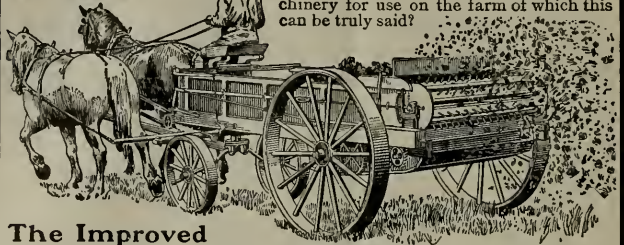
Kentucky State Fair, Louisville, Ky. Premium list of the First Annual Fair, September, 22-27, 1902.

## CENSUS BULLETINS.

- No. 218. Agriculture. Wisconsin.
- 219. Agriculture. Ohio.
- 220. Agriculture. Kentucky.
- 221. Manufactures. Boots and Shoes
- 222. Agriculture. Utah.
- 223. Agriculture. Virginia.
- 224. Agriculture. Missouri.
- 225. Agriculture. Mississippi.
- 226. Agriculture. Tennessee.
- 227. Agriculture. Louisiana.
- 228. Manufactures. Glass Manufacture.
- 229. Agriculture. Texas.
- 230. Agriculture. Oklahoma.
- 231. Agriculture. Washington.
- 232. Agriculture. South Carolina.
- 233. Manufactures. Manufacture of Clothing.
- 234. Agriculture. South Dakota.
- 235. Agriculture. Wyoming.
- 236. Manufactures. Wool Manufacture.
- 237. Manufactures. Musical Instruments and Materials.

# SAVES ITS COST ON THE FIRST CROP.

It spreads all kinds of manure, lime, soil, ashes, compost, etc., either broadcast or in rows. Does it better than it can possibly be done by hand.



## The Improved Kemp Manure Spreader

not only makes easy work of getting out the manure, but by the way in which it breaks it up and makes it fine, it more than makes up for the extra cost of the machine. It will break up and spread evenly, manure that cannot be handled with a fork. It doesn't matter how hard, lumpy, caked, starchy, or stinky the manure is, this machine will spread it. It makes fine, well rotted manure go a long way in top dressing wheat in the spring, meadow lands, pasture, etc. Being mounted on broad fixed wheels, it can be handled on any kind of ground without serious cutting in or rutting. Can spread back and forth, as front wheels turn entirely under. Can be turned on the ground it stands on. 1902 machine has our new **Beater-Freeding Device**, **Apron-Retaining Device** and numerous other improvements. Send for latest catalogue (free) and read about these and other advantages; also about "How to Grow Big Crops." Remember that the only original and genuine Kemp Manure Spreader is the one made by ourselves. **KEMP & BURPEE MFG. CO., Box 28, SYRACUSE, N. Y.**

# CISMONT DORSETS..

CISMONT STOCK FARM offers well developed young Dorsets of the best blood of England and America.

Prices reasonable.

G. S. LINDENKOHL, Keswick, Albemarle Co., Va.

## THE OAKS. 6 SHORTHORN BULL CALVES,

(Eligible to registry) FOR SALE; Also 4 Grades.

100 high-grade SHROPSHIRE EWES; good ones, and some of them bred. I never offered a better lot of stock.

B. B. BUCHANAN, BEDFORD CITY, VA.

## URY FARM BREEDER OF HOLSTEIN-FRIESIAN Cattle.

Royally Bred and Individually as Good as their Breeding.

OFFERINGS FOR THIS MONTH—15 young bulls, from 1 to 18 mos. old. Service bulls, Ury Alwina Count Paul DeKol 23206, Count DeKol Mechthilde 22842, DeKol 2d Butter Boy 3d, No. 2, 23209. Parties desiring fine, young bulls by above sires and from elegantly bred dams, would do well to write us.

THOS. FASSITT & SONS, SYLMAR, MD.

## Save Time, Labor and Money by having a threshing and power outfit of your own.

This No. 3 Pennsylvania Thresher and Cleaner and Roller Bearing Level Tread Power is the best individual outfit for threshing rye, barley, oats, flax, rice, alfalfa, millets, sorghum, timothy, etc. Will thresh and clean 100 to 150 bushels of wheat per day. Also made in two and three crop sizes. Power can be used for cutting chaff and dry feed, shelling all kinds of grain, to run lawns, green hose cutter, pump water, separate cream, churn, etc. Also make lever powers, Feed and Knife Cutters, Grinders, Sawsets, Heebler & Sons, 25 Broad St., Lancaster, Pa.



## WHAT THEY TALKED ABOUT.

"I was at luncheon the other day," said a North Side woman, "where the hostess was a graduate of Smith College, three of the guests were graduates of Wellesley, two went through Vassar, two had been Bryn Mawr girls, and the other ladies present were graduates of Northwestern, the University of Chicago and Wells, respectively."

"Well," one of her hearers said, "it must have been very interesting. How I wish I could have been there. What did you talk about?"

"Let me see. Oh, yes. About how hard it is to keep help."—*Chicago Record-Herald.*

## SENATOR TILMAN'S TAR.

A friend of Senator Tilman was inquiring about the politics of the Tilman family.

"We are all Democrats," asserted the Senator, enumerating his relatives, "all tarred with the same stick."

"Ah," observed the caustic inquirer; "but, Senator, didn't you get a little more tar than the others?"—*New York Times.*

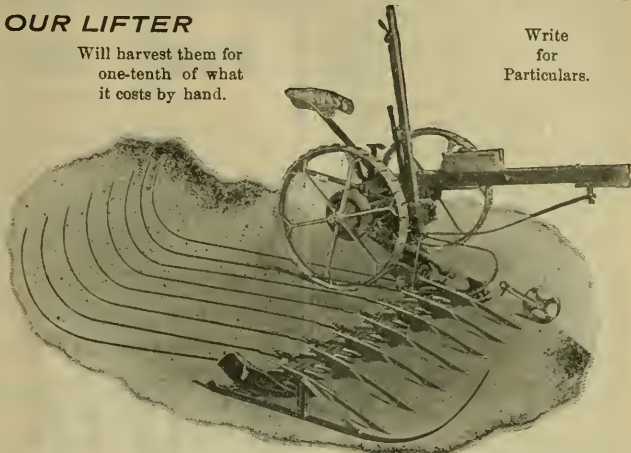
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## PEAS ARE AS GOOD AS COLD THIS YEAR.

## OUR LIFTER

Will harvest them for one-tenth of what it costs by hand.

Write for Particulars.

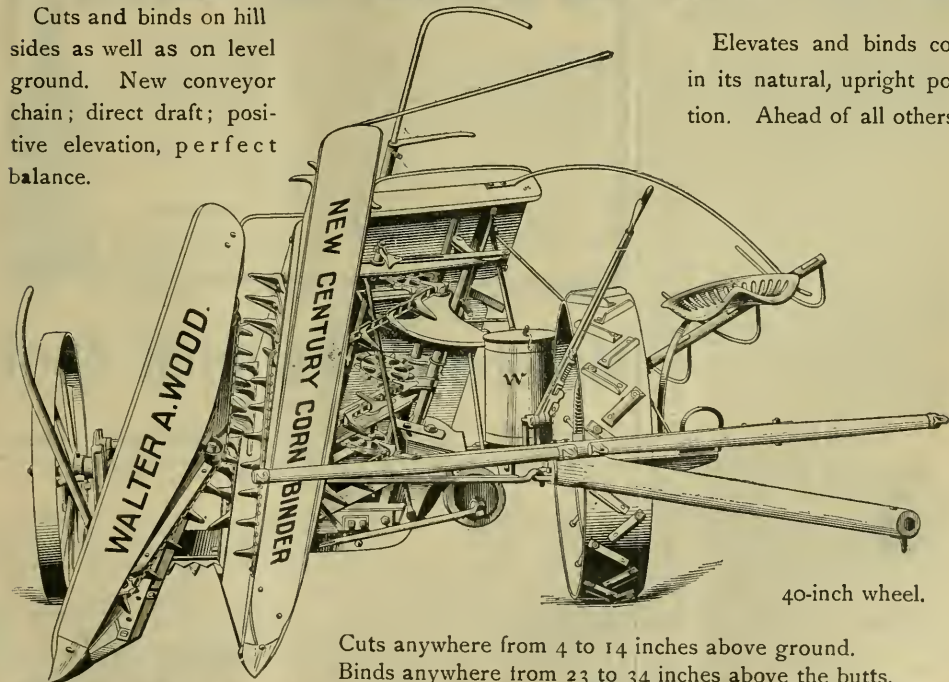


THE VINE AND ROOT MACHINERY COMPANY, Port Huron, Michigan.  
Manufacturers of Pea, Bean, Beet and Chlorey Farm Tools, and  
"THE MEAD" Full Circle, 2-Stroke Hay Press.

## The Newest and Latest CORN HARVESTER

Cuts and binds on hill sides as well as on level ground. New conveyor chain; direct draft; positive elevation, perfect balance.

Elevates and binds corn in its natural, upright position. Ahead of all others.



40-inch wheel.

Cuts anywhere from 4 to 14 inches above ground.  
Binds anywhere from 23 to 34 inches above the butts.

WALTER A. WOOD, M. and R. M. Co., Southern Office, 1422 E. Main St., Richmond, Va.

**MAKING EXPENSES.**

When Edward Payson Hammond, the great revivalist, passed through Illinois in the late sixties he did not neglect Galesburg; he felt that Galesburg generally needed him, and that Ox-Horns Marshall needed him in particular.

A crown of glory awaited any revivalist who could win to the heavenly way John Marshall, the Galesburg tailor, whose store sign was a pair of huge, wide-curved horns, arching above his door. No one in Galesburg who knew of Marshall and his record put any faith in the old saw that it takes nine tailors to make a man. It was generally conceded that Ox-Horns Marshall, when he was properly loaded and carefully aimed in the direction of serious trouble, could attend to any nine men of the vicinity, near or remote. The ox-horns, which were crudely improvised heraldic device, were acknowledged to be no more than justly typical of his strength and of his prowess in such bickering as the Illinois of that clamorous day provided.

With Hammond, religion came to Galesburg. And, as it came to Galesburg with its wrath and its repentance, it came to Ox-Horns Marshall.

He reformed.

Galesburg, dazed at first, at last accepted the wonder of his reformation; but it hastened its evening meal in order to go to church and gaze with awe upon this child of evil from whom the blackness had been washed out. The glory of his amendment spread in undiminished radiance from town to town, and travelling salesmen—roystering friends of his in the unregenerate days—attended the revival meetings in order to see Ox-Horns Marshall bow that terrifying front of his in earnest, humble prayer.

There were four of them in the rear of the sacred edifice, one night, when the reformed one felt the time had come for him to play a Christian's part. He walked forward, seized the plate, and began to take up the collection. He did not see his friends of sin until he came directly to their pew; he was suffering from the stage fright which seizes every man to whom that solemn plate is first introduced with all its stern responsibilities. Their presence took him by surprise. But his courage rose with the emergency.

"Chip in, boys!" he whispered hoarsely. "Salvation's free. But oh, dear friends, remember, it costs like h-l to run a Methodist church!"—*Lippincott's Magazine for August.*

**APPLE CATSUP.**

Pare and core ½ bushel ripe sour apples. Cook in sufficient water to prevent burning, using porcelain or granite vessels. When cooked, rub through a colander and return to the fire, adding 4 oz. salt, 3 oz. black pepper, 1 oz. cinnamon, ½ oz. ground cloves, 1 dram cayenne pepper, 1 teacup sugar, ½ gallon vinegar. Let boil five minutes, and seal or bottle in stone or glass. This is original, and is our favorite catsup. The having may be varied.

"If you say 'please,' I'll give you a piece of pie." "An' if I say it twice, auntie, will y' give me two pieces?"

**Your money back  
if you are not satisfied**

DO YOU SUPPOSE that a company with a capital of \$500,000, paid in full, and the proud reputation of 36 years of continuous success, would make such an offer and not carry it out to the letter?

DO YOU SUPPOSE we would jeopardize our standing with the public and our chances of still greater success by failing to fulfill any promise we make?

DO YOU SUPPOSE we would make such an offer if we did not have the utmost confidence in the satisfactory quality of our goods?

WE KNOW we can please you and save you money, for HAYNER WHISKEY goes direct from our distillery to you, with all its original richness and flavor, carrying a UNITED STATES REGISTERED DISTILLER'S GUARANTEE of PURITY and AGE and saving you the big profits of the dealers. That's why it's best for medicinal purposes. That's why it's preferred for other uses. That's why we are regularly supplying over a quarter of a million satisfied customers. That's why YOU should try it.

**Direct from our distillery to YOU**  
Saves Dealers' Profits! Prevents Adulteration!

**HAYNER WHISKEY**  
PURE SEVEN-YEAR-OLD RYE  
**4 FULL QUARTS \$3.20 EXPRESS PREPAID**

We will send you FOUR FULL QUARTS of HAYNER'S SEVEN-YEAR-OLD RYE for \$3.20, and we will pay the express charges. When you receive the whiskey, try it and if you don't find it all right and as good as you ever drank or can buy from any body else at any price, then send it back at our expense and your \$3.20 will be returned to you by next mail. How could an offer be better? We take all the risk and stand all the expense, if the goods do not please you. Won't you let us send you a trial order? We ship in a plain sealed case; no marks to show what's inside.

Orders for Ariz., Cal., Col., Idaho, Mont., Nev., N. Mex., Ore., Utah, Wash. or Wyo., must be on the basis of 4 Quarts for \$4.00 by Express Prepaid or 20 Quarts for \$16.00 by Freight Prepaid.

Write our nearest office and do it NOW.

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It is the only machine of its kind in the world. It cuts and crushes at one operation. Prepares the nutritious horse stock, making an excellent and much relished feed. No waste. Easy to maintain. It is easier to run two tons of fodder than one ton of hay on the same ground. Fodder is equal to hay in feeding value. The cost itself is low. Working attachments for \$2.00. You then have cutter, crusher and shredder combined in one. Not much more expensive than other machines, but far more valuable. Send for free booklet.  
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Of Fruit and Ornamental Trees, Small Fruit Plants, Roses, Shrubs, etc., etc., for the Fall of 1902 is now ready. The assortment we offer is one of the most complete in America, and consists only of the reliable and tested varieties. OUR PRICES are reasonable, consistent with products of the HIGHEST QUALITY. A copy of this list, and our general catalogue, will be sent FREE for the asking.

### Turnips, Spinach, Kale,

And everything in Seeds.

### Bee Keepers Supplies, Fertilizers

For any and every purpose.

Write us for anything you may need, our prices will be interesting.

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## ANGORA GOATS.



They are brush exterminators. Fleece more valuable than wool. If you have brush-land you cannot afford to clear it except by the Angora Goat. The demand for the flesh and fleece is great and is still growing. You will find a flock of these animals a profitable investment. I can supply you with registered and unregistered stock, in pairs, trios, or any quantity from one to a carload. Lowest prices quantity considered. Write me,

JOS. M. NEIL, Charleston, W. Va.

Pedigrees traced and tabulated. Catalogues compiled and circulars prepared. Special attention given registration matters pertaining to thoroughbred and trotting horses

..BY..

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P. O. Box 929, RICHMOND, VA.

Correspondent of

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SOUTHERN PLANTER, Richmond, Va.  
SPIRIT OF THE TIMES, New York.  
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1902. STALLIONS AT 1902.

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**GOLDEN DENMARK**, A grand looking, chestnut horse, registered in American Saddle-Horse Registry.

**ABD. EL KADER, JR.**, Chestnut horse, by Abd. El Kader, dam by Senator. This horse sires high-class Hunters, Jumpers and Steeplechasers.

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SECOND ANNUAL EXHIBITION,

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\$7,000 IN PRIZES.

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Building Carriages to order is our special business.

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DEALER IN

**FINE HARNESS, SADDLE and  
STABLE SUPPLIES,**

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### PLANTAIN FOR POISON IVY

As the season of poison ivy returns, I am reminded of some of the remedies offered last year through your paper. I have tried them all, and some more besides. The only external application that gave any permanent relief in my case was sweet spirits of nitre.

Now after nearly 40 years, experience with the plague, let me say that an ounce of prevention is worth a pound of cure. My remedy is so simple that I find it difficult to induce people to try it. It is to make use of plantain, the wide-leaved kind, very common in these parts. I do not know the botanical name. It can be steeped and the juice drank, or in my case when I came to a nice fresh leaf I would pick it, chew it, and swallow the juice. I have never known a case in which it has been faithfully tried to fail to give relief; that is, it acts on the system so that one can work in the ivy without danger of getting poisoned. I can mow in it with shoes and no stockings on, with no evil results. I have seen those who could eat it and not be affected at all.

I will give some cases to prove my statements. My father could not go near this ivy without getting poisoned. Every year after haying he would have a regular time with boils and abscesses to get it out of his blood. About 30 years ago he heard of the use of plantain. He has not been poisoned to speak of since, although working in it every year.

My wife was one of the worst cases I ever knew. If she went out after berries, she was sure to be poisoned. It would come out all over her body and make her nearly crazy. She tried every known outward application without relief. It was two years before I could induce her to make a thorough trial of plantain. At last she steeped the leaves and took it regularly for a month or more, and for the past 14 years has not been poisoned at all. A new man in the neighborhood said it was worth \$10 to him last year. Other cases might be cited, but these are some of the worst. I have not heard a case that plantain did not help after a fair trial. I sometimes chew a little plantain, usually before breakfast. I have not been poisoned for 30 years, only slightly when I get the inky-black juice on my bare skin.

Franklin County, Mass. C. S. HALE.

### WHERE THE FUN COMES IN.

"Oh, yes," said the young housekeeper, "I keep a complete set of household-account books, and it's more fun than a little."

"Fun?" ejaculated the neighbor.

"Yes, indeed. I enjoy it so much."

"Enjoy what?"

"Why, watching my husband trying to straighten them out for me, of course. I get him to do it about once a week."—*Brooklyn Eagle.*

### UNNECESSARY EFFORTS.

Kegan: "Old man Rafferty near had a fit when he heard his darter 'n' young Rooney had bin married fer six months."

Regan: "Cu'd yez blame him? There he'd bin treatin' th' young blackguard loike a gentleman fer six month's, jist thryin' to git him into th' family."—*Judge.*

# LEE'S PREPARED AGRICULTURAL LIME

The Old Reliable for WHEAT, OATS, CLOVER and OTHER GRASSES; has stood the test for twenty-five years, being composed principally of Hydrate of Lime, Sulphate of Lime and Potash.

If you wish to IMPROVE your land, use a ton to four acres for WHEAT and CLOVER, or if you wish to seed it for other GRASSES where the land is in good condition, use the same quantity and it will give you a good STAND and GROWTH of GRASS. For reclaiming POOR land, where there is little or no VEGETATION, COVER naked places with litter from the barnyard or forest, using the same quantity, and sow winter OATS and CLOVER.

## FRUIT TREES.

Maj. G. A. Barksdale of Richmond, Va., has used our PREPARED LIME on his fruit trees, and says it has made wonderful improvement, both in the condition of the trees and quality of the fruit.

## OUR SPECIAL WHEAT FERTILIZER.

We put this brand on the market only a few years ago, and have had very flattering results. The best farmers say that they get better STAND and GROWTH of GRASS and CLOVER from it than from other fertilizers. This we can confidently recommend for CORN-LAND or any other land of fair fertility.

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Constantly on hand at lowest prices.

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In car lots at lowest market price from kilns.

Send for Circular and Prices.

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A Fire Insurance Association, chartered by the State for the farmers of Virginia, under an amended and well protected plan.

Insures, against Fire and Lightning, only country property—no stores or unsafe risks. Average cost per year for three years has been \$3.66 per \$1000, including dwellings, barns, produce, &c.,—about one-third the usual cost of insurance to farmers. Amount of property insured \$325,000. Estimated security in real and other estate, \$600,000.

For further information, address,  
MENTION THIS JOURNAL.

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Prolongs the wear of HARNESS, SHOES, Etc., fully 100 per cent. Save half the yearly Shoe and Harness expense. Guaranteed to do all we claim or money refunded. Write  
JOHN MFG. CO., Box 15, Hurricane, W. Va.

## FARMERS' NATIONAL CONGRESS.

It is quite probable that farmers generally do not fully realize the scope and extent of the Farmers National Congress, as otherwise they would take a much deeper interest in it. The topics discussed are more particularly those of a national or international character, quite different from what is generally on the programmes at farmers' institutes. The following is a copy of the program for the 1902 meeting:

1. Inter-oceanic canal.
2. National irrigation.
3. Reciprocity—how may it affect agricultural interests?
4. Effect of present insular possessions on the agriculture of the United States.
5. Preservation of forest and fruit trees and reforestation.
6. Injurious insects, insect pests and fungi.
7. What part of a man's farm does he sell when he sells the crop?
8. Postal reforms particularly affecting the farmer.
9. Mutual relations of northern and southern farmers.
10. Dairy interests of the United States as related to the markets of the world.
11. Farm products other than dairy products in the markets of the world.
12. The labor problem from the farmer's standpoint.
13. How can we best build up our merchant marine?

The Farmers' National Congress is made up of delegates and associate delegates appointed by the governors of each State. Every governor appoints as many delegates as the State has representatives in both houses of Congress, and as many associate delegates as he chooses.

The meeting will be held at Macon, Ga., October 7-10, and the people of that city will give a hearty welcome to all who attend.

The Southeastern Passenger Association has granted a rate of one fare for round trip, and there is a fair indication that the other passenger associations will make better than an excursion rate.

The men who will be invited to take part in the program will be the choicest that can be selected, and each one will be an acknowledged leader in his line. Isn't it about time the farmers took a practical hand in helping to solve the problems that pertain to their own affairs?

We hope to have at least 1,000 delegates, associate delegates and visitors.

John M. Stahl, 4328 Langley Avenue, Chicago, is secretary, and will gladly answer any correspondence for the Congress.

J. H. REYNOLDS,

Treasurer.

EXTRACTS FROM A CYNIC'S  
DICTIONARY.

*Crank*.—A person whose views are the opposite of your own.

*Egotist*.—A person who thinks as much of himself as other people do of themselves.

*Honor*.—That which people talk about when they want to get out of doing something they don't want to do.

*Society*.—That which we lay the blame on when anything goes wrong.—JOHN ELIOT, in the *September Lippincott's*.

Why must your nose be in the middle of your face?—Because it is the scenter.

**DON'T READ THIS.**

We beg to announce to our patrons that we are daily receiving an immense lot of

**FURNITURE, STOVES, OIL-CLOTH,  
CARPETS, MATTINGS, PARLOR  
FURNITURE and odd pieces.**

We will endeavor to make this Opening Fall Season more attractive and the goods more pleasing than ever before.

The prices we have arranged are very low, despite the advance in everything imaginable.

Buying in very large quantities enables us to give our patrons the benefit of lower prices than we have heretofore.

**M. ROSENBLOOM & SON, The Mail Order House,**  
1536 E. Main Street, Adjoining New Main Street Depot, RICHMOND, VA.

**Japan Plums**

And all other desirable standard and new varieties of PLUMS, APPLE, PEACH, PEAR and ORNAMENTAL TREES, SHRUBS, ROSES, Etc.

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PROLIFIC STRAWBERRY.**

The Most Reliable Variety Ever Grown in the South.

Three hundred and fifty acres under cultivation. Write us if you contemplate planting. Catalogue free.

AGENTS WANTED. WRITE FOR TERMS.

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OLD DOMINION NURSERY.

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**IT STANDS FOR BIG CROPS.**

For uniform drilling of grains, any kind and any amount per acre for grass seed sowing and even distribution of lumpy, damp or dry fertilizers, nothing equals this

**SPANGLER Low-Down Drill**

Positives force feed for fertilizer, grain and grass seed. Drills any depth, perfect regulation, low steel or wood frame, high wheels with broad tires. Easy to fill and operate. Light draft. Investigate before buying. Write for free catalogue. SPANGLER MANFG. CO., 501 QUEEN STREET, YORK, PA.



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The Dispatch, Richmond, Va.....	\$ 00	\$ 00
The Times, " " .....	3 00	3 00
The Post, Washington, D. C.....	6 00	6 00
SEMI-WEEKLIES.		
The Dispatch, Richmond, Va.....	1 00	1 25
The World (thrice-a-week), N. Y.....	1 00	1 25
WEEKLIES.		
Harper's Weekly .....	4 00	4 00
" Bazaar .....	1 00	1 40
Montgomery Advertiser.....	1 00	1 00
The Baltimore Sun.....	1 00	1 35
Breeder's Gazette .....	2 00	1 75
Hoard's Dairyman.....	1 00	1 35
Country Gentleman.....	1 50	1 75
The Times, Richmond, Va.....	50	65
Religious Herald, Richmond, Va.....	2 00	2 25
Central Presbyterian, " " .....	2 00	2 50
Christian Advocate, " " .....	1 50	1 75
Turf, Field and Farm.....	4 00	4 00
Spirit of the Times.....	4 00	4 00
Horseman.....	3 00	3 00
SEMI-MONTHLIES.		
Wool Markets and Sheep.....	50	75
Dairy and Creamery.....	50	75
Commercial Poultry.....	50	75
All three.....	1 50	1 15
MONTHLIES.		
North American Review.....	5 00	5 00
The Century Magazine.....	4 00	4 25
St. Nicholas " .....	3 00	3 25
Lippincott's " .....	2 50	2 50
Harper's " .....	4 00	4 00
Forum " .....	3 00	3 25
Scribner's " .....	3 00	3 25
Frank Leslies " .....	1 00	1 35
Cosmopolitan " .....	1 00	1 35
Everybody's " .....	1 00	1 35
Munsey " .....	1 00	1 35
Strand " .....	1 25	1 65
McClure's " .....	1 00	1 35
Puritan " .....	1 00	1 35
Review of Reviews.....	2 50	2 75
Leisure Hours.....	1 00	1 25
Blooded Stock.....	50	50

Where you desire to subscribe to two or more of the publications named, you can arrive at the net subscription price by deducting 50 cents from "our price with the Planter." If you desire to subscribe to any other publications not listed here, write us and we will cheerfully quote clubbing or net subscription rates.

Subscribers whose time does not expire until later can take advantage of our club rates, and have their subscription advanced one year from date of expiration of their subscription to either the Planter or any of the other publications mentioned.

Don't hesitate to write us for any information desired; we will cheerfully answer any correspondence.

We furnish no sample copies of other periodicals.

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- MAMMOTH CLOVER.
- CRIMSON CLOVER.
- WHITE CLOVER.
- LUCERNE CLOVER.
- ALSYKE CLOVER.
- BOKHARA CLOVER.
- JAPAN CLOVER.
- BUR CLOVER.



- TIMOTHY.
- ORCHARD GRASS.
- BED TOP or HERDS GRASS.
- KENTUCKY BLUE GRASS.
- RANDALL GRASS.
- TALL MEADOW OAT GRASS.
- JOHNSON GRASS.
- GERMAN MILLET.
- BUCKWHEAT.
- OATS and CANE SEED.

"Whatsoever One Soweth, That Shall He Reap."  
 We sell strictly reliable FIELD AND GARDEN SEEDS of every variety at Lowest Market rates, included in which are RAGLAND'S PEDIGREE TOBACCO SEEDS.

WE ALSO SELL

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For Tobacco, Corn, Wheat, Potatoes, &c.  
 Pure Raw-Bone Meal, Nova Scotia and Virginia Plaster and Fertilizing Materials generally.

Parties wishing to purchase will find it to their interest to price our goods. Samples sent by mail when desired.

**Wm. A. Miller & Son,** 1016 Main Street LYNCHBURG, VA.

## Headquarters for Nursery Stock.

WHOLESALE AND RETAIL.

We make a specialty of handling dealers' orders.

ALL STOCK TRUE TO NAME.

- Apples, Nectarines, Pecans, Ornamental and
- Pears, Cherry, Chestnuts, Shade Trees,
- Peach, Quinces, Walnuts, Evergreens,
- Plum, Almonds, Small Fruits, Roses, Etc.
- Apricots,

CALIFORNIA PRIVET, for Hedging.

WRITE FOR CATALOGUE.

..AGENTS WANTED..

**FRANKLIN DAVIS NURSERY Co.,** Baltimore, Md.

# BUSY! BUSY! BUSY!

THAT'S NO NAME FOR IT; THAT'S WHY OUR AD IS NO LARGER THIS ISSUE--WE ARE TOO BUSY TO GET UP ONE.

Look Over This in a Hurry and You Will Surely "REGRET IT."

Best Family Flour, bbl.....	\$4 25	bottle.....	85
Granulated Sugar.....	4 1/2		
Rock Candy Syrup, gallon.....	40	Juniper Gin, for kidney and bladder troubles. Cures weak and lame back, per gallon.....	2 00
Something fine, regular price, 50 cents.....		Old Northampton Apple Brandy, per gallon.....	2 00
Pure Lard, any quantity.....	12	Clemmer Whiskey, per gallon.....	2 00
2,000 bushels Clover Seed.....	2 90	Will sell any quantity of these medicines at same price.....	
10,000 bushels Choice Seed Wheat.....		New Large, Fat Mackerel in 15-lb. buckets.....	98
40,000 bushels Winter Seed Oats.....		The regular price is \$1.50, we are overstocked and want to move them.....	
Arbuckle's Coffee.....	11	New Prunes.....	5
Golden Rio Coffee.....	10	Octagon Soap, 100 cakes.....	4 00
Country Cured Side Bacon.....	12 1/2	Finest English Breakfast Tea.....	45
10,000 bales Choice Timothy Hay.....	70	Carolina Rice.....	6
New Cut Herrings, dozen.....	12	Home-Made Blackberry Brandy, per gal., including jug.....	75
McDermott's Fine Malt Whiskey, sure cure for chills and fever, loss of appetite, dyspepsia, consumption, sleeplessness, enriches the blood and builds up the system. No family should be without a			

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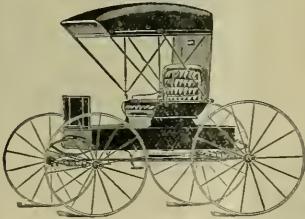
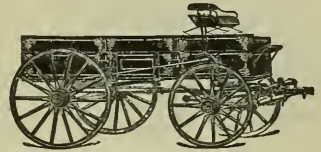
Send me your orders, and if I don't save you big money on your Groceries, Seeds, Feed and Medicines I will be very much disappointed.

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**VIRGINIA-MADE BUGGIES AND WAGONS.**

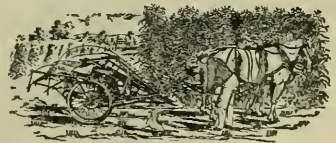
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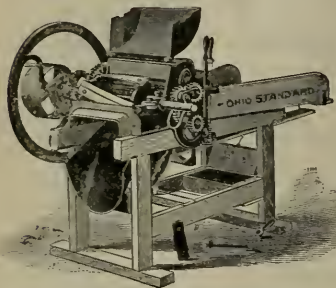
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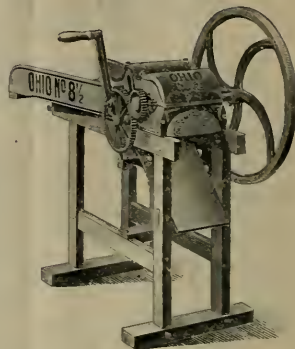
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A good polish for varnished furniture is equal parts of vinegar, sweet oil and spirits of turpentine; the furniture may be washed first with warm water and soap. The little white spots which come on varnished furniture may be removed by holding a hot dinner plate over them for a few moments. For unvarnished furniture of dark wood a coarse oil, mixed with turpentine, does very well; besides improving the appearance and cleaning it, it also preserves the wood and strengthens it. Chippendale or inlaid mosaic furniture should be frequently cleaned with oil, which preserves it from cracking and keeps the inlaid parts from becoming loose and protruding. Anyone who is fortunate enough to possess olive-wood tables or boxes should have them frequently wiped over with olive oil. Cane chair bottoms may be not only cleansed, but made more springy and elastic by washing with hot water, using, if they are dirty soap also. The chair should be turned upside down and well soaked. Dry it out in the wind and sunshine, and it will be as firm and nice as when new, unless it is broken or injured in some way. *Ledger Monthly*.

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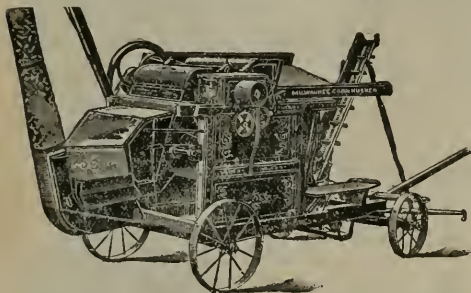
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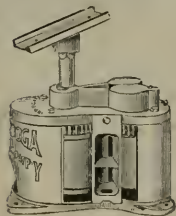
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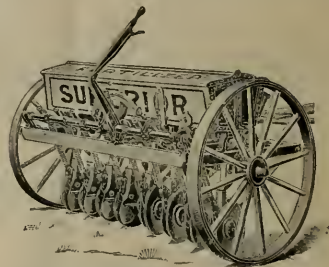
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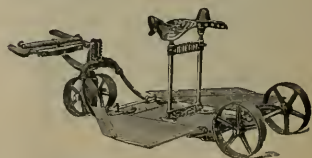
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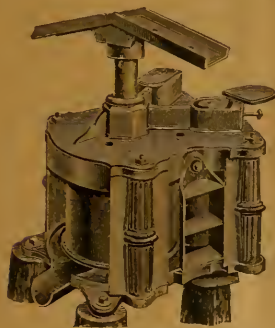
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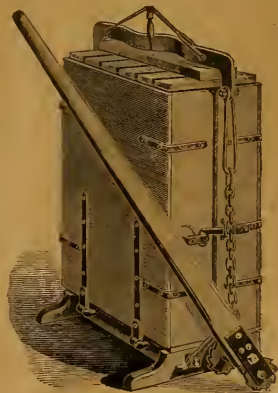
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# Southern Planter

A MONTHLY JOURNAL

DEVOTED TO

Practical and Progressive Agriculture, Horticulture,  
Trucking, Live Stock and the Fireside.

OFFICE: 28 NORTH NINTH STREET, RICHMOND, VIRGINIA.

THE SOUTHERN PLANTER PUBLISHING COMPANY, - - - Proprietors.  
J. F. JACKSON, Editor and General Manager.

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Agriculture is the nursing mother of the Arts.--XENOPHON.

Tillage and pasturage are the two breasts of the State.--SULLY.

63d Year.

Richmond, October, 1902.

No. 10.

## Farm Management.

### WORK FOR THE MONTH.

The month of September, like the month of August, has not been one of the most propitious for the maturing of the crops. It has been too cool, indeed so cool that frost has been felt before the middle of the month in several places in this State, whilst in the West and Northwest injury from that cause to the crops has been severe in many sections. In Eastern and Middle Virginia and North and South Carolina, there has been sufficient rainfall to keep the land moist, but not overwet, and had the temperature been higher, growth and maturity would have been rapid. In the Valley and Southwest Virginia, and in Western North Carolina, the drouthy conditions, which have been the peculiar feature of the summer—a condition most unusual in those sections—have continued and crops are cut short and pastures bare. Corn in all those sections is going to be in short supply during the winter, and feed of all kind will have to be fed with a careful hand to make it last out until spring. The general corn crop of the country still promises to be the greatest ever grown, probably in excess of 2,600,000,000 bushels, so that there will be an abundance to be had for money, but we do not expect the price to be low, as the empty corn bins of the West and Northwest will take millions of bushels to fill them, and farmers there have had a lesson which will impress itself and cause them to hold a supply sufficient to carry them over a year of deficient yield in the future. The wheat crop of the world is estimated at

several million bushels in excess of that of last year, but harvest conditions have been very unfavorable in England and Europe generally, so that there will likely be much of the crops of these countries not fit for flour. This will no doubt have some effect in keeping the price from falling to what it otherwise might have done. The oat crop promises to be a large one, though there will be much damaged grain from unfavorable harvest weather in the North and Northwest. Both corn and long feed promise to be short in the States south of Virginia, and there will likely be a brisk demand for these products from those States all through the winter. The indications are that the cotton crop will be much smaller than appeared at one time probable. The weather of August and September has been most unfavorable for the crop, and the condition of the crop at this writing, 20th September, is a very low one. We doubt much whether the yield will be as large as that of last year. With small stocks, and a greater demand, this should make the price of cotton harden, and we would urge cautious selling. It will, in our opinion, pay growers to hold a considerable part of the crop as long as possible. The tobacco crop in this State is turning out much better than at one time seemed probable. The showery weather has helped the late set plants very much, and if frost holds off for ten days longer much of the crop which, in July, looked likely to make nothing will be a good marketable product. The indications for frost should be carefully watched, and cutting not be too long de-

laid. The markets are opening with a strong demand for almost all kinds of tobacco, and primings are selling for prices which, a few years ago, would have represented the value of nearly the best of the crop. There is every indication that good well-cured tobacco is likely to sell well. Let care be taken to cure the crop to meet market requirements. In our last issue will be found advice on this subject from the proprietors of one of the largest warehouses in this city. Peanuts and sweet potatoes have improved much during the past two months, and the crop will be an average one. The second crop of Irish potatoes promises to be one of the best ever grown. The moist showery weather of August gave it a good start, and now all that is needed is the absence of frost until it is sufficiently matured to dig. The demand for this crop for seed is always good.

The plowing and fitting of the land for the wheat and winter oat crops should be pushed forward as fast as possible. In our last two issues we wrote fully on this subject, and refer readers to what we then said. Both crops should be sown as soon as the land can be got into good condition, but the importance of a fine, well prepared seed bed is so great in the influence upon the yield, that it is better to seed a little late rather than to seed on a poorly-prepared bed. Fine preparation of the soil is of greater influence than a heavy dressing of manure or fertilizer. It should always be borne in mind that all the cultivation that can be given either of these crops, except it may be a harrowing of the crop in the spring, which, though often omitted, is yet of great use in helping the crop, must be given before the crop is seeded; hence the great importance of leaving nothing undone that can conduce to a finely broken surface soil and a compact subsoil. Plow deep, harrow, and roll frequently. Much good has been found to result in the West from the practice of subsurface packing. This is practically a reversion to a practice that has been in use in England ever since we can recollect. The roller used for the purpose in England is one made with two large wheels, having the rolling surface made V shaped, the point of the V being left about one inch broad. These two wheels are set on an axle so as to run one on each side of the furrow thrown by the plow so as to pack the seam between each furrow. A third wheel is set on the other end of the axle to run on the unplowed land. This roller follows the plow, waiting to start until three furrows have been turned. Its use has been found of great benefit, especially when plowing sod land for wheat. The close packing of the seams of the furrow prevents seed from getting down under the furrow, where it rarely germinates or grows, and thus leads to a thin growth of the crop. These subsurface packing roll-

ers can be had from Western implement dealers, but we have not seen them advertised in the East. We have used the English form of roller, and can speak favorably of it. In its absence, the corrugated iron roller advertised in our columns by a Charlottesville firm, which is practically the same as the roller known in England as a Cambridge roller, can be usefully substituted. It has a corrugated surface the whole width of the roller, and will pack the soil well; after which, the surface should be finely harrowed. Wheat never grows well with a loose subsoil. Do not seed until after we have had a sharp frost or two to kill the flies. In some sections these have been troublesome again this year, and in these places wheat should not be sown until after the flies have been trapped on a strip of wheat seeded early and then plowed down, thus destroying the eggs and pupa.

The sowing of Crimson clover, Sand vetch and English vetch, should be continued as advised in our last month's issue. Although it is now getting late to seed Crimson clover, yet if the fall is an open one, it may yet make a good stand if seeded before the middle of the month. Sow with a mixture of wheat and oats or rye, or all three grains, 10 lbs. of Crimson clover and a bushel of the mixed grain per acre. Vetches may be seeded all the month, and English vetch into November. Sow these also with the mixed grain, but do not sow more than three-fourths of a bushel of grain per acre with 25 or 30 lbs. of vetch seed.

Cut and cure all forage crops as early in the month as possible. Their succulent nature makes them slow and difficult to cure if the cutting is too long delayed. The power of the sun is now fast waning and the dews at night are heavy; curing, therefore, will require constant attention. Sorghum and corn fodder should be cut and set up in small shocks. Cow-peas and Soja beans should be cut and allowed to lie broadcast for a few hours and then be put into small cocks. These, after standing a day or two, according to the weather, should be then broken out and exposed to the sun and wind for a few hours, and then be put up into larger cocks to cure out. The value of these two crops as a substitute for bran or other protein feed, is so great that they are worth much labor to save.

Let the corn crop be cut up at the roots and be set up in shocks to cure. Do not waste half the crop you have labored to produce by leaving the stalks in the field. You would laugh at the idea of leaving your timothy in the field and only saving the seed, and yet corn fodder is just about as valuable for feed as timothy hay. In this issue will be found a report of an

experiment made in feeding corn fodder as compared with timothy.

Sweet and Irish potatoes should be dug before the frost has cut down the tops. In digging these crops be careful not to damage the tubers more than possible, and do not leave them in the hot sun after digging longer than necessary just to dry off the damp soil. In this issue we give information as to the storing of sweet potatoes, which require more care to save them in winter than Irish potatoes. Irish potatoes, after being dug, should be put up in pies of about fifty bushels, and be covered with straw sufficient to keep out frost, and a few boards to shed the rain, and be allowed to remain there until they have passed through the sweat. They may be allowed to lie in the barn or under a shed, if more convenient. After the sweat is over, sort the tubers carefully and take out all damaged ones and put the rest into pies or kilns and cover with straw and two or three inches of soil, and they will keep all winter.

Sugar beets and mangold wurtzel beets should be pulled and the tops be cut off before frost has touched them. After being frozen they never keep. Put them up in pies or kilns after they have dried a few hours, and cover with straw and a few inches of soil, and they will keep all winter. It is better not to put the soil on until after they have been pried a few weeks so that excessive moisture shall have dried out.

Ruta bagas and turnips should be allowed to continue their growth until the latter part of November. They will gain much size and weight during this and the following month.

The cutting of tobacco should be hastened as much as possible as frost may now be expected at any time.

Cotton should be picked as fast as it opens. Do not let it remain on the plants to be stained and wasted by the storms. Sun a few hours before bulking.

Whenever other work in the seeding of fall crops or the saving of fodder and other crops does not press keep the teams at work breaking the fallows and plowing all land intended to be cropped next year. The ground is now cooling off fast, and green crops and vegetable matter of all kinds can now be safely turned under without danger of souring the land. The showery weather we have had has induced large growths of weeds. These should be utilized for making humus about the value of which we wrote last month. Bury them deeply, and when possible give a dressing of lime on the top after plowing, and harrow in lightly.

Wherever the subsoil is a good one subsoiling should also be done, so as to increase the depth of soil. There is a large supply of phosphoric acid and potash in nearly all our subsoils which only requires to be made available to ensure large crops. The way to make these available is to bring them within the influence of the weather and the rain by breaking the soil and subsoil loose, so that the humic and carbonic acid, which develops in decaying of vegetable matter, can act upon them. Lime also will largely help to render these available. There is great gain apart from these advantages to be made in utilizing the fall and winter months in plowing the land. In the spring work always presses, and especially if it be as has been the case for several years, a wet and late spring.

See that all implements and tools not in use are got under cover and cleaned. It is astonishing what a great loss is sustained every year by farmers in not seeing to this care of their implements.

Have all barns, sheds and pens cleaned out, thoroughly repaired and lime washed, so that the stock can be housed comfortably as soon as necessary.

#### LIME AS AN IMPROVER OF LAND.

During the course of the year we have frequent enquiries as to the advisability of applying lime to land, and as to its value as an improver of the soil. As the fall and winter months are the season of the year when lime should be applied to land, we propose now shortly to give advice on this subject in order that it may come pointedly to the notice of our readers when the advice can properly be at once acted upon. We have always held strongly to the opinion that lime can be profitably applied to nearly all the lands of the Atlantic Coast States, and very probably to nearly all land everywhere. It is a mistaken idea to suppose that lime is only useful to correct well ascertained acidity in land, such as upon marsh lands or lands recently reclaimed from a marshy condition. Whilst upon lands of this character its use is absolutely essential in order to restore fertility, yet upon lands where the acidity is only so slight as to be barely ascertainable, its use has been found most valuable. Even a slight degree of acidity is sufficient to prevent the free multiplication and active work of the soil microbes on which so largely depends the fertility of all land. Its action, however, is not confined solely to its power to correct acidity. Lime has a powerful physical and chemical action upon the soil and the mineral plant food therein. On light sandy soils it acts as a binder of the particles together, thus rendering them more susceptible of retaining moisture, and

better media in which plants can obtain their nourishment and support. On heavy clay lands lime acts as a disintegrator of the soil. It breaks up the atoms of the soil, and thus renders it permeable by the roots and rootlets of plants. In this way it renders such soils drier and better susceptible of fine cultivation. Chemically, it acts as a solvent of inert plant-food, rendering the potash especially, and phosphoric acid generally, more easily accessible to the needs of the crops. It also acts as a solvent and disintegrator of tough plant fibres and vegetable matter in the soil, thus rapidly reducing these substances into humus-making matter. Whilst, therefore, lime is not directly a plant-food itself, except to a very limited extent, and probably to only a small class of plants, it is yet indirectly most vitally important to the vigorous growth of all plant-life. All the different forms of lime compounds are useful to a greater or less extent, but probably the form in which it is most useful is in that of the Carbonate, which is that of the common limestone of the mountains of this State and of oyster-shell lime. In England, where lime is largely used, and in this country, where it has been at all used, it was formerly thought to be necessary to apply it in heavy dressings. We have applied it at the rate of five tons to the acre, and this was not an uncommon quantity to use. Recent experiments have conclusively shown that it is equally effective when used in much less quantity and at more frequent intervals. It was formerly thought that it was as unwise to apply it to land when phosphatic fertilizers of any kind were also applied as it was to apply it to land when farmyard manure was also applied. This, however, is now found not to be so. Whilst it should never be applied along with farmyard manure, as its effect is in such a case to liberate and waste the nitrogen, it may with safety and with some forms of phosphatic fertilizers with increased profit be used with phosphatic fertilizers. In illustration of these uses of lime, we quote the results of experiments made in Maryland. In 1889, '90 and '91, gypsum (plaster) 370 lbs. per acre; quick lime, 2,000 lbs. per acre; and shell marl, 8,000 lbs. per acre, were compared on corn and wheat on a well drained loam soil. The results show that the sulphate of lime (gypsum), and the quick lime (carbonate of lime), produced marked effects the first year of application, but that the carbonate showed no effect until the second year. In the sum total of the three years' crops, all of the applications proved to be quite beneficial and the quick lime produced the greatest increase in yields. In another series of experiments with corn and wheat, carried out during 1890 and 1891, stone lime, 2,000 lbs. per acre; oyster-shell lime, 2,000 lbs. per acre; ground oyster-shells, 2,000 lbs. per acre; marl, 4,000 lbs. per acre; and gypsum (plaster), 233

lbs. per acre, were compared on stiff clay naturally inclined to be wet. In all cases, the yields were increased by the application, the ground oyster shells being especially effective, and much more so than the marl. In a series of experiments begun in 1893, on a rotation of corn, wheat, and hay, the results to the close of 1899 show that the application of lime to this land was a beneficial and profitable procedure. In a series of experiments begun in 1896 on stiff clay land inclined to be wet, varying amounts of lime, 10 to 60 bushels per acre, were compared on a rotation of corn, wheat, and hay. The results for four years (1896-1899) show that small applications of lime have proven to be as efficient at the end of four years as the larger applications, and that the relative profits up to date are in favor of applying 20 bushels per acre.

On the hay crop, the 10 bushels gave the largest net return. Since 1896, experiments have been in progress to test the effect of lime in connection with green manure. Stone lime was applied at the rate of 40 bushels per acre. Cow-peas were sown, which were turned under for wheat. Wheat was followed by clover, which was cut for hay, and the land planted to corn. The net gain from the wheat, hay, and corn was \$4.97 in case of cow-peas alone, and \$5.03 in case of cow-peas and lime. In another series of experiments, the results showed that lime applied so as to slake in the soil produced a slightly better total yield than when first slaked and then harrowed in; that stone lime and shell lime were of about the same value on the soil; that lime, with fertilizer, was more profitable than fertilizer alone; that all applications of lime increased the yields of the crops. In a series of experiments conducted for four years at the Rhode Island Station—to ascertain the effect of lime used in connection with phosphatic fertilizers—ten plots of land had lime applied at the rate of one ton to the acre in 1894. Since that time, up to 1899, eight of these plots have had applied like amounts of phosphoric acid in different forms on each plot. The plots have each grown corn, oats, and hay in the four years. In 1894, the yield of corn on the cob on the plot on which no form of phosphoric acid was used, but which had been limed, was 2,613 lbs. per acre. On the plot which had neither lime nor phosphate, the yield was 1,893 lbs. per acre. On the limed plot, to which dissolved bone black was applied, the yield was 4,510 lbs. of corn on the cob per acre. On the unlimed plot, to which dissolved bone black was applied, the yield was 3,698 lbs. per acre. On the limed plot, to which acid phosphate was applied, the yield was 3,953 lbs. of corn per acre. On the unlimed plot, to which acid phosphate was applied, the yield was 3,255 lbs. per acre. In 1895, the oat crop on the plots lodged so badly in consequence of a severe storm during the early period of growth, that no satisfactory

conclusions could be reached. For the years 1896 to 1899, inclusive, the hay crop on the *limed* plot, to which dissolved bone-black was applied, amounted to 19,837 lbs. per acre. On the *unlimed* plot, to which dissolved bone-black had been applied, the yield was 9,820 lbs. per acre. On the *limed* plot, to which dissolved bone had been applied, the yield was 19,281 lbs. per acre. On the *unlimed* plot, with dissolved bone, the yield was 8,564 lbs. per acre. On the *limed* plot, to which acid phosphate (rock), was applied, the yield was 20,205 lbs. per acre. On the *unlimed* plot, with acid phosphate, the yield was 8,951 lbs. per acre. On the *limed* plot, to which fine-ground bone meal was applied, the yield was 22,012 lbs. per acre. On the *unlimed* plot, with bone meal, the yield was 11,855 lbs. per acre. On the *limed* plot, to which no phosphoric acid in any form was applied, the yield was 15,737 lbs. per acre. On the *unlimed* plot, to which no phosphoric acid was applied, the yield was 2,547 lbs. per acre. The yields of hay given are those of the material at the time it was harvested. Deducting 20 per cent. to allow for shrinkage, and estimating the value of the additional hay produced by liming at \$12 per ton, we obtain the gross gain from liming. Now, deducting \$7.50, the estimated cost of the one ton of lime applied in 1894, we obtain the following as the net gain per acre in the use of the various phosphates on the limed plots for the hay crop of 1896 to 1899, inclusive:

<i>Forms of Phosphoric Acid to the Acre Applied to the Different Plots.</i>	<i>Net Gain in Four Years from the Use of One Ton of Lime Per Acre in 1894.</i>
Dissolved bone black.....	\$40 58
Dissolved bone.....	43 94
Dissolved phosphate } .....	46 52
Rock (acid phosphate) } .....	
Fine ground bone.....	41 26
Basic slag meal.....	27 09
Floats.....	40 33
Alumina phosphate (raw).....	37 36
Alumina phosphate (ignited).....	62 35
No phosphoric acid.....	55 81
Double superphosphate.....	55 79
Average net gain.....	\$45 10

It will be noticed that the lowest net gain was \$27.09. This was on the plot where Basic slag meal was used. This is undoubtedly due to the fact that the Basic slag meal itself contains large quantities of lime, and explains its superior action to the other forms of phosphoric acid used when applied to the unlimed land. It produced 13,193 lbs. of hay per acre on the unlimed plot, as against 10,560 lbs., the highest produced by any other form of phosphate.

We commend the attention of our readers to the foregoing facts. We are satisfied, from our own experience in the use of lime (which has been a pretty extensive one), and from the experiments made in this

country (of which the above are examples), that if farmers would apply lime before seeding wheat, that they would realize a good return on the outlay, both in the wheat and following crops, and that a saving could in this way be made on fertilizer bills.

#### HAY PRODUCTION.

In a recent issue we drew attention to the heavy crops of hay which Mr. Clark is producing on his farm in Connecticut, the secret of which he claims to be perfect preparation of the land before seeding, seeding grass alone and heavy annual dressings of chemical fertilizers, specially mixed for the purpose. In connection with this question and as illustrating the soundness of his system, which is the one we have all along advised to those who desired a good stand of grass, when once land has been properly fitted for producing it by being filled with humus, we note that in an experiment made in Rhode Island three grass plots were treated exactly alike during the experiments, excepting that one plot had received no nitrogen for eleven years, while the second had received a small dressing, and the third a large dressing of nitrate of soda annually since 1892. The large application of nitrate of soda yielded much the greater profit. In 1901 the value of the hay from the plot receiving the heavy dressing exceeded the cost of the fertilizers by \$40.70 per acre, and for the three years of the experiments by \$90.72. In all instances the use of a complete fertilizer gave the best results. The formula used in 1901 in top dressing the grass consisted of 807 pounds of acid phosphate, containing about 16 per cent. of total phosphoric acid, 200 pounds of muriate of potash, and 400 pounds of nitrate of soda per acre. This application furnished the large dressing of nitrate of soda per acre. The experimenters believe the results of 1901 to indicate that an application of 400 to 500 pounds of acid phosphate, 250 to 300 pounds of muriate of potash, and 350 to 400 pounds of nitrate of soda per acre would perhaps have been more economical. The original grass mixture sown on these plots in 1898 consisted of 7½ pounds each of common red clover and red top, and 15 pounds of timothy. In 1900 the plot without nitrogen contained 222 grass stalks per square foot, the plot with the small dressing, or one-third ration of nitrogen, 271, and the plot with the full dressing of nitrogen 236. During the last season of the experiments the plot receiving the full dressing of nitrate of soda had the heaviest stand of timothy, the relative percentage of timothy and red top being 67 and 33 per cent. respectively. The increase in nitrate of soda produced a heavier stand of timothy and with it a larger yield of hay. This plot yielded at the rate of 9,390 pounds or over 4½ tons of hay per acre.

## MIXED CROPS OF CORN AND COW-PEAS.

In Bulletin No. 55, Delaware Experiment Station, page 9, Article VI, Mr. Gettys claims "No crop of field corn intended for cribbing should be planted without the addition of seed peas in each hill, etc. He claims that it increases the yield of corn. Will you give me your views on the subject through your columns?"

Would Black peas be as good as any, and should they be planted the same time as corn?

*Westmoreland Co., Va.* "CABIN POINT."

In our July issue we commented on the practice of growing corn and cow-peas together as advised and practiced by Mr. Gettys, and quoted at length from the Bulletin of the Delaware Experiment Station, which gave the results of an experiment made there with the mixed crop. Whilst Mr. Gettys strongly urges the growth of the two crops together, we do not see that he claims that it results in an actual increase of the corn crop in bulk, but that it results in securing a better balanced food for stock, whether in the form of silage or dry fodder; and this view is borne out by the experiment made at the Delaware Station. This improvement in the feed value of the crop is, it is claimed, and apparently with correctness, obtained at no increase of cost over that of a corn crop alone, except to the extent of the money invested in the cow-pea seed. The peas supply the protein which is needed to balance the carbohydrates of the corn, and thus obviate the necessity for the purchase of cottonseed meal or other protein feeds. In the Delaware experiment, the actual yield of one acre of the mixed crop was 16 tons 150 lbs. A careful division of the two crops was made, and it was found that 76 per cent. of this yield was made by the corn crop and 24 per cent. by the peas. We have known 20 tons of corn alone to be made on an acre of land. The Director of the Station says "it must be admitted that no demonstration has as yet been made that the pea vine noticeably increases crop tonnage." To the enquiry, therefore, as to how much of gain will result to those who plant cow-peas with their silage corn, the reply may be as follows: Shred and feed corn fodder judiciously; under this condition peas planted with corn will add to the food supply of the farm an equivalent of one ton of cotton seed meal for each area of 12 acres in silage crops. With cotton-seed meal selling at \$30 per ton, peas growing in corn may return \$2.50 per acre, at an approximate increase in cost of the total crop of 50 cents per acre for the cow-pea seed. There is another advantage claimed for the mixed crop when grown for silage, in that it enables a greater weight of silage to be stored in a silo than is possible with corn alone. Experiments made at the Delaware Station go to show that a circular silo 17 feet in diameter filled with settled silage to a depth of 23 feet, would con-

tain 92 tons of corn alone, or 132 tons of mixed corn and peas if grown in the proportion of 75 per cent. of corn and 25 per cent. of peas, which was about the proportion shown in the crop there grown. This means that without expenditure of any kind, the capacity of a silo may be increased by practically 43 per cent., in itself a sufficient reason for the addition of peas to a crop of silage corn.

As to the variety of peas to be planted, Mr. Gettys strongly favors the Whippoorwill as ripening its vine more evenly than the ranker growing varieties, and rendering the harvesting less difficult, as it confines its growth in great measure to the corn row in which it is seeded. The Black and Wonderful peas on good land, and in a favorable season, make such an immense growth of vine that the probabilities are that the crop could not be harvested with any of the corn harvesters or mowers in use, as the rows would be so tangled together, and this would result in adding so much to the cost of harvesting as to overbalance any profit. The peas should be planted at or just after the first working of the corn, unless the corn was planted late, when both might be seeded together.—ED.

## JAPAN CLOVER.

*Editor Southern Planter:*

The success of some self sown grasses and clover is the cause of this letter. The cost, and at times the difficulty, of securing a catch of sowed grasses is well known to farmers, and a practical way of obviating these troubles would be a blessing indeed. Perhaps my little experience may be of use.

For hay, we must go on in the old way, that is, sow seed of the kind required. Timothy for market, and better grasses for home use. But for pasture it is another thing.

Fourteen years ago a field of high land was seeded with clover, timothy, red top, and orchard grass, for a pasture. Afterwards the fences between this field and some creek bottom land were taken away, and the pasture now comprises thirty acres, about half dry ground, the remainder subject to overflow. The sowed grasses have disappeared, native grasses, with a heavy accompaniment of Japan clover, having displaced them. But what a fine pasture it is, no better in this neighborhood.

I try to pasture closely, turn the stock out early; in fact, they run on it all winter, although there is then very little to eat. But the cattle are on hand, browsing bushes and watching for the first sprigs of green. Of course they are fed at the stable yard in addition.

By pasturing closely broom sedge is kept down; indeed, makes but little show. There is some of our native blue grass, crab grasses of different sorts, weeds

that are eaten, and in the low ground especially, some that are not; but the main stay is Japan clover, one of the greatest blessings that have happened to this part of Virginia. It is not perfect. It is killed by frost; it does not make hay, although I have seen it eighteen inches high. I am told stock prefer other clovers; perhaps they do, but with me it is eaten clean, and the cattle are plump and well nourished, never had better, if as good.

An account kept with this pasture in 1899 shows that it kept horses, hogs, and cattle, whose pasture was worth \$160. So, allowing \$1.00 per month for cows, \$2 00 for horses, and proportionately for young cattle, this compares well, I think, with a good blue grass pasture.

For pasture I should still sow a variety of grasses, principally red top and orchard grass. If they grow, so much will be gained, but if they fail, I know that our valuable native grasses will come in accompanied by that inestimable foreigner, Japan Clover.

We are told that Bermuda grass is the grass for the South. As a legume is better than a grass, why is not Japan Clover better than Bermuda grass. Both die down in the winter, a failing they have in common. Bermuda, where not wanted, is a pest, while the clover is easily destroyed. I prefer the clover.

We have so much land that we can afford permanent pastures. To sow grass seed once in ten or twenty years is not much of a burden. The only reason for sowing at all is to keep out weeds until the Japan Clover is established.

Louisa Co., Va.

GEORGE CLENDON.

## PRINCIPLES OF SOIL MANAGEMENT.

### Manuring.

*Editor Southern Planter:*

The greater interest taken by farmers during the last two years in the keeping of live stock—due mainly to the good work of the agricultural papers and also to the high prices of meats—will, without doubt, induce them in the future to keep still more live stock. More live stock means more manure, and the greater demands made on the growing of forage crops to bring the stock profitably through the winter, will also cause the farmers to pay better attention to the care of and the applying of manure—this being the best fertilizer the farmer can use.

Without doubt, under conditions still prevailing in large sections of our country of low priced land, and scarce, therefore high priced labor, the ownership of a farm which requires the least labor, even if the results leave many things to be desired, will often deserve the preference.

This economizing in labor is, I think, the main cause of the comparative little care taken in the handling of manure. I do not want to discuss here the question whether it is better to haul the manure every day on

the land or to pile it up in the barn yard until the time for its application has come. These questions have been discussed so often in the agricultural papers that every reader is familiar with them. Both methods have advantages and disadvantages. It is a great saving of labor if the manure is hauled every day to the field; but it is unquestionable that the crop following the top-dressing will be more benefited than by applying the manure shortly before the crop is sown. In top-dressing the manure, especially the vegetable matter, is exposed to the decomposing influences of the weather, causing sometimes considerable loss, and much of the mineral matter may be washed away on rolling land. On the other hand, if the manure is piled up in the barn yard, it makes double work and a certain loss cannot be avoided, but it can be gotten into the very state of decomposition for improving the mechanical condition of the soil, and if immediately plowed under, no further loss occurs. Shortly we can say: By top dressing with manure we fertilize the crops. By immediately plowing it under the soil. Each farmer must ascertain for himself which method to follow, and which is best adapted to the profitable management of his farm.

The great value of manure over chemical fertilizers lies in the amount of vegetable matter it contains. Our virgin soils, were rich in humus, which made plowing easy, retained moisture, and in being converted into carbonic acid, helped to liberate plant food. With the disappearance of the humus by constant cropping without replacing it, some of the heavier soils have almost become unmanageable, and the lighter soils are affected by the least drought. In order to restore these soils to their former fertility by careful tilling and manuring, the state of decomposition of the manure should be given the closest attention. It should be strictly in conformity with the physical properties of the soil.

In order to treat the matter intelligently, we must divide the soils into certain groups. The variety of soils is so great, and even the same kind of soils have to be treated so differently under different climatic conditions, that no attempt can be made here to go into a detailed description of the treatment of some of these soils. But a clay soil, no matter what the conditions are, will always require a different treatment from a sandy soil, and a loam from a humus soil. I therefore think that the dividing of the soils into the four large groups—clay, loam, sandy, and humus soils—will for our requirements answer all practical purposes.

1. *Management of Clay Soil.*—The trouble which confronts the farmer in managing these soils, however fertile they may be, is their bad mechanical condition. It must, therefore, be the aim to overcome this by tilling and applications of large quantities of strawy manure at one time. It is of no use to try to accomplish the same end with small quantities of manure, as it is a peculiarity of these soils not to respond to small quantities of either manure or lime. Each straw, when it is plowed under and decomposed, leaves a fine channel behind making the soil porous, and not only giving access to water and air, but also permitting the roots of plants with a weak root system to penetrate the soil in all directions in their search for plant food.

The danger of lodged grain from such heavy appli-

cation of manure is very slight, because the decomposition in these cold and little active soils is not only slow, but we can grow crops on these soils like rape, horse and hog beans, fodder, beets and others, which will only make good crops in fresh, heavily manured soil, and at the same time, through the necessary cultivation or strong root development, prepare the soil for the following barley and wheat crops. These, again, can profitably be followed without manuring by strong rooted crops, such as corn and oats. For instance, such rotations as these are possible and advisable:

Rape,*	Clover,	Beans,	Fodder Beets,
Wheat,	Wheat,	Wheat,	Barley,
Corn,	Corn,	Oats,	Clover.

The following rotation in a stiff upland clay soil which was not fit for pasture, gave very good results, and may serve as an example:

1. Clover.\*
2. Wheat.
3. Corn.
4. Beans or Peas.\*
5. Wheat or Rye.
6. Corn or Oats.
7. Beets, Potatoes, or Green Fodder.\*
8. Barley.

This rotation, though a little complicated, was very satisfactory, because each crop was placed where it was benefited by the preceding crop. There is further a variety of crops, the best insurance against unfavorable weather, and there is enough wheat and rye (producing the best straw for making manure) for the rotation (about one-third of the acreage), to obtain the necessary manure for the heavy application, about six four-horse loads per acre, necessary to obtain the desired results. There are also enough hoed crops to keep the soil free of weeds.

If ows are kept on heavy soils which make a poor pasture, but otherwise produce fine crops, they should generally be fed in the barn over summer, or at least the greater part of it, if this should not prove too expensive. On large farms, where the hauling of the green fodder from the large fields on account of the distance would take up too much time, an area sufficiently large for this purpose near the barn should be separately managed with the following rotation:

1. Green fodder.\*
2. Wheat.
3. Different small crops.

The liquid manure may be applied to the green fodder. In the third field a variety of small crops, such as early potatoes, cabbage, turnips, carrots, etc., for which the garden is not large enough, are generally grown. Part of this field may also be laid out in clover, making a good, and when top-dressed, an early green fodder.

On small farms the dividing of the area into eight or nine fields is not always advisable, at least not on rolling land or on any land not of a uniform texture. It may happen that some fields will contain all good land and others only the poorer land, making crops in these fields, on the successful growing of which the farmer may depend, somewhat risky in years of unfa-

vorable weather. For these farms a modified form of the popular five and six field rotations:

<i>Five Fields.</i>		<i>Six Fields.</i>	
1. Corn.*		6. Corn.*	
2. Wheat.		7. Wheat.	
3. Clover and grass.		8. Wheat.	
4. Timothy, once cut.		9. Clover and grass.	
5. Pasture.		10. Timothy, once cut.	
		11. Pasture.	

will probably give the best results.

These rotations, which have given good results as long as the soil was rich in humus and easily available plant food, have the great advantage, that they require less teams than almost any other rotation. In the five field rotation only one field is plowed every year, in the six field rotation two. On an impoverished clay soil, which can only be profitably managed by constant tilling, they have the disadvantage that the soil is plowed only once in five years and a little more in the six field rotation. As already stated so, long as the soil is rich in humus this is of little moment with the disappearing of this, it becomes the main question. The soil is not in the best condition for wheat if it is drilled in the corn stubble, as it usually is. Wheat after wheat will only do well in a rich soil.

If the clover is cut twice and the timothy the next year once (the red clover having died out the second year) the soil, deprived of considerable plant food, will make a poor pasture the following year. If the greater part of the clover and timothy is sold and only a few head of live stock are kept, there is not sufficient manure made to preserve the good mechanical conditions of the soil. At the end of each rotation there will be less humus in the soil than there was in the beginning; the scant quantity of manure applied is no compensation for the loss through decomposition of the humus that was originally present in the soil. The results of such management are too well known. When a change in this system of rotation is deemed necessary, the following change in the rotation, which is more in conformity with the nature of the clay soils, may prove of advantage:

*Five Fields.*

- |              |                       |
|--------------|-----------------------|
| 1. Clover.*  | 6. Clover, cut once.* |
| 2. Wheat.    | 7. Pasture.           |
| 3. Corn.     | 8. Corn†.             |
| 4. Legumes*. | 9. Legumes.           |
| 5. Wheat.    | 10. Wheat.            |

*Six Fields.*

- |              |                       |
|--------------|-----------------------|
| 1. Clover.*  | 1. Clover, cut once.* |
| 2. Wheat.    | 2. Pasture.           |
| 3. Corn.     | 3. Corn.              |
| 4. Legumes.* | 4. Wheat.             |
| 5. Wheat.    | 5. Legumes.           |
| 6. Oats.     | 6. Wheat.             |
| 1. Clover.   | 4. Corn fertilizer.   |
| 2. Pasture.  | 5. Legumes, etc.*     |
| 3. Pasture.  | 6. Wheat.             |

In Northern countries, two fields in pasture in a six-field rotation are too much in proportion to the winter feed; in Southern countries, with a mild fall, this is all right. In some of the rotations the fall manure cannot be applied, and it will be necessary to divide

\*Full manure.  
†Half manure.

\* Means manured.

it up, but if the rotation is to be arranged according to the number of fields, this cannot be helped.

Clay soils are, as a rule, fertile, and if they are only worked right, the keeping of a large number of live stock to convert the crops into manure, by which light soils are so much benefited, is not necessary, if only the rough fodder is returned to the soil. Green manuring in conjunction with chemical fertilizers is less effective on heavy soils, because the green crops do not possess the decomposing resistance and loosening effect of wheat and rye straw, and the tilling of clay soils so much depends upon the weather that the preparing of the seed bed for the green crops at the right time cannot always be depended upon, though this has to a great extent been overcome on large farms, by the introduction of steam, and electric plows.

The heavy soils are the granaries of the world, and if properly managed, surpass all others in the production of grain, clover and beets. It is true that the tilling, especially in a country like ours, with constant changing weather, generally going from one extreme to the other, is rather difficult. It requires close attention, many and strong horses, strong farm machinery, plenty of help and an intelligent management. It will happen sometimes that unfavorable weather interferes in carrying out the adopted rotation, and that only two-thirds or one-half of the acreage to be sown with rye or wheat can be seeded with these crops, and spring crops have to be substituted. But the large crop grown on these soils and the fine live stock kept on these farms are a sign of their profitableness. The pleasant environment and the generally fine landscape in countries with clay soils make these lands the most desirable that can be farmed.

*District of Columbia.*

H. WINKELMAN.

### Clover without manure, a failure.

*Editor Southern Planter:*

On a hillside, sloping moderately toward the south-east, on the opposite side of the river, but in plain view from my house, is a field containing about twenty acres. I know the history of that field as well as I know the history of my own farm. It has been cleared about fifty years. It was light clearing, the timber being chiefly pitch-pine, interspersed with oak and hickory. Its location being near the old Indian village of Friedenshutten, or Wyalusing, which was a station of the Moravian missionaries, it is probable that it was once cut over for fire-wood, which would account for the trees being no larger on a good soil. On the surface were a good many detached rocks of gray lime, composed almost entirely of small shells cemented together, which were hauled off and burned in a kiln before the land was cleared, leaving it quite free from stones. There is no doubt there was a plentiful supply of lime in the soil. Its sheltered situation, not being exposed to the northwest blasts of winter, allowed the snow to lie on the ground until it melted off in the spring, giving a protection to the wheat plants when sown with wheat.

For many years after this field was cleared it produced splendid crops of wheat without a single failure. Judge Stalford, the owner, was a good farmer, and during his lifetime the land was as well tilled and taken care of as land could be without the application of manure. After taking off a crop of wheat, the field was usually seeded with clover, which, sometimes was mowed, but usually pastured two or three years until the clover ran out, when it was plowed (generally summer fallowed), a good crop of wheat taken off, and reseeded with clover. Once or twice a crop of corn or a crop of oats, followed by wheat, was taken off and seeded with clover. Long before the Judge's death, about twenty-five years after the field was cleared, I noticed that it was difficult to get a good stand of clover, and when there was a "catch" there was by no means a vigorous growth. The land was getting "tired" and "sick." The clover, when it grew, told the story in the most positive language, and hung out the signals of distress to the view of every observer. That the land was naturally good and strong, it had given abundant proof. It was not the kind of land that favors the frost in heaving out the clover plants, and leaving their roots bare. Its sheltered situation was favorable for the growth of clover as well as wheat; but the clover could no longer find the especial fatness it feeds upon, even when reaching down with its deep roots into the subsoil.

When the Judge's health failed, the field was rented for \$6 per acre, and the renter summer fallowed it by plowing three times, doing his work well, sowing in good season, and obtained a good crop of wheat. He followed the wheat with rye and had a moderate yield. He sowed it the following spring with oats, and they were hardly tall enough to bind. After another crop of rye, it was seeded with clover, but it only grew in spots, and on these the plants were feeble and sickly. On half of the field, there was nothing to speak of, neither clover, grass nor weeds. The best spots were cut with a machine, the remainder left because it was not worth mowing.

Judging from the past, a good crop of grain, and a good catch of clover without manure, or some other fertilizer, is now utterly impossible.

Mr. Waldo F. Brown has stated that there are fields in his vicinity (in Butler county, Ohio), which have been tilled and cropped for forty years without the application of any fertilizer whatever, and have been kept up to the full standard of their original fertility, merely by the use of clover and a judicious rotation of crops. The statement only proves that those fields were very rich, and that it takes a long time to exhaust them. The deepest and strongest wells can be pumped dry. The ocean itself would ere long be evaporated if no rivers were flowing into it.

Mr. T. B. Terry, for a time, became a convert to Jethro Tull's doctrine that *tillage* is manure, and that clover and tillage would keep up the fertility of his farm without the dung of animals or commercial fertilizers. Mr. Terry has returned to his old faith in barnyard manure, especially when it is kept without leaching in his covered barnyard.

Farmers talk about land becoming "clover sick." The land is not sick; it is becoming impoverished, hungry and weak. Let them give it a good top dressing of rotten manure, then sow their clover seed, and see how quickly it will get well and produce clover again. It may be that rotten manure contains the living organisms which form the tubercles on the roots of clover, without which it is said that no nitrogen can be extracted from the atmosphere. Clover gathers up the fertility in the soil and makes it available. Its long roots penetrate deep into the subsoil, and bring back the fertility that has escaped beyond the reach of most other plants; but clover roots are not long enough to reach the sewers of London and Liverpool and bring back the life-blood of the soil that has been shipped away from our fields in the many thousand cargoes of wheat, corn, cotton, butter, cheese, pork, beef, and lard, which have been sent to those ports.

J. W. INGHAM.

## HOW TO STUDY PLANT FOOD.

*Editor Southern Planter:*

Fertilizers are the same thing, so far as they are useful to farmers, as the ordinary farm-yard manure; and this is the first thing to fully grasp. The food of plants is confined to three substances, known in the fertilizer trade as "Nitrogen," "Potash," and "Phosphoric Acid." There are other substances necessary to the growth of plants, but ordinary soils contain all of these that are necessary. Lime is not a direct plant food in the sense that soils may be deficient in same, for there is always plenty of lime in all soils for the actual needs as food, but lime has the property of improving the mechanical condition of soils, and improving also the availability of actual plant food. On this account lime is frequently used liberally, especially on sandy soils or on black soils. Plaster or gypsum is used for much the same purpose, but may not be considered as needed plant food in the same sense as we regard nitrogen, potash, and phosphoric acid.

Ordinary farm-yard manure is valuable in increasing the growth of plants simply for the nitrogen, potash and phosphoric acid it contains, so far as plant food is concerned. It is generally believed that farm-yard manure has also a valuable mechanical action on soils, but this is distinct from its use as plant food. However excellent may be the mechanical condition of a soil, without the plant food, no plant life can flourish. It is important to consider the true value of manures to understand fertilizers; that is, we must keep in mind that so far as plant food is concerned, manures and fertilizers are precisely the same thing.

If farm yard manure is broken up with chemicals and the great mass of vegetable matter removed, we then have fertilizer in form and appearance precisely the same as regular commercial fertilizers.

When we get down to bed facts on the fertilizer matter, it is a very simple matter and easily understood. Farm-yard manure, if concentrated as are fertilizers, would be called a fertilizer, though nothing but manure was used in the manufacture. Suppose five tons of farm yard manure were freed of its great mass of water and vegetable matter, we would then have a brownish gray powder with an analysis about as follows: Nitrogen, 2 to 3 per cent.; potash, 2 to 3 per cent., and phosphoric acid, 1 to 2 per cent.

Here we have the basis of fertilizers, a formula established by nature. The phosphoric acid in this manure would not be soluble in water, and would be only slightly available; hence, the acid phosphate of commercial fertilizers is really more valuable, as it is always available.

Once we have the general nature of plant food clear in the mind, the value of a manure or fertilizer is readily understood. If a manure or fertilizer is offered for sale, its value depends on the quantity of plant food it contains, and not on its gross weight. A bushel of shelled corn is not sold at the same price as a bushel of corn on the ear.

We now come to the only other point of great importance in understanding fertilizers—the fact that all three of these plant food substances are equally necessary, and that no excess of any one, or of any two, for that matter, can make up for a shortage of any one; that is, if we have enough nitrogen and phosphoric acid in the soil for a full crop, but only enough potash for a quarter of a crop, only a quarter of a crop can be grown.

From this point, the importance of studying the plant-food removed from the soil by the various crops becomes clear, also the necessity for buying plant food to fill these losses. It is easy to get the analyses of different crops, as almost any State Agricultural Experiment Station will furnish them. The analyses of fertilizers are published by the same authority, and are also on all fertilizer bags. It is a mere matter of figuring out how much plant food will be needed by a crop, and how much manure or fertilizer it will take to supply the needed quantity; and this is about all there is to the fertilizer problem, which seems to have given us so much bother.

V. J. LANCE.

Whilst our correspondent is no doubt correct in saying that farmyard manure, as compared with commercial fertilizer, is only valuable for the nitrogen, phosphoric acid and potash it contains, we must demur to his conclusion that, apart from this, its only other use is as a mechanical agent. It is now clearly established that its value as a creator of humus as a source of carbonic acid and of humic acid, and especially its ability to supply and nourish the microbial life which is essential in a fertile soil, and without which plant-food, in whatever form supplied, cannot be properly utilized, gives to farmyard manure a much higher value than its mere mechanical and food action. Soils devoid of humus and microbial life,

however well supplied with plant-food, will never prove satisfactory as crop producers. Mere chemical plant-foods can never alone supply these requisites. Hence, however valuable these chemical plant-foods may be, and we rate them highly, they alone cannot meet crop requirements. Farmyard manure and humus-making crops are the basis of all good farming, and should be supplemented with chemical fertilizers supplied according to the food requirements of the crops to be produced.—Ed.

### CURING PEA-VINE HAY.

#### An Answer to Enquiries.

*Editor Southern Planter:*

My article on curing pea-vine hay has brought such a large number of enquiries that I shall have to answer them in a general way.

First, as to time of mowing the vines. We usually mow after the vine matures well and some peas are dry. The vines are then easier to cure than if cut while young and sappier. If cut earlier, say just as the peas begin to form good, I should stack them as fast as cut, as I do mature vines. But in addition to the two strips of wood nailed cross-shape to the pole, a foot above the ground, to keep vines from being harmed by too close contact with the earth, I should nail two more, also cross shape, about half way up the pole. This would keep the stack from setting too close, leaving them open to dry out faster.

The poles should be about ten feet high and set in the ground at least one foot deep, or deep enough to prevent the wind from blowing over the stack. Do not trample the vines in stack. Let them settle by their own weight, as thrown up. Let the vines be the height of the pole, or a little less. Slope off at the top to shed water as well as possible.

It is best to shred as soon as the vines are dry enough. The time necessary to cure will depend altogether upon the dryness or wetness of the weather. The stack will heat at first, and then gradually dry out. If shredding is not intended, they should be housed as soon as cured, to be fed as needed. Some leave them in the stack during the winter till needed. This is a most wasteful thing to do. For the pea-vine being stalky, and to some extent open to the weather, deteriorates more than any other kind of hay from exposure.

I have found pea hay somewhat harder to cure this year than usual. Late rains caused a second growth, and the vines were very sappy to the last. Then heavy and continuous rains were driven by hard winds deeper into the stacks than I ever saw before. We had to tear down and sun a few stacks on which

rain had fallen steadily for several days. Still I find it much the best to stack as fast as I cut, without previous sunning.

The Star Pea Machine Company, Barnettsville, S. C., make an absolutely perfect implement. It shreds the vines and shreds the peas all at once.

*Kittrell, N. C.*

*O. W. BLACKNALL.*

### HOW TO CIRCUMVENT THE HESSIAN FLY.

So little complaint of the Hessian fly has been heard at the Ohio Experiment Station this season that there is ground for the hope that there will be no more trouble from it for a few years to come, but it will be wiser for farmers to be on their guard lest it may reappear suddenly as it did in 1899.

It is possible for every farmer to determine for himself whether the fly is likely to appear in destructive numbers in his wheat each season. To accomplish this, let a small strip of wheat be sown alongside of the intended wheat field about two weeks before the time when the main crop is usually sown in that particular locality. As soon as the wheat comes above the ground, examine the young shoots carefully every day with a magnifying glass. A cheap lens, magnifying about three diameters, which can be bought of any optician or department store for a dollar or less, is sufficient. If the fly is present its minute, reddish eggs, one fiftieth of an inch long, will be found in the creases of the young wheat blades. Once seen under a glass, these eggs can easily be seen by the unaided eye as red specks. Often two or more are found together, lying end to end.

Usually egg-laying occupies about a week, and if the fly, on her appearance, finds a little wheat ready for her, she will soon deposit all her eggs, after which the main crop may safely be sown in the assurance that by the time it appears above ground the eggs will all have been laid on the earlier sown wheat.

Many farmers suppose that the so called "flax-seeds," which are found in October and November at the base of the wheat stalk, are the eggs of the fly, but this is a mistake; these "flax seeds" are the full grown larvæ of the fly, which undergo their transformation into the winged insect within the brown cases called "flax seeds."

*CHAS. E. THORNE, Director.*

[After the eggs have been laid on the trap crop, this should be plowed down and the ground be rolled solid. This will effectually destroy the eggs and embryo flies.—Ed.]

### A TEN-YEAR COMPARISON OF VARIETIES OF WHEAT.

Thirty-four differently named sorts of wheat have been grown in comparative test at the Ohio Experiment Station for ten years past. One of these—Penquite's Velvet Chaff—is used as a standard of comparison, and for this purpose is grown on every third plot of the series, and the other sorts are valued as their yields rise above or fall below those of the Vel-

vet Chaff plots between which they lie.

In the ten-year average, the Mealy heads the list with an average yield of 4½ bushels per acre more than that of the Velvet Chaff. Poole and Red Russian, which are synonyms of the same variety, come next, with yields ranging from 3½ to 3¾ bushels per acre above that of the Velvet Chaff. (Harvest King is also Poole wheat, recently introduced under a new name.) Gypsy has yielded 3¾ bushels, and Early Ripe 3½ bushels per acre more than Velvet Chaff.

Varieties averaging between two and three bushels more than Velvet Chaff are Nigger, Fultz, Mediterranean and Currell's Prolific; while New Monarch and Valley and its synonym, Egyptian, nearly reach the two bushel mark, and Democrat has averaged more than one bushel in excess of the standard.

Jones' Square Head has averaged two and one-half bushels less than Velvet Chaff, and Jones' Winter Fife nearly two bushels less, while Early White Leader, Early Red Clawson, New Longberry, Martin's Amber and Royal Australian—a synonym of Clawson, have yielded nearly a bushel per acre less than Velvet Chaff.

American Bronze, Bearded Monarch, Deltz, Fulcaster, Hickman, Hindostan, Lebanon, Lehigh, Missouri Blue Stem, Rudy, Sibley's New Golden, Silver Chaff, and Yellow Gypsy, have given yields varying but little either way from that of Velvet Chaff.

CHAS. E. THORNE, *Director.*

### ENQUIRER'S COLUMN.

Enquiries should be sent to the office of *The Southern Planter*, Richmond, Va., not later than the 15th of the month, for replies to appear in the next month's issue of the *Planter*.

#### Rye.

I write to know which you think the most profitable for a grain crop—oats or rye. I have had such poor crops of oats that I am thinking of trying rye; but as I have no experience with rye, I would like to have your opinion. I have twenty acres of highland in corn and cow-peas which I wish to sow in some grain crop for feed, but it will be the latter part of October or the first of November before I can seed it, as I have the corn to gather before I can plow the land. Would rye do well seeded as late as that? Please answer in the October number of the *Planter*.

Campbell Co., Va.

J. A. DAVIDSON.

A good crop of oats at present market prices for the grain is more profitable than a crop of rye. The oat straw is valuable as feed for stock, whilst rye straw makes poor feed. The oats are also better feed than rye, though rye makes fair grain feed for cattle and hogs. Where rye straw can be sold to collar-makers, it usually makes the crop a very profitable one, but this market is only a limited one, and it requires that the straw shall be kept straight and unbroken in the harvesting and threshing. When oats got down to the low price of two or three years ago, we advised that rye should be substituted for the oat

crop as being the more profitable, especially on thin land which will make more bushels of rye to the acre than oats. Oats, to succeed in the South, ought not to be sown later than September or October at the latest, unless seeded in February or March, when, if the spring be a late one and cool, the rust proof oat will sometimes make a very fair crop. In your case, as you cannot seed before November, we think rye will be more profitable than oats. Rye may be seeded up to December, with a fair prospect of making a good crop. It is a very hardy grain, and rarely suffers from winter killing—it being grown successfully further north than any other of the cereal crops.—ED.

#### Rotation of Crops.

Will the following rotation of crops improve the fertility of the soil in a limestone section?

1. Break fallow of timothy and plant in corn, and at the last working of corn sow in Crimson clover, to be plowed under in the following spring, and seeded to cow-peas and peas cut for hay and stubbles disced up and sowed to wheat?

2. Would it be a good chance to get clover sowed with wheat on above-mentioned stubble?

3. What is the best variety of peas for this section?  
Washington Co., Va. S.

1. Yes. The rotation should improve your land, especially if 250 or 300 lbs. of acid phosphate to the acre is applied to the pea crop.

2. Yes. We think it likely the clover would succeed. Sow it at the same time the wheat is sown as early in October as it is safe to sow wheat for the fly.

3. Either the Black or Whippoorwill.—ED.

#### Contract for Purchase of Mowing Machine.

If a farmer has given his order for a machine to either the McCormick, Deering, Champlon, Milwaukee, or Plano Harvesting Machine Companies, which companies have gone into the trust, and are now no longer known, but constitute The International Harvester Co., and the machine has not been delivered, can the farmer be held up to the order, and thus be compelled to patronize this trust? May be there are other farmers interested in this same question who would be glad to know through your valuable paper.

Henrico Co., Va.

F. B. AUSTIN.

The changes in the business arrangements of these makers will not warrant a buyer from them breaking a contract into which he has entered with any of them individually. He will be entitled to get what he contracted for, and this is all he can ask.—ED.

#### Keeping Winter Apples.

Please tell us in the next issue how to manage winter apples after they have been picked carefully.

Lunenburg Co., Va.

CHR. RICKERS.

Apples are best kept in a fruit room in which a dry equable temperature of about 35 to 40 degrees can be

maintained. They should be stored in bins through which ventilation can be maintained by slatted sides and bottoms. In the absence of such a room they will usually keep well stored in barrels in a dry cellar or barn with sufficient straw packed around them to keep out frost. Before being put up in the barrels they should be allowed to pass through the sweat which follows soon after picking, being stored for this purpose in a dry, airy room or shed not in too large bulk. The keeping of apples much depends upon the season in which they were grown. When this has been wet they rarely keep well however stored.—Ed.

#### Spraying Apple Trees.

Please state in your paper at what age it is necessary or advisable to commence spraying young apple trees. I have read a good deal about spraying, but have never seen any definite statement on this point.

Spotylvania Co., Va.

C. J. HILLYER.

Spraying should commence when the trees are in the nursery, if a perfectly healthy growth is to be maintained, as they are just as subject to the attacks of insects and of fungoid and scale diseases then as at later periods of growth.—Ed.

#### Horse Sucking His Tongue.

I have a nice horse which has a habit of sucking his tongue; it does not interfere with his health or his use, so far as I can see. He is in good condition. Any remedy or information you can give through the *Southern Planter* will be gladly appreciated.

Durham Co., N. C.

R. B. F.

This is only a habit contracted by the horse probably at some time when his tongue was sore. See that his teeth are not injuring the tongue by being rough or out of place. We do not know of any way of breaking the habit.—Ed.

#### Keeping Root Crops in Winter.

Can you tell me through your columns the best way to keep winter vegetables fresh—salsify, carrots, etc.—in a cellar?

Augusta Co., Va.

H. D. PECK.

Salsify usually keeps well left in the ground where it grew, unless the frost is very severe. Cover the rows with some long litter or straw. In order to be certain of a supply, however, even if the frost be very severe, dig a portion of the crop as late in the fall or in early winter as possible, and put away in boxes or bins in a dry cellar burying the roots in dry sand. Carrots keep well stored in the same way. Also parsnips. Turnips will keep well stored in piles or kilns, covered with straw and two or three inches of soil. Cabbages may be saved in trenches, covered with straw and soil.—Ed.

#### Onion Sets—Fall Setting of Irish Potatoes.

I want to set some White Silver King onion sets in

November. Is it too late now to sow the seed in beds to make sets by November? The weather has been so dry here I could not get the seed to come up.

I also want to plant some Irish potatoes in November to come up early in the spring. Please give me your advice in the next issue.

I live 150 miles south of Richmond, Va.

Wayne Co., N. C.

T. E. PERSON.

1. It is too late to sow seed to make sets for planting now. The seed for these should be sown in spring and the sets then ripen about June or July, and are kept over until time to plant in the fall, say, October.

2. The planting of Irish potatoes in the early winter has not yet been much practiced, but we have had several reports of successful results in Virginia and North Carolina. In these cases the sets were planted in November and December. The land should be well prepared and then the rows be laid off three feet apart. These rows should be opened very deep by running the plow at least twice in each. Sow a good potato fertilizer in the rows and mix with the soil by running a cultivator through them. Then drop the sets at the usual distance apart, say, twelve or fifteen inches. Cover lightly with the soil, and then cover thickly with straw barn-yard manure, and upon this throw a furrow from each side of the row. In the early spring as soon as safe to do so for frost, rake down the ridge thus made and cultivate the crop as usual. If the potatoes should come up before danger of frost is past throw a light furrow on to them.—Ed.

#### Fertilizing Orchard with Green Crops—Working Orchard—Spraying—Onion Growing—Whitewash, &c.

1. Is it necessary to sow peas among peach trees (bearing age), after harvest, when the cover crop for winter will be part crimson clover? What do you think of mixing rye with crimson clover to sow in November; what would be the right proportion and amount of the mixture per acre? How early after harvest (last peaches picked by August 1) would you plant the cover crop? Would you out for hay or turn under in spring?

2. Do you know of any large orchards planted on hillsides, not terraced, and yet, by proper management, are kept from washing?

3. What do you think of the Extension Acme Harrow for hillside orchards—used after once plowing?

4. What is the "general" spray that can be applied for two or more peach tree pests—i. e., scale, orcurillo, leaf-curl, etc. If there is such a one, what may be the best time for using, so as to "kill two birds with one stone"?

5. What do know of the "Sudduth Pear," grown by Augustine & Co., Normal, Ill.? They declare it is free from blight all through the life of the tree. Do you know of good healthy pear trees being grown from cuttings? What stock would you use in grafting?

6. In planting large acreages of onions, do the growers carefully set each bulb in the row, or merely drop them and then cover? It would take a great deal of

time to set each bulb *by hand* over large areas, and make also large expense.

7. I have been told that the whole cow-pea plant grown on "prairie" soil (black limy soil) is poison, and especially the root. Can this be so?

8. Please give a formula for making a cheap white-wash that will *stick*, and save constant rewashing after every hard rain.

*Macon Co., Ala.*

F. H. CARDOZO.

1. We would not sow cow peas in a bearing peach orchard after picking if intending to sow crimson clover for a winter cover. It is too late then for the cow peas to make a profitable growth. Rye may be seeded with the crimson clover. We prefer, however, to sow a mixture of wheat, oats, and rye, with the clover, as this mixture makes a better hay than rye alone, and also a better yield. Sow ten lbs. of clover with one bushel of the mixed grain. Whether to cut for hay or turn under depends on the luxuriance of growth of the peaches. If the trees are making plenty of wood, cut for hay and then cultivate the ground until time to sow the winter cover crop, say August. If the trees need help, plow down.

2. There are peach orchards planted on the mountains in the West of this State and in West Virginia and West Maryland, which are not terraced and yield well.

3. We have never used this harrow, and therefore can give no opinion.

4. See our Spray Calendar, published every year in February or March.

5. We do not know anything of the Sudduth Pear, except what we have seen published by the sellers of it. If it be blight proof in the South it is an acquisition, as we know of no pear that is. Keiffer and Seckel are the nearest to being so.

The best pear trees are raised from seedling stocks. These are budded usually the first summer after transplanting from the seed-bed. The best stock for grafting is the pear stock. The only other reliable stock is the French Quince.

6. Each set or young plant is carefully set, not dropped.

7. We do not believe anything of the kind.

8. What is called Government Whitewash is the best. We have frequently published the formula. It is simply stone lime slaked with hot water, to which is added a few pounds of salt, a little rice flour made into a paste by boiling, and a small quantity of glue melted in boiling water.—Ed.

#### Insects Affecting Sweet Corn.

Mr. W. N. Kennedy, of Dinwiddie county, Va., wrote us that large numbers of a little yellow skipper were infesting the stalks of his sweet corn and late corn generally, and he feared would prevent same

making a crop. We submitted the facts to the Entomological Division of the Department of Agriculture, and have received the following reply, to which we invite attention.—Ed.

AUGUST 25, 1902.

Dear Sir,—In the absence of Dr. Howard I acknowledge your letter of August 23, with enclosure from Mr. W. N. Kennedy, Rowanta, Va., requesting information in regard to an insect which is affecting the stalks of late sweet corn. From the description which your correspondent gives, and the fact that the so-called little yellow skipper is maturing from maggots in the tassel of corn, I judge it to be one of a little group of scavenging insects. The description might fit one of perhaps a hundred of these insects. Some of the best known forms are termed frit flies, and a few are injurious to the stems of wheat and grasses. One of these is called the stem maggot. It is quite likely that the insect in your case is one of this group. Others are called pomace flies, and are found in vinegar and decomposing or fermenting apples and other fruit, about cider mills, wine presses, etc. Still others are leaf miners, and do injury to cabbage and clover by mining the leaves; and some develop in damp, decaying portions of grains.

It seems probable that there is no injury in the case reported, and that the insects are merely attracted by decomposition of the corn, due to the presence perhaps of the corn ear worm. This insect is quite distinct from the frit flies or any of their relatives. It is, as you doubtless know, the larva or caterpillar of a large moth.

I would advise your correspondent to obtain specimens and send them, living if possible, to this office, when I will doubtless be able to identify them, and can afford more satisfactory information. I enclose herewith two prints of maggots and the flies which produce them, which have scavenging habits.

If you think any of this matter worthy of publication, as a means of drawing the attention of your correspondents to the case, and to obtain specimens for identification, I will be pleased to receive a copy of the issue in which this letter appears.

Yours very truly,

F. H. CHITTENDEN,  
Acting Entomologist.

#### Woodland Pasture—Johnson Grass—Hairy Vetch.

I have a piece of woodland. The soil is deep, rich and somewhat moist. It is partly ditched so that water does not stand upon it long at a time. The growth is sweet gum, ash, and others of the leafy kind.

When I began to pasture upon this, eight years ago, it was set in reeds among the trees. Pasturing this winter and summer has killed out the reeds, and dog fennels are taking their place.

I want to improve this for pasture without injuring the trees. Are there grasses that I can sow that would catch and grow without preparation? What kind and quantity per acre? Would Johnson grass do it, and would there be danger of its spreading to cultivated lands? What do you think of Johnson grass as a hog grass on this rich, deep soil?

I have other pasture lands where I have mowed the weeds and left upon land. Would "Hairy Vetch,"

sowed upon this be a success or a failure?

Please answer through the *Planter* and oblige.

Washington Co., N. C.

W. T. HOPKINS.

Yes. Sow a mixture of Wood Meadow grass, Orchard grass, Red Top and Virginia Blue grass. If you can harrow the land with a heavy drag harrow, so as to cut up the present turf before seeding the catch will be much better. Sow two bushels of the mixture to the acre. Johnson grass is not suited for this purpose. It is really a sorghum and grows best on land suited for a forage crop and not shaded. There is a wide diversity of opinion about Johnson grass. In the extreme Southern States, where the winters are not severe enough to kill out the roots when exposed, it is regarded as a nuisance, but in this and the adjoining States we think it may often be grown with advantage, as it is so persistent in growth and yet can be got rid of when desired by plowing and exposing to the winter cold. Hairy Vetch will not succeed unless the land be first plowed or cultivated. If this be done it will grow freely.—ED.

#### Sick Hogs.

My experience leads me to think that the sick hogs described by G. A. Moore in August number, and by N. S. W. in the September number of the *Planter* are affected with excess of worms. I have found that shutting the hogs up, putting a small, but constant supply of coppers in the will trough and then feeding on bran mash rids them speedily of the worms. Soaking corn in lye all night and mixing powdered coppers with it on feeding next morning is excellent for hogs running in a pasture lot.

District of Columbia.

JAMES A. BETHUNE.

#### Seeding to Grass.

Please advise me on the subject of sowing grass seed. I have a lot of about six acres I wish to sow in oats together with a mixture of clover, timothy and herds grass. Please advise me on the subject.

Land is now in corn.

Dinwiddie Co., Va.

SUBSCRIBER.

In the August and September issues "Subscriber" will find this subject of grass seeding fully discussed. In this issue also will be found further information on the question.—ED.

#### Hog Moth Caterpillar.

Find under separate cover a specimen of insects, found on our fruit trees, eating the leaves off and leaving trees leafless. Please give us full particulars regarding same, and what must we do to get rid of them. Answer through next issue of *Southern Planter*.

Charles City Co., Va.

NEDVIDEK BROS.

The specimen is a remarkable caterpillar. It is of a brownish red color, nearly three fourths of an inch long, and when in a perfect condition is provided with five pairs of more or less curved plume-like appendages which are about three-eighths of an inch long.

These rise at nearly equal distances from either side of the back of the caterpillar and give it a very peculiar appearance. They break off so readily that is rare to meet with a perfect specimen. This insect is *Phobetron petheticum* Abb. and Sm., the hog moth caterpillar, and is somewhat rare. It is a somewhat general feeder, having been recorded as occurring on cherry and apple trees, white birch, various kinds of oaks, sugar maple, ash, witch hazel and chestnut. Like other caterpillars, it hatches from eggs which are very peculiar and appear like drops of transparent gelatine of pale brown color. These are deposited by the parent moths upon the surface of a leaf and are very difficult to detect. The caterpillars on attaining maturity descend to the ground and spin oval cocoons to which several of these peculiar plume like appendages described above may be attached. The moth escapes the following summer from its peculiar retreat by opening a small lid. This species is a leaf feeder, and where it is sufficiently abundant to cause any considerable damage it can be readily controlled by spraying the infested branches with Paris green or London purple.

Winter vetch (*Vicia Sativa*) finds great favor at the New York Experiment Station at Geneva as a cover crop. Sown in midsummer or early fall it makes a magnificent growth, thoroughly covering the soil and often is green in the spring, after the severest winter weather. It is then plowed under and not only adds much needed humus or vegetable matter to the soil, but supplies a large quantity of nitrogen which the plant has extracted from the air. The soil here is rather of a clayey nature underdrained with tile.

#### SELECTION OF SEED CORN IN FIELD.

In selecting stock seed in the field, the most convenient plan is to make a partition in the wagon bed. As the husker goes along the rows, he can easily throw the good ears from the good stalks into one compartment, and the poor ears or ears from poor stalks into the other. A second selection must be made at the seed-house, and all undesirable ears thrown out which escaped the eye of the husker. In order to do this most satisfactorily and economically, the selected corn can be thrown out of the wagon into a general bin at the seed house. Here other men can select the seed to be finally preserved and pile it up in sections, discarding all inferior ears.—[A. D. Shamel, Illinois.]

#### THE TOP BUSHELS.

When preparing for the wheat crop and sowing it, keep your thoughts to the harvest time and strive to add a few more top bushels. Benefits will come through preparation of the ground, intelligent fertilization, good seed and careful sowing. Better net results will usually be obtained if your efforts are directed along these lines than to expand your acres.

## Trucking, Garden and Orchard.

### WORK FOR THE MONTH.

Harvesting, storing and shipping the summer grown crops should engage the attention and largely occupy the time of the growers. Apples and pears should be carefully gathered—not be shaken or knocked from the trees, as is too often the practice, and should be at once removed from the orchard and not be allowed to remain in heaps under the trees, as is often done. They should be stored in a dry, airy shed or room, not in too great bulk, until they have passed through the sweat and then be either stored in a fruit-room or house where they will be safe from frost or be barrelled up and shipped. A fruit-room or house should be dry and well ventilated, and the temperature should be kept at or about 35 to 40 degrees. See that all bruised, damaged or decayed fruit is carefully culled out, and also that the small fruit is not mixed with the large. Make the fruit grade No. 1 all through the lot to be shipped, and pack so that the barrel is uniform throughout, and mark plainly No. 1 or first quality. The damaged fruit should be kept at home and be used, as far as needed and proper, for drying or preserving, and the balance be fed to stock. It rarely pays to ship. Seconds or small fruit should be shipped in separate barrels, and be plainly marked "Seconds." The adoption of this rule will ensure the best price for all the fruit. In packing, see that the barrels are packed tight, so that the fruit will not be injured in transit. Good apples are likely to sell well.

Elsewhere in this issue will be found advice as to the storing of sweet and Irish potatoes.

Carrots, parsnips and salsify will often keep safely in the ground where grown all the winter. In order, however, to be certain of a supply if the frost should be very severe, it is wise to lift part of the crop and store in a dry cellar, from which frost can be excluded. The roots should be packed away in dry sand, and will then come out crisp and full of flavor. Beets and turnips may be stored in the same way, though turnips will keep good merely covered with straw in a cellar or with straw and a little soil in pies out of doors.

Kale and spinach should be sown for winter and spring cutting, also turnips for salad.

Cabbage, cauliflower and lettuce seed may be sown for plants to set out in spring. The beds should be where they can be protected in winter when necessary. Lettuce plants should be set in cold frames for pushing on for winter use. At the end of the month cab-

bage plants may be set out for the early spring crop in the eastern and middle sections of this State and North and South Carolina. Make the land rich, and lay the rows off east and west, and set the plants on the south side of the ridge forming the row, so that they will be protected somewhat from the cold and get the benefit of the sun. Celery should be earthed up a little as it grows, just sufficient to keep the plants compact. It is too early yet to earth up to blanch. This may be done late in November, unless wanted for an early market.

Land may be got ready for planting with orchard trees and bush fruits, but it is too early to plant. This should be done in November and December. Plow the land deeply and break the subsoil either with the plow or in the places where the trees are to be set out with a grubbing mattock. We strongly favor the late fall planting of orchard and bush fruits in the South, as in this mild climate much root growth is made in the winter and early spring, and the trees are thus enabled to get an early start in spring and are not likely to suffer so much in the event of a dry hot summer.

Clear up all trash, leaves, prunings, weeds and waste of every kind in the orchard, vineyard and garden, and burn the same, and thus destroy insects eggs and fungoid spores, which, if left around, will make trouble next year.

Seed all land not needed for vegetable crops or for trees with crimson clover and a mixture of wheat, oats or rye. This will conserve fertility and add to the humus content of the soil when plowed down in spring.

### STORING SWEET POTATOES.

The sweet potato is more susceptible to injury from frost and from rotting during winter than the Irish potato, and therefore more care is required in storing them. Where only a small crop is grown for home use, they will usually keep well if stored in a dry frost-proof cellar well buried in pine tags. The temperature of the cellar should be kept at about 40°. In mild weather, it should be ventilated freely, and in case of hard frost, outside openings should be closed and a lamp be kept burning. When a large quantity is to be stored, a house should be built for the purpose. Prof. Waite, of the Department of Agriculture at Washington, who owns a farm in Maryland, where

he makes a specialty of sweet potato-growing, thus describes, in the *American Agriculturist*, his potato house and the means he uses to ensure keeping and a choice market product:

The best type of storage-house is probably in the form familiar to most people as that of a bank barn. The basement of such a building is very easy to keep at a uniform temperature. The extreme dryness of a living room is not required for the sweet potato, but a slightly milder, moister atmosphere is probably superior. My largest sweet potato house, which is 28 by 40 feet, is built entirely above ground, but the walls are double ceiled on the inside with 6-inch pine boards with paper between. The space between the 2 by 6 inch studding is packed with pine needles. The floors underneath and overhead are double with paper between. Only a few openings for windows are made in the building, and these are provided with shutters, making a very tight, warm room. The sweet potatoes should be put into the storage-house the same day they are dug. In fact, just as soon as they are dried out and sorted. They should be handled as carefully as possible. Sweet potatoes intended for storage should be handled about the same as choice fruits. The ordinary  $\frac{1}{2}$  basket is a popular package for carrying and transporting sweet potatoes. They can be hauled in these baskets and carefully dumped in the bins with out serious injury.

The sweet potato-house should be heated to the temperature of 98 to 100 degrees three or four days before the potatoes are put in, until it is thoroughly dried out. While the potatoes are going in, and for a week to ten days after that time, the house should be kept very hot. As much as 80 degrees, and some would prefer to have it from 90 to 100 degrees. I used to heat my houses 98 to 100 degrees, but concluded, from the slight shrivelling which I noticed, that this was too warm. My crop last year was fired at about 80 degrees. It generally takes about a week or ten days after the last potatoes are in before the bins are thoroughly cured out. Only an expert can tell when to stop firing. A few symptoms, however, can be given which will enable one to judge pretty accurately.

While the potatoes are being heated up, they sweat rather profusely, the air in the house smells moist, and dew deposits on the windows at night. The heat and ventilation gradually carries this moisture out of the house, and the air begins to smell dry and dusty. The potatoes next to the stove and on top of the pile will begin to sprout slightly, and if this is accompanied by the dry smell and feeling of the house, it can safely be assumed that the crop is cured. The firing dries up all sores or broken ends on the potatoes, compels them to go through a sweat, and then takes up the moisture which this sweating develops. It compels the potato to go through some physiological change which puts it in condition for keeping. The result is that if the temperature is gradually lowered to about 60 degrees, potatoes which have been fired properly will keep all winter long. These heated potatoes are also slightly improved in quality, and are known on the market as kiln-dried potatoes.

## ANNUAL MEETING OF THE VIRGINIA STATE HORTICULTURAL SOCIETY.

The Executive Committee of this Society met at Charlottesville on September 1st, when it was decided to hold the annual meeting of the Society at Lynchburg, on December 2 and 3. Owing to the shortness of the fruit crop generally, it was decided to postpone the intended exhibition of fruit until next year and substitute as a special feature lectures on the packing of fruits, with specialists to lead in the various heads, and with exhibitions of the various packages most used in different markets. Further particulars of arrangements for this meeting will appear in these columns in the November issue.

WALTER WHATELY,  
*Secretary and Treasurer.*

## STRAWBERRY CULTURE—FALL PLANTING.

*Editor Southern Planter:*

A thing that is worth doing is worth doing well, says the old adage. Of all things this applies to the fall setting of strawberry plants. One who plants in fall almost always does so with a view of getting a crop of berries the next spring. To insure this happy result the conditions must be right. For while the strawberry plant likes cool weather and even cold weather short of the coldest, it cannot grow when the ground is actually frozen. Therefore we must aid it to make all possible growth before heavy freezing sets in and to extend its root growth. The foliage is apt to be killed down by frosts in the mild intervals between cold spells of winter.

The three prerequisites to this end are good plants, good planting, and good soil. The well-grown, well-rooted plant has already much of the size necessary to enable it to sustain a good crop of fruit. Besides, it has the vitality which will enable it to grow much faster in proportion to its size than a small, weak plant. Properly set, the plant grows faster than if it had not been transplanted at all.

I will begin with the soil. It is, of course, better to have a rich soil to begin with—one in which the fertilizing properties become thoroughly incorporated with the soil—a part of the soil itself. The ideal conditions are where the land has been made rich for a prior crop—like Irish potatoes or spring or summer trucking of some kind. Plants are easier to live and quicker to grow off on such land than where a great deal of manure of any kind is applied just before planting.

Not all, probably not the majority of growers, are fortunate enough to have such land available for strawberries. Therefore, I will give the best plan to follow where poor or ordinary land has to be used for this purpose.

Cotton seed meal is by long odds the best and safest manure for young plants, especially in fall, when heat and drought sometimes follow planting. Being of vegetable origin, it does not fire or burn, even when coming in contact with the roots, like mineral or animal fertilizers. Then, it is quick enough and yet not so soluble as to be quickly lost unless at once appropriated by the plants like nitrate of soda.

I break the land well in September and harrow well with disk harrow if cloddy or turfy. In October or November I prepare it for planting, by running off rows three feet apart. In these are sown cotton seed meal at the rate of 500 to 700 lbs. an acre. This is as much as it is usually safe to apply in the drill. Mix the cotton seed meal with the soil by running a small harrow, or lacking that, a plow, down the drill. Then list on this with a furrow from each side. Knock this list down pretty low with hoes or a drag, and you are ready to plant.

An endless number of implements are used by different people to open the hole to set plants—spades, trowels, hoes, poles, etc. A thoroughly effective implement may be economically made by a piece of inch plank four feet long and four inches broad. Most of the board should be trimmed down to lighten it and form a handle. Six inches or more of one end must be left spade shape and sharpened at the tip. If the land is stony or rough, several inches of this end should be shod with iron, especially if much planting is to be done. A planter made of oak or any hard wood plank or sapling, will usually last to set several acres without ironing.

Armed with this implement, a man can walk upright and open the hole fast and well. In these broad holes the plants should be set, spreading the roots out as much fan shape as practicable, and the dirt pressed firmly around the roots, care being taken that the hole is well filled from the bottom up.

To grow off at once, the plants must not be set too deep, while if set too shallow they will be apt to die. The right depth is that which covers and hides all the roots after the dirt is packed down around them.

If stable manure is to be used, a good way is to apply it evenly around and between the plants as a top-dressing in November or later. Little, if any, of its properties are lost by exposure in cold weather. Instead, they are washed into the soil within reach of the plant roots, which appropriates them at once. Thus used, they also answer a good purpose as a mulch to lessen the heaving and lifting effects of heavy freezes.

Above I have given the directions for field planting on a more or less large scale. In a garden bed, when intensive culture can be given to obtain big results, the plants can be set much closer—say fifteen inches

apart in the rows, the rows fifteen inches apart, with a two foot walkway between each three rows. In this mode of planting, the cotton seed meal should be applied broadcast and well chopped in. Manure can be applied as a top dressing as in field culture.

Kittrell, N. C.

O. W. BLACKNALL

### BITTER ROT OF APPLES.

Bitter rot is a disastrously destructive disease upon the apple fruit. It has prevailed at times over very large areas of the territory of the United States, but is especially liable to occur South of the 39th parallel of north latitude. In Illinois, in 1900, the loss in four counties was estimated to be \$1,500,000 and as great proportionally to the acres in orchards elsewhere.

#### APPEARANCE OF DISEASED APPLES.

It begins in one to many brown specks anywhere upon the unbroken skin of the apples, and each point of infection enlarges so as to become a very distinct, dark colored, circular and somewhat sunken spot, beneath which the tissues are dry (never soft and watery) and tough. Great numbers of pustules so small as to be scarcely visible to the unaided eye, arranged in close concentric circles, cover all but the outer border of the discolored spot and give to the surface a roughened appearance. In very dry weather these pustules are merely minute, raised, dark-colored points, but when the air is sufficiently moist each conically shaped point opens by breaking through the skin of the fruit and discharges a little pinkish mass of a mucilaginous or waxy substance well seen under a lens. This material may at length form a reddish, minutely roughened crust. Each spot may remain distinct or several on one apple may run together so as to form an irregularly shaped, depressed patch. The whole fruit at length becomes shriveled into an angular, hard body, called a "mummy." It does not further decay.

The pinkish or reddish material from the spots in the fruit is composed of myriads of spores. These cannot be distributed by the wind because they are held together and to the fruit by an adhesive substance, which, however, is very soluble in water. The spores are carried in splashes of rain water or may be distributed by insects. The fungus lives over winter in the old, dried fruits (mummies) and in wound like infected spots, called bitter rot cankers, on the limbs of the tree. During the month of May or later a fresh crop of spores may be produced from the mummies and from the limb cankers. The former more often fall from the tree. The first infection of the season apparently comes from the cankers and can be traced on the younger apples spreading below those in cone-shaped figures in the trees, where the spores have been carried by rain.

The disease goes slowly from tree to tree in an orchard, probably through the agency of insects.

In July and later, where the disease has not become widely spread, search should be systematically made in the orchard for infected trees as determined by the spots on the apples. This can best be done from an ele-

vated position like the platform of a spraying outfit. If diseased apples are found the infecting canker (or mummy) should be looked for just above the uppermost of the spotted fruit. The canker and infected fruit should be removed, taking care not to distribute the infection in the process. This is of the utmost importance if the contagion is to be stopped.

In the winter time the mummies and cankers can be removed or the fungus probably destroyed by spraying the trees with copper sulphate.

The disease can be kept in check during the summer by repeated applications of Bordeaux mixture.

### FIRE BLIGHT OF PEARS.

So much has already been written on the subject of pear blight, that it seems like thrashing over old straw to again revive the subject. But the control of pear-blight is one of the great practical questions of the fruit grower of Delaware.

The disease cannot be cured after it once attacks a tree; it can be prevented, however, if orchardists are only careful enough to destroy sources of infection; and since the disease, as a rule, spreads from without inwards, or from younger shoots and spurs to older wood, its progress can be checked by the prompt and effectual removal of diseased parts.

As is well known, the disease is caused by a minute germ or bacillus. This germ only needs to come in contact with a blossom or be introduced into the tissue of a leaf, young shoot or bud for the disease to manifest itself. From that point it extends inwardly and downwardly.

One of the great sources of infection is observed in the spring, when blighted twigs are often seen to exude a milky-looking substance. This latter is the pear blight virus in an almost pure state. If examined under the microscope, it is found swarming with rod-shaped organisms or bacilli. From this, too, the organism can be isolated and grown upon artificial media, and from these pure cultures, blossoms, buds, twigs and leaves can be inoculated and the trouble reproduced.

To show the relation of the milky virus exuding in the spring from blighted trees to the spread of the disease, a quantity of the latter was collected on April 25, 1902, just at the time that the trees were coming into bloom. This was diluted with sterile water to make a turbid fluid, which the microscope showed was swarming with pear blight germs. By means of a camel's hair brush dipped in the diluted virus, a number of blossoms were touched in their centres and thus infected with the germs. The blossoms so inoculated were then enclosed in bags.

Two weeks later, all of the twigs which bore inoculated blossoms were blighted for a distance of four to eight inches, and bore black dead and shriveled leaves.

One shoot whose blossoms were inoculated six weeks previously, was blighted for the entire length of the shoot, a distance of fourteen inches, and was beginning to extend into the shoot from which it sprang.

It is thus certain that the germs of pear blight only need to be brought into contact with the blossoms for infection to follow, and for the blight to extend downward from these points.

It has been shown that bees and other insects are largely instrumental in disseminating the virus from one blossom to another; and while it would be impossible and unwise to banish the bees, even if we could, it is possible to remove much of the virus which they are so instrumental in carrying.

This will consist in a thorough inspection of the orchard in the spring before the blossoms open, and the cutting out and burning of all blighted limbs, branches and spurs. This will prevent in a large measure the wholesale infection of the blossoms, either on terminal growths or spurs, at which time nearly all of the blight gets its start in the tree.

Again, if one will inspect a pear orchard any time during the months of May or June, one will observe a greater or less number of blighted terminal shoots and spurs. These represent blossom, and perhaps bud infection as just noted. If these blighted parts be allowed to remain, the disease will extend and serious consequences will follow.

If the terminal blighted shoots are cut out, the progress of the disease from these points can be stopped, provided care is taken to cut well below the blight and through the healthy wood.

When spurs are affected, it is seen as clusters of dead leaves. These being so short, it does not take long for the blight to extend from them down to the larger limbs. If not cut off on the first appearance of the blight in them, the disease may have already extended into the branch when their excision would be useless.

Hence, soon after blossoming, the trees should be watched carefully, and every evidence of blight removed as fast as it makes its appearance. Delay, especially as regards the excision of blighted spurs, is fatal; that is, it will necessitate the later removal of a large quantity of wood, even to large limbs, which might otherwise be spared.

Most farmers practice pruning for blight, but they commonly do it whenever convenient, rather than at the right time, or perhaps not until the tree is badly involved.

Following the two spring prunings—the first before the blossoms open and the second during a period of a month following blossoming—there should be a third inspection and pruning in the fall before the leaves drop, cutting out at this time any evidence of blight which may have escaped the previous operation.

DELAWARE EXPERIMENT STATION.

### KEEPING VEGETABLES AND FRUITS IN LIME.

It may be just the time to remind my friends of the newer scheme of keeping fruits and vegetables in lime. Procure a quantity of air slaked lime. Put a layer in a box; upon this layer place a layer of freshly-picked, nearly ripe tomatoes; then another layer of lime, and another of tomatoes, and so forth, until the box is full. Keep this in a cool place, such as an ordinary cellar, and the tomatoes will most likely keep for a long time in first-class condition. Grapes, pears, and possibly other fruits and vegetables may be stored in this manner with some assurance of having them keep all right for months. I hope that many of the farmer readers will try this plan this fall, and be in position to report about the outcome later in the season.—T. GREINER, in *Practical Farmer*.

## Live Stock and Dairy.

### THE RAZOR-BACK HOG.

We had thought that we had lived beyond the time when a correspondent of the *Planter* would have ventured to say that for any purpose, except that of outrunning any "nigger" on the plantation, a Razor back hog had any good qualities to commend him. But such, however, apparently is not the case, as a correspondent in this issue claims that a Razor-back was better for his purpose—that of making hog meat on practically a forage and truck crop diet—than either a Jersey Red or a Berkshire. He does, however, concede that a cross of a Berkshire boar on a common sow was even better than a Razor-back. We have long understood that the parties making the celebrated Smithfield hams have always claimed that a strong admixture of Razor-back blood in their sows was an advantage in giving to the hams that peculiar lean character and high flavor for which the hams are noted; but we have never known any one to claim that such an admixture of wild blood conducted in any way to the production either by grazing or corn feeding of a profitable general market hog. If this be so, then the efforts of those breeders who have given so much time and attention and spent so much money in perfecting the breeds of pure-bred hogs has been practically time and money wasted. We are not prepared to concede this. The facts and the figures are against such a conclusion. Experiments have been made at several Stations as to the results to be accomplished by crossing Razor-backs on pure-bred hogs. In every instance, so far as we know, the only result has been to produce a hog which failed to respond as quickly to good feeding as the pure bred hog, however fed. The claim has been made that the introduction of Razor back blood would give vigor and a better disease-resisting hog, but if this be needed in the best pure-bred hogs, then breeders have failed in their work. We believe that the best strains of pure bred hogs are as vigorous and healthy as hogs can be when kept under proper conditions and fed as hogs ought to be; and that this is so, is proven by the fact that such hogs will make a pound of meat at less cost than any grade hogs, and make it in less time. If hogs are wanted to merely roam over a plantation and get their own living and make a few pounds of hard, tough meat by the time they have attained almost a patriarchal age, then we grant that the pure-bred hog does not fill the requirement. But if, as we take to be the case, a hog is needed that can convert green food and corn into fat, tender, juicy meat, and make a weight of this meat from 300 to 400 lbs. before twelve months have passed over his head, then only a pure-bred or

high-grade hog can meet the requirement. The prime object in feeding stock of any kind is to convert farm products of bulky capacity and low value into products of limited capacity and high value, so that they can be transported more easily to markets, and as a result leave greater profit to the producer of the raw products. No one who has had any practical experience with coarse-bred, low grade hogs or scrub cattle, will for a moment contend that they can compete with high-grade and pure-bred hogs and pure bred beef cattle in accomplishing this end. We have known pure-bred Berkshire hogs to make 250 lbs. weight by the time they were six months old, and pure bred Short-horn Angus and Hereford cattle to make 600 lbs. weight at six months old. Where is the man who ever saw a Razor-back hog make 250 lbs. weight, even at twelve months, or probably ever in his life, however long it might be, or a "scrub" cow to make 600 lbs. at even nine months of age? With the average low price of staple farm products, and the cost of producing them, if the farmer is to make a profit at all on his capital invested, he must have animals to consume them which will convert them into a high-priced product in a very limited time, and only animals which have been bred so as to intensify their natural proclivity to assimilate food and convert it into meat quickly, can meet this requirement.

### SAVE AND FEED THE CORN FODDER.

Every year millions of tons of corn fodder are allowed to go to waste, and a large part of this waste occurs in the South. Thousands of cattle in the South suffer every year for want of rough forage, and thousands of tons of hay are grown and bought to supply some of this deficit. A very large part of the hay so grown and bought is timothy hay, a feed that supplies only the same constituents that are found in the corn fodder wasted. According to Professor Armsby, one of the best authorities on feeds, more than one-third of the digestible nutrients of the corn crop are found in the fodder and stalks, and not two-thirds in the grain. Compared with timothy hay, a ton of corn fodder contains practically the same number of pounds of digestible matter. The Missouri Experiment Station has devoted the last seven years to an attempt to ascertain the actual feeding value of corn fodder as compared with timothy hay, and to study the method of combining it with other feeds, so as to increase its feeding value. The results of three years' feeding experiments show—1. That yearling steers may be wintered on whole corn fodder from which all ears were re-

moved, alone, without grain or other food, and neither gain or lose in weight on the average. 2. That similar steers, when fed all the bright timothy hay, they would eat, and no grain made in each case a slight gain. 3 More pounds of fodder than of hay were necessary to keep up the weight of the cattle. 4. That between 30 and 40 per cent. of the fodder was refused and not eaten by the cattle. All things considered, it is safe to say that when fed alone a ton of fodder has something like half the feeding value of timothy hay. No one, however, disputes the assertion that it is poor business to winter steers merely to keep them at the same weight. To obviate this, therefore, and still utilize the fodder the Experiment Station has tried the effect of combinations with other feeds. What the corn fodder lacks is protein. The following show the results reached with different combinations :

The first trial with two year old steers on full feed took place from December, 1899, to April, 1900—119 days, four two-year old steers in each lot, full fed on shelled corn. Here are results :

	<i>Pounds.</i>
Timothy hay lot—	
Corn eaten.....(166½ bushels)	9,331
Hay eaten.....	3,813
Total gain.....	802
Average daily gain per steer.....	1.69
Grain per pound of gain.....	11.6
Gain per bushel of corn.....	4.81

	<i>Pounds.</i>
Corn fodder and clover hay lot—	
Corn eaten.....(186 bushels)	10,385
Corn fodder eaten.....	1,859
Clover hay eaten.....	1,126
Total gain per lot.....	917
Average daily gain per steer.....	1.94
Grain required per pound gain.....	11.3
Gain per bushel of corn.....	4.93

In this trial the steers on corn and timothy hay made a gain of 802 pounds, or 1.69 pounds daily per steer, while those on equal parts corn fodder and clover hay gained 917 pounds daily, or 1.94 pounds per steer. The grain required to make a pound of gain was on the timothy lot, 11.6 pounds, and with the fodder and clover lot, 11.3 pounds. A bushel of corn made when fed with timothy 4.81 pounds of beef, and when combined with equal parts of fodder and clover 4.93.

The second trial took place between January 6 to April 16, 1901—100 days, four two-year-old steers in each lot, full fed on shelled corn :

	<i>Pounds.</i>
Timothy lot—	
Corn eaten.....(157 bushels)	8,319
Hay eaten.....	2,540
Total gain.....	789
Average daily gain per steer.....	1.97
Grain per pound of gain.....	11.2
Gain per bushel of corn.....	5

	<i>Pounds.</i>
Corn fodder and clover hay lot—	
Corn eaten.....(190 bushels)	9,469
Corn fodder eaten.....	868
Clover eaten.....	2,475
Total gain.....	1,140
Average daily gain per steer.....	2.85

Gain per pound of gain.....	8.3
Gain per bushel of corn.....	6.75

In this trial, through an oversight, the cattle were allowed practically all the clover they would eat, and, as a result, the amount of fodder eaten was comparatively small, which, in a measure, vitiates the results. But the striking difference in the gains made, and in the cost of the gains, cannot fail to be impressive, and still further emphasize the superior value of clover and the importance of using this roughness in full feeding.

It will be noted that in this experiment a bushel of corn produced 5 pounds of gain when combined with timothy and 6.75 pounds when fed in connection with clover and corn fodder—a difference of 1.75 pounds, which, at \$5 per 100, means 8½ cents per bushel of corn.

The first trial with yearlings took place from January 1 to March 15, 1898—74 days, four yearling steers in each lot—no grain :

	<i>Pounds.</i>
Timothy lot—	
Hay eaten.....	4,736
Gain per lot.....	123
Average daily gain per steer.....	.42
Digestible matter per pound of gain.....	18.23
Fodder and clover lot—	
Corn fodder eaten.....	2,510
Clover hay eaten.....	3,288
Total gain per lot.....	234
Average daily gain per steer.....	.80
Digestible matter per pound of gain.....	9.26

Thus the combination of fodder and clover hay made almost twice as much gain as did timothy hay. It is true that the steers on clover and fodder ate more than the timothy lot, but the digestible organic matter required to make a pound of gain was with timothy 18.23 pounds, while with corn fodder and clover only 9.26 pounds, or little more than half as much.

The second trial lasted from December 30, 1899, to April 10, 1900—101 days, four yearling steers in each lot—four pounds of shelled corn daily per head :

	<i>Pounds.</i>
Timothy lot—	
Corn eaten.....	1,612
Hay eaten.....	6,753
Gain per lot.....	262
Average daily gain per steer.....	.65

	<i>Pounds.</i>
Fodder and clover lot—	
Corn eaten.....	1,612
Corn fodder eaten.....	3,631
Clover hay eaten.....	3,593
Gain per lot.....	357
Average daily gain per steer.....	.88

Here the gains were for the timothy lot 262 pounds, and for the fodder and clover lot 357 pounds or 36 per cent. more, although both lots had the same amount of corn.

The third trial lasted from January 29 to April 19, 1901—80 days, four yearling steers in each lot—6 pounds of shelled corn daily per steer :

	<i>Pounds.</i>
Timothy lot—	
Corn eaten.....	1,920
Hay eaten.....	4,943
Gain per lot.....	318

Daily gain per steer.....	1
Fodder and clover lot—	
Corn eaten.....	1,920
Corn fodder eaten.....	2,298
Clover hay eaten.....	3,619
Gain per lot.....	543
Daily gain per steer.....	1.67

In this trial, the daily allowance of corn per steer was six pounds instead of four, and the gains were proportionately larger. Yet the advantage of a combination of fodder and clover over timothy is quite as marked as in the preceding experiments. The gain from corn and timothy was 318 pounds and from corn, corn fodder and clover hay it was 543 pounds, or 70 per cent. more.

The fourth trial lasted from December 26, 1901, to April 24, 1902—120 days, four yearling steers in each lot—6 pounds of shelled corn daily per head:

Timothy lot—	Pounds.
Corn eaten.....	2,880
Hay eaten.....	8,152
Gain per lot.....	658
Daily gain per steer.....	1.37
Fodder and clover lot—	
Corn eaten.....	2,880
Fodder eaten.....	2,568
Clover eaten.....	4,958
Gain per lot.....	744
Daily gain per steer.....	1.55

Again the results show the superiority of a combination of fodder and clover over timothy. The gain from timothy was 658 pounds, from the fodder and clover 744 pounds.

It will be noted that in every case the amount of roughness consumed by the cattle getting a combination of fodder and clover was larger than by the lot getting timothy, thus confirming the proposition laid down in a former article that the addition of a food rich in protein was accompanied by a larger total food consumption. This has been true with animals on full feed when the protein was supplied in the grain as well as when supplied in the roughage, and seems to hold true with cattle on half feed and with those on roughage alone. That the better balanced rations were more efficient is clearly shown by the gains. That the larger gains obtained from the better balanced rations—when clover, cowpeas or alfalfa supplied the protein—were much more economical and profitable is self-evident, since these roughnesses may usually be bought at less per ton than timothy, and are produced at decidedly less per ton when the effect upon the fertility of the farm is considered.

Making full allowance for the increased amount of roughness eaten when clover was added to ration, allowing for the fodder uneaten—i. e., the coarse stalks—the inevitable conclusion from these four years' work is that a combination of corn fodder and clover hay is fully equal to timothy hay, whether fed without grain, with a small allowance of grain, whether on half feed or on full feed, and whether with yearlings or aged cattle. In other words, the farmer can by this means make the whole, coarse fodder serve every purpose, in cattle feeding at least, for which timothy is now used. Under these circumstances, it is fair to say that timo-

thy and corn fodder have essentially the same feeding values.

## MAKING HOG MEAT IN THE SOUTH.

*Editor Southern Planter:*

I read with much interest the enquiry of J. S. Wilson, of Wilson county, N. C., and your reply in the September issue of the *Planter*. Your plan, while good, may not suit his case, and as I have had some experience along that line I will write it, hoping it may benefit some one if it does not Mr. Wilson.

I wish to see more short letters from the farmers themselves, giving their experience. Tell what you have done and not what you expect to do. When questions are asked, don't let the Editor do all the talking. Let us have more speaking out or writing out from the men who have had experience on that subject. "In a multitude of counselors there is safety."

The principles of agriculture and stock-growing are the same the country over. Surrounding circumstances should be considered and planning done accordingly. The Editor cannot cut and dry a successful plan for any one except himself. Each one must work out his own plans. It is by reading such papers as the *Planter* that we are best prepared to do wise planning for ourselves. Read the advice of all, and then apply your own judgment and experience to the problem.

I have been farming and studying farming for thirteen years. The first eight years of this time was spent upon a fifty acre farm of my own. The first three years of this eight I put my attention mostly to the cultivation of cotton. When cotton got down to 6½ cents a pound I affirmed I would not raise any more at that price. I then turned my attention to the raising of vegetables and hogs, and it is my experience with hogs that I now want to give. I bought a pair each of Jersey Reds and Berkshires. I bought full bloods at a high price. I soon found out the Reds were not the hog for me at all. I then bought some Razorback pigs to test with Berkshires of same age. I found the Razorback to be the best hog for my use. The kind of feed I fed required a hog with a large stomach, and as the Razorback had the largest stomach he could eat more than the Berkshire, and in the end would beat him right much. I would add further, that a cross with a Berkshire boar on common stock sows gave me a better hog still, and this is the one I stuck to. I succeeded in marketing between four and five thousand pounds of fresh meat annually. This I did during the months of December to April. I kept a lot of good common stock sows. I killed and cleaned all pigs that would dress out forty pounds and shipped them off by the 1st of April. This cut

my stock down pretty well to sows only. These with good attention would give me a quantity of pigs ready for peas and potatoes in the fall. As the Editor says, we cannot feed as the Western farmer does. There is not so much money in heavy meat; but there is good money in light pigs nicely cleaned and put on the market at any season of the year. My first crop ready for hogs was the refuse from my early cabbage crop. Then followed squash, Irish potatoes and melons in great abundance. These I gathered from the field and hauled to the hogs. I sowed peas in corn at the last plowing, set out a quantity of sweet potatoes, gathered corn as early as it would cure, and turned hogs in the field after putting a ring in each one's nose to keep him from rooting. Peas and potatoes make a complete ration for them. With mire to wallow in and plenty of pure water to drink they did well.

Later I had turnips and sweet potatoes to feed in abundance. They then had full run of nearly all the fields and had crimson and red clovers and peas and potatoes still. I fed very little grain, and this mostly to suckling sows. I found pigs peas and potatoes beat  $6\frac{1}{2}$  cents cotton a long way. Besides my lands rapidly improved under this management.

This is already too long, so I will have to close; later I will write again and tell you how to clean and dress a pig, for I know there are some who make a mess of it. I will also tell how I raised three big crops a year on same land after I quit cotton.

I wish to say that I am not now on a farm of my own; but manage one for another man. I have this year 630 acres in corn, 175 in cotton, 80 in rice, 75 was in oats, now in peas, 10 in potatoes.

Washington Co., N. C.

W. H. HOPKINS.

We shall be delighted if our subscribers will take Mr. Hopkin's advice and write us their experience. We don't know it all "by a long way." We want to learn more, and the experience of practical men will help us and help our readers very much.—Ed.

#### DORSET SHEEP.

Mr. T. O. Sandy, of Nottoway, Va., writes us that he has purchased a number of Dorset sheep and intends to establish a flock of this breed. The sheep he has purchased are pure blooded animals and consist of a buck, an imported animal two and a half years old, weighing 350 pounds, and a number of ewes with their this year lambs. Amongst these lambs are four bucks which were dropped last February, well grown and of fine conformation and type, which he would sell at reasonable prices. The ewe lambs he will keep to breed from. Dorset sheep seem to be coming into favor in the South. The peculiar value of the breed for the South lies in their ready production of winter and early spring lambs, which can be so much more

easily cared for here in our mild winters than in the cold North and West. The ewes are great milkers and very prolific, and thus make for their owners to put on the best early markets both fine lambs and plenty of them. In our advertising columns will be found the advertisements of one or two other breeders of Dorsets in the State, amongst them Mr. Lindenkuhl, of Albemarle county, who has some of the finest bred sheep in the country.

#### THE ANGORA GOAT.

##### Experience of the Maine Agricultural Experiment Station.

The first problem we met was suitable fencing. We soon found that while they do not jump they are good climbers and that they will go over any fence the top of which they can reach with the fore feet. The horns on some of the ewes point backward in a V shape. In the case of a woven wire fence with square openings even with four inch mesh they will push their heads through the openings and get hung by their horns. With this kind of a fence it was necessary to visit them two or three times a day to release the prisoners. The Ellwood poultry fence (not poultry netting) of the American Fence Company with small diamond shaped openings has proven perfectly satisfactory. It costs about a third more than the ordinary woven wire fence of equal height.

In 1901 we gave them too extensive a range and they did but little clearing up. In May 1902 six ewes, one buck and five kids were put in an acre of young woodland of a mixed growth, most of the trees three to six inches in diameter. There was a quite thick growth of underbrush. The small underbrush of birch, maple, hazel bush, etc., have been cleaned up so that where there are no alders or evergreens the ground under the trees is as clean as though it had been burned over. Sweet fern they do not like very well but they have cleaned all of the hardhack out of this piece. Ferns and brakes have been eaten to some extent. They have eaten the leaves and young sprigs of bushes in preference to grass. Birches two inches or more in diameter they have not injured but they have stripped the bark from every maple. Even maple trees six inches in diameter have been thus killed. We have found them to be fond of the bark of apple trees, even eating the bark from old trees.

To clean up birch or evergreen woodland they have proven very effective. There has been practically no cost for the summer's keeping. The twelve goats have been kept without other food on one acre of young woodland. They have required no care other than an occasional visit to see that they are all right and that they have water. Salt was given occasionally.

CHAS. D. WOODS, *Director.*

Orono, Sept. 15, 1902.

#### STOMACH WORMS IN SHEEP.

The exceptionally wet season has produced conditions very favorable to the development of animal parasites. The eggs of young embryos need moisture

for development, and this year there has been plenty. The effects are now realized in the great loss of lambs, due to twisted stomach worms.

The symptoms of stomach worm disease are not very characteristic, and therefore do not admit of close description. They are dullness, loss of appetite, increased thirst, diarrhea may or may not be present, a part may show an accumulation of fluid between the jaws, grinding of the teeth; there is a stiffness of the back and hind parts, and a lagging behind the flock. In acute cases there may be evidence of pain, as colic, eating unusual material, and much bleating. Some die suddenly without showing evidence of the disease. The majority linger for a week or two and then die. Old sheep are not much affected.

The parasite causing the disease is found in the fourth stomach. It is small, being only about one-half inch in length, and threadlike. If a lamb be killed, these worms may be seen to be pinkish from the blood they have abstracted from the stomach wall. If a lamb dies and the stomach be not opened for a couple of hours, the worms will be white, and being matted together, resemble the fibre of the food. The inexperienced will probably fail to recognize them, although thousands may be present.

The treatment is as follows: Take one part of coal tar creosote and one hundred parts of water and mix well. With a two ounce hard rubber syringe having a short bit of rubber tubing on the end, administer one syringeful to each lamb. Use care not to hold the head high or to force the dose too rapidly, so as to cause strangulation. With such an arrangement, a whole flock may be easily treated. One to three treatments given a few days apart may be necessary.

It is also a good policy to turn the lambs off the regular pasture into the cornfield. They will do little damage to the corn, and in eating the lower blades and grass get food free from all contamination. Yarding and giving dry feed may also be resorted to. The main object is to get the sheep off the infected pasture.—A. W. BITTING, Veterinarian, in *Country Gen. Ueman*.

#### VALUE OF A PEDIGREE.

*Editor Southern Planter:*

Several years ago I selected the best sow of a litter of half-blood Poland China pigs and bred her to an animal of as good blood as herself. As might reasonably be expected, the result was a litter of pigs much inferior to either parent. While both animals were nice specimens of their kind, the prepotency or power of transmitting their best qualities had been destroyed by the intermixture of the inferior blood. If I had bred the sow to a full blood male, I could have reasonably expected an improvement over the mother in the offspring, as full blood stock is prepotent over half bloods or grades. A neighbor said a few days ago that he did not care about a full blood male, as his sow was only a grade. This was the best reason for wanting a full blood. We should always grade up instead of down. As full bloods are prepotent over

grades, some full bloods are more prepotent than others, and, by means of a pedigree, these best animals may be selected—that is, stock that are descended from the best and have the advantage of heredity. An inferior animal is not made more valuable by having a pedigree, but a good animal, with a good pedigree, is more valuable than a good animal, the descendant of inferior stock. I believe in selecting a good animal with a good pedigree, but would reject an inferior one, no matter how good the pedigree. Judging from their purchases, some people buy for the pedigree alone. This is a mistake. An inferior animal is so much the worse for having a pedigree that may be traced back to a good family of animals. A pedigree is a good thing when we use it as a guide for the purpose of securing the best blood, but when it is used merely to give stock a good name, without the good qualities of the animal to back it, it is used improperly. It may be used for the purpose of imposing inferior stock upon a purchaser, who relies upon the reputation of the stock, and who often gets deceived. Such stock gives better stock a bad name, and often good stock falls to find a purchaser just because some one has been so deceived.

*Albion, W. Va.*

A. J. LEGG.

#### SALE OF SHORT HORNS AND POLLED ANGUS CATTLE AT RADFORD, VA.

We invite the attention of our readers to the public sale of Short Horn and Polled Angus Cattle, to be held at the Fair of the Southwest Virginia Agricultural and Live Stock Association at Radford, Va., on October 14, particulars of which will be found in our advertising columns. This sale affords an opportunity for farmers to buy some of the choicest bred stock in the country, which should not be missed.

#### PICTURES OF LIVE STOCK.

It is our intention to make our Special New Year's issue in January next one of great interest to Live Stock owners, and in order to add to its attractiveness we hope to publish pictures of some of the best stock in the South. To enable us to do this, we ask Live Stock owners to send us photographs of some of their animals for selection and reproduction. These should reach us not later than the end of this month, so that we may have time to have the plates produced. Write name and address of owner on back of the photograph. Later we will ask for information as to breeding, &c., of the animals selected for publication.

## The Poultry Yard.

### COST OF EGG PRODUCTION.

The Cornell Experiment Station, New York, has conducted a series of co operative experiments in egg production, which have been of so extended a character as to afford some very reliable data of great value to poultry keepers. We abstract the following information from a very exhaustive Bulletin published on the subject :

These experiments were begun in the fall of 1901 and were intended primarily to furnish information as to the cost of the production of eggs during the winter months and incidentally to give such information as it was possible to secure as to the number of eggs laid per fowl and the effect of various systems of care, feeding and management.

Several poultry men who make more or less of a specialty of producing eggs in the winter and who had expressed a willingness to undertake the work, were asked to co operate in the experiment, and several pens of the University flock were also used. In all cases possible the owners were asked to include their whole flock, and in several cases this was done. The smallest flock contained 25 fowls, the largest 600, exclusive of males. In all, 2,133 hens and pullets were included in the experiments. Those who participated were C. G. Brainard, Waterville; O. W. Mapes, Midletown; C. S. Menges, Yorktown; Mrs. George E. Monroe, Dryden; E. C. Stewart, Ithaca; Henry Van Dreser, Cobleskill, and White and Rice, Yorktown, and to them thanks are due for cordial assistance and painstaking care in keeping the records asked for.

No restrictions were placed upon the owners as to how the fowls were to be fed, cared for or managed. In brief, they were asked to go ahead and produce the greatest possible number of eggs at the lowest possible cost, and to report each week the kind and amount of food consumed and the number of eggs produced. From the reports so received the results in the following pages have been compiled. Frequent visits were made to each of the places, and there is every reason to believe that the experiments were carefully conducted and the reports honestly and accurately made. The responsibility for accuracy must, however, remain with those participating and not with the Experiment Station.

Following is a description of the flocks and the method of feeding each :

#### FLOCK A.

This flock was composed entirely of White Leghorns. There were on December 1, 1901, 60 hens hatched in 1899; 340 hens hatched in 1900, and 200 pullets hatched in 1901. With the flock were 22 cocks and cockerels; 21 hens were sold and 21 died during the course of the experiment. The percentage of mortality was, therefore, 3.5.

This flock was fed three times a day beginning with the mixed grain of corn, wheat, oats and buckwheat which is scattered in the straw or litter. The noon feed consists of a mash fed hot in winter, made up of boiled and mashed vegetables, corn meal, wheat bran,

wheat middlings, ground oats and animal meal. After this is eaten up clean they are given a ration of either fresh cut bone or sliced vegetables. At night they are fed all the mixed grain they can eat up clean with a little extra scattered in the litter for the early birds in the morning.

#### FLOCK B.

This flock was composed of 150 White Leghorn hens hatched in 1900. Three cockerels were added to the flock on January 1st. There were three hens that died or were so sick as to be removed, thus giving a percentage of mortality of 2. They were fed as follows :

In the early part of winter, oats and peas were the first feed in the morning, and after they were gone whole wheat was substituted. This feed was scattered in the litter on the floor and care taken that they did not have all they wanted, so they were hungry for the mash, which was fed about 10 A. M. This was fed in troughs. The mash was mixed with hot water and fed warm, not hot. It contained all the ground grain and the meat scrap. All of this was fed that the hens would eat up clean and quickly. As soon as the mash was eaten they were fed a very light feed of oats or wheat scattered in the litter. At noon they were fed beets, all they would eat up until the next noon, cut in two lengthwise and laid in the troughs. At night they were fed all the whole corn they would eat scattered in the litter. The litter was wheat straw, and was changed frequently.

#### FLOCK C.

This flock was composed of 150 White Leghorn pullets hatched in 1901. Three cockerels were added on January 1st, and four pullets died or were removed at various times during the experiment. The percentage of mortality was 2.66. This flock was owned by the same party as Flock B, and the food was all weighed together for both flocks, only the eggs being kept separate. The total food consumed was divided pro rata between the flocks according to the number in each.

#### FLOCK D.

This flock was composed of 50 White Leghorn hens hatched in 1900 with four cocks; of these, five died at various times during the experiment, giving a mortality of 10 per cent. The daily practice as to feeding is given by the owner as follows :

As soon as the hens leave the roost a very light feed of grain, usually wheat, is given. This is followed with green food, then another light feed of grain. By dividing the morning portion into two feeds the fowls are kept active nearly all the forenoon. About 11 o'clock the mash feed is given. This is fed warm and the birds are allowed all they will eat. The afternoon feed is largely cracked corn. This is a liberal feed, and is given soon enough to allow the birds to finish before dusk.

#### FLOCK E.

This flock contained 150 White Leghorn pullets hatched in 1901 with 12 cockerels; 3 died during the course of the experiment, making a mortality percentage of 2.

Flocks D and E were also owned by the same person, and were fed and cared for alike. The feed was all weighed out together, and the amount consumed divided pro rata between the flocks according to the number in each.

#### FLOCK F.

In this flock there were 50 White Leghorn pullets hatched in 1901. With them were three cockerels—two with the flock and one confined in a small pen alternately. Thus giving two days with the flock and one of confinement to each cock. During the experiment 5 died, giving a mortality of 10 per cent.

This flock was fed a mash in the morning, vegetables, and after January 11th, whole grain at noon and whole grain again at 4 P. M. The whole grain was always fed in the litter.

#### FLOCK G.

This flock was composed of 25 Brown Leghorn hens about half hatched in 1899 and half in 1900. With the flock were two cockerels. Two hens died, giving a mortality of 8 per cent. This flock was fed and cared for like Flock F, and belonged to the same party.

#### FLOCK H.

In this flock there were 25 Black Minorca pullets. There were no males in the flock, and as any of the pullets became indisposed they were removed and their places supplied with others, thus keeping the number constantly good. No record was kept of the number removed, but it was not large.

The fowls were fed three times a day regularly, whole grain in the morning, mash at noon and whole grain at night; green food, including clover, was *not* fed in the mash, but at some time following the grain food, usually in the morning, occasionally in midafternoon.

#### FLOCK I.

This flock contained 26 Black Minorca females and two males. Three of the females were pullets, the remainder were partly one year old and partly two year old hens. One died, giving a mortality of 4 per cent. This flock was owned by the same party as Flocks F and G, and was fed and cared for like them.

#### FLOCK J.

On December 1, 1901, this flock contained 458 females and 29 males. They were of various breeds and ages as follows: White Leghorns, 178 hens, 139 pullets and 16 cocks and cockerels; Buff Leghorns, 31 hens, 20 pullets and 2 cocks and cockerels; Black Minorcas, 7 pullets and 1 cockerel; Silver Pencilled Wyandottes, 22 pullets and 4 cockerels; White Wyandottes, 52 females, all pullets but 8 or 9, and 3 cocks and cockerels; Barred Plymouth Rocks, 9 hens and 3 cocks. During the course of the experiment 7 were sold, 23 were killed and 26 died. The percentage of mortality was therefore 5.7.

This flock was fed whole mixed grain in the morning scattered in the litter, whole grain again at noon, and a mash at 3:30 P. M., with fresh ground meat and bone twice a week. No green food or vegetable food was given.

#### FLOCK K.

This flock was composed of 96 White Leghorn pul-

lets, hatched in 1901, and one cock, 20 White Wyandotte hens, hatched in 1900, 134 White Wyandotte pullets, hatched in 1901, and 13 cocks and cockerels and 100 cross-bred White Wyandotte—White Leghorn cross-bred hens hatched in 1900. There were 14 sold during the course of the experiment and 4 died. The percentage of mortality was 1.1.

This flock was fed about 7.00 A. M., noon, and 5.00 P. M.; the time of the evening feed varies, being earlier in winter and later in summer. The morning and evening feeds consist of whole grain, viz., wheat, oats and corn mixed. The noon feed consists of a mash composed of wheat bran, wheat middlings, corn meal, ground oats, meat meal and cut clover moistened to a crumbly consistency with skim milk or water, always the former when available. Aside from the clover all green feed is fed about middle of forenoon. Oyster shells always before them.

#### FLOCK L.

In this flock were 100 pullets of mixed breeding. White Leghorn very largely predominating, 2 males were with the flock, and during the course of the experiment 5 hens died, thus giving a percentage of mortality of 5.

These fowls were about seven to eight months old at the beginning of the test, and up to within a few days of December 1 had always had wheat and corn (cracked or whole) where they could help themselves whenever they felt like eating, with skimmed milk to drink.

The feeds used, except the whole grain, were mixed together, and given as a morning feed in the form of a mash during December and January; the wheat and buckwheat were fed at noon, by scattering in a litter on the floor, and the whole corn was given at night.

During February and March, while Mapes' Balanced Ration was used, it was simply made into a mash by adding either warm water or warmed skimmed milk, and placed in the troughs either two or three times a day. There seemed to be no difference in results secured, whether the feed was given in two feeds or in three feeds.

#### FOOD COST OF ONE DOZEN EGGS.

As has been already stated, the primary object of the experiment was to obtain the food cost of one dozen eggs. This varied very much for the different flocks and in the different periods, ranging from something over five dollars to something less than six cents.

The average cost for the whole time, taking each flock as a unit, was 16½ cents per dozen. The range being from 8.7 cents (Flock C) to 33.9 cents (Flock I).

The chief factors in determining the cost of one dozen eggs are the cost of the food and the number of eggs laid. In general the latter was the more important factor. That is, those hens that laid the most eggs produced them at the least cost per dozen, regardless of the cost of the ration.

#### PROFIT AND LOSS.

By "profit and loss" is simply meant the relation between the cost of the food consumed and the value of the eggs produced at market rates. No account is made of anything else, and it is therefore not really a discussion of profit and loss, but the term is used for want of a better. The discussion is given to bring out some factors of interest that appear by reason of the varying numbers of eggs laid and the fluctuation in

the market price.

The winter of 1901-2 was remarkable both because of the high price of foods and the high price of eggs, the latter running much farther toward spring than usual. In fact, the highest quotation for the whole winter, namely 36½ cents, was for the week ending February 21.

GENERAL SUMMARY.

Flock.	Breed.	Age.	"Profit" Ex- cess of value of eggs over cost of food per 100 fowls		Food cost of one dozen eggs.		Percent- age of eggs laid.		Cost of food con- sumed per 100 fowls.	
			Amt.	Rank	Amt.	Rank	Amt.	Rank	Amt.	Rank
C	White Leghorn...	pullets	62.10	1	.087	1	86.1	1	31.28	6
K	Mixed.....	mixed	63.10	2	.113	4	84.9	2	39.07	12
E	White Leghorn...	pullets	43.98	3	.113	4	86.6	3	31.30	7
F	"	"	38.72	4	.119	3	87.8	5	30.8	3
A	"	mixed	38.72	5	.136	5	86.8	6	36.16	10
B	"	hens	27.26	6	.176	6	82.7	7	37.96	9
J	Black Minorca.....	pullets	15.09	8	.163	9	77.7	8	31.71	11
L	Mixed.....	mixed	8.14	9	.176	8	77.7	8	31.71	11
D	White Leghorn.....	pullets	6.88	10	.163	9	81.1	9	33.62	8
M	Brown Leghorn.....	hens	1.80	11	.203	10	81.1	9	33.62	8
G	Black Minorca.....	"	—1.46	12	.339	12	81.1	9	33.62	8

In the seventeen weeks, from December to March 29, in twelve flocks, representing eight owners and 2,100 fowls, the average daily production of eggs was 23.2 per 100 fowls.

During the same time the average food cost of one dozen eggs was 16.3 cents. The flocks that laid most eggs during December and January laid most eggs also in March.

The egg production of pullets (hatched in 1901) was notably in excess of that of hens, particularly in the earlier periods when the price of eggs was highest.

The average cost of feeding 100 hens for the seven-teen weeks was \$32.43

The average excess of production over cost of food for seventeen weeks was \$23.93 per 100 fowls.

The outlook is that poultry will be scarce and high next winter. Farmers sold off a year ago when feed was scarce, and the wet summer was unfavorable to young chicks and turkeys.

Mention the *Planter* to your friends.

SKIM MILK FOR POULTRY.

Another way of disposing of the surplus skim milk with profit is to feed it to the poultry. As a feed for poultry, it furnishes the material for making growth in a palatable, easily-digested form. For this reason it is easily valuable as an addition to the grain ration which is liable to lack in the materials to make growth. The Indiana Experiment Station fed two lots of growing chickens exactly alike, except one lot was given all the skim milk it would eat, in addition to the grain ration. The lot having grain, but no skim milk, made an average gain of 2.62 ounces per week. The lot receiving skim milk made a gain per week of 4.46 ounces. The conclusion of this experiment was as follows:

"If skim milk be added to the ration fed young chickens, it will increase the consumption of other foods given. The greatest increase in gain was coincident with the period when the greatest amount of skim milk was consumed. Skim milk is especially valuable as a food for young chickens during the hot, dry weather, and becomes of less importance as the chickens grow older and the weather becomes cooler."

The New York Experiment Station found skim milk a very economical feed for producing growth in chickens. In these experiments the skim milk was valued at 25 cents per hundred pounds, but some careful poultry feeders believe 50 cents per hundred not too high a valuation. Skim milk can be fed sweet or after it is quite thick and sour. It is necessary, in feeding it in any form to poultry, to take great care that the troughs or utensils in which it is fed be kept clean. Lack of attention to this point is about the only cause of poor results from feeding skim milk as an addition to the grain ration for poultry.—*Missouri Experiment Station Bulletin.*

OLD-FASHIONED METHODS.

While there are many improvements along the line of caring for fowls, some of the older methods are good and cheap. Take lice or bed bugs. What is better, or what living thing can stand a good smoking out of sulphur? Close up the house, burn five cents' worth of sulphur in an iron pot. If one thinks one smokes is not enough, repeat in two or three days.

An acquaintance of mine bought a house in which parties moving out said they had fought bed bugs and kept them down, but never were rid of them entirely. This man shut up the house, gave it too good smokings, using ten cents' worth of sulphur, and has not seen or found a bug in two years.

I am this season using silicate of soda, water glass, to preserve my eggs for winter. If I had known about it several years ago, I could have laid in a supply, as it was used several years ago in the paper mills quite extensively to make book paper smooth and hard. I should be pleased to know if any experiments have been made to know how long this solution holds good; if the water glass I now have eggs in will not be equally good to put in eggs another year.—MORTON INGALLS.

## The Horse.

### ELIGIBILITY FOR REGISTRATION.

Will a colt out of a thoroughbred mare by a standard bred horse (both registered), be entitled to registration as a "standard bred," without showing a certain or required amount of speed?

*Edgecombe Co., N. C.*

W. H. M.

### THE TROTTING STANDARD.

When an animal meets these requirements and is duly registered, it shall be accepted as a standard-bred trotter:

1. The progeny of a registered standard trotting horse and a registered standard trotting mare.

2. A stallion sired by a registered standard trotting horse, provided his dam and grandam were sired by registered standard trotting horses, and he himself has a trotting record of 2:30 and is the sire of three trotters with records of 2:30, from different mares.

3. A mare whose sire is a registered standard trotting horse, and whose dam and grandam were sired by registered standard trotting horses, provided she herself has a trotting record of 2:30 or is the dam of one trotter with a record of 2:30.

4. A mare sired by a registered standard trotting horse, provided she is the dam of two trotters with records of 2:30.

5. A mare sired by a registered standard trotting horse, provided her first, second and third dams are each sired by a registered standard trotting horse.

The colt not coming within any of these requirements cannot be registered.—Ed.

### NOTES.

Mr. Henry G. Herring, of the Retirement Stud, near Bridgewater, Rockingham county, Va., writes as follows concerning the farm horses, of which nearly a hundred head are owned on the place:

"The most highly prized, of course, among our trotting bred matrons is the gray mare Erena, 2:19½, by Alcyone, out of Estelle, dam of Rutledge, 2:27½, by Clark Chief, 89. By Allerton, 2:09½, she has thrown Allercyone, 2:17½, and two other standard performers, while several of her produce by other sires are likely to make records. Her foal of 1902 is a shapely chestnut filly, by Supremacy, 2:29½, and she was bred back to that son of Bell Boy, 2:19½. Rose Pompon, by Algernon, son of Allie Wilkes, 2:15, and Tuti Feori, by General Hancock, dam Miss Gate, by Restoration, has a large, handsome brown filly at her side by Supremacy and was bred back. Two other trotting bred foals that we think well of are by Restoration, one of them being out of a mare by Algernon and the other from a daughter of Ali Pasha, the son of Almont, 33. Restoration was bred by Major Foxhall A. Daingerfield, while a resident of this county, and sired by Sam Prudy, out of Nellie Buck, grand dam of Mosul, 2:09½; Partiality, 2:24½; Nutwith, 2:29½, etc. Jessie Nelson was barren this season, but the yearling from her by Restoration is one of the best ever seen on the planta-

tion of any breed. The bay gelding, 3, out of her, by Algernon, took first and second prizes in his class at the Harrisburg Horse Show in August. Jessie Nelson is a daughter of Africa, 11393, and Sister, by Clayton Chief, second dam by Alburn, son of Almont. We have eight weanlings and one yearling by Chorister, thoroughbred son of Falsetto, all out of good mares, and we look for them to make high class hunters and jumpers. Our collection of half-breds also includes a number of the get of Sam Corey, thoroughbred son of Long Taw. One of our most highly prized youngsters is by Chorister, dam Loving Bell, by imported Aerolite. We had Chorister here for a couple of seasons, but he is now in the Stud of Dr. James Kerr, Warrenton, Va., and Loving Bell was bred back to him last spring. I omitted to mention that we have a number of the get of Black Squirrel, Montrose, Woodford's Cripple, Mark Diamond, and other saddle stallions, which are highly finished and more beautiful than any other bred I know of."

William A. Walker has sold to a gentleman in North Carolina for use as a road horse the little bay gelding Dr. Williams, 4, by Egwood, 2:16½, dam Bessie Hunter, by Woodburn Hambletonian. This gelding is handsome and acts well enough to develop speed with handling. Dr. Walker has purchased from parties on the Eastern Shore of Virginia a good looking chestnut stallion, five years old, by a son of Onward, dam by Walker Morrill, the sire of Lamp Girl, 2:09, and regards him as the making of a fast horse.

The second annual exhibition of the Richmond Horse Association, which begins on October 14th and continues through the week, promises to be a grand affair, both in point of attendance and the class of exhibits. Many of the most noted show horses in the country will be here, and amidst the glare of electric light some dazzling performances may be witnessed over the tan bark in the spacious arena. The new amphitheatre at Reservoir Park is a splendid affair, and will accommodate at least ten thousand people. It was built especially for the Richmond Horse Show Association and is excelled by no building of the kind in the country. The Richmond Horse Show is doubtless a fixture here, and merits the patronage and support of our best people, and that it will be liberally accorded is not to be doubted.

BROADBROOK.

### SADDLE HORSES FOR SALE.

Mr. John F. Lewis, proprietor of Lynnwood Stock Farm, Lynnwood, Va., is disposing of Kentucky saddle horses, as will be seen by his advertisement elsewhere in this issue. Mr. Lewis is going more extensively into breeding Percherons, Shorthorns and Berkshires, devoting his entire time to them, hence the sale of his Kentucky saddle horses. The stock offered is first class, and ranges from weanlings to seven-year-olds.

## Miscellaneous.

### THE FARMER AND EDUCATION.

*Editor Southern Planter:*

Education is the great modern fad. A great moral force is found to reside in the alphabet, and that A, B, C, &c., in their many and various combinations, are going to effect a total revolution, and to make men not only intelligent but virtuous, and the decalogue is to become obsolete; only educate all at public expense, and the reign of righteousness will have come, and come to stay. At least such is the necessary inference from the claims of the advocates of public schools.

But it is evident, from the recent biennial report of the State Superintendent of Instruction that the people of Virginia do not take this roseate view of the benefits derivable from free schools; on the contrary, it would seem from this report that they care little or nothing at all for education, which is extremely unfortunate, for though education is by no means the panacea, moral and intellectual, for human depravity and stupidity, it is nevertheless true that the uneducated community is seriously handicapped in the race for wealth and influence, and therefore happiness. Education is power, and it is the powerful, and not the saints, that do and that shall inherit the earth. Hence if Virginians wish to inherit a fair portion of the earth they must improve, vastly improve, their public school system, and become educated, or at least much better educated.

The following epitome of the report shows the wretched and disgraceful condition of public education in our State:

Total school population (white).....	426,054
Total enrollment, only (white).....	258,222
Total average attendance, only (white).....	156,472

(that is to say, 64 per cent. of the white population not attending public schools.)

Forty-three per cent. of the white schools illegal, or 2,658 schools out of 6,056; and of the 2,658 schools 1,051 have an average attendance of between 14 and 10 pupils, and 146 have an average attendance of less than 10; Louisa had only 2 legal schools out of 64, Buckingham only 9 out of 59, Dinwiddie only 6 out of 59, Prince Edward only 5 out of 42, etc.; many schools established to accommodate men who have daughters or some other relative they wish appointed to teach the schools, or to satisfy wild and insane tendencies; school-houses unfit for human habitation; school term so short children forget almost as much during the long vacation as they learn during the short school term; teachers in many instances inadequately pre-

pared, etc., etc., and the superintendent thinks "a rigid investigation would show a worse state of affairs in many sections of the State."

Now, who is to blame? It would hardly do to lay the blame upon our last Governor and our last Attorney General, now Governor, and the Superintendent, and the Secretary, who composed the Board of Public Instruction, for they are all honorable men, ambitious, forgetful of self, and with an eye single to duty. The people, then, are to blame, and appeal, therefore, is made to them to begin with the new school year and see that affairs are conducted with an eye single to the cause of good education, for any increase of efficiency of the school system means benefit to them, and benefit proportionate to the efficiency. Let the people demand that there be no longer any illegal schools; that is, schools under twenty average attendance, because to expect good from smaller schools is like expecting a fire from two sticks; and if possible, see that schools do not fall below twenty-five average attendance, which is the smallest number from which, according to the Superintendent, much good can come. But the people must be earnest and wide awake, and must get behind the State Board, otherwise school affairs will remain in the same disgraceful rut, for political boards, whether school or other are notoriously inefficient, and neglectful if those whom they represent are not constantly behind them.

Probably, however, the people will deny that they are to blame, at least wholly, and will charge that the State Board of Instruction is the chief offender; that the Board has been entrusted with the duty and the power, and that if after the expenditure of \$7,914,872 on public schools in four years the schools are in the condition reported by the Superintendent, then the Board has not only been neglectful, but grossly so, and not only neglectful, but equally incompetent too, for the Secretary says in the press, the Board has made "utmost effort to do its duty," and if four years of "utmost effort" results in present school conditions, then truly the Board is not only incompetent, but very incompetent, but between Board and people I shall not attempt to decide. But one thing I will say that the people of the State must, for their own good, be better educated, and that, to be better educated, they must get behind, stimulate and uphold those charged with the administration of school affairs.

Richmond, Va.

L. H. BLAIE.

When corresponding with advertisers, kindly mention the *Southern Planter*.

## PULLING AND TOPPING CORN VERSUS CUTTING BY HAND OR MACHINE.

[Article prepared by Mr. W. S. Mott and read at meeting of Farmers Club of Gloucester county, Va.]

While I promised my brother members at our last meeting to give them an article on the comparative costs of handling the corn crop, as above mentioned, I fear I will not be able to deal with it as explicitly as I would like, or I think the subject warrants.

To begin with, it is shown by statistics that something like 90,000,000 tons of corn fodder are annually raised on the 80 to 90 million acres normally planted in this country, which fodder is to a great extent wasted, the enormity of this loss will be emphasized when we realize that the normal hay crop of the country is about 65,000,000 tons, valued at \$500,000,000. Why not save our fodder entire and sell the hay, provided it be proven feasible to handle it cheaply enough to make it an object, and it would seem to the writer, after contemplating the value of the hay, almost entirely fed for roughage, it would alone solve the question as to its being worth the expense of saving. But I have wandered in my earnestness to impress upon the mind the value of the crop. As to the cost of handling, I will give the few figures at my command, and will be pleased to have them compared with estimates made by others better informed. I find by inquiry that it is the experience of most local farmers, who have kept any strict accounts of cost of handling in the different ways, to be in favor of cutting up, to this extent, that in tests made in this and adjoining counties, where the wage scale is comparatively the same, it has been demonstrated that to top and pull an acre of corn that will yield four barrels per acre, costs 75 cents and board per hand, paying at the rate of 50 cents per day, and that under same conditions it costs 50 cents and board to cut down and shock one acre, throwing the cost at least 25 cents per acre in favor of cutting down, to say nothing of avoiding the risk of the elements by adopting the latter plan, for it will be seen that the provender cut down was in a sense saved when in shock. Also in a letter received by the writer from Professor Ferguson, Assistant Professor of Agriculture at our Experiment Station at Blacksburg, where he claims repeated tests have been made in the manner of handling the corn crop, he says, in a very summary way, that as far as handling it in the antiquated and time-worn way of topping and pulling, he can give me no figures, as they regard it a too wasteful and by-gone practice to follow in these modern days; but further states that putting the wage scale at what they have to pay day and monthly help, that it costs them 30 cents per acre less to handle the crop with the harvester than by hand, paying 80 cents per day, and \$20 per month. They estimate that it costs

them on the college farm 70 cents per acre with harvester and about \$1 by hand, so it would seem that all tests made thus far are decidedly in favor of cutting down and more forcibly in connection with a machine against hand. But here, before concluding, let the writer express his humble opinion in regard to the harvester versus hand; he has tried both, and is decidedly in favor of the harvester, where the acreage is large enough for the machine to more than earn the interest on the investment; in other words, if it costs, as the Professor says, 70 cents an acre to handle the crop with it, and the machine costs \$125, there must be acreage enough for it to cut yearly to earn the interest on same \$125, at the local wage scale rate, that it costs to cut an acre by hand, and also enough extra to keep it in repair for the natural life of the machine, otherwise he thinks he had better cut by hand, provided he can command labor at time needed, the last mentioned having been a strong factor in inducing the writer to buy a harvester. It made him independent and able to harvest his crop at proper time, and at nearly one-half the cost of hand labor. For instance, he cut down in 1½ days 15 acres of corn that averaged eight barrels, and two monthly hands shocked and tied tops of same in two days; now, allowing at the rate of day labor, the comparison will be seen as follows: three horses and driver, \$3.38; two hands, \$3.00; 30 lbs. twine at 11 cents, \$3.30; total, \$9.68; cost per acre, 64½ cents, against one dollar, which it always cost me by hand, with one exception, which I find from some old notes made at the time, of lumping the crop that season with parties at a price that brought it down to 71 cents, which, at this low price hand work, is still beaten by the harvester, not to mention the fact that when cut by hand it then has to be bound after shucking, so as to handle to advantage, making another item in favor of the machine.

There are many other points of interest in the matter of the corn and fodder crop, its comparative feeding value with other long food, etc., which I will not attempt, but leave for another time to some of my more competent confreres.

Gloucester Co., Va.

W. S. MOTT.

## WOODS AND MALARIAL DISEASES.

*Editor Southern Planter:*

A good cause has frequently been injured for a time by the impetuous ardor of its advocates. There are facts about forestry, and the necessity of preserving a certain proportion of woodland where it already exists for fuel and timber, and planting out groves in destitute places, but the main fact has been buried out of sight under a pile of doubtful matter by enthusiastic writers until the subject is not likely to receive

the attention which its importance demands. Even Lieut. M. F. Maury, one of the most learned and astute of modern scientists, had the weakness to assert that a few rows of Sunflowers, planted between the Washington Observatory and the marshy banks of the Potomac, had saved the inmates of that institution from intermittent fevers to which they had been formerly liable.

The Hon. George P. Marsh, in his book, "The Earth as Modified by Human Action," after discussing the subject cautiously, throws the weight of his influence in favor of Maury's idea, that a few rows of trees, or even sunflowers, would protect a farm-house, or a village, against the malarious influence of a stagnant, putrid swamp, where vegetable decomposition was rapidly going on!

The American Horticultural Society, in 1889, passed a resolution embodying the same principle in a different shape—that the removal of the native forests tends to cause, or increase, malarious diseases.

Now, with all respect for the opinions of these learned men and this august society, I would say the truth seems to be exactly the reverse, and that malarial districts of great extent have been rendered healthful and salubrious by *cutting down* the timber, clearing up the land, letting in the sunlight, and the wind to dry up the stagnant water, purify the air, and destroy the miasmatic germs of malarious diseases.

All Northern Pennsylvania, when first settled by white men, was subject to fever and ague, which attacked every family, and each member of the family. The strong men shook as well as the weak and the young. Its visits from house to house were not seldom, but frequent, and when once it came it was never in a hurry to go. It was the prevailing epidemic and remained so until much of the country was cleared of its woods and under cultivation, and then it disappeared, except perhaps in the neighborhood of some pond of stagnant water full of decaying logs and leaves. So entirely has fever and ague left this part of the country it would be hard to find a resident under fifty years of age who had ever seen a case unless it was imported, or saw it when abroad.

Mr. J. A. Foote, writing to the *Rural New Yorker*, says: "I speak as a resident of Indiana for fifty-six years, and assert that I believe there is a vast improvement in the health of the people, and that the mortality from malarious diseases now is not one fourth what it was forty or fifty years ago in proportion to population.

"An old physician tells me that there is no comparison to be made between the past and the present in respect to the general health, and that as to malarial diseases there is not one case now to ten in those days when there was twice or three times the extent of forest there is now."

About the year 1846, after a hot dry summer, fever and ague broke out among the people living near a large mill pond in Herrick township, Bradford county, Pennsylvania. Nearly every person for miles around was attacked by the disease. The water in the mill-pond (which had nearly become dry) was stagnant and offensive to the smell. There were woods on nearly all sides of the pond, but the trees did not prevent the malaria as Lieut. Maury believed they would. After the pond was drained the fever abated, and there have been no cases since. There is no doubt that the shade of woods is favorable for preserving the rain and snow water from evaporation, and causes it to sink into the ground for the benefit of springs, wells, and mill streams. Creeks which once supplied an abundance of water for mills at all seasons, after clearing off most of the woods have become nearly dry and the mills are abandoned.

There is no doubt that a forest will break the force of the fierce winter blasts and make it more comfortable for men and animals who live in its midst or on the lee side of it, and that fruit trees will bear better and oftener for its protection. There is no question about the necessity of preserving a certain proportion of woods for growing timber, without which it is hard to see how the business of civilized life could be carried on; but when people talk about the removal of the forest causing malarial diseases, irregularity and uncertainty of the rain fall, extremes of drouth and flood, extremes of heat and cold, and diminished humidity of the atmosphere, they are going beyond the bounds of truth and reason, and are likely to injure the cause of forestry which they are endeavoring to advocate.

Malaria has mostly disappeared in the few districts of the eastern counties of England and in most parts of Holland, France, Italy, and Algiers by drainage. The certain prevention against malaria is not in planting trees or sunflowers, but in thorough drainage of the marshes and the destruction of garbage and decaying substances which generate the germs.

J. W. INGHAM.

#### MEETING OF THE MUTUAL FARMER'S CLUB OF FREDERICK CO., VA.

The Mutual Farmer's Club met at "Lost Stream," the residence of John L. Bond, August 30th, 1902. The meeting was called to order by President Rees at 10:45. The minutes of last meeting were read and approved.

Carroll C. Clevenger, John L. Bond, and Edward L. Just, were appointed to select and refer questions for the next meeting. A motion was carried that the reading of the "Advertiser" come after the referred questions.

H. S. Lupton, N. W. Solenberger, and J. W. Bran-

son, were appointed a committee to prepare resolutions upon the death of Samuel L. Pidgeon.

Under the head of referred questions, D. W. Branson answered the following: "Tell us how to make the best butter." Mr. Branson read an essay in which he outlined a method that had been used by him very satisfactorily for a number of years. He especially emphasized the importance of keeping everything in connection with the dairy scrupulously clean. After some discussion on butter making, Mr. Boyer was called upon to answer the question, "The farmer's interest in good seed." Mr. Boyer thought that the farmer should be very careful to sow good seed, and if that of his own raising was not suitable, he should spare no effort to purchase good seed elsewhere.

The question referred to C. M. Solenberger was continued till next meeting. The meeting adjourned a few minutes before noon to enable the committees appointed to perform their work ready for the afternoon session.

The after dinner stroll was taken through the apple orchard, where an abundance of fine apples were seen.

Upon resuming business, Mr. Solenberger read the "Advertiser," after which the committee appointed to prepare resolutions produced the following:

Whereas our Heavenly Father, in the dispensation of His providence, has seen fit to remove from our midst one of our much esteemed members, Samuel L. Pidgeon; and

Whereas the Mutual Farmer's Club realizes that it has sustained a great loss in his removal, not only because of his rare and commendable qualities, but also because of his connection with the early history of the Club; therefore, be it

*Resolved*, That we, the Mutual Farmer's Club, extend our heartfelt sympathy to the members of his family in their sore bereavement; and be it further

*Resolved*, That these resolutions be published, and a copy sent by the Secretary to the afflicted family.

H. S. LUPTON,  
N. W. SOLEMBERGER,  
D. W. BRANSON,

*Committee.*

Under the head of New Business, Senator Lupton suggested the feasibility of a circulating library, which resulted in the following committee being appointed without instructions to investigate the matter: S. L. Lupton, L. M. Boyer, and C. C. Clevenger.

The committee appointed to select and refer questions for next meeting reported as follows:

(1) Considering the price of feed and the shortness of crops, would it be advisable to feed to stock or sell grain and stock. Referred to Daniel T. Flood.

(2) Considering the labor attached to the making of butter and the price usually obtained for the product, would it not be better to allow calves to do the milking and sell for veal? Referred to Lewis Pidgeon.

(3) Give your opinion on selecting, planting, and growing fruit trees. Referred to S. L. Lupton.

Under the head of Miscellaneous Business, Dr. Brown read a tribute to Samuel L. Pidgeon. A motion was carried that the paper be offered for publication. Mr. P. H. Gold, a visitor, gave a short account of his experience with Soja beans as a forage crop.

Nothing further claiming attention, an invitation was accepted to meet at the residence of S. L. Lupton, September 27th, 1902.

JOSIAH L. REES, *President.*

W. E. BRANSON, *Secretary.*

**Dr. Brown's Tribute to the Late S. L. Pidgeon.**

*Mr. President and Gentlemen of the Mutual Farmer's Club:*

Since our last meeting, another honored gray head has bowed to the conqueror of us all. It is with sympathetic feelings of grief that we now present this brief tribute of respect to the memory of our honored and departed friend. In him our Heavenly Father in his infinite wisdom, has taken from our midst another charter member of our Club. When we take a retrospective view of his long and useful life, we find his reputation without reproach. As he lived, so he died, a follower and devout believer in the religion of Christ. One of the principal characteristics of his life was liberality in judging men and their actions, with charity to all—ever ready to place the best construction on words and actions of men, always disposed to lend a helping hand to promote the welfare and good of others. Truth and manly sweetness dwelling on his tongue, a quiet, unassuming deportment in his social intercourse, made admiring friends of all who had the pleasure of his acquaintance. Blessed by his Creator with a clear mind and warm heart for the right; a true and loyal friend, and in the Club ever ready to do his whole duty, an indefatigable worker for the advancement of its varied interests.

The Mutual Farmer's Club deeply mourns the loss of so valuable a member, and to the family extend their heartfelt sympathy in this their great affliction. We have the consolation of knowing that so long as memory lasts his good name will be greatly cherished and deeply enshrined in the hearts of his family, relatives and friends.

"Through shining paths where an Almighty Hand,  
Where love, hope, faith and joy have spanned  
The gulf between, till full of new might,  
He turns with sweeter life and warmer glow,  
And holds his hands to those that climb below."

Ah, well, not long till we shall be  
A silent one of the company.

F. YARDLEY BROWN.

THE  
**Southern Planter**

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J. F. JACKSON,

Editor and General Manager.

B. MORGAN SHEPHERD,  
BUSINESS MANAGER.

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Rate card furnished on application.

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The Southern Planter is mailed to subscribers in the United States and Canada at 80c. per annum; all foreign countries and the City of Richmond, 75c.

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Subscribers failing to receive their paper promptly and regularly, will confer a favor by reporting the fact at once.

The Date on your Label shows to what time your subscription is paid.

We invite Farmers to write us on any agricultural topic. We are always pleased to receive practical articles. Criticism of Articles, Suggestions How to Improve THE PLANTER, Descriptions of New Grains, Roots, or Vegetables not generally known, Particulars of Experiments Tried, or Improved Methods of Cultivation are each and all welcome. Contributions sent us must not be furnished other papers until after they have appeared in our columns. Rejected matter will be returned on receipt of postage.

No anonymous communications or enquiries will receive attention.

Address— THE SOUTHERN PLANTER,  
RICHMOND, VA.

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PUBLISHER'S NOTES.

A Liberal Offer.

We will send THE PLANTER from October, 1902, to January, 1904, to any one who is not now a subscriber to the journal who will send us fifty cents, either by money order, in coin, or in postage stamps. We make this offer in order that we may lighten the work of our Subscription Department in the months of December and January, when thousands of new subscribers and renewals usually crowd upon us and overwhelm us with work and result in much delay to subscribers, and not a few mistakes, however careful we may be. This offer makes the price of the journal only about three-fourths of a cent per week. A subscriber writes us, in September, that one issue of it is worth \$10 to any farmer. We would ask our old subscribers to bring this offer to the notice of their friends and neighbors, and urge them to send in their subscriptions; or, better still, obtain the money and send it along with their own renewal. We are making arrangements for the issue of a specially attractive number for January, 1903, which alone will be worth much more to every farmer than the cost of the whole year's subscription.

Binders for the Planter.

We have received a new supply of binders for the Planter, and shall be glad to send one holding the numbers for a year to any one sending us 25 cents in stamps or coin.

THE SUPERIOR DISC HARROW.

The Superior Drill Company of Springfield, Ohio, is advertising its splendid Disc Harrow in another column. This harrow is something of a novelty in that it is mounted on wheels. The advantage of this arrangement is at once apparent, as it does not have to be hauled around in a wagon, but rides on its own wheels. It is also easy to work in the fields. All you have to do is to hitch up the team, throw over the lever, and put your boy on it, and he will do the work as well as a man. Look up the advertisement.

Wood's Seeds.

**Vetches.**

The HAIRY WINTER or SANDVETCH makes a hay or forage crop superior in feeding and nutritive qualities to Timothy Hay. It will also make the largest yield of dry feed of any crop that can be sown in the Fall. In this respect it is superior to Crimson Clover as it not only makes a larger yield than that crop, but is very much superior in feeding qualities.

Wood's Fall Catalogue tells all about Seeds for Fall Planting, Seed Wheat, Oats, Rye, Barley, Vetches, Grass and Clover Seeds, etc.

Write for Catalogue and prices of any Seeds desired.

**T. W. WOOD & SONS,**  
Seedsmen, Richmond, Va.

Wood's Fall Catalogue also tells about Vegetable and Flower Seeds, Strawberry and Vegetable Plants, Lawn Grass, Hyacinths, Tulips, etc. Catalogue mailed free upon request.

**PLANT BED CLOTH,**

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**MAGAZINES.**

The Century for October has for its front-piece the full-length portrait of Andrew Carnegie, recently painted by John W. Alexander, and Mr. Carnegie is the subject of an appreciation by Hamilton W. Mabie.

A subject of wide and growing interest which occupies the leading place in the number is "The New Photography." Mr. Alexander Black, in a paper entitled "The Artist and the Camera," presents an imaginary discussion of the question whether photography is an art, both sides being fully represented, and Alfred Steiglitz, founder of the Society of the Photo-Secessionists, writes of "Modern Pictorial Photography," to the progress of which this society has largely contributed. In proof of this The Century presents seven of the most notable artistic examples taken from the Society's exhibition of 1902.

Two papers are devoted to the subject—novel in magazine literature—of John Alexander Dowie, Dr. James M. Buckley, well known for his study of similar subjects, writing under the title of "Dowie, Analyzed and Classified," and John Swain contributing a descriptive study at first hand of "the modern Elijah," entitled "The Prophet and his Profits." Both are illustrated by drawings by F. De Forrest Schook, made at Zion City, Ill., the present seat of the Dowieites. Mr. Swain's article bears on its face the evidence of authenticity, but, at the same time, it presents, with much anecdote and incident, his own point of view of Dowie's character and pretensions.

The other illustrated articles cover a wide range. A picturesque and novel subject is treated in a paper by Roger Riordan, entitled "The Quest for Cages," in the Collectors Series, with numerous pictures by Alfred Brennan of bird cages of various nations. The Century continues to minister to the general interest in New York this month by two articles on the Subway—one of a picturesque character by Arthur Ruhl, illustrated by Lunger and Vanderhoof, and the other on "Difficult Engineering in the Subway," by Frank W. Skinner of the "Engineering Record."

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Sylvester Baxter continues his series on Civic Improvement by a paper on "Art in Public Works," in which he considers the esthetic possibilities in aqueducts, water-towers, power-houses, reservoirs and bridges, and the pictures by Guerin present successful examples in illustration of the author's argument.

In The Century's "Year of American Humor" there are two diverting stories, "On the Links," a tale of love and golf, by George Hibbard, and "John Henry's Lobster Trust," by Walter Leon Sawyer, both illustrated, and an article by Katherine A. Chandler on "The Sense of Humor in Children," with specifications.

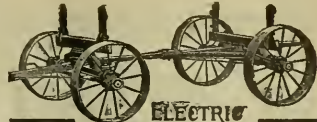
The October-December number of the Forum which, it will be remembered, is now published quarterly, contains articles by specialists, reviewing the progress of the last three months in various departments of thought and activity. Henry Litchfield West deals with "American Politics," devoting special attention to the President's speeches and the Congressional campaign, while A. Maurice Low treats of "Foreign Affairs," including the changes in the British administration, the renewal of the Triple Alliance, and the continued unsettlement in China. A. D. Noyes writes on "Finance," Henry Harrison Suplee on "Applied Science," Frank Jewett Mather, Jr., on "Literature," and Henry T. Finck on "Music." Russell Sturges' paper on "Sculpture" is an exhaustive analysis of recent tendencies in this form of art as practiced in America. The subject of "Education" is divided between Ossian H. Lang and Dr. J. M. Rice, the former discussing the general outlook, and the latter giving an account of some special investigations into the teaching of arithmetic. The concluding articles in this number are a paper on "The Political Situation in Russia," by Isaac A. Horwich, and a criticism of Herbert Paul's book on Matthew Arnold, by Prof. W. P. Trent.

The October St. Nicholas presents "Slushy the Roustabout," by Howard E. Ames, as the long story. It is the fascinating record of a real boy who served in the United States Navy. In this same number appears a couple of capital articles on home amusements and an unusually long list of good stories and pictures.

The long story appearing in the October St. Nicholas is the true story of a poor lad in the United States Navy. "Slushy the Roustabout," by Howard E. Ames, U. S. N., got his name from his unkempt appearance and hang-dog manner. The author, who is a surgeon, found that the boy was suffering from a disease that rendered him temporarily unfit for work. He put "Slushy" on the sick list, cured him, and made him his protégé. The story has to do with the boy's really remarkable career; and now, year's later, he called on his benefactor, in frock coat and high hat, the picture of a well groomed man.

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Lippincott's Magazine for October con-



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tains a complete novel and many short stories. The novel, by Mary Moss, is entitled "Fruit Out of Season." It is fresh, clever and witty, and the reader is bound to ask himself, "Should Virginia Dry, or of thirty, have acted differently?" or "Did Jack McCall, of twenty one, make a fool of himself?" Some of us have known similar cases, and can draw inferences. Miss Moss has a happy way of plunging into the story she has to tell at the first page, without a tiresome introduction, and the interest thus caught is held unbroken to the last word.

Marie Van Vost's stories run in the order of good, better, best. This, her latest, called "The Primrose Way" in the October Lippincott, excels anything she has yet published, which is praise indeed. The quaint humor of Josiah Allen's Wife is abundantly demonstrated in her tale called "Dr. Marsh's Fortunate Call." It is both pathetic and amusing, dealing with the sex which is "weak and easily flattered." A sharp contrast is presented in the story contributed by Cy Warman, entitled "The Persecution of a Pup," which is a powerful animal story. Alfred Stoddard's hunting tales have won him many friends. This, entitled "The Witch of the Hunt," is about a daring girl, a race, and what came of it, "Passing the Love of Woman," by Crys Townsend Brady, is the story of a temptation such as seldom falls to man's lot. It is a fine example of Mr. Brady's master hand. Clinton Dangerfield's "The Master of Fate" is distinctly original in scheme. The sole survivor of a shipwreck cast upon an island, finds a dozen friends who had met the same fate one year before. Their touching eagerness for news of family and friends at home makes him reluctant to pass along bald facts, and he is assailed with a desire to tell each suppliant what he would like to hear rather than ugly truths.

From no other periodical can so sane and accurate a view of current politics be gained as from the Review of Reviews. The October number of that publication is noteworthy for its very clear and full editorial exposition of the issues involved in this fall's campaign, the effect of Speaker Henderson's retirement, the meaning of the tariff agitation in the Middle West, and President Roosevelt's attitude on the trust question. The President's remarkable speaking tours through New England, in the South and to the West; as far as Indianapolis—where the abrupt ending was necessitated by the absence of the President's legs—are described and pictured for the reader more comprehensively than in most daily or weekly journals. In fact, this record of the year's campaigning up to date is something unique in our periodical literature. It includes a survey of State political activities, East, West, North, and South. Neither Josiah Quincy's conservative leadership of the Massachusetts Democrats nor Tom Johnson's capture of the Ohio Democratic organization, on behalf of the pro-Bryan radicals, is ignored. The editor of the Review has acted an other chapter to the unequalled "History of Our Own Times" that he is writing month by month.

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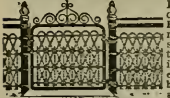
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Perhaps the most interesting character in the story of the American Revolution is Alexander Hamilton. A study of the man, his characteristics and guiding motives, was prepared by John Fiske before his death, and appears as the leading article in the October Cosmopolitan. No paper could illustrate more clearly the difficulties through which the American Union had to pass on its way to the excellence already attained and the perfection which it must ultimately reach.

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 the Dederick catalogue and acquainted  
 himself with the various presses in the  
 Dederick line. The Dederick advertising  
 is to be found elsewhere in this paper.  
 Look it up and write for the catalogue,  
 which is mailed free.

The California method of combating an  
 early or late frost is effected by heating  
 the lower stratum of air, thus diminish-  
 ing radiation. Iron pots, each of which  
 has a cover, and which are somewhat like  
 those for burning charcoal, are used.  
 Thirty-five are required for an acre, and  
 this number will raise the temperature  
 near the surface eight or ten degrees.  
 Seventeen and one-half gallons of crude  
 oil are required. With each gallon of  
 oil one-fifth of a pound of cotton waste,  
 costing about eight cents a pound, is used.  
 Each pot usually burns steadily for  
 about six hours. An electrical thermom-  
 eter is arranged to alarm the foreman as  
 soon as the temperature falls to thirty-  
 four degrees Fahrenheit, when the fires  
 are at once lighted.

**THE WEDDING  
 OF  
 SARSAPARILLA  
 AND CELERY.**

**A NOTABLE MEDICAL DIS-  
 COVERY.**

No event in the history of medical  
 science is fraught with more importance  
 than the discovery of the ideal combina-  
 tion of sarsaparilla with celery; that is,  
 if the greatest good to the greatest num-  
 ber is the standard of comparison. There  
 are millions of people to-day suffering  
 from ailments which sarsaparilla and  
 celery will cure. There are thousands of  
 people in every country who could be  
 saved from future sickness to-day by its  
 prompt use.

Ninety per cent. of the diseases which  
 afflict mankind come through impure  
 blood or disordered nerves. For the  
 former, sarsaparilla has been the ideal  
 cure for centuries. For the latter, celery  
 in its concentrated form is the proved  
 corrective.

The ideal combination of both these  
 drugs was discovered after years of ex-  
 periment. It was produced under the  
 name of YAGER'S SARSAPARILLA  
 WITH CELERY. It is to-day proving  
 its worth by effecting wonderful cures in  
 the manifold disorders which arise from  
 impure blood and weak nerves. Won-  
 derful cures are reported in cases of  
 rheumatism, scrofula, catarrh, malaria,  
 loss of appetite, biliousness, nervousness,  
 female diseases, etc.

YAGER'S SARSAPARILLA WITH  
 CELERY is sold by all druggists at 50c.  
 a bottle. It is made by Gilbert Bros &  
 Co., Baltimore, Md.

**CLEASON'S  
 HORSE AND CATTLE  
 POWDER**

If used according to directions will  
 keep your HORSES and CATTLE in  
 perfect condition; will enable them to  
 do more work and better withstand  
 the severe changes in the weather; and  
 their general condition will be im-  
 proved in every way. Nostable should  
 be without this valuable Powder. It is  
 sold by all dealers, and prepared by  
 GILBERT BROS. & CO.,

Proprietors, BALTIMORE, MD.

**HONEY-TOLU  
 CURES**

**Coughs, Colds and Hoarseness.**

BUY IT FROM YOUR DEALER. 25 CTS.

## HOMES AND THE PLACE TO FIND THEM.

No place in the United States can a man do so well at farming, for the money invested, as in Virginia. Lands are cheap; climate good, and the best of markets close at hand. It is the State of all others, for a comfortable all the year round home. The James River Valley Colonization and Improvement Company offer superior advantages to land purchasers. For free 36 page land pamphlet, address

W. A. PARSONS, Vinita, Va.

## To HOMESEEKERS.

### "THE BUSINESS OF FARMING IN VIRGINIA"

Is the title of a new pamphlet issued by the Norfolk and Western Railway Company. We will gladly mail you a copy.

W. B. BEVILL, PAUL SCHERER, Agt.,  
G. P. A., Lands and Immigration,  
Roanoke, Va.

## ..Magnificent Estate..

Known as the Hampstead Farm, situated on the Pamunkey river, for sale. Contains nearly 1600 acres, 800 of which is river bottom land, the remainder being upland and timber. Large deposits of green sand marl; brick barn with wood stable attached; also houses for sheep, etc. Splendid dwelling said to have cost \$60,000. Property now owned by stock company. Price, \$20 per acre, on easy terms. For further particulars, address

"PAMUNKEY," care Southern Planter.

WE HAVE A LARGE LIST OF

## FRUIT, POULTRY and TRUCK FARMS.

Ten, Fifty and One Hundred Acres each, with good buildings, close to steam and trolley lines, easy access to the city. Also

### GRAIN and STOCK FARMS

From 100 to 1,000 acres at low prices, all the way from \$5 to \$50 per acre. Write for Catalogue.

THE VIRGINIA LAND AGENCY, Richmond, a.

J. R. HOCKADAY, Manager.

## A BARGAIN IN 63 ACRES ... OF LAND

In sight of Richmond, Va. Fine large house with modern improvements; fine large barn and other improvements; large orchard; society the best. Will be sold cheap with stock and crops. Would make a fine dairy farm. Address OAK SHADE, care Southern Planter.

## "PIEDMONT AND all that it implies."

Good land, climate, markets, shipping facilities, churches, schools, good health, moderate prices, easy terms.

MACON & CO., Orange, Va.

## WANTED!

By a practical Pennsylvania farmer, to rent and buy a good Virginia farm. Best reference. Address

FARMER, - NEW BERRY, PA.

## VIRGINIA FARMS

\$3 PER ACRE and UPWARDS.

EASY PAYMENTS. CATALOGUE FREE.

GEO. E. CRAWFORD & CO., Richmond, Va.

Established 1875.

## REPORTS.

U. S. Department of Agriculture, Washington, D. C. Bureau of Plant Industry. Bulletin 20. Manufacture of Semolina and Macaroni.

Section of Foreign Markets. Bulletin 26. Agricultural Imports of the United Kingdom, 1896-1900.

Section of Foreign Markets. Bulletin 28. Sources of the Agricultural Imports of the United States, 1897-1901.

Farmers' Bulletin 160. Game Laws for 1902.

Biological Survey Circular 38. Interstate Commerce in Birds and Game. Crop Reporter, September 1902.

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Georgia Experiment Station, Experiment, Ga. Bulletin 57. Cantaloupe Culture in Georgia.

Illinois Experiment Station, Urbana, Ill. Bulletin 76. Alfalfa on Illinois Soils.

Michigan Experiment Station, Agricultural College, Mich. Bulletin 201. Aeration of Milk.

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Missouri Experiment Station, Columbia, Mo. Bulletin 52. Influence of Height of Wheel on the Draft of Farm Wagons.

Bulletin 53. Breeding Experiments with Sheep.

Bulletin 57. Raising Calves with Skim Milk.

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Virginia (Hampton Institute) Agricultural Leaflet, No. 1. Notes on Plants. No. 2. Notes on Soils. No. 3. Notes on Farm Manures.

Virginia Weather Service, Richmond, Va. Report for August, 1902.

Wyoming Experiment Station, Laramie, Wyo. Bulletin 54. The Shrubs of Wyoming.

Agricultural News, Barbados, West Indies. August 16 and August 30, 1902.

## BOOKS.

Poultry Appliances and Handicraft. By G. E. Fiske. Illustrated, 5 x 7 inches, 130 pages, cloth. Orange Judd Company, price postpaid, 50 cents.

This neat booklet is intended to facilitate and ease the management of poultry on a large or small scale, and this in the most economical manner. By concise descriptions and clear illustrations, it presents many styles and kinds of the best contrivances in the line of nests, roosts, windows, doors, ventilators, home-made incubators, and brooders, traps for vermin, feeding appliances, fountains and water system, food machines, heating apparatus, besides scores of miscellaneous labor-saving devices. No one who keeps or intends to keep poultry can peruse these pages without advantage.

The Southwestern Poland-China Record, Vol. 1, 1901. Published by the

## I Can Sell Your Farm

no matter where it is. Send description, state price and terms how. Est. % Highest references. Offices in 14 cities. W. M. Ostrander, 1885 N. A. Bldg., Philadelphia

## Virginia Farms

All prices and sizes. Free list on application.

WM. B. PIZZINI CO., Richmond, Va.

## FINE FARMS

in the great fruit grain and stock section of VIRGINIA. Best climate and water in the U. S. Near great markets, with best educational advantages. For further information, address ALBEMARLE IMMIGRATION CO. SAM'L E. WOODS, Pres. Charlottesville, Va.

## S. C. WHITE LEGHORNS

Young males which will improve your stock in utility and standard show-room points for sale. Write for prices. C. G. M. FINK, 1409 W. Leigh St., Richmond, Va. 2nd V.-Pres. Va. Pigeon, Poultry and Pet Stock Association.

## EGGS

From Pure-Bred Fowls, Cheap.

The Imperial Fruit and Poultry Farm is in a position to offer Eggs from pure-bred B. P. Rocks and S. C. B. Leghorns at 50c. setting of 15. Reference furnished.

P. H. HEYDENREICH, Prop., Staunton, Va.

## WANTED

200 Early Hatched

## W. P. ROCK PULLETS

Or Yearling Hens for breeding purposes. Address with description and prices.

WALTER P. LAIRD, Spray, Rockingham, Co., N. C.

## PIT GAMES

BLACK DEVILS and RATTLESNAKES.

These cocks always win the odd fight, also the main, wherever fought. Eggs in season and stock for sale.

THOS. W. JARMAN, - Yancey Mills, Va.

## BROWN LEGHORNS

(Single Comb.)

Well-bred and good layers. Fine farmed-raised young stock for sale. Prices reasonable. Buy now and get the pick.

R. W. HAW, Jr., - Centralia, Va.

## FOR SALE!

Pure MAMMOTH BRONZE TURKEY, TOULOUSE GEESSE, BARRED PLYMOUTH ROCK CHICKENS, GUINEAS AND PEA FOWLS; Eggs in season except from Pea Fowls and Geese.

Enclose stamp for reply.

Mrs. W. F. JACKSON, - Olga, Amelia Co., Va

## FOR SALE.

## 6 S. C. B. LEGHORN ROOSTERS

\$1.00 Each. Address

Miss CLARA L. SMITH, Croxton, Caroline, Co., Va.

Mention the Southern Planter when writing advertisers.

# FOR SALE

Owing to my other stock interests and the over-crowded state of my stables, I have concluded to offer all of my

## REGISTERED

# SADDLE STOCK

Consisting of

## One Mare, Four Fillies and Two Colts,

all good colors, browns, bays, one chestnut and one black; no markings except stars in forehead, and two have one white hind foot; they range in age from weanlings to seven years old. A bargain if bought in a bunch, or any one buying the seven head can get a "Big Cut."

JNO. F. LEWIS,

Lynnwood, Va.

## ANGORA GOATS

For Sale—From 1 to carload lots, from \$4 to \$30 per head. Write for particulars.



HEBNER IMPROVEMENT CO. Saxe, Charlotte Co., Va.

# COLLIE PUPS!

By prize-winning imported sires and trained dams. Eligible. Fit for bench, ranch or farm. Price, \$10, either sex. Also a book on the care and training of the Collie for all practical uses. Price, 50c. Copy of book free to purchaser of Collie.

Stock Farm, "MAPLEMONT," Albany, Ver.

## FOR SALE!

**4 MALE BEAGLE PUPS**  
Of excellent hunting stock and prettily marked.

Dr. C. T. SMITH, - - Croxton, Va.

## "GET A DANDY"

and double your egg yield. The fastest and easiest bone cutter made. Sold on 15 Days' Trial, \$6.00 up. Catalogue and special proposition Free. STRATTON MFG. CO., Box 78, Erie, Pa.



Southwestern Poland-China Record Association, Gadsden, Tenn. This is a very praiseworthy attempt to do for Southern Poland-China hog-breeders what is done for Western and Northern breeders by the old established Registries, viz., provide a reliable local record and registry. H. P. Wilson, of Gadsden, Tenn., is secretary.

Catalogue of Registered Jersey Cattle for public sale at Clarksville, Ohio, October 4, 1902. John A. and Frank Kelley, Clarksville, Ohio.

Wertz's Nursery Catalogue. James G. Wertz, Salem, Va.

The Royal Orchard, Afton, Va. Circular to Horticulturists and Apple-Growers as to the making of cider.

The Bible Society of Virginia. Eighteenth Annual Report for the year ending March, 1902. Office 1001, East Main street, Richmond, Va.

## CENSUS BULLETINS.

- 239. Manufactures. Typewriters.
- 240. Manufactures. Sewing Machines.
- 241. Manufactures. Carriages and Wagons.
- 242. Patents in Relation to Manufactures.
- 243. Manufactures. Locomotives.

## HEEBNER'S POWER AND DRY FODDER CUTTERS.

When feeders are considering the resources at their command with which to get through the winter, they should not overlook the virtue which lies wrapped up in the common corn fodder of which they have such an abundance. Time was when the corn stalk went to the manure pile, or was gathered up and burned in the spring. That was before practical feeders and the Experiment Stations had demonstrated its great value, and while the farmer was without adequate machinery to prepare it for the animal's use. Knowing now the high percentage of sustaining power in the dry stalk, and with such an outfit as the Heebner Dry Fodder and Ensilage Cutter, advertised in our journal, to reduce it to palatable condition, there is no longer any excuse for this waste. All kinds of provender-eating stock, especially cattle, greatly relish it, and are not only sustained, but thrive upon it. The Heebner Cutters are most excellently adapted to its preparation. It is not only a cutting process, but the machines crush and shred as well. One has only to see cattle eating it to be convinced both of the worth of the food and the thoroughness of its preparation. Heebner's cutters and the convenient tread-powers they make for their economical operation, have done much to make dry fodder feeding profitable and popular. They should have a still wider—in fact, a very general use—among farmers and feeders wherever the corn crop is a factor. If the advertisement has escaped your notice, look it up. Write to the Company for their catalogue, and see whether fodder feeding, prepared as the Heebner machinery prepares it, does not suggest something of value to you. In writing, kindly mention our journal.

## • FILSTON FARM. •

SECOND LARGEST

# JERSEY HERD

IN AMERICA. FOUNDED 1882.

BULL CALVES, and for the first time, Heifers bred to Imported Golden Peter, and Heifer Calves and a few aged Cows.

BERKSHIRES, all ages, sired by Imported Storm King, or Imported Essau 2nd, Size, good shape and large letters.

Visitors welcome. Address for Book of The Farm, or prices

E. M. GILLET, Clerk, Glencoe, Md.  
ASA B. GARDINER, Jr., Manager

## Swift Creek Stock and Dairy Farm



Has for sale a large number of nice young registered A. J. C. C.

## JERSEY BULLS AND HEIFERS.

None better bred in the South. Combining closely the most noted and up-to-date blood in America. Bulls 10 to 12 months old, \$25 00. Heifers, same age, \$35.00. POLAND-CHINA PIGS, \$5.00 each. Send check and get what you want.

T. P. BRASWELL, Prop., Battleboro, N. C.

## ..OAK HILL FARM..

# Holstein and Jersey Cattle, Biltmore Berkshires.

Wishing to reduce my stock, will sell cheap. Every thing from Oak Hill Farm is guaranteed first-class, and as represented. Address Oak Hill Station SAM'L HAIRSTON, on the Farm. Wenonah, Va.

# 9 DAIRY COWS,

FOR SALE.

Some fresh to pail, others soon will be. I also offer a

## LARGE PAIR OF MULES.

A. DILLS, - BURKEVILLE, VA.

## WANTED!

We wish to buy

## 20 YOUNG JERSEY COWS.

MINIBORYA FARM, Box 901, - Richmond, Va.

## WANTED TO BUY

A car-load of calves. Grade Shorthorns, or other large breeds. Give description, number and price. Address W. C. W., This Office.

# V. P. I.

## Farm Bulletin

Nice BERKSHIRE PIGS for sale now. Also a few DORSET RAM LAMBS left.

D. O. NOURSE, Prof. of Agr.

Blacksburg, Va.

## FINE STOCK AT A BARGAIN.



One trotting bred brown gelding, coming 4 yrs. old, 15½ hands, weight 1000. Trim as a fawn, and dashing in style and action. Can negotiate a mile in 3 minutes under the lines without effort. His future is big with promise. Sinewy, hardy and tough. With just a bit more of age and service will make a model family horse. On any city market he would go "like hot cakes" at \$20. To sell at once we will take \$150.

One reg. Aberdeen-Angus Heifer coming 3 yrs. Old, bred to our imported herd bull, Rubicon Mlgno 2nd, No 4121. Price, \$125.

One superb, reg. Aberdeen-Angus bull calf

One extra fine bull calf, seven-eighths Angus and one-eighth Shorthorn. Price, \$50.

One fine, three-year-old family milch cow. Gentle and fresh to pail. Price, \$30.

One fine Shropshire Southdown (cross) Ram Lamb. Price, \$5.

Nine head beautiful, reg. Angora Goats; One Buck; Price, \$20. Six Does; Price, \$12 each. Two Buck Kids; Price, \$10 each. Lump price of nine goats, \$100.

Five aged reg. Dorset Ewes, bred to fine, reg. Dorset Buck. Price, \$8.

Address W. M. WATKINS & SONS,  
Cottage Valley Stock Farm,  
Randolph, Charlotte Co., Va.

## For Sale CHEAP.

One No. 2 Kemp Latest Improve Manure Spreader, practically new, and with dirt attachment. Price, \$55.

Address W. M. WATKINS & SONS,  
Randolph, Charlotte Co., Va.

## For Sale, CHEAP!

To prevent in-breeding. That grand Berkshire Boar, "Black Knight," registered, No. 60319. Weighs over 300 lbs., twenty two months old. Biltmore stock.

DALKEITH STOCK FARM, Wolf Trap, Va.

## FOR SALE.

## A FINE POLAND-CHINA BOAR

Sixteen months old. Eligible to registry. Price, \$15.00. Want to sell him to avoid in-breeding.

F. C. LOUHOFF, Yancey Mills, Va.

## FOR SALE,

BRED-IN-THE-PURPLE,

## BERKSHIRE PIGS,

Eight weeks old. Dam, best breeding in America, by imported sire. Only five left. Address

DUNTREATH FARMS, P. O. Box 666, Richmond, Va.

## WANTED...

A registered BERKSHIRE BOAR about a year old. Must be all right in every way.

H. T. PANCOAST, Purcellville, Va.

## WITH THE ADVERTISERS.

Miniborya Farm wants 20 Jersey heifers. Who can supply them? See advertisement.

"Farmer" is advertising to rent or buy a farm. Good chance for some one.

The Stratton Manufacturing Company is advertising the "Dandy" Bone Cutter. Useful machine for little money.

Half Shorthorn and half Red Poll bull calf offered for sale by W. S. Southall, Elkton, Va.

Berkshire Pigs, 8 weeks old, "bred in the purple," is the way the Duntreath Farms advertisement reads.

Forest Home Farm is advertising some splendid A. J. C. C. Jerseys and thoroughbred Berkshires of the Hood and Biltmore Farms strains. A new advertiser with us, and we bespeak for them the liberal patronage of our readers.

Wertz Nursery makes its usual Fall Announcement in this issue. Healthy and reliable stock is guaranteed.

The Lehman Heater, advertised elsewhere in this issue, will make driving pleasant and comfortable this winter if you will take the precaution to provide yourself with one. Look up the advertisement.

The Marvin-Smith Company, of Chicago, are with us again this season. Many of our readers have dealt with them, but to those who have not we would say, get their catalogue and prices before purchasing any implement elsewhere.

The Hercules Stump Puller is offered our readers in another column.

A Berkshire Boar is wanted! by Mr. H. T. Pancoast, of Purcellville, Va.

Yager's Liniment—for man and beast—is advertised in another column. It is for sale by all general stores and druggists.

F. C. Louhoff desires to dispose of a fine Poland China Boar to prevent in-breeding.

Gleason's Horse and Cattle Powder is guaranteed by its makers to keep stock in perfect condition if used according to directions. Look up the advertisement.

Hollybrook Farm is advertising some nice Berkshire pigs of both sexes.

Beagle Pups can be had of Dr. C. T. Smith, Jr., of Croxton, Va.

To those inquiring for Angora Goats, we refer to the advertisements of Jos. M. Neil, Jeremy Improvement Company, and E. W. Cole & Co., all in this number. There is also a brief bit of information regarding the Angora in another column.

Mr. W. P. Laird wishes to purchase 200 White Plymouth Rock chickens for breeding purposes. Refer to his advertisement.

W. C. W. is advertising for a car-load of calves. How many can you sell him?

Groceries and Feed at lowest possible prices at D. O'Sullivan's. He says that \$3 cash at his store is equivalent to \$5 spent elsewhere.

To make cows pay, use Sharples Cream Separators. Book "Business Dairying" & Cat. 305 free. W. Chester, Pa.

## HEREFORDS.



## BERKSHIRES.

Young stock for sale at all times. Information and terms upon application.  
EDW. G. BUTLER, ANNEFIELD FARMS,  
BRIGGS, CLARKE CO., VA.

## POLAND-CHINA

Pigs, eligible to registration, 8 weeks old, \$5.00.

## HEREFORDS,

Grade calves, either sex, \$25.00.  
J. C. GRAVES, Barboursville,  
Orange County, Va.

## FOR SALE.

TWO Very Choice BERKSHIRE BOARS,

SIX months old.  
Sired by "Lustre Topper III, dam "Horlene," Imported.

MINIBORYA FARM, Box 901, Kiehmood, Va.

## Berkshire Pigs

Thoroughbred stock, eligible to registry, six weeks old. Boar pigs, \$7.50 each; Sow pigs, \$6.00. Crated and delivered to express or freight depot.

HENRY W. WOOD,  
Hollybrook Farm, Richmond, Va.

## REGISTERED STOCK.

POLAND-CHINA Hogs;  
A lot of extra good boars ready for service; gilts bred, sows and pigs. Also

## SHROPSHIRE Rams and SHORTHORN Bull Calves

Prices right, and stock guaranteed as represented.

J. F. DURRETTE. - Birdwood, Albemarle Co., Va.

## .. ESSEX PIGS..

Some extra fine pigs, 8 to 10 weeks old, \$10 per pair. All stock offered is eligible to registry. Southdown sheep, spring lambs and yearling ewes for sale. Prices on application.

L. G. JONES, BETHANIA, N. C.

## THOROUGHbred

## O. I. C. PIGS

FOR SALE. Prices Right.  
F. S. MICHIE, CHARLOTTEVILLE, VA.

**ELLERSLIE FARM**

**Thoroughbred Horses  
and Shorthorn Cattle,  
Pure Southdown Sheep  
and Berkshire Pigs.**

FOR SALE. R. J. HANCOCK & SON,  
CHARLOTTESVILLE, VA.

**EAST RIVER SIDE****SHORTHORNS.**

Choice bull and heifer calves for sale.  
Will make price very low for next 60  
days.

JAMES F. CLEMMER, Summerdean, Va.

**DORSET SHEEP,  
FOR SALE,**

1 Ram, 2 years old; 4 Ewes, 18 months  
old; thoroughbred, eligible to registry.  
Also 16 good Southdown Ewes. A bar-  
gain to a quick buyer.

H. E. JOHNSON,

603 W. MAIN ST. - RICHMOND, VA.

**WOODLAND FARM DORSETS.**

Virginia has a good many of our Dorsets,  
and we note our old customers writing for  
more. That's because we send out only good  
ones.

Joseph E. and Willis O. Wing,  
Mechanicsburg, Ohio.

**300 HIGH-GRADE EWES**

Bred to PURE SHROPSHIRE BUCKS. For  
Sale in lots to suit purchasers, also 30  
RAMBOUILLET EWES and 40 SHORTHORN  
STEERS comlog 2 years old.  
Call on or address

JNO. MATHEWS, East Richmond, Va.

**THOROUGHBRED****SHROPSHIRE BUCKS**

For Sale. ONE IMPORTED BUCK,  
2 yrs. old, YEARLING and several  
LAMBS at farmers' prices.

Apply to MANAGER,

ANTRIM STOCK FARM, Warrenton, Va.

**ANGUS BULL CALVES**

Registered and unrecorded. Stock first-  
class, and breeding the best.

**SHROPSHIRE SHEEP**

First class yearling rams, and ewes of  
all ages. Several FINE FARMS for sale.

WARREN RICE, - Winchester, Va.

**JACKS  
FOR SALE.**

1 to 6 yrs. old. Fine Jacks a  
specialty. Write for  
what you want.

W. E. KNIGHT & CO.,  
Nashville, Tenn.

**DELOACH LOSES BUT LITTLE TIME.**

WITHIN TWO WEEKS AFTER FIRE DESTROYS  
ENTIRE PLANT WHISTLE BLOWS AGAIN.

With a commendable energy, inspired  
by a book full of orders, the DeLoach  
Mill Manufacturing Company of Atlanta,  
Ga., have lost but little time by the fire  
that destroyed their entire plant. With-  
in two weeks to the day after the fire the  
whistle blew in the foundry and the  
manufacture of saw-mills was begun with  
but little loss in daily capacity. The fire  
occurred on Friday, June 13, and to the  
superstitious that might have meant a  
bad omen, but to the DeLoach men it  
meant a little inconvenience, some ma-  
chinery orders by telegraph, and a plant  
of increased capacity.

The day after the fire work was begun  
on a temporary shed 60 x 400 feet, and as  
fast as the wood-working machines and  
machine shop tools ordered by wire began  
to arrive they were put in place. Within  
two or three days after the fire the Com-  
pany had completed arrangements with  
three machine shops in the city that  
would enable them to put all their men  
to work. They employ over two hundred  
men. Though the fire came in the dull  
season, they had about seventy-five per  
cent, more business on hand than ever  
before in the history of the Company,  
and in July they shipped about as much  
as they had ever shipped in the same  
month.

Their new plant will be another feather  
in the cap of Atlanta. Their capacity will  
be increased about one hundred per cent.  
Every tool placed in the new plant will  
be the most modern that can be secured,  
and electrically driven. The main build-  
ing will be 400 x 80, and around it will  
be grouped a power-house 34 x 137, a pat-  
tern storage-room 30 x 70, office building  
31 x 80.

The new plant will have a capacity of  
200 saw mills a month, besides the prod-  
ucts of the departments manufacturing  
planers, single mills, lath-mills, edgers,  
trimmers, grinding-mills, and water  
wheels.

Who said the South was slow?—The  
Southern Lumberman.

**INTERNATIONAL LIVE STOCK EX-  
POSITION.**

Apply to UNION STOCK YARDS, Chicago.

November 29th to December 6th, 1902.

At the Exposition this year the col-  
leges will be more fully represented by  
their students. The stock judging con-  
tests promise to be more lively than any  
yet held. The management of the Ex-  
position will make this a more attractive  
feature than it has been heretofore. In  
addition to the \$750 Spoor trophy, the  
beautiful "Bonheur" modeled bull, the  
Breeders' Gazette and John Clay, Jr., of  
Chicago, offer a special purse of \$250 each  
for the students' contests. Nothing can  
encourage the young men more than  
these contests when friendly rivalry of  
the true sportsman character prevails.  
As an educational feature, this contest  
possibly has no equal in regular school  
work.

**A FREE TRIAL PROPOSITION.**

We desire to call our readers' attention  
to the free trial offer made in another  
column by the Stratton Manufacturing  
Company, Erie, Pa, on the Dandy Bone  
Cutter. This standard machine has been  
before the public for nine years, and  
many of our subscribers have used it  
with perfect satisfaction; such as have  
not, have now the opportunity of trying  
one for fifteen days before they pay for  
it. The Company requires no deposit in  
advance. All you have to do is to try  
the Dandy, and then decide whether you  
want to keep it or not. We need not  
urge upon poultry-raisers the importance  
of cut green bone as a poultry food; it  
has the advantage of costing almost no-  
thing, and certainly it is one of the greatest  
egg producers in the world. It will pay you  
to "get a Dandy."

Of what trade is the sun?—He is a tan-  
ner.

**GO SOUTH.**

For full particulars  
write A. JEFFERS,  
Norfolk, Va.

**ARCADIA FARM.**

**COLLIE PUPS, BERKSHIRE PIGS and  
INDIAN GAME FOWLS.**

FOR SALE.

E. M. BALL, - - - EMORY, VA.

**RED POLL BULL CALF  
FOR SALE!**

One six months old grade Red Poll Bull  
Calf. Full half Red Poll and one-half Short-  
horn. A pe feet picture; dark red color, and  
as fine calf and form as I ever saw or raised.  
At a bargain.

W. S. SOUTHALL, ELKTON, VA.

**"Feeds and Feeding"**

Prof. Henry's Great Book for  
Farmers and Stockmen.

Delivered anywhere for - - - \$2.00  
With the SOUTHERN PLANTER, 2.25

**"Crop Growing  
and Crop Feeding"**

BY PROF. W. F. MASSEY.

383 Pp. Cloth, \$1.00; Paper, 60c.

We offer this splendid work in con-  
nection with the Southern Planter  
at the following prices:

Southern Planter and Cloth  
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Southern Planter and Paper  
Bound Volume, 90c.

Old or new subscriptions.

## BILTMORE FARMS, - BILTMORE, N. C.

### Headquarters for GOLDEN LAD JERSEYS,

Also get of TREVARTH and GEN. MARIGOLD. ❁ ❁ ❁

**GOLDEN LAD'S SUCCESSOR**, First and sweepstakes over all at the Pan-American Exposition, the champion JERSEY BULL OF AMERICA, and out of Golden Ora, our great prize-winning cow, both born and developed on these Farms, is among our service bulls.

Biltmore Jerseys are a combination of large and persistent milking qualities with an individuality that wins in the show ring.

**SPECIALTY.** Write for descriptive circular of the best lot of young bull calves ever offered, both for breeding and individuality. They are by noted sires and out of large and tested selected dams. Many of these calves are fit to show and win in any company.



### BILTMORE POULTRY YARDS.



**SPECIALTY.** Write for descriptive circular of eggs from our prize-winning pens. Over 50 yards to select from, made up of the winners at the leading shows for the last two seasons. If you want winners you must breed from winners.

### Headquarters for the best IMPORTED ENGLISH BERKSHIRES.

APPLY TO BILTMORE FARMS, BILTMORE, N. C.

# ANGORA GOATS

They are the most profitable stock that can be handled on the farm. They are the only animals on which the fleece, flesh and work are all valuable. They are profitable alone in their work on clearing land, and in addition to their value as land clearers, their fleece is worth more than that of the sheep, and their mutton is now selling on the leading markets fully equal to, and in some instances at an advance over sheep mutton. They are easily managed, very hardy, and any ordinary plank, wire, hedge or eight rail fence will turn them.



THEY ARE THE COMING STOCK IN THE UNITED STATES. THEY THRIVE AND STAY FAT WHERE OTHER ANIMALS WOULD STARVE. YOU CAN RAISE GOATS CHEAPER THAN CHICKENS. EVERY FARMER HAVING BRUSH LAND Cannot afford to clear it in any way than by the **ANGORA GOAT**. Utilize the brush and weeds, convert them into valuable fleeces of Mohair, mutton and the other products. Write to the Bureau of Animal Industry, Washington, D. C., and ask them to send you Farmers' Bulletin No. 137, and see what the Agricultural Department has to say about the industry. Try a flock of these animals and learn their value. I can furnish you registered and non registered stock, pairs, trios, or car lots. I have just arranged for the sale of some 3,000 head, and in order to dispose of them quickly will give you a bargain. If interested, write or call on me.

**JOS. M. NEIL**, Office No. 16, Arcade Building, CHARLESTON, W. VA.

ABOUT ANGORAS.

Probably the average price paid for mohair during the past season was 25 cents per pound. The product of the lower crosses, which contain a large percentage of kemp, brings a low price (10 or 15 cents), while there were some fleeces that brought 40 cents. There is not a large quantity of this latter quality of hair produced in this country, for the reason that the breeders have not given the matter proper attention. There is a great demand for the better hair, while the lower grades, which enter into the manufacture of carpets and horse blankets, find direct competition in wool.

Prices for good does range from \$10 to \$25 at this time. One breeder in the East sold fifty head at \$25 each. Twenty-four sold at auction at Kansas City in October last year at \$17 each. Bucks, like the males of all domestic animals, bring varying prices, which have ranged during the past year from \$20 for a fairly good kid to \$100 for animals two or three years old. It is not a rare occurrence, however, for a buck to sell for several hundred dollars. For instance, the sweepstakes prize buck at the Kansas City show sold for \$1,050, and the buck who took second prize in that contest brought \$150.

It is impossible to go into the Southwest, the principal source of present supply, and purchase goats at lower figures than those named, but many of them are not high grades. Those which are high grade become expensive when expressage or freight is paid to distant points.

BURNING OUR PURSE-STRING AT BOTH ENDS.

THIS IS TRUE OF THE ENTIRE SOUTH.

The little town of Pawtucket, in Rhode Island, has one hundred and thirty-one inventors—one hundred and thirty-one men and boys who have patented that number of useful articles and appliances, says the *North Mississippi Herald*.

Rhode Island has a compulsory school law. A man is compelled by that law to educate his children.

In raw material and natural resources, Rhode Island is poor beyond compare with Mississippi. Yet with her manner of education her people have turned to manufacture and invention, and that section is now the richest spot on the continent. Mississippi spends quite as much of her comparative wealth on education as Rhode Island, yet I doubt whether there are one hundred and thirty-one inventors in the whole State. Every town and city in the State, however, has an over-supply of brainy young fellows who have been crowded into the professions—law, dentistry, the ministry, etc. Only a very small per cent. of these have their heads above the level. Many of them will live and die failures. It is not their fault. They have the brains, the energy, the muscle and the determination to do, but there is little left when his brother lawyers or doctors get their share. So in the end he becomes listless and contented with a bare livelihood—a victim of misapplied education.

Our lawmakers are largely to blame for this state of affairs. They refused to

**HEREFORDS**

**Registered Herefords**

YOUNG BULLS AND HEIFERS  
NOT AKIN FOR SALE BY  
STONEHURST FRUIT & STOCK FARM,  
Union Mills, Virginia.

**CASTALIA HEREFORDS...**

The breeding cows and herd bulls at "Castalia" have been selected with one aim: THE BEST, REGARDLESS TO COST. Herd headed by the \$3,000.00 imported SALISBURY, assisted by LARS, JR. I have now for sale a very fine bunch of bull calves by these bulls, also a few females. Visitors are welcome and met at station. Write your needs.



MURRAY BOOCK, -

Keswick, Va.

**BACON HALL FARM.**

**HEREFORD REGISTERED CATTLE**

"TOP" BREEDING, CALVES NOT AKIN.

MOTTO—Satisfaction or no Sale.

E. M. GILLET & SON,

Verona, Balto. Co., Md.

**C. C. Taliaferro,**  
NASONS,  
VA.  
1902

**"MOUNT SHARON HEREFORD CATTLE STOCK FARM."**

**REG. AND GRAD. HEREFORD CATTLE**  
**REG. AND GRAD. SHROPSHIRE SHEEP**  
**REG. AND GRAD. POLAND-CHINA PIGS.**

**BRONZE TURKEYS** & **MUSCOVY DUCKS**



NOW OFFERS FOR SALE

**HEREFORD CATTLE.**—Calves, entitled to registration, \$75 to \$100. Grade Calves by "Sir Edward" \$25 to \$40.

**SHROPSHIRE SHEEP.**—Bucks, one year old and over, \$15 to \$20. Buck Lambs, July delivery, \$10, and \$12. Ewe Lambs, July delivery, \$3, and \$10.

**POLAND-CHINA HOGS.**—Pigs, six weeks old, \$5. Pigs, two or three months old, \$7.50. Pigs, five months and over, \$15 to \$20.

**M. BRONZE TURKEYS.**—Toms, \$1. Hens, \$3. Eggs, per sitting of 12, when in season, \$4.

**MUSCOVY DUCKS.**—Pure White Drakes, \$1.25. Pure White Ducks, \$1. Pairs, \$2.25; trios, \$3. **BARRED PLYMOUTH ROCKS.**

**ROUEN GESE.**—Ganders, \$2.50. Geese, \$2.50. Eggs, per sitting, \$3.00

**WILLIAM L. JR.,** No. 21658, half brother of Axtell, will serve a limited number of mares for \$25 the season. Mares boarded at lowest figures per month.

**Leather Life**  
(TRADE MARK REGISTERED)

Prolongs the wear of **HARNESS, SHOES, Etc.**, fully 100 per cent. Save half the yearly Shoe and Harness expense. Guaranteed to do all we claim or money refunded. Write **JOHN MFG. CO.,** Box 15, Hurricane, W. Va.

see and are still blind to future possibilities. And parents are to blame, too, for not taking up arms against the system, when each year has but added to their further discontent. The same train that carried their boy to New York or Chicago for the completion of his education as a professional man, carried also an order for a wagon from Ohio, a buggy from Indiana, a dress from New York, or a watch from Connecticut, thus lighting both ends of the purse-string at the same time.

Why not teach a boy to make the things that we buy elsewhere?

A DIVIDEND IN PLEASURE.

The primary idea of a greenhouse is simply a building or room where summer can be kept prisoner over winter. It need not be elaborate in any sense. The plainest structure that is built sufficiently snug to keep heat in and cold out, and affords free entrance to light and sunshine, will grow plants just as well as the most ornate building—better, perhaps, for many greenhouses defeat some of the objects aimed at in their construction by excess of ornament, which interferes with light and ease of management. I know of one amateur's greenhouse which is really nothing more than a shed whose board roof has been removed and one of glass substituted, but this plain little building has in it plants which would do credit to the most elaborate conservatory equipped with every modern convenience. The owner of this cheap building picked up here and there some of the material from which he constructed it, buying it as he could afford to do so, and storing it away until he had enough to warrant him in beginning his house. He built it himself, working "between whiles." It is not ornamental from without, but those who go into it forget all about the building in their admiration for the beautiful plants it contains. You could not make its owner believe that the money that went into the house could have been invested in any other way that would have "paid" half so well. No dividends of dollars and cents have been declared on his investment, but he has realized as much pleasure from it as, I presume, his millions ever afforded Andrew Carnegie.—*EBEN E. REXFORD, in October Lippincott's.*

The Santa Fe "New Mexican" says: "The skin of the Angora goat is now coming into use also as a fur robe. When the hair is of one month's growth it can hardly be distinguished from the astrakhan if dyed black. Nearly all the buggy robes that are now sold as wild animal fur are goatskins dyed, and the so-called monkeyskin muffs and cloaks are only straight haired goatskins properly prepared. One of the most profitable uses that the skin of the Angora goat is put to is that of making trimming, which commands a price a yard equivalent to fifteen dollars for a single hide."

**RUPTURE CURED, TRUSS FREE!**  
No cure, no pay. ALEX. SPEIRS, Box 844, Westbrook, Maine.

**THIS LINIMENT SHOULD BE KEPT IN EVERY HOUSE.**

**YAGER'S**  
**GREEN**  
 ADDING TO SPRAIN  
 TRADE MARK  
**HYPOFORM**  
**LINIMENT**  
 FOR  
**MAN OR BEAST**  
**POPULAR**  
 FOR ITS SOOTHING & EFFECT  
**QUICK HEALING POWERS.**  
 IN THE TREATMENT OF DISEASES REQUIRING  
 AN EFFICACIOUS EXTERNAL REMEDY.  
**BEWARE OF IMITATIONS.**  
 PREPARED ONLY BY  
**GILBERT BROS. & CO.**  
 SOLE PROPRIETORS  
**BALTIMORE, M.D.**  
 U.S.A.  
 REGISTERED U.S. PATENT OFFICE

**ASK YOUR DEALER FOR YAGER'S LINIMENT. - 25 Cents.**

EXACT SIZE OF BOTTLE.  
**TAKE NO SUBSTITUTE.**

## SOME CHOICE PICKLE RECEIPTS.

## CHOPPED PICKLE.

2 gallons of green tomatoes.  
1 large head of cabbage, cut up as if for slaw.

1 dozen large onions.  
1 dozen large cucumbers.  
2 dozen green peppers.  
Chop up the tomatoes, cucumbers, onions and peppers, and mix them with the cabbage, adding two teaspoonfuls of salt to them. Put these ingredients in a bag, and let them hang all night with a vessel underneath to catch the drippings. By the next day, these ingredients will be drained dry and ready for pickling. Put them in a kettle, and cover them with strong cider vinegar. Flavor with half pound of white mustard seed, a small box of mustard, 1 ounce of turmeric, 2 ounces celery seed, a coffee-cup full of garlic, 3 pounds of brown sugar. Boil till the ingredients become soft, and the vinegar imbued with the flavor of the spices. Mrs. C. T. P.

## GREEN TOMATO SOY.

(An Old Virginia Receipt.)

1½ gallons green tomatoes.  
1 gallon cabbage.  
1 quart of onions.  
1 pint of green peppers.  
1½ gallons of vinegar.  
3 pounds brown sugar.  
3 tablespoonfuls ground allspice.  
2 tablespoonfuls ground cloves.  
4 tablespoonfuls of ground cinnamon.  
4 tablespoonfuls celery seed.  
½ box of mustard.  
½ pound white mustard seed.  
1 pound turmeric in muslin bag.  
1 pint salad oil.  
1 pint French mustard.  
2 tablespoonfuls of ground black pepper. Slice tomatoes, cabbage, onions and peppers, sprinkle with salt, and drain off the juice before pickling. Boil them in the vinegar, with the spices, till thoroughly done. Do not add the French mustard or salad oil till the pickle is cold.

## SWEET PEACH PICKLE.

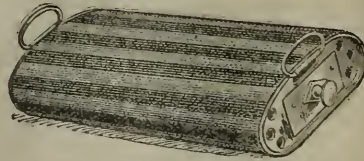
Cling-stone peaches are best for pickling, and they should be used before they are fully ripe. Allow 3 pounds of white sugar to 5 pounds of peaches. Peel them and sprinkle the sugar in layers. Put them on in a porcelain kettle as soon as they have finished peeling them, as they will turn dark if they stand. Add a quart of strong vinegar, an ounce of mace, and an ounce of ground cinnamon. Let them come slowly to a boil. Then take out the peaches with a perforated ekimmer, and spread them on flat dishes. Let the syrup continue to boil till it thickens. Then put the peaches in jars and cover well with the syrup.

## DAMSON PICKLE.

Damsons also should be pickled before they are fully ripe. Frick each one with a coarse nettle, so the vinegar can penetrate it. Allow 4 pounds of sugar to 7 pounds of damsons, sprinkling the sugar in layers. Add a quart of vinegar, 1 ounce of mace, and one of cloves. Boil for five minutes, then lay the damsons on

## YOUR CARRIAGE OR WAGON IS INCOMPLETE

WITHOUT A  
CELEBRATED



**LEHMAN..  
HEATER.**

Cost for Heating, Two Cents Per Day.  
Over 175,000 in Actual Use.

...Sold by...  
All Carriage, Harness and Hardware Dealers.  
SALES ANNUALLY OVER 10,000.

For booklet or other information address

LEHMAN BROTHERS, Mfrs.,  
10 BOND ST., NEW YORK.

JAMES W. ERRINGER,  
Gen'l Western Sales Art.,  
297 Wabash Ave., CHICAGO, ILL.

When writing please mention this paper.

297 Wabash Ave., CHICAGO, ILL.

## HOLSTEINS and DORSETS.

Two young cows, one to be fresh in December, other in the spring. Two heifers, one year old. One bull calf, four months old.

## FOUR DORSET RAMS

Rams sired by an Imported Buck. Address

T. O. SANDY, *Burkeville, Virginia.*

Norfolk and Western and Southern R. R.

POLAND-  
CHINAS.

TECUMSEH G, 49283.

I have a limited number of pigs by my fine boars, "TECUMSEH G," 49283, and "MONARCH," 48705, and can furnish pairs not akin or related to those previously purchased. Young boars and sows of all ages. Send to headquarters and get the best from the oldest and largest herd of Poland-Chinas in this State at one-half Western prices. Address J. B. GRAY, *Fredericksburg, Va.*

## SALE OF HORSES and JERSEY CATTLE.

The 29th Annual Sale at Ewell Farm, Spring Hill, Tenn.,

**FRIDAY, OCTOBER 31st, 1902.**

The Day Following the Close of the Trots at Memphis.

50 HEAD OF HORSES, including drafts from the studs at Ewell Farm, Cleburne Farm (M. C. Campbell, Prop.), the Hermitage Stud, (Wm. Gerst Prop.), and others, yearlings, 2 yr.-olds, 3-yr.-olds and over, representing the get of Brown Hal, 2:12½; McEwen, 2:18½; Actonward, 2:15½; Constantine, 2:12½, from Tennessee Wilkes, 2:27, etc., both trotters and pacers. Also two handsome saddle stallions.

30 HEAD OF JERSEYS of the best strains of imp. and Tennessee-bred cattle. Catalogue ready October 10th, 1902.

Apply to GEO. CAMPBELL BROWN or M. C. CAMPBELL, Spring Hill, Tenn.

dishes, and boil the syrup till thick. The same directions will answer for apple or pear pickle.

#### CUCUMBER CATSUP.

Cucumber catsup is more easily made than any other, inasmuch as it does not require cooking. Peel and grate up the cucumbers, put them in a bag and squeeze out the juice thoroughly. Then flavor with strong vinegar, salt and black pepper, in the grain, and put in bottles. This is a peculiarly nice condiment to use with fish.

#### GREEN TOMATO SAUCE.

In the late autumn, when you find your tomatoes are threatened with frost, it is a good plan to utilize the green ones in making tomato sauce. I have already given a receipt (obtained from a noted housekeeper), for an elaborate and expensive green tomato soy, but I will now give a cheap and simple one: Cut up your green tomatoes, sprinkle them with salt, let them stand in a bag and drain all night. Make them up with a sauce the next day, with strong vinegar, flavored with both black and red pepper and a little cinnamon and ginger and sugar to the taste. If you have any horse-radish, it will improve the sauce.

MARY WASHINGTON.

#### SHELburne's WAREHOUSE.

In calling attention to the advertisement of Silas Shelburne & Son, we would say that Richmond has such advantages that they cannot be ignored by farmers who wish the best prices for their tobacco.

The large stemmeries of the American Tobacco Company, the extensive buildings recently acquired by the Imperial Company, the buyers for the Italian, Austrian, Spanish and French Governments, the representatives of the American Snuff Company, and 35 buyers for independent factories and brokers, certainly gives Richmond the strongest and largest number of buyers to be found on any tobacco market in the world.

Richmond offers such facilities as cheap freight rates, low rate money and insurance, and a large supply of skilled labor, as to enable buyers to give the advantage to Richmond on their purchases. Look up the advertisement of the above firm, and correspond with them before shipping your tobacco.

Mr. W. J. Brogden, well known to shippers, is with this firm.

#### WASHINGTON POULTRY, PIGEON AND PET STOCK SHOW.

Mr. Geo. E. Howard, Secretary of the above Association, advises us that they will hold their Annual Show at Washington, D. C., on December 9th-13th inclusive.

The management is putting forth its best efforts to make this exhibition the best one ever held, and the indications are that they will succeed. Mr. Howard's address is Box 54, Station A, Washington, D. C.

A Neat BINDER for your back numbers can be had for 25 cents. Address the Business Office.

**IT RIDES ON -**



**ITS OWN WHEELS**

**NO DULL DISCS!**

Hitch your team to it—just the same as to any vehicle—throw over the levers and ride anywhere. No loading on wagon or sled. *Cultivates all the ground.* Independent Discs. Depth secured by pressure. Angle of Discs does not change. Made strong. Does better work and more of it than any other Harrow ever made.

**A BOY DOES A MAN'S WORK  
WITH A SUPERIOR DISC HARROW.**

Our new book No. 16 tells all about it. IT'S FREE.

**SUPERIOR DRILL CO.  
SPRINGFIELD, OHIO.**

**DISC HARROW.**

## A. J. C. C. JERSEYS, BERKSHIRE SWINE.

### A FEW BULL CALVES FOR SALE

From cows making 300 to 360 pounds butter-fat each milking period. Milk is weighed EVERY milking and tested frequently, so we KNOW what we say.

### BERKSHIRES

Of the best Hood Farm and Biltmore strains.

Southern R. R.

Two especially fine boar pigs for sale at present.

**FOREST HOME FARM. - - - PURCELLVILLE, VA.**

## DEVON COWS....

Ten young DEVON COWS, thoroughbreds and high-grades with Calves by their sides. Want to sell them during this month. Can be seen if day's notice is given. Also JERSEY CATTLE and several YOUNG GUERNSEY BULLS. BERKSHIRE PIGS not akin. Several young BOARS ready for service.

**M. B. ROWE & CO., Fredericksburg, Va.**

## HIS "KNITTIN' WORK.

Aunt Alvira Fifer was what her neighbors called a "regular driver." Possessed of untiring energy and unflinching strength herself, she made little allowance for idleness on the part of any one, and she declared that she could "put up with a mean man easier than with a lazy one."

Aunt Alvira's husband, Uncle Ethan, was a small, wizened, weak-looking man, whom Aunt Alvira declared to be "mighty wiry if he did look so spindlin'."

One day a summer boarder, who changed to be sojourning in a farmhouse near the Fifer farm, wandered over to the little brown farmhouse and engaged Aunt Alvira in conversation. The visitor sat on the kitchen doorstep and took note of the enormous quantity of stove-wood piled up in the back yard and overflowing from the great wood-shed. The whole yard was strewn with stove-wood, and the caller estimated that there were not less than twenty-five cords of it.

"What an enormous quantity of stove-wood you have," he said to Aunt Fifer.

"Yes, there is considerable of it," she replied. "I callate on sellin' most of it in the fall."

"Who cut all of it?"

"Oh, Ethan did it as sort o' knittin'-work. I think it a good thing for a man to have some sort o' knittin' work to do when he's sort o' restin', an' that wood-pile has been Ethan's knittin'-work."—MORRIS WADE, in *October Lippincott's Magazine*.

## BOWMONT FARMS.

We invite the attention of our readers to the advertisement of The Bowmont Farms, Salem, Va., elsewhere in this issue. Their offering this month consists of "gilt-edged" family cows from high-testing St. Lamberts, Indian Game, White Wyandotte, and White Leghorn fowls. There is one fact in connection with Bowmont Farm—of which Virginians should be proud—and that is, these farms are regarded as the home of St. Lamberts in America. More high-testing cows of this strain can be found here than anywhere else on the continent.

## EWEELL FARM PACERS AND TROTTERS.

Mr. George Campbell Brown, of Spring Hill Farm, the owner of this farm, advertises in this issue a sale of fifty head of horses consisting of Trotters, Pacers, and Saddle Stallions, and thirty head of Jerseys, both imported and Tennessee bred, to be held at Eweell Farm on the 31st of October. This sale will afford an opportunity to lovers of horses to obtain some as finely bred horses as are to be found in the South. The stallions in use at the farm are all out of great brood mares, and of the 18 mares the dams of 12 are in the great brood mare table.

Send to Mr. Brown for catalogue and further information.

Mention the *Southern Planter* when writing advertisers.

## GILT-EDGED FAMILY COWS

Bred from high-testing Jersey Cows a specialty.

We have more high-testing St. Lambert Cows than can be found in any herd in America.

**INDIAN GAMES**—The king of table fowls.

**WHITE WYANDOTTES**—The best general-purpose fowl.

**WHITE LEGHORNS**—The greatest of all egg producers.

Address

**BOWMONT FARMS, SALEM, VA.**

## CISMONT DORSETS..

CISMONT STOCK FARM offers well developed young Dorsets of the best blood of England and America.

Prices reasonable.

G. S. LINDENKOHL, Keswick, Albemarle Co., Va.

## SIR JOHN BULL'S PIGS.

All testify to his prepotency, nor is

## UNCLE SAM

Unlike him in strong points of transmission or reproduction.



Every pig I ship has individual merit, aside from the purest English strain of LARGE BERKSHIRES that I could import from the most famous breeder in England.

LET ME HAVE YOUR ORDERS PROMPTLY FOR FALL SHIPMENT, at Farmers' Prices.

HUNTING DOGS and PUPS FOR SALE.

THOS. S. WHITE, Fassifern Stock Farm, Lexington, Va.

\* VIRGINIA DIVISION. \*

## Farmers Mutual Benefit Association.

A Fire Insurance Association, chartered by the State for the farmers of Virginia, under an amended and well protected plan.

Insures, against Fire and Lightning, only country property—no stores or unsafe risks. Average cost per year for three years has been \$3.66 $\frac{1}{2}$  per \$1000, including dwellings, barns, produce, &c.,—about one-third the usual cost of insurance to farmers. Amount of property insured \$325,000. Estimated security in real and other estate, \$600,000.

For further information, address, MENTION THIS JOURNAL.

CHAS. N. FRIEND, General Agent, CHESTER, VIRGINIA.

URY FARM  
BREEDER OF

## HOLSTEIN-FRIESIAN Cattle.

Royally Bred and Individually as Good as their Breeding.

OFFERINGS FOR THIS MONTH—15 young bulls, from 1 to 18 mos. old. Service bulls, Ury Alwina Count Paul DeKol 2236, Count DeKol Meebthilde 2284, DeKol 2d Butter Boy 3d, No. 2, 22289. Parties desiring fine, young bulls by above sires and from elegantly bred dams, would do well to write us.

THOS. FASSITT & SONS, SYLMAR, MD.

**A POINT IN FAITH-HEALING.**

Looking broadly at this vogue of healing faiths and healing individuals, one cannot help being affected by a sense of pathos. It is the old cry of humanity for an escape from physical ill; for, as Bagehot says, and many a philosopher and poet has had occasion to say the same, "though the costume and circumstances of life change, the human heart does not." Dr. Buckley gives certain reasons for the apparent, and possibly actual, success of some of the curers. There is another reason, however, and that is that people always recover from every attack of illness—except the last. Suppose a man has ten illnesses, and dies, as he surely will, with this last one, he has then been "cured," either by doctoring or by "faith-cure" or "mind-cure" or no "cure," just nine times. The failure is then only one in ten! As for the final, fatal illness, that always is accounted for satisfactorily to those who are the faithful of the faithful.—The Century for October (editorial).

*Editor Southern Planter :*

Our State Fair is over, splendid weather, good crowds, &c.

Filston Farm Jerseys won 2d in bull, 1st and 2d in cows, 1st and 2d in young bulls. 2d in 2 year cow, 1st in "American Special."

In Berkshires, we won 6 Firsts and 2 seconds. Never had better specimens of the large Berkshire at the Fairs. Imported "Storm King" easily weighed 750 pounds, and with "Straton Lizzie" and "Highclere X," both over 500 pounds each, our show attracted much attention.

Can report a very pleasant sale of Jerseys in Virginia. W. McC. Ramsey buys one bull and six females; also sold G. W. Linite, of New Jersey, 1st prize bull. Berkshire sales continue good.

W. McC Ramsey—1 boar, 15 sows.

W. F. Jackson, of Maryland—1 bred sow.

John Link, of Maryland—1 boar, 1 sow.

Patrick Rodgers, of Maryland—1 boar, 5 sows.

T. M. Carroll, of Maryland—1 boar, 3 sows.

Chas. H. Price, of Maryland—"Lady Leeduke"

E. K. McConkey, of Pennsylvania—"King Lee VI."

Yours truly,

E. M. GILLET,  
Glencoe, Md. Sales Department.

**SEIZING THE OPPORTUNITY.**

"Always," advises the pompous person who has accumulated several millions, "always say, 'I will.' Never allow yourself to be dismayed by the outlook. Overcome the outlook. That's the way to succeed."

"One, then," comments the poor person to whom he addresses this homily, "should always say, 'I will!'"

"Yes, sir."

"And you always say it?"

"I do."

"Will you lend me half a million to get my airship in running order?"—W. D. Neabit, in *October Lippincott's Magazine*.



**CAUTION!**

**YOU ARE HEREBY NOTIFIED** that after October 1st we are expecting a drop in the thermometer, and it will continue to drop until we get cold weather followed by snow storms.

**IT WILL, THEREFORE, BE WISE** if you prepare yourself with the necessary articles for comfort.

**ONE OF OUR HEATERS** will protect you during the intense cold days, and the cost of it is not much.

**WE HAVE THEM** from \$1.00 up, and if you will write us we will be will be pleased to send you cuts of them.

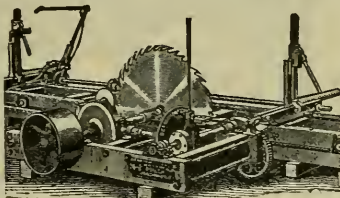
We also sell the "**CELEBRATED FITZ LEE**" stove at factory prices.

Our line of **FURNITURE** for this season is complete in every way, and prices positively the lowest.

**M. ROSENBLOOM & SON**, The Mail Order House,  
1536 E. Main Street, Adjoining New Main Street Depot, RICHMOND, VA.

Your mail orders will receive prompt attention.

All goods properly packed for shipment.



**Farmers' \$125 Saw Mill.**

Cuts 2000 ft. lumber a day with only 4 h. p.

Our large, handsome catalogue tells all about the famous DeLoach Variable Friction Feed Saw Mills, 4 to 100 h. p., \$125 up. DeLoach Saw Mill Machinery, Planers, Shingle, Lath and Corn Mills, Water Wheels, etc. Write for catalogue and price f. o. b. your depot. DELOACH MILL MFG. CO., Box 800, Atlanta, Ga. (Branch, 120 Liberty St., New York.)

**IT STANDS FOR BIG CROPS.**

For uniform drilling of grains, any kind and any amount per acre for grass seed sowing and even distribution of lumpy, damp or dry fertilizers, nothing equals the

**SPANGLER Low-Down Drill**

Grain and Fertilizer  
Positive force feed for fertilizer, grain and grass seed. Drills any depth, perfect regulation, low steel or wood frame, high wheels with broad tires. Easy to fill and operate. Light draft. Investigate before buying. Write for free catalogue. SPANGLER MFG. CO., 501 QUEEN STREET, YORK, PA.

STANDARD EVERYWHERE. FULLY WARRANTED.



**THE OAKS. 6 SHORTHORN BULL CALVES,**

(Eligible to registry) FOR SALE; Also 4 Grades.

100 high-grade SHROPSHIRE EWES; good ones, and some of them bred. I never offered a better lot of stock.

**B. B. BUCHANAN, BEDFORD CITY, VA.**

**BALE YOUR OWN HAY,**

Millet, Sorghum, Pea Vines, etc., with a **LITTLE GIANT**, the only perfected high capacity hand power **PRESS** on the market.

Finishes a perfect bale of standard size, either light or heavy. Write for descriptive circulars.

Little Giant Hay Press Co., Dallas, Tex.

## FUNNY ADVERTISEMENTS.

Curiously worded advertisements, which are funny without intent, are common in the London papers it would seem. A contemporary recently offered a prize, says the *Manchester Guardian*, for the best collection of such announcements, and the following is the result:

"Annual sale now on. Don't go elsewhere to be cheated—come in here."

"A lady wants to sell her piano, as she is going abroad in a strong iron frame."

"For sale—A piano forte, the property of a musician with carved legs."

"Wanted—A room by two gentlemen about 30 feet long and 20 feet broad."

"Wanted—By a respectable girl, her passage to New York; willing to take care of two children and a good sailor."

"Mr. Brown, furrier, begs to announce that he will make up gowns, capes, etc., for ladies out of their own skins."

"Bull dogs for sale; will eat anything; very fond of children."

"Wanted—A boy to be partly outside and partly behind the counter."

"Wanted—For summer, a cottage for a small family with good drainage."

"Lost—Near Highgate Archway, an umbrella belonging to a gentleman with a bent rib and a bone handle."

"Widow in comfortable circumstances wishes to marry two sons."

"To be disposed of, a mail phaeton, the property of a gentleman with a moveable headpiece as good as new."

The last is a copy of an inscription painted on a board which adorned a fence in Kent:

"Notis—If any man's or woman's cove gets into these here otes, his or her tail will be cut off as the case may be."

There was a king once who upbraided his couriers for paying excessive attention to ceremony. "Your Majesty," replied a courier, "forgets that you yourself are only a ceremony." This is practically the text of the article which W. T. Stead contributes to the *Cosmopolitan* for October on the real significance of the Coronation. Mr. Stead throws an interesting light on the King's habits of life and mental attitude toward his subjects, and compares the state of democracy in Great Britain with the democracy of the United States. Even those who do not altogether agree with Mr. Stead's conclusions always find him interesting as a writer, and "The Coronation and its Significance" is no exception to the rule.

"What a Father Can Do for His Son" is the title of one of the most instructive articles which has ever appeared in a magazine. Prof. Harry Thurston Peck discusses this subject in the October *Cosmopolitan* in a way to be entertaining to fathers, mothers and sons. The essay will have a wide range of readers.

## BERKSHIRE PIGS..

I have for sale 40 thoroughbred Berkshire Pigs, from 4 to 6 weeks old. These are fine pigs; will sell in lots to suit. Prices cheap. Address

H. SWINEFORD, - Richmond, Va.

## Uncle Sam says it's all right

Uncle Sam, in the person of ten of his government officials, is always in charge of every department of our distillery. During the entire process of distillation, after the whiskey is stored in barrels in our warehouses, during the seven years it remains there, from the very grain we buy to the whiskey you get, Uncle Sam is constantly on the watch. We dare not take a gallon of our own whiskey from our own warehouse unless he says it's all right. And when he does say so, that whiskey goes direct to you, with all its original strength, richness and flavor, carrying a UNITED STATES REGISTERED DISTILLER'S GUARANTEE of PURITY and AGE, and saving the dealers' enormous profits. That's why HAYNER WHISKEY is the best for medicinal purposes. That's why it is preferred for other uses. That's why we have over a quarter of a million satisfied customers. That's why YOU should try it. Your money back if you're not satisfied.

### Direct from our distillery to YOU

Saves Dealers' Profits! Prevents Adulteration!

# HAYNER WHISKEY

PURE SEVEN-YEAR-OLD RYE

4 FULL QUARTS \$3.20 EXPRESS PREPAID

We will send you FOUR FULL QUART BOTTLES of HAYNER'S SEVEN-YEAR-OLD RYE for \$3.20, and we will pay the express charges. Try it and if you don't find it all right and as good as you ever used or can buy from anybody else at any price, send it back at our expense, and your \$3.20 will be returned to you by next mail. Just think that offer over. How could it be fairer? If you are not perfectly satisfied, you are not out a cent. Better let us send you a trial order. If you don't want four quarts yourself, get a friend to join you. We ship in a plain sealed case, no marks to show what's inside.

Orders for Ariz., Cal., Col., Idaho, Mont., Nev., N. Mex., Ore., Utah, Wash. or Wyo. must be on the basis of 4 Quarts for \$4.00 by Express Prepaid or 20 Quarts for \$16.00 by Freight Prepaid.

Write our nearest office and do it NOW.

### THE HAYNER DISTILLING COMPANY

DAYTON, OHIO      ST. LOUIS, MO.      ST. PAUL, MINN.

33      DISTILLERY, TROY, O.      ESTABLISHED 1866



## Japan Plums

And all other desirable standard and new varieties of PLUMS, APPLE, PEACH, PEAR and ORNAMENTAL TREES, SHRUBS, ROSES, Etc.

HEADQUARTERS FOR TENNESSEE PROLIFIC STRAWBERRY.

The Most Reliable Variety Ever Grown in the South.

Three hundred and fifty acres under cultivation. Write us if you contemplate planting. Catalogue free.

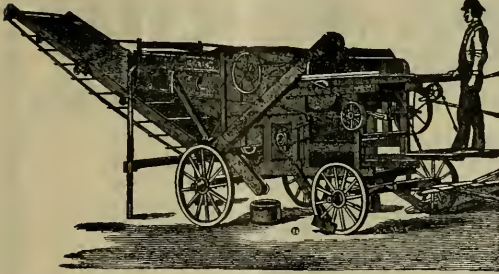
AGENTS WANTED. WRITE FOR TERMS.

### W. T. HOOD & CO.

OLD DOMINION NURSERY.

RICHMOND, VA.

The most popular Machine in use for Peanut Picking and Grain Threshing are the



**HEEBNER'S,  
LITTLE GIANT AND  
PENNSYLVANIA**

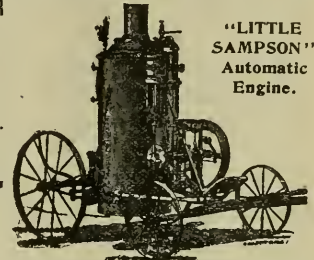
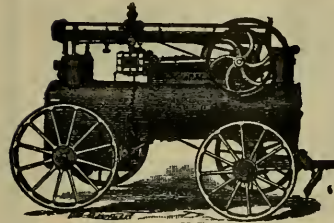
Machines, and they have splendid improvements for 1902. They are built in first-class manner, and are strong and durable. The price is within the reach of all. We guarantee them to do the work satisfactorily. We will mail catalogue and testimonials, and quote prices on application.

**RUBBER, LEATHER  
and  
GANDY BELTING.**

**FRICK'S "ECLIPSE"  
ENGINES and BOILERS.**

**ERIE ENGINES and BOILERS.**

THE CELEBRATED  
**"CHASE" SAW MILLS**  
and  
**"DE LOACH" MACHINERY.**



**"LITTLE  
SAMPSON"  
Automatic  
Engine.**

This cut shows our 5 and 7 h.p. "Little Sampson" Vertical Automatic Engine, for running threshers, peanut pickers, cutting feed, sawing wood, etc.  
Larger size also furnished.

**STRATTON & BRAGG, 20 and 22 N. Sycamore St., Petersburg, Va.**

**WAGONS and BUGGIES**



**MADE  
RIGHT HERE  
AT HOME  
-BY-**



*The BARBOUR BUGGY CO.,  
The HUGHES BUGGY CO.,  
The VIRGINIA WAGON CO.*

*All of Virginia.*

These vehicles are guaranteed to be as good as can be bought elsewhere; material and workmanship unsurpassed; all sizes and styles, prices low. We can save you time, money and freight by purchasing our vehicles. Send for our illustrated catalogues. Drop in our warehouse and inspect our stock. Inquiries cheerfully answered.

WE ARE ALSO AGENTS FOR THE **DEERING CORN BINDER.**

**RICHMOND BUGGY & WAGON CO., 1433 E. Main Street, RICHMOND, VA.  
J. T. DUNN, Manager.**

## MEASURING HAY IN THE STACK.

There has been considerable inquiry in your columns for a method of measuring hay in the stack. I enclose copy of a bill recently introduced by myself and passed in the Legislature of New Mexico:

Section 1. The following rule and method of measuring loose hay in the stack, and specifying the cubical contents of a ton of loose hay, is hereby established:

Sec. 2. Measure the stack for length, width, and the "over." To get the "over," throw a tape line over the stack at an average place, from ground to ground, drawing it tightly. Multiply the width by the over, and divide this result by four, multiply result of division by the length for approximate cubical contents of stack. To reduce to tons, for hay that has stood in stack less than 20 days, divide cubical contents by 512; for more than 20 and less than 60 days, divide cubical contents by 422; for more than 60 days, divide cubical contents by 380. Example: Stack measures 17 feet wide, 58 feet long, and 36 feet over. Stack has stood 15 days. Multiply 17 by 36, equals 612. Divide 612 by 4, equals 153. Multiply 153 by length 58, equals 8,874, which gives the cubical contents in feet. Divide 8,874 by 512, equals 17.3 tons in a stack.

I have carefully tested this rule on several different stacks and kinds of hay. Hay measured in the stack under this rule will bale out in weight to within 5 per cent. of its measurement, which is far closer than any other rule of measurement I have ever been able to get hold of, and in drawing up this law, and the investigation preceding it, I secured over fifty different systems of measurement from almost every part of the United States.

I believe this rule will prove as nearly correct as is possible to be figured out, and hope it may prove of interest to your readers.—WM. C. BARNES, Colfax Co., N. M., in *Breeder's Gazette*.

A tramp rapped at a door the other day, and asked the woman if she could spare him a piece of bread. "No, I can't," replied the woman. "I am a policeman's wife, and if my husband were in, he would take you." "Well," said the tramp, "if he'd take you, he'd take anybody." (Collapse of woman.)

A colored girl happened to meet a gentleman going down a street in New Orleans, and nearly came in collision with him. Then both made for the other side of the path, and another collision was imminent. They then danced back, and dodged again, when the girl suddenly stopped and said, "See heab, mister, what am dis gwine to be—a schottische or a waltz?"

One of those women who have an antipathy for tobacco entered a street-car the other day, and inquired of the man sitting next to her, "Do you chew tobacco, sir?"

"No, madam, I do not," was the reply, "but I can get you a chew if you want one."—*October Lippincott's Magazine*.

Mention the *Southern Planter* when corresponding with advertisers.

# LEE'S PREPARED AGRICULTURAL LIME

The Old Reliable for WHEAT, OATS, CLOVER and OTHER GRASSES; has stood the test for twenty-five years, being composed principally of Hydrate of Lime, Sulphate of Lime and Potash.

If you wish to IMPROVE your land, use a ton to four acres for WHEAT and CLOVER, or if you wish to seed it for other GRASSES where the land is in good condition, use the same quantity and it will give you a good STAND and GROWTH of GRASS. For reclaiming POOR land, where there is little or no VEGETATION, COVER naked places with l' ter from the barnyard or forest, using the same quantity, and sow winter OATS and CLOVER.

## FRUIT TREES.

Maj. G. A. Barksdale of Richmond, Va., has used our PREPARED LIME on his fruit trees, and says it has made wonderful improvement, both in the condition of the trees and quality of the fruit.

## OUR SPECIAL WHEAT FERTILIZER.

We put this brand on the market only a few years ago, and have had very flattering results. The best farmers say that they get better STAND and GROWTH of GRASS and CLOVER from it than from other fertilizers. This we can confidently recommend for CORN-LAND or any other land of fair fertility.

## PLAIN SHELL LIME

Constantly on hand at lowest prices.

## No. 1 WOOD-BURNT LIME

In car lots at lowest market price from kilns.

Send for Circular and Prices.

## A. S. LEE & SON, 102 S. 13th Street, Richmond, Va.

CHARTERED 1870.

# Merchants National Bank

OF RICHMOND, VA.

Designated Depository of the United States, City of Richmond and Commonwealth of Virginia. Being the Largest Depository for Banks between Baltimore and New Orleans, this Bank offers superior facilities for direct and quick collections.

Capital Stock, \$200,000.00  
Surplus and Profits, \$531,000.00

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in Richmond, the BEST MARKET for all grades of Tobacco. It is the home of sun and air cured Tobacco and headquarters for flue-cured and shipping types. Here are located the head offices and stemmeries of all the large corporations, Regie representatives and the largest number of independent factories and buyers in the United States.

### SHELBURNE'S WAREHOUSE

Has the largest lighted space, insuring equal attention to every pile. Ample accommodations in every way for all our customers.

Correspondence solicited.

SILAS SHELBURNE & SON, Props., 12th and Canal Sts., RICHMOND, VA.

Pedigrees traced and tabulated. Catalogues compiled and circulars prepared. Special attention given registration matters pertaining to thoroughbred and trotting horses

..BY..

**W. J. CARTER** (Broad Rock),

P. O. Box 929, RICHMOND, VA.

Correspondent of

RICHMOND TIMES, Richmond, Va.  
SOUTHERN PLANTER, Richmond, Va.  
SPIRIT OF THE TIMES, New York.  
KENTUCKY STOCK FARM, Lexington, Ky.

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1902.

IN THE STUD AT

1902.

**KELLY, 22283. Record, 2:27.**

Bay Horse; Foaled 1859.

(See American Trotting Registry, Vol. XV.)

Sired by Electioneer 125. First dam, Esther, dam of Expressive 3, 2:12½; Express, 2:21, etc.; by Express. Second dam, Coliseum, by Colossus.

(For further extension of pedigree, see Stud Book.)

NOTE—Kelly is not only richly bred, but he represents the highest type of a trotter, having grand size and the form and finish of a thoroughbred. He is the sire of McChesney, 2:16½.

FEE, \$25 the season, with usual return privilege.

Address

**JAMES COX,**

Belgravia Farm, Mt. Jackson, Shenandoah, Co., Va.

## FOR SALE AT A BARGAIN

The fine Hackney Stallion,

### HEIDRICK,

Bay horse, 16 hands high, 4 years old.

Bred by A. J. Drexel, Philadelphia.

Sired by imp. Danegelt, dam imp. Heroine.

This horse has great natural action, and is capable of getting the highest class harness horses.

His colts are most promising.

B. Mountain, out of Heroine, has won numerous prizes at New York and Boston.

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**W. J. CARTER, BOX 929, RICHMOND, VA.**

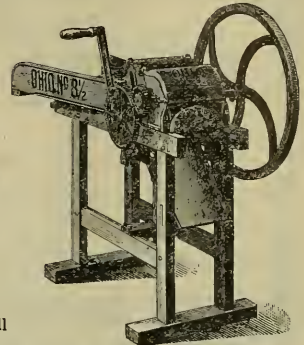
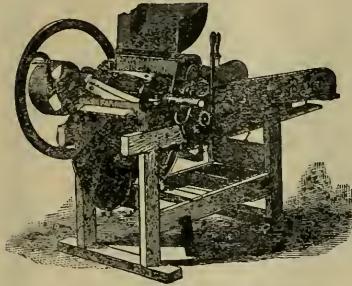


# OHIO FEED AND ENSILAGE CUTTER.

For hand or power. The strongest, simplest and BEST MADE. Write for prices, catalogues and testimonials.

## CANE MILLS AND EVAPORATORS

We are agents for the celebrated "Kentucky" Mill and "Cook's Improved Evaporator." At least the equal of any made, and far superior to most.



**PEA HULLERS.**—It will pay to inspect the "STAR." Will hull and clean from 10 to 15 bushels of peas every hour.

**DISC HARROWS.**—Send for special catalogue of the "THOMAS," lightest draft and strongest harrow made.

## OWEGO AND PENNSYLVANIA DISC GRAIN DRILLS

With or without fertilizer attachment.

## THE IDEAL FEED MILL AND POWER COMBINED

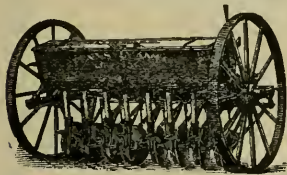
Has no equal for grinding shelled grain, corn and cob into excellent feed. The Horse-Power is very useful for running other machinery as well. A full line of mills for horse and steam power.

## THE No. 19 IDEAL MILL.

For one horse. A very useful size for small farms. Price, \$15.00.

## PLOWS.

Try an "Imperial" and you will not want any other. It is admitted by all who have used it to be the best in the world.



## WAGONS, BUGGIES, CARRIAGES, HARNNESS AND SADDLES.

The most complete line in the State. Write for special catalogue.

**FANNING MILLS.**—We can strongly recommend the "Lyons" for cleaning any kind of grain or grass seed. Does its work clean, and praised by every one who has used it.

**BALING PRESSES.**—For a serviceable press at a low price, we think the "Lyle" is the best on the market. Supplied with or without power attachment. Write for descriptive circulars.

EVERYTHING THE FARM NEEDS WE CAN SUPPLY, AND THAT AT A CLOSE PRICE.

THE IMPLEMENT COMPANY, 1302 and 1304 E. Main St, Richmond, Va.

The manager of the Fresno, California, Fruit Canning Company has invented a plan for the removal of the skins of peaches by means of a solution which has been analyzed by Professor Hilgard, of the State University, and pronounced by him to be harmless. A series of revolving brushes removes the skins, and the rinsing process prepares the peaches for pitting and canning. It is stated that by this process four tons of peaches will produce as much canned fruit as five tons by the old method.

When corresponding with advertisers, kindly mention that you saw their advertisement in the *Southern Planter*.

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EXTENDING FROM CINCINNATI AND LOUISVILLE, AND THROUGH ITS CONNECTIONS

THE BIG FOUR SYSTEM, from Chicago, St. Louis, Peoria, Indianapolis, Sandusky and Cleveland;

THE OHIO CENTRAL LINES, from Toledo and Columbus;

THE CINCINNATI, HAMILTON & DAYTON, from Detroit, Toledo, Lima and Dayton—

FORMS THE MOST DIRECT And from Five to Twelve Hours the Quickest ROUTE.

TO STAUNTON, LYNCHBURG, CHARLOTTEVILLE, RICHMOND, PETERSBURG, NORFOLK,

And Principal Virginia Points.

H. W. FULLER, Gen. Pass. Agt. C. & O. Ry., Washington, D. C.

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Keep abreast of the times by reading the latest works pertaining to rural affairs. We can supply almost any book you want, but name here only a few :

<b>FEEDS AND FEEDING, by Henry</b>	-	<b>\$2.00, delivered,</b>	
<b>FERTILITY OF THE LAND, by Roberts,</b>		<b>1.25,</b>	<b>"</b>
<b>ELEMENTS OF AGRICULTURE, by McBryde,</b>		<b>75,</b>	<b>"</b>

Every farmer should have these books, as they contain much valuable information and are well worth the price charged.

## POULTRY BOOKS

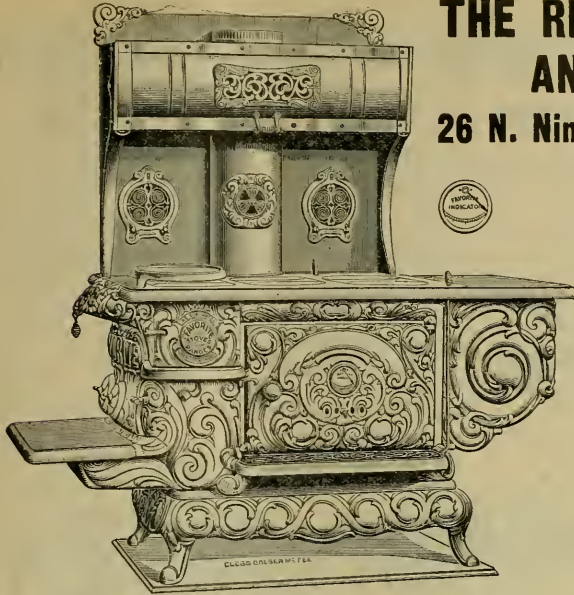
We mention below three Poultry Books which should be in the hands of every poultry raiser in the country :

<b>STANDARD PERFECTION POULTRY BOOK, by Shoemaker,</b>	<b>50c.</b>
<b>POULTRY APPLIANCES and HANDICRAFT, by Fiske,</b>	<b>50c.</b>
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These books contain valuable information in regard to Breeding, Hatching and Marketing Poultry, together with hundreds of suggestions as to labor-saving devices, pens, coops, houses, etc.

**THE SOUTHERN PLANTER, - Richmond, Va.**

**THE RICHMOND PLUMBING AND MANTEL CO.,**  
**26 N. Ninth Street, RICHMOND, VA.,**



Has just received an entirely new Stock and complete line of  
**STOVES, RANGES, FURNACES, MANTELS, GAS and ELECTRIC FIXTURES, FILTERS, TILING and FIRE-PLACE TRIMMINGS.**

We are contractors for  
**PLUMBING, TINNING, SHEET-METAL WORK and ELECTRIC WIRING.**  
 Correspondence Solicited.  
**CALL AND INSPECT OUR SHOW-ROOMS.**

**BUSY! BUSY! BUSY!**

THAT'S NO NAME FOR IT; THAT'S WHY OUR AD IS NO LARGER THIS ISSUE--WE ARE TOO BUSY TO GET UP ONE.

Look Over This in a Hurry and You Will Surely "REGRET IT."

Best Family Flour, bbl.....	\$4 25	bottle.....	85
Granulated Sugar.....	44	Juniper Gin, for kidney and bladder troubles. Cures weak and lame back, per gallon.....	2 00
Rock Candy Syrup, gallon.....	40	Old Northampton Apple Brandy, per gallon.....	2 00
Something fine, regular price, 50 cents.		Clemmer Whiskey, per gallon.....	2 00
Pure Lard, any quantity.....	12	Will sell any quantity of these medicines at same price.	
2,000 bushels Clover Seed.....	2 90	New Large, Fat Mackerel in 15-lb. buckets.....	98
10,000 bushels Choice Seed Wheat.....		The regular price is \$1.50, we are overstocked and want to move them.	
40,000 bushels Winter Seed Oats.....		New Prunes.....	5
Arbuckle's Coffee.....	11	Octagon Soap, 100 cakes.....	4 00
Golden Rio Coffee.....	10	Finest English Breakfast Tea.....	45
Country Cured Side Bacon.....	12½	Carolina Rice.....	6
10 000 bales Choice Timothy Hay.....	70	Home-Made Blackberry Brandy, per gal., including jug.....	75
New Cut Herrings, dozen.....	12		
McDermott's Fine Malt Whiskey, sure cure for chills and fever, loss of appetite, dyspepsia, consumption, sleeplessness, enriches the blood and builds up the system. No family should be without a			

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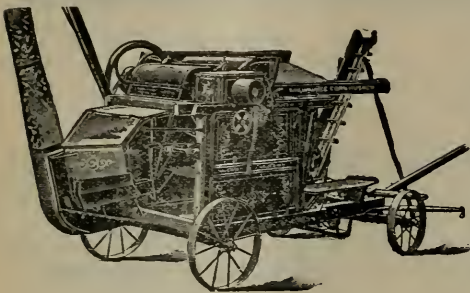
Send me your orders, and if I don't save you big money on your Groceries, Seeds, Feed and Medicines I will be very much disappointed.

**D. O'SULLIVAN, Eighteenth and Main Streets, Richmond, Va.**

# Milwaukee Corn Husker and Fodder Shredder

With Blower or Carrier. Manufactured in four sizes: Large machines for threshermen, and small machines for farmers' own use.

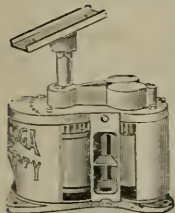
Read list of only a few of the many using the MILWAUKEE Husker.



R. L. Brnce, Medlock, Va.,  
J. C. Segar, Lewiston, Va.,  
J. A. Graham, Hanover, Va.,  
L. E. Williams, Enfield, Va.,  
Julian Ruffin, Old Church, Va.,  
Edmund Ruffin, Old Church, Va.,  
A. T. Broadus, Old Church, Va.,  
H. S. Saunders, Shirley, Va.,  
C. C. Branch, Toano, Va.,

M. L. Norvell, Island, Va.,  
S. H. Ivey, Petersburg, Va.,  
J. A. Maddox, Triangle, Va.,  
W. H. Walton, Rice Depot, Va.,  
T. S. Wilson, News Ferry, Va.,  
Geo. R. Land, Boydton, Va.,  
C. C. Moore, Charlotte, N. C.,  
R. F. Broadus, New Berne, N. C.,  
Col. B. Cameron, Stagville, N. C.

The above parties will cheerfully give you testimonials as to the merits of the MILWAUKEE. We are ready at all times to go in the field with any other husker made, and will guarantee the MILWAUKEE to be the best made; and will also guarantee it to do more work than any other made, and shell less corn, and cost less for repairs and last longer. Write the parties that are using them; also write for special circulars and testimonials we have, which will be sent with pleasure.

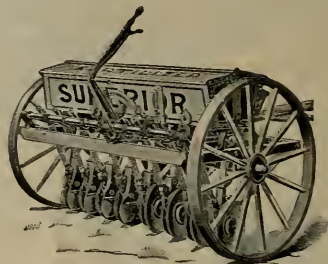


Chatanooga Cane Mills and Evaporators.



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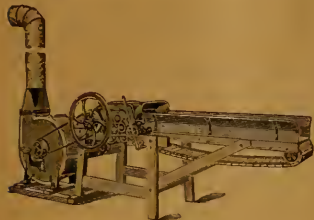
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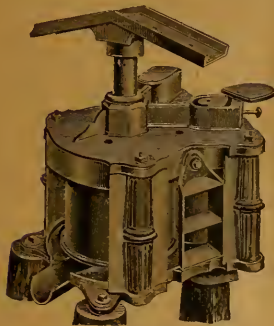
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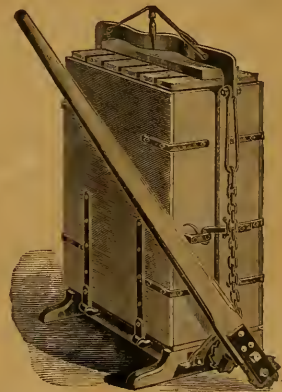
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# Southern Planter

A MONTHLY JOURNAL

DEVOTED TO

Practical and Progressive Agriculture, Horticulture,  
Trucking, Live Stock and the Fireside.

OFFICE: 28 NORTH NINTH STREET, RICHMOND, VIRGINIA.

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Tillage and pasturage are the two breasts of the State.--SULLY.

63d Year.

Richmond, November, 1902.

No. 11.

## Farm Management.

### WORK FOR THE MONTH.

The month of October up to this writing (21st) has been one of the finest we have ever known for making progress in the saving of the crops and the preparation and seeding of the land with fall crops. The days have been fine and bright and the nights not too cold. Except in the mountain sections of the western parts of the Southern States there has been no frost to do injury, and even there the frosts have been few and light. As a consequence of this great progress has been made in saving corn and forage crops; all the tobacco crop has been secured without injury, and cotton picking has made rapid progress—much of the area planted in that crop, except in the far South, being safely gathered and now going forward to market. Tobacco is already being marketed freely, and fine prices are being made, even lugs selling for from \$4.00 \$9.00 per hundred. Winter oats have been mostly seeded and some wheat is already sown.

Wheat-sowing should be pushed forward now as fast as the land can be got ready as all danger from injury by the fly is practically past. Whilst we thus urge the completion of the seeding of wheat we would couple this advice with the further advice not to seed until the land is well prepared and a fine surface and well consolidated sub surface is secured. The yield of the wheat crop this year in the South was a poor one, and the general average yield year by year is not by any means what it ought to be. In Virginia, in 1901,

the yield of wheat was only a little over 10 bushels to the acre. This year it will be still less. In North and South Carolina the yield was only a little over 8 bushels to the acre. In Maryland the yield in 1901 was over 17 bushels to the acre, whilst in Kentucky the yield was 12 bushels to the acre. Maryland in 1901 made 13,315,139 bushels of wheat on 774,136 acres of land, whilst Virginia made only 9,680,192 bushels on 888,890 acres. No natural soil or climatic conditions exist to account for so large a difference between the yields in Maryland and Virginia and North and South Carolina. The true cause of the difference we believe to be the much better preparation of the land before seeding the crop in Maryland than is the case in the other three States, and also the fact that lime is much more largely used upon land in Maryland than in Virginia and North and South Carolina. The use of the lime results in a much heavier growth of clover and the other leguminous crops, and these in turn supply the soil with more plant-food, which is made available for the wheat crop by a better system of rotation and more perfect cultivation and preparation of the soil. Wheat is a crop that will forage widely for plant-food, but as pointed out by the late Sir J. B. Lawes, to enable it to do this the land on which it can secure it *must be well prepared* before the seed is sown. A week spent in better fitting one acre of land before seeding will be much more profitably spent than in plowing and fitting an extra acre to be seeded. There is no reason whatever why the average yield of wheat per

acre in Virginia and North and South Carolina should not be doubled and that without the expenditure of one dollar more per acre in fertilizer. Early and better plowing and cultivation of the soil, the growing of clover and cow-peas and the application of a dressing of from 20 to 30 bushels of lime to the acre once in each rotation of crops will effect the object. The truth of this is shown by the wheat crop grown by Mr. Bellwood at Drury's Bluff, Va., this year, particulars of which were published in our July and September issues. He made an average of over 29 bushels to the acre on a 75 acre crop, grown on upland, and this without the use of any fertilizers. There is time yet to improve the condition of the seed-bed and yet not be too late in seeding. A crop of wheat that can be well seen above ground before hard, frosty weather sets in will almost invariably make a better yield than one which is two or three inches high at that time. See to it that after the crop is sown proper provision is made for draining all water away from the field so that it shall not stand on the crop or the soil become water logged. Wheat cannot grow in water. Lay off plenty of water furrows, and see that all drains and ditches are cleaned out and the mouths kept open.

Rye or rye and English vetch may yet be sown for a winter cover and early spring forage crop. No land should be left bare that can be gotten into seedling order before the end of the month. The winter and spring rains will leach out of bare land large quantities of nitrates which have accumulated under the shade of crops in warm weather and not been utilized by the crops. A growing winter crop will utilize these, and they can then be turned into the soil again in spring, or be made to supply food for stock.

The fine fall days, of which we are having so many this year, ought to be fully utilized in getting home to the barns and under cover all the late crops of hay, millet, sorghum, peas and soy beans as fast as they are fit to store. The farmers of the South are much too careless in attending to these things. They allow crops, which have cost labor and money to raise, to remain in the fields bleaching, weathering and wasting long after they might be safely under cover if given proper attention during the curing, and then in winter and late spring complain of being short of feed and compel stock to live on food containing little or no nourishment. There is no excuse for this in a country where we have such a long and usually fine fall. See that the crops after being cut are given frequent attention and exposed to the sun and wind until sufficiently cured to keep, and then at once put them under cover or into stacks. As fast as the corn is fit to crib, let it be pulled and be hauled to the corn-

house, and have the fodder tied up into bundles and carried home, there to be run through the cutter or shredder and then stored in the barn, or if no cutter or shredder be available, have the fodder stacked up near the barn, so as to be handy for feeding. It will pay any farmer having even only a few acres of corn to buy a shredder and shred his fodder as it comes from the field. In this way he can put a large quantity of fodder into small space, and have it ready for feeding in a shape in which the stock will not waste it. Shredded fodder, when well saved, is almost the equivalent of good timothy hay in nutritive value, and when fed in mixture with clover, cow-pea or soy bean hay will make a ration upon which stock will not only live, but thrive and fatten. Remember that more than one third—nearly one half—of the nutritive value of the corn crop is found in the fodder and stalks. No farmer has a right to complain that he cannot make farming pay who wastes this value by leaving his corn fodder in the field all winter or fails to utilize it to the best advantage by feeding it in a form in which it will be largely wasted by the stock.

All root crops should be dug or pulled during this month. Ruta bagas may, however, be safely left in the ground until the end of the month. Even a sharp frost will not hurt them, and they will gain more in weight during this month than during any like period in their growth. We wrote fully last month as to the best method of storing and keeping these crops, and to that issue we refer our readers.

Old pasture fields which have begun to fall in growth and productiveness may be renovated and made to do many more years of good service without being plowed if taken in hand now. Let all bushes, stumps and strong weeds and briars be grubbed out. Then take a sharp-toothed drag harrow and harrow the field both ways so as to tear up much of the old grass and loosen the soil about the roots of the grass thoroughly. Then take a horse rake and rake up all the trash harrowed loose and haul the same off into the cattle or hog pen, there to be made into manure. Apply a dressing of 25 or 30 bushels of lime to the acre broadcast. In March sow one bushel of mixed pasture grass seed to the acre, and four or five pounds of mixed clover seed per acre, and harrow lightly. When dry enough, roll. The grasses best to sow are orchard grass, perennial rye, Virginia blue grass, and red top, mixed in equal parts. The clovers should be red, alsike and white. Do not turn stock on until the new seeding has made a good growth, and do not graze too closely in the hot summer months, and the pasture will then take on a new life and be found useful probably for years.

In this issue will be found an article on "The Ma-

nure Heap," to which we invite attention. It deals with a subject which ought to have attention this month. The stock will shortly be brought under cover, and the question of the saving and disposal of the manure made calls for solution. We have endeavored in the article to help in this matter. In the face of the fact that in 1899, according to the census report, the farmers of Virginia spent \$3,681,790, the farmers of North Carolina, \$4,479,030; the farmers of South Carolina, \$4,494,410, and the farmers of Maryland, \$2,618,890, in the purchase of fertilizers, and that in the year now closing they have no doubt spent even more than these enormous sums, it would seem that it would pay Southern farmers to give more attention to the question of saving and utilizing the manure made on their farms, or which might be made and saved there with proper care given the matter.

Keep the teams at work plowing all lands intended to be cropped next year whenever the weather and the land is dry enough. It is a mistake to suppose that because we have not the hard frosts of the North to disintegrate our lands in the winter, that it is therefore time wasted to plow them in the fall and winter. What all our lands need is more frequent and deeper plowing and cultivation. The attempt to grow crops with only one plowing and two or three workings, is proven a failure. Let us amend the system and plow and subsoil in the fall and winter and repeat the work in the spring. Cultivation is much more nearly manure and fertilizer than many are willing to concede. Besides these considerations, we need to plow in the fall and winter to permit of the saving of the rainfall. After the hot weather, the surface of the land becomes so hard and baked that instead of the rain sinking into the soil, it runs off into the nearest creek and river and is largely lost, when the soil needs it badly to meet crop requirements another year. Break, and break deeply, and thus conserve the rainfall. What frost we do have will help to disintegrate the soil when saturated with water. When practically dry, it can do very little in this direction.

See that all barns, stables, sheds and buildings in which cattle or stock of any kind are to be housed are thoroughly cleaned out and lime-washed, and that all roofs, doors and windows are repaired and made good. In the September issue we wrote an article on the making of cement floors for stables and barns, to which we invite attention. We would much like to see these floors put down more generally. They would save much more than their cost in a very short time.

Have the barn-yard fences and gates made good and the yard itself repaired and drained, so that it will not become a mud hole as soon as stock are turned into it.

## THE MANURE HEAP.

The barn-yard manure heap has been concisely and accurately described as "the Farmers Savings Bank." The function of a savings bank is to care for and accumulate the small savings of the depositors until these become large enough for permanent investment in land, buildings, or other securities. This description accurately defines the function of the manure heap. It is a place where the daily voidings of the live stock of the farmer are accumulated until they become large enough to be applied with effect on the land for its permanent improvement. Unless so saved and accumulated nearly the whole value of these voidings are lost. When allowed to remain where dropped in the pasture or carelessly thrown out of the buildings in a thin layer in the barnyard, unprotected from the wind, rain and sun, a short time only is needed to dissipate nearly the whole of the manurial value. American farmers as a body, and Southern farmers pre-eminently, are careless of the manurial products of their stock. When charged with this they almost invariably reply that the whole quantity of the manure which they could save, even when ever so careful, would amount to so small a quantity in comparison with their needs of fertilizer that it is not worth while to give greater care to the product. At this season of the year, when the live stock is about to be housed for the winter, we want to impress upon them that this view is a wholly erroneous one and to urge upon them a change in their system and a careful regard for the value of the manure. "A penny saved is a penny gained." A ton of manure saved is money saved which it would otherwise be necessary to expend in the purchase of fertilizer, and this money saving can be secured at practically little cost. It is much easier in most cases to save the money value of a ton of manure than to find the money wherewith to buy the equivalent plant-food value in commercial fertilizer.

As we remarked above, the common reply, when a farmer is charged with neglecting to save the manure, is that the quantity, which at best he can save, is so small that it is not worth the trouble. Let us look into this matter. The manure produced per day by a flock of sheep of 1,000 pounds weight is thirty-four pounds, worth seven cents. Calves weighing 1,000 pounds, sixty-seven pounds, worth six cents. Pigs weighing 1,000 pounds, eighty-three pounds, worth sixteen cents. Cows weighing 1,000 pounds, seventy-four pounds, worth eight cents, and horses weighing 1,000 pounds, forty-eight pounds, worth seven cents. These values are calculated on the market prices of commercial fertilizers. Probably these values are too high because of the fact that the plant-food in animal manure is not so completely and readily available as in high-grade commercial fertilizers, but making liberal allowance

for this and other considerations, Professor Roberts, one of the most reliable and experienced investigators on this subject, estimates that the value of the manure produced on a small farm, carrying four horses, twenty cows, fifty sheep and ten pigs during the seven winter months, amounts to about \$250. Now, how many farmers having such a farm and owning such a number of live stock, expend \$250 per year in commercial fertilizers, and even if they do they will certainly not get as great a return in the long run from the application of this quantity of commercial fertilizer every year as they will from the application of the farm-yard manure. The one form of fertilizer supplies to the soil, in addition to the constituents supplied by the commercial fertilizer, humus-making material which the fertilizer absolutely lacks, and upon the humus content of the soil largely depends the crop producing capacity of the soil. It matters not how rich a soil may be in nitrogen and mineral plant-food, if it lacks humus it will not produce to its capacity. Good commercial fertilizers, in consequence of the ready availability of the form in which the constituents of plant-food are supplied largely exhaust their effect in the first year of their application. Rarely, if ever, can any result be seen after the third crop. Barn yard manure has been proved to give results continuously for twenty years after it was applied.

Looked at from another point of view, the saving of the manure of the live stock is a matter of great moment to the farmer. Every form of food fed to animals has two values, one the feeding value, consisting of the carbohydrates, protein and fat in the food; the other, the manurial value, consisting of the nitrogen, phosphoric acid and potash in the food. When the animal takes and appropriates the food value it does not exhaust the manurial value. From 75 to 90 per cent. of the latter value is excreted from the animal's body in the dung and urine it voids. The urine is especially rich in nitrogen and potash, the solid dung in phosphoric acid. Not to save both these excreta is wasting from 75 to 90 per cent. of the food given to the animals, and this with no resulting profit from the keeping of the stock. The richer the food fed to the animals the greater the loss in the manure. Cottonseed meal, flax-seed meal, gluten meal and bran make the richest manure. Clover, peas and the leguminous crops generally the next richest. Corn, oats and the cereal crops the next, and the root crops the poorest. Having thus pointed out how easily it is possible to save a large quantity and value of manure, even where only a small head of stock is kept, let us now see what effect even a small application of this manure can secure. A recent bulletin of the Ohio Experiment Station will very well illustrate this point.

One hundred and fifty tenth-acre plots arranged in five sections of thirty lots each have been cropped with corn, oats and wheat grown in succession, followed by two years in clover and timothy mixed, the cropping

being so planned that each crop is represented each season. The test was begun in 1894, and eight crops each of the cereals and seven hay crops of the first year and six of the second year have now been raised. On plot 18 of this test barn-yard manure is applied to the corn and wheat crops at the rate of eight tons per acre to each crop, and on plot 20 the same kind of manure is used at the rate of four tons per acre on each crop, there being a total application every five years of sixteen tons of manure to plot 18 and eight tons to plot 20. The manure is taken from flat, open yards, where it has accumulated for several months during the fall and winter, and has been subjected to the conditions which affect the ordinary open yard manure of the average farm, conditions which involve very considerable loss. For both corn and wheat, the manure is applied as a top dressing, and is put on with the manure-spreader. The results of this test are as shown in the following table, which gives the average manured yield for each crop for the period over which the experiment has been conducted, the mean unfertilized yield for the same period of the two plots nearest the manured plot, the average in yield due to the manure, and the value of this increase, counting corn at 33½ cents per bushel, oats at 25 cents, and wheat at 66½ cents, corn stover at \$3.00 per ton, straw at \$2.00, and hay at \$6.66½ per ton:

TABLE I.—INCREASE PER ACRE FROM BARN-YARD MANURE IN FIVE-YEAR ROTATIONS.

CROP AND TREATMENT.	Wooster.			
	Plot 18.		Plot 20.	
	Grain.	Straw or Stover.	Grain.	Straw or Stover.
CORN.				
Manured yield.....	Bushels. 44.25	Pounds. 2,096	Bushels. 40.36	Pounds. 1,922
Unfertilized yield.....	30.76	1,602	31.26	575
Increase.....	13.49	494	9.10	247
Value of increase.....	\$4 50	\$0 74	\$3 03	\$0 52
OATS.				
Manured yield.....	40.05	1,551	34.86	1,337
Unfertilized yield.....	30.56	1,084	29.35	1,089
Increase.....	9.49	467	5.51	248
Value of increase.....	\$2 37	\$0 47	\$1 38	\$0 25
WHEAT.				
Manured yield.....	13.42	1,702	11.62	1,466
Unfertilized yield.....	6.84	742	6.99	756
Increase.....	6.58	960	4.63	710
Value of increase.....	\$4 38	\$0 96	\$3 08	\$0 71
HAY.				
Manured yield.....	1st yr. lbs. 2,993	2d yr. lbs. 3,593	1st yr. lbs. 2,474	2d yr. lbs. 3,242
Unfertilized yield.....	1,678	2,686	1,657	2,537
Increase.....	1,245	1,007	817	705
Value of increase.....	\$4 15	\$3 36	\$2 72	\$2 35
Total value of increase.....	\$20 93		\$14 14	
Value of increase per ton of manure.....	1 31		1 77	

It will be observed that in every case the value of the increase per ton of manure is greater from the smaller application of manure, although if we count the cost of manure at only that of getting it from the barn-yard to the field, the net profit is much greater from the large application of manure.

Additional light is thrown upon this point by an other series of the experiments in which corn, oats and wheat have each been grown continuously on the same land during the same period covered by the rotation experiments just described. In this test plot 5 receives two and a half tons of manure each year and plot 6 receives five tons, the manure, as in the other test, being applied as a top dressing and with the manure-spreader. The average results of the eight crops of each grain harvested are shown in Table II.

TABLE II.—INCREASE PER ACRE FROM BARN-YARD MANURE ON CROP GROWN CONTINUOUSLY.

CROP AND TREATMENT.	Plot 5.		Plot 6.	
	Grain.	Straw or Stover.	Grain.	Straw or Stover.
CORN.				
Manured yield .....	Bushels.	Pounds.	Bushels.	Pounds.
Unfertilized yield .....	35.72	1,649	48.33	1,950
Increase .....	25.33	1,307	24.46	1,272
Value of increase .....	10.39	342	18.87	678
Value of increase per ton of manure .....	\$3 97	.....	\$7 30	.....
.....	1 59	.....	1 46	.....
OATS.				
Manured yield .....	30.81	1,045	35.86	1,384
Unfertilized yield .....	26.87	993	25.95	1,017
Increase .....	3.94	52	8.91	367
Value of increase .....	\$1 04	.....	\$2 60	.....
Value of increase per ton of manure .....	41	.....	52	.....
WHEAT.				
Manured yield .....	12.41	1,392	15.47	1,728
Unfertilized yield .....	8.43	921	8.43	929
Increase .....	3.98	471	7.04	799
Value of increase .....	\$3 12	.....	\$5 50	.....
Value of increase per ton of manure .....	1 25	.....	1 01	.....

Table II indicates a considerably larger increase from manure, both in quantity and value, in the corn crop than in either of the other crops, while that from oats is much smaller than that from wheat.

Although the separate applications of manure are higher in the continuous than in the rotative cropping, the total weight applied in the course of a five-year period is heavier, as shown by Table III.

TABLE III.—TOTAL WEIGHT OF MANURE APPLIED IN FIVE YEARS, WITH VALUE OF INCREASE PER TON OF MANURE.

EXPERIMENT AND PLOT.	Total weight of manure in five years.	Value of increase per ton of manure.
Rotation, Plot 20.....	8 tons.....	\$1 77
Continuous, Plot 5.....	12½ " .....	{ 1 59 on corn 41 on oats 1 25 on wheat
Rotation, Plot 18.....	16 " .....	1 31
Continuous, Plot 6.....	25 " .....	{ 1 46 on corn 52 on oats 1 10 on wheat

These figures seem to show very clearly that where the supply of manure is scanty it should be spread over as large an area as possible.

Having thus shown the possibility of every farmer saving manure, and the value of that manure as compared with commercial fertilizer and as a crop producer, we want now to say a word as to the best method of saving the manure and as to how its value may be increased. Whilst it is no doubt true that as a general proposition the best way to utilize barn manure is to apply it directly to the land from the barn, thus saving handling and loss from leaching or overheating, yet there are always times and circumstances on every farm when this method cannot be followed. If a farm is all light land, then it is inadvisable to apply manure directly as made. It should be stored and partially rotted before application, if the best results are to be had. On heavy clay land, the quicker the manure is applied after being made the better. Weather conditions, however, and the other work of the farm, may, and often will, prevent the immediate application of the manure to the land; then the question of storage becomes an important one. If merely thrown out into the open yard, as is too often the case, very much of the value of the manure will quickly be lost by leaching and weathering. The best place in which to save manure is a close pit, which will conserve all the liquid leaching from the pile, and into which the urine from all the animals in the barn or stables can be drained. In such a pit, with the manure packed closely and the mass kept moist by urine and the rain only which falls upon it, little loss will be sustained, even if the manure be kept for several months. If no pit is made, then the manure should be stored on impervious clay ground, which should slope from each side towards the centre, thus ensuring the saving of the leaching from the pile. The manure from the different classes of animals should be mixed as brought from the barn and stables. Horse and sheep manure is dry, and heats rapidly. Cow and hog manure is cold and watery. A judicious mixing of these will prevent fire-fanging and loss of ammonia.

Pack closely to exclude the air, and keep the surface level or slightly sloping towards the centre. So place the pile that no drainage from roofs or higher land shall run onto it. The ordinary rainfall of this country will not injure it if only what falls upon the pile is prevented from running away from the heap, and thus carrying off dissolved plant food. Covered barnyards for storing manure are strongly advocated by some authorities, and no doubt possess many advantages; but their success as preservers of the manure, largely depends upon the keeping of the manure sufficiently moist with urine or water to prevent overheating and the compacting of the manure by the treading of live stock.

The value of barn yard manure as a crop producer may be considerably enhanced not merely by care in the handling and storing of it, but by the use of preservatives whilst it is in the barn or stable or in the heap. Of these plaster (gypsum) is the most used, but kainit and acid phosphate are more to be advised, as they both add valuable plant food elements to the manure, and in the case of acid phosphate add that one element in which barn-yard manure is most lacking. Floats (simply ground phosphate rock) is also recommended as being advisable. The Ohio Experiment Station has conducted a series of experiments with a view of determining which of these substances is the more valuable, and from the report of these experiments, which have extended over five years, we take the following notes:

A lot of manure, taken from an open yard, where it had accumulated during the winter from daily cleaning out of the stable behind a herd of dairy cows, which had been liberally fed on bran, gluten meal, corn meal, hay and silage, was divided in the spring into four parcels. On one parcel the finely ground phosphatic rock, from which acid phosphate is made by treating with sulphuric acid, and which, in its untreated condition, is known in the South as "floats," was dusted as the manure was thrown into a pile; on a second parcel, acid phosphate was dusted; on another, the crude potash salt known as kainit, and on another, land plaster, or gypsum, these materials all being used at the uniform rate of 2 pounds per hundred pounds of manure, or 40 pounds per ton. At the same time, a lot of manure was taken from box stalls, where it had accumulated under the feet of animals which were kept continuously in their stalls, being given sufficient bedding to keep them clean without cleaning out the stalls, and similarly treated.

At first, the animals furnishing this manure were bulls, fed on a maintenance ration only; but for two seasons the manure has been made by fattening steers. After a few weeks, the manures thus treated, together with two lots of untreated manure, one taken from the yard and one from the stall, are spread upon the land that is being prepared for corn, the manure being distributed over the surface before plowing, at the uniform rate of 8 tons per acre. The corn crop is followed by wheat, and that by clover or soy beans, the

latter crop having been grown during the first three seasons, owing to the failure of the clover. The soy beans were plowed under. The land under experiment is divided into three sections of twenty plots each, so that each crop is represented each season. Up to the present time there have been harvested in this test five crops of corn, four of wheat, and one of hay.

Each of the materials added to the manure has increased its effectiveness, both total and net. This point is more clearly exhibited by the following statement, showing the value of the net increase for the different applications over and above that given by the untreated manures:

Manure treated with—	Per acre.		Per ton of manure.	
	Yard manure.	Stall manure.	Yard manure.	Stall manure.
Kainit.....	\$3 62	\$1 56	\$0 45	\$0 19
Gypsum.....	3 26	3 13	0 41	0 39
Floats.....	7 70	8 67	0 96	1 08
Acid phosphate....	9 93	9 54	1 24	1 19

These results show that while the prevention of escape of ammonia, which seems to be the only effect that can be ascribed to kainit and gypsum in common, has abundantly justified the use of these materials, yet the additional increase resulting from the use of phosphatic materials has been so large as to demonstrate, beyond all doubt, the superiority of these materials for the purpose in view.

It is probable that floats and acid phosphate are quite as effective conservers of ammonia or kainit, while in addition to this office they also reinforce the manure in that constituent in which chemical analysis and practical experience show it to be deficient, and thus largely augment its effectiveness.

One of the purposes of this experiment was to study the effect of contact with manure upon the availability of the phosphoric acid in the untreated, pulverized rock; hence the use of floats. This material is converted into acid phosphate by the addition of approximately an equal weight of sulphuric acid, hence the non-acidulated floats contains nearly twice as large a percentage of phosphoric acid as does the acid phosphate made from it. In the untreated rock, however, the phosphoric acid becomes available so slowly as to make some form of treatment, calculated to increase the solubility absolutely essential to its economical use. This experiment shows that the manure is having this effect to a limited degree, and it seems reasonable to expect that if the floats were so used as to remain in contact with the manure for a longer period, as by dusting the floors of the stable with it, or incorporating it at an earlier date in the manure accumulating in the box stalls or barnyard, this effect would be increased.

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## MANAGEMENT OF LOAM SOILS.

*Editor Southern Planter:*

If large quantities of strawy manure improve clay soils, it would be a mistake to apply such manure to loam soils. The greater amount of sand these soils contain makes them more open, and therefore the necessity for making these soils as loose and porous as the clay soils not only does not exist, but in dry years may cause serious injury. We must also not overlook the fact that the decomposition of manure, as well as of all vegetable matter, is more hastened in these warm and active soils, and therefore large quantities of manure applied at one time will easily cause lodged grain. A slightly decomposed manure containing a moderate amount of assimilable plant food, on which the plants can immediately commence to feed, will give the best results.

The manure should also be less strawy than that applied on clay soils—richer in plant food—because these soils, especially the lighter loams, are not as rich in plant food as heavier soils. It is also important that the liquid manure which chiefly contains the soluble plant food, the ammonia and potash salts, be retained in the manure, and if leached out, be pumped back over it. In cattle manure, the liquid and solid parts easily become separated, and therefore each barn yard should be provided with a cesspool of comparative large size to receive not only the liquid manure direct from the barn, but also that leached out of the manure until time can be found to return it to the manure.

Of upland soils, with the exception of limestone soils, the loam soils are the best for the growing of all kinds of grasses. Our cultivated grasses want a rather loose, clean and well manured soil; yet, one containing sufficient clay to retain moisture and these conditions, are best met with or can more easily be obtained on loam soils. Rye, barley, potatoes, corn and oats, peas and vetches, and all kinds of mixed crops, make fine yields on these soils.

The management of loam soils differs in so far from clay soils, that they contain less plant food, and the assimilable amount due to their greater activity, is easier exhausted. In order to retain their fertility, a comparatively greater amount of plant food must be returned to these than to the clay soils. This can be done by keeping a greater number of well fed live stock, producing rich manure, and it can be done by turning under green crops in conjunction with chemical fertilizer, or probably better by both.

Loam soils, whether laid out in pasture or not, should be at least a year in pasture in rotation. Experience has shown that on farms where large quantities of rich manure are applied, and the soil is deep and thoroughly plowed, the soil becomes too loose, and the excess of nitrogen over the other plant foods found in all rich manures, easily causes lodged grain. This is hard to overcome, even with applications of chemical fertilizer; but very successfully done if the soil is pastured for one year, during which time the mechanical condition of the soil also readjusts itself to a more normal condition, better adapted to the growth of crops which require a settled soil. This refers especially to light loam soils. This is one of the main differences in the management of clay and loam soils.

I would like to cite here two rotations—one for a dry and the other for a moist soil—which have given good results. The rotations show in an excellent way how the manure should be applied to these soils every other year, and how the crops are most successfully rotated.

*For a dry soil.*

1. Clover and grass.
2. Pasture.
3. *Fallow*\*.
4. Wheat.
5. Corn.
6. *Peas*\*.
7. Rye.
8. *Mixed crops, etc*\*.
9. Oats.

*For a moist soil.*

1. Clover and grass.
2. Pasture.
3. Pasture.
4. *Fallow*\*.
5. Wheat.
6. Clover.
7. *Mixed fodder, etc*\*.
8. Oats.

These rotations are probably not to every body's liking on account of the great number of fields they contain. But the greater variety of crops which can be grown without having two crops in the same field are, as stated before, the best insurance against unfavorable weather, and the soil due to the different kinds of plants with different requirement of plant food, and extracting it from different depth, is less easily exhausted. As the seeding and harvesting of different crops takes places at different times, the pressure of work at one time is not so great, less help is therefore required, and unfavorable weather, which may delay the seeding or harvesting of a crop, if it is very extensively grown, will not have the same bad effect, if some different crops with different seeding and harvesting times are grown on the same area.

On the farm with the nine field rotation both cows and sheep were kept. The sheep were kept until the stubble came in, on some grass spots here and there about the farm not included in the rotation, and also received up to that time additional dry feed and bedding at night. This not only required fodder, but also considerable bedding, and therefore besides the wheat a crop of rye was grown, as the soil was not good enough to produce in the same rotation another profitable crop of wheat. In both rotations the wheat, the most valuable crop, was given, as it always should be, the best place in the rotation. Rye follows the peas, no crop doing better than rye after peas. We also see that the manure, with the exception of that applied to the wheat, is applied to the fodder crops. This should always be the case on soils where large numbers of live stock are kept, as the fodder crops play such an important part in the feeding of the live stock. If necessary, chemical fertilizers may be applied to the grain crops. In this the fertilizing of the leguminous crops differs from the growing of these crops for green measuring, when chemical fertilizers are applied.

The second rotation is much simpler. Of the eight fields two are in pasture, one in clover and one in fallow, leaving four fields for the growing of grain and forage crops. The proportion between the pasture and the winter feed is right. There should always be a surplus of winter feed for all emergencies, and which may be turned to good account at any time.

These rotations, however good they may be, have to be changed somewhat to meet our conditions. In a warm and dry climate like ours fallow cannot be re-

\*Manured.

commended, unless the soil has become, through neglect, so extremely weedy that continuous plowing with increasing depth to destroy the shallow as well as the deep-rooted weed is absolutely necessary. A hoed crop can take the place of the fallow. For example :

- |                      |                        |
|----------------------|------------------------|
| 1. Clover and grass. | 5. Peas*               |
| 2. Pasture.          | 6. Wheat and rye.      |
| 3. Pasture.          | 7. Mixed fodder, etc*. |
| 4. Corn*.            | 8. Oats.               |

\*Manured.

- |                      |                       |
|----------------------|-----------------------|
| 1. Clover and grass. | 5. Wheat.             |
| 2. Pasture.          | 6. Corn.              |
| 3. Corn*.            | 7. Mixed fodder, etc. |
| 4. Peas*.            | 8. Rye.               |

\*Manured.

On a soil in a poor and weedy condition the following rotation may be of advantage :

- |                                |                      |
|--------------------------------|----------------------|
| 1. Fallow, with a catch crop*. | 5. Oats.             |
| 2. Wheat and rye.              | 6. Clover and grass. |
| 3. Corn.                       | 7. Pasture.          |
| 4. Leguminous crop*.           | 8. Pasture.          |

Or for 6 fields :

- |                      |                        |
|----------------------|------------------------|
| 1. Clover and grass. | 4. Corn*.              |
| 2. Pasture.          | 5. Mixed fodder, etc*. |
| 3. Pasture.          | 6. Wheat and rye.      |

\*Manured.

There is really no end of combinations. The objection I have to a six field rotation on a good soil is, as stated before, that there is too much pasture in proportion to the winter feed if two fields are in pasture, and if the grass is cut the second year, it makes a poor pasture the third year—that is, generally speaking. There are soils, however, where this can be very successfully carried out. The greatest hindrance in changing a six field rotation into an eight field rotation will be the taking down and putting up again of the fences. This may keep many a farmer from doing it, although he may be convinced of the advantages of such a change.

On farms where only cattle are kept, and only one field is sown with leguminous crops, mixed fodder is better than peas or beans because it is better liked by the stock. It is true that a mixture of crops does not generally yield as much seed as a single crop, because there is a slight difference in the time of ripening of the different crops. The fodder is harvested when the seed of the prevailing crop or crops is ripe, and the mixture must therefore always contain immature seed. But mixed fodder is a pretty sure crop, especially on a soil lacking in fertility, for a variety of crops with different requirements on the constituents of the soil, drawing food from different depths, and differently affected by the weather, has better chances of making a good crop than a single crop will have.

More attention should also be paid to the pastures. Travelling through the country, we often see small herds of either cattle or sheep roaming over a large pasture entirely out of proportion to the number of live stock. Bunches of grass grown up here and there and flowering weeds of every size and color, gives the whole a desolate and neglected appearance. This is objectionable in that the seed of these weeds scattered

by strong winds in all directions will infest the adjacent fields ; but the grass allowed to grow up to maturity will extract from the soil an unnecessary amount of plant food, and the stems becoming hollow, will break off and commence to rot, causing the decay of the root stock, and often the dying out of the whole plant. Running a mower over the field whenever necessary will prevent this.

When loam soils are well adapted for grazing, they are equally well adapted for the growing of sugar-beets, and are unexcelled for producing fine brewing barley. In some countries, potatoes are very extensively grown on these soils, producing large crops of starchy potatoes, best suited for manufacturing purposes.

Loam soils have the advantage of possessing, as a rule, good physical conditions ; they require less teams than clay soils, and can be worked at almost any time of the year if the weather is not too unfavorable. If the soil is properly prepared for pasture, the grass imparts to the butter a fine flavor and good keeping qualities. If a variety of crops are grown—cereal, leguminous and root crops alternately—the greater part fed and the mineral matter returned in the manure to the soil, little, if any, fertilizer is needed, and the fertility of the soil will be steadily increased. A neglected or impoverished loam soil, due to the greater activity of these soils, is quicker improved than a clay soil. Whilst loam soils cannot compete in yield with the clay soils, they have the advantage of being easier worked. They are also less affected by unfavorable weather, and the average net profit per acre is little below that of the clay soils, although more intelligent and industrious management is necessary to obtain this result.

District of Columbia.

H. W.

### POSSIBLE INJURIOUS EFFECTS OF GREEN MANURE.

Editor Southern Planter :

"Cart the manure from the yard and spread upon the land as soon as possible after it is made, thus preventing destructive fermentation and loss from leaching," is the advice given again and again in our journals and Station bulletins. The disadvantage of this system is that there are times when it is impossible to go upon the land, as, for example, after heavy rains ; besides, there are farms where the land is so rolling that if the manure was applied in the winter, losses would be likely to occur because of the opportunity for washing into valleys and streams, and finally, there may be no field upon which it can be applied, particularly in the summer season, when crops are growing. However, where conditions justify this method the minimum loss would result, though, as shown by experiments, the availability of the solid portion would be less for the first crop than if the manure had begun to ferment before applying.

Again, all stable manures and the refuse of many farm crops (particularly straw), contain organisms

which cause the liberation of nitrogen in the gaseous form when grown in favorable media containing nitrates. There is, therefore, a constant danger that the conditions of the soil may be favorable to the growth of these denitrifying organisms, and that they will cause a considerable loss of nitrogen by rapidly destroying the nitrates contained therein. These organisms decrease in number and activity when the manure is stored for some time. In view of these facts, it is evident that fresh stable manure and nitrates should never be applied to the soil at the same time.

The farmer should make careful tests in the field. It is a comparatively easy task to manure one portion of a field with fresh manure and another portion with manure which has been stored under definite conditions for a certain time. For this purpose the manure produced by a given set of animals should be collected separately for a convenient period (one week, for example), stored where it can be kept moist, closely packed, and sheltered from the leaching action of the rain. The storing period may vary from one month to one year. When the time for preparing the soil has arrived, the manure should be collected for the same period of time as was the stored manure, and from the same set of animals fed in the same way. The fresh and stored manures should each be applied to equal areas of land of the same kind, and to crops of a like character. The crops should be harvested separately and the relative yields determined.

It is the practice of some farmers to incorporate all the straw possible with manures, in order to facilitate the rotting of the straw, and thus increase the availability of the plant food in it. Considering the objection of inoculating the soil with the denitrifying organisms contained in the straw, the practice of plowing under large quantities of this material in the unrotted state is questionable.

*Macon Co., Ala.*

GEORGE H. C. WILLIAMS.

## PLANT FOOD IN VEGETABLE CROPS.

*Editor Southern Planter:*

Plant food means the principles in manure and fertilizers which promote the growth of plants, and for all practical purposes may be considered to refer only to nitrogen, potash, and phosphoric acid. At least, these three substances are about all that is necessary to plant growth that is likely to become so deficient in soils that the growth of crops is checked by their absence. The quantities of these plant elements actually taken up by plants is small as compared with the full bulk of the crop, but they are, nevertheless, necessary; so much so, that without them or any one of them, plants simply fail to make growth. The point

is illustrated by the fact that if a soil contained, for example, enough potash for half a crop, only a half crop at best can be grown. It is well, therefore, to accustom ourselves to regard manures of whatever form, as well as fertilizers and agricultural chemicals, as simply so much nitrogen, potash and phosphoric acid.

Nitrogen is often called "ammonia," probably because the word ammonia means a well-known substance to most people, while nitrogen is an unfamiliar word. Ammonia is, however, a compound of nitrogen and a gas called hydrogen, and the hydrogen is of little or no value in plant growth. As a matter of fact, the nitrogen plant food in manures and fertilizers rarely ever contains any actual ammonia as such, and it is probably better at once to adopt the word nitrogen and become familiar with it. Nitrogen is a gas, and as used as plant food, is generally understood to be combined with a gas called oxygen, forming nitric acid. When this nitric acid is joined to other substances, a product is formed called nitrate, and this is the most useful form of nitrogen plant food. Potash and phosphoric acid are both substances too well known to need a detailed description here.

The actual needs of crops in plant food is somewhat in dispute. As all soils contain more or less of all three of the elements of plant food, manurial applications which were known not to suit the actual needs of the crop, have given good returns. This, because the fertilizer applied made up with what existed in the soil naturally, all the plant food needed by the crop. However, these conditions are unusual, when a gradual falling off in acre yields show that plant food is needed. However rich a soil may be, with continuous cropping the time comes at last when crops begin to fall, and fertilizer applications will restore the crop making power of the soil. It is not easy to say just how much fertilizer should be used, and what kind. The actual needs in plant food of any particular crop is, so far as we now know, best shown by the actual plant food contained in the crop itself. As the crop took up this plant food in order to make its growth, and as nature rarely makes use of anything it does not want, the composition of a crop ought to show just what a similar crop will need in the way of plant food.

It is true that a soil may be deficient only in one or two of the plant food elements; in which case it would seem to be a waste to apply any other plant food than that deficient. However, it is very difficult to draw such fine lines of distinction, especially as the element or elements present, ample this year, may become exhausted a season or two later. A cheese paring policy fails badly on the farm, as in the event of crop failure, the loss in time, etc., is irreparable. In

general practice, it perhaps is cheaper to make the mistake on the safe side, and use plant food liberally, unless it is well known that certain elements are not required as manure.

The following table shows the actual plant food contained per acre, in average crops of various vegetables:

CROP.	Nitrogen.	Potash.	Phos. Acid.
Asparagus.....	12 lbs.	12 lbs.	4 lbs.
Early Beets.....	43 "	79 "	16 "
Early Cabbage.....	114 "	129 "	23 "
Cauliflower.....	5 "	15 "	7 "
Cucumbers.....	112 "	168 "	84 "
Lettuce.....	69 "	111 "	21 "
Onions.....	67 "	48 "	19 "
Potatoes.....	30 "	41 "	10 "
Tomatoes.....	11 "	6 "	8 "
Turnips.....	21 "	5 "	8 "

The figures relate only to those portions of the crop which are usually sold off the land—the tops, leaves, etc., not being counted, as they are supposed to go back to the soil as manure of one kind or another. As a matter of fact, it is doubtful if a very great quantity of this roughage, or, rather, the plant food contained in it, is not lost in the operation. At best, it is doubtful if it reached the very land from which it was taken. Consequently, the actual drain of plant food in growing vegetable crops must be much more than the figures in the table show. One very good thing the table brings out is the relation between the different elements of plant food. It shows that for a certain amount of nitrogen, for example, certain other amounts of potash and of phosphoric acid must be used; that is, the proper balance in the plant food.

G. W. WILSON.

## ACID PHOSPHATE AND COTTON-SEED MEAL.

*Editor Southern Planter :*

Throughout the South generally fertilizers are largely compounded of acid phosphate and cotton-seed meal. As these two raw materials for the manufacture of commercial fertilizers are natural to the Southern country. Acid phosphate contains anywhere from 12 to 16 per cent. available phosphoric acid, and cotton seed meal from 5 to 8 per cent. nitrogen, 1 to 2 per cent. potash, and about 2 per cent. phosphoric acid. A mixture of equal weights of acid phosphate and cotton-seed meal, say 1,000 pounds of each, will give a fertilizer of about the following analysis :

Nitrogen, 3 to 4 per cent.

Available phosphoric acid, 6 to 8 per cent.

Potash, not more than 1 per cent.

The weak point in such a mixture is the very small per cent. of potash, and in fact the best grades of fertilizers are "fortified," as it is called, by adding Ger-

man potash salts or other materials containing potash. Most commercial fertilizers, however, are not thus fortified. That this potash is necessary is shown by the composition of the crops generally grown in the South.

For example, cotton at the rate of 300 pounds of lint per acre requires for the whole crop some 50 pounds of nitrogen, 39 pounds of potash, and 12 pounds of phosphoric acid. For every 100 pounds of nitrogen contained in lint cotton, there are also 317 pounds of potash and 26 pounds of phosphoric acid. From this it is pretty clear that potash is a very important ingredient in the plant food for cotton, especially as the lint is the main object of the crop.

Tobacco is another crop grown in the South, and a fair crop per acre demands plant food at the rate of 75 pounds of nitrogen, 200 pounds of potash, and 16 pounds of phosphoric acid. It is evident that in this case again a simple mixture of acid phosphate and cotton seed meal does not supply the proper quantities of plant food.

One of the chief crops of the South is the cow pea, grown as a manure, a soil cover, or for forage. It is a legume, and consequently if given the proper mineral plant food will draw the necessary nitrogen from the air. The plant must be fertilized, however, in order to assimilate this atmospheric nitrogen, and the analysis shows that the proper proportions of plant-food are 300 pounds of potash to every 100 pounds of phosphoric acid; evidence again that the acid phosphate cotton seed meal mixture is not all that is desired.

It is not our desire to cast any reflections on the use of either cotton seed meal or acid phosphate as plant food, for, so far as they go, they are excellent. The food of plants consists of three substances—nitrogen, potash and phosphoric acid—and no great excess of any one, or of any two for that matter, can make good a shortage of any one. If the soil has enough nitrogen and phosphoric acid for a full crop, but only enough potash for a half crop, only a half crop or less will be grown. The chain is no stronger than its weakest link. For this reason a simple mixture of cotton seed meal and acid phosphate is unsatisfactory because it supplies only nitrogen and phosphoric acid, leaving potash lacking to a serious extent. H.

The amount of mineral plant food in the soil, and its availability, has a great bearing upon the question of the effectiveness of any application of fertilizers. In many sections of the South, especially east of the Piedmont section, experiments have demonstrated that potash is already in abundant supply in the soil, hence the practice of only applying phosphoric acid and nitrogen.—ED.

Mention the *Planter* to your friends.

## BERMUDA GRASS—JOHNSON GRASS.

*Editor Southern Planter:*

In your September issue, Mr. J. D. Perkins, Grayson county, Va., asks "When Bermuda grass should be sown." If the gentleman will permit me to answer, I will say, Never! never! never!

However, if he wishes to get a start, I have about ten acres on one of my farms which he may have if he wishes it; and for his trouble I will pay him \$5 per acre to take it away.

My foreman is under strict instructions, should any Bermuda, Brome, or Johnson grass man come on the farm, to escort him to the front gate with the request never to return. I may be mistaken, but this is the way I feel about it. I have personal experience with Bermuda only. This is enough for me.

Remington, Va.

L. M. ALLISON.

There is a story told of the late Lord Palmerston, once Prime Minister of England, that when asked to define "Dirt," he replied that it was "Matter in the wrong place," thus inferring that even dirt had its uses. So we would say with reference to the grasses named. All three—"Brome," "Johnson," and "Bermuda"—have value, and great value, in their proper places, but may become nuisances when out of place. With out Brome grass, many parts in the arid sections of the West would be without hay or pastures; whilst without Bermuda, the hot sections of the South would be without summer grazing, and without Johnson grass, many sections of the South would have but little hay. They all fill a place and meet a felt want somewhere, and all have both strong friends and bitter enemies. We know of no grass that makes so good and reliable a pasture in a hot summer on light lands in a warm climate as Bermuda; but on heavy land, in a cooler section, it may easily become a nuisance. It should never be introduced except upon land that is to be kept in permanent pasture. So with Johnson grass. It should not be sown except where it is to remain as a permanent hay meadow, and should always be cut before the seed ripens.—ED.

## ENQUIRER'S COLUMN.

Enquiries should be sent to the office of *The Southern Planter*, Richmond, Va., not later than the 15th of the month, for replies to appear in the next month's issue of the *Planter*.

## Crops for Hogs.

I have four lots on which I expect to run hogs the coming year. I have already seeded one lot to annual clover and oats; one lot seeded to rye, vetch and oats, and two more I will seed later. What shall they be seeded with, and when and how? Should the two lots I have seeded be allowed to come to maturity before turning hogs on, or should it be grazed soon and then take them off and allow the crop to come out and mature and then turn them in. I notice through the col-

umns of "Blooded Stock" a good deal is said against sowing wheat or rape for hogs, and I was afraid to try it. At what stage should the artichokes be turned over to the hogs?

Mecklenburg Co., Va.

A READER.

We would seed one of the remaining lots to Canada peas, wheat, oats and rye in December or January, and the remaining one would plant part in artichokes in April, and the balance in turnips and ruta bagas for winter feeding. The lots seeded in clover, oats and rye, vetch and oats should be turned into as soon as the crops afford a good bite for the hogs, as after these crops become maturely grown hogs do not care for them, and besides they will be needed to supply summer and fall feed. One of the lots should be grazed down and what is left be turned under in April and be planted late in that month with sorghum or part in sorghum and part in corn. The other lot should be turned down in May after the hogs have grazed it well and be planted in cow peas. The Canada pea lot should be turned down in June after the hogs have grazed the crop and be planted also in cow-peas or cow-peas and sorghum, or part in cow-peas and part in sorghum and part in rape in August. These second crops should carry the hogs until the artichokes, turnips, ruta bagas and rape are ready in October or November. We know of no reason why wheat and rape should not be sown for hogs. On the contrary, we do know that rape makes one of the best of hog pastures.—ED.

## Strawberry Bed—Rhubarb.

1. I have a strawberry bed of about half acre that has been neglected for two years, and the vines are just matted together—the ground is thoroughly covered and the weeds are as high as one's head all over the patch. Please tell me in the next issue of the *Planter* the best plan to cultivate to get best results.

2. Is rhubarb profitable to grow for market in my section?

3. What do you think of the "Crimson Winter" rhubarb to grow for profit?

Surry Co., N. C.

A SUBSCRIBER.

1. Plow the bed up and plant a new one on a piece of land clear of weeds. It would be useless and unprofitable labor to endeavor to make the existing bed produce a good crop. In this issue will be found an article on planting strawberries. Nearly all large growers now plow up their beds after the second year's bearing. Many only take one crop from them.

2. The demand for early forced rhubarb is growing on the markets, and we do doubt not but that in a few years there will be a large call for it. How far it would be a profitable crop in North Carolina we do not know. The market for it at present is mainly confined to the large cities of the North. We see no reason why it should not be shipped there from North Carolina as it

is not a crop requiring any special care in transportation, and therefore the freight ought not be heavy.

3. The only variety we have ever forced is a Crimson variety, whether the one you refer to or not we can not say. The stalks are easy of production in a dark, warm cellar. The roots of well grown plants should be dug up in the fall as soon as frost has cut them down and be placed closely together on the floor in the cellar with soil filled in amongst them and be kept just moist. In a short time they will commence to throw out the new stalks.—Ed.

#### Wood Ashes—Alfalfa.

I have two or three thousand bushels of ashes burned on the farm. I want to try some on corn and cotton. Please tell me how to use to best advantage. Will it work well in compost with cow-stable manure and good dirt? and what other fertilizer should be used with it, and how many ashes will be safe to use in drill or broad cast? I have only recently moved from the red clay lands to this light sandy soil. I see no Alfalfa here; can it be successfully grown, and what fertilizer would you suggest?

*Edgecombe Co., N. C.*

EDGECOMBE.

Good ashes are mainly valuable for the potash they contain. In good, hard wood ashes this will run as high as 5 per cent. Lime is the principal other constituent. Both of these elements are valuable on nearly all soil, and the potash especially so on light land. The ashes will no doubt help your corn and cotton, but they should not be composted with stable manure. The best way to use them is to spread them broadcast on the land. They are too caustic to be applied in the drill along with seed of any kind. Acid phosphate and cotton-seed meal should be applied with them if the best results are to be looked for.

There is no reason why alfalfa should not be grown in your State. It requires good loamy soil well drained and soil free from weeds, which are the greatest enemies to securing a good stand. The seed should in the South be sown in August on land which has been specially prepared for the crop by having been plowed deep and cultivated all summer to make it fine and to kill out the weeds as they have germinated. An application of acid phosphate and potash, say, from 300 to 500 pounds to the acre, should be applied broadcast and be worked into the soil before seeding the alfalfa.—Ed.

#### Preserving Eggs.

In response to Mr. Morton Ingalls' query anent using water glass silicate of soda. If he drops the "Rhode Island Agricultural Experiment Station, Kingston, R. I., a postal asking for Part II of 14th Annual Report for 1901," the Director will very likely send him a copy. It contains a report of experiments made in using water glass, lime and salt and other preservatives for keeping eggs. The water glass preserved

eggs were o. k. over one year after putting up, 1 per cent. and 3 per cent. solution used.

*Lancaster Co., Va.*

HENEY J. KIRK.

#### Soy Beans and Cow-Peas—Cabbages—Acorns.

1. I am a young farmer, and never had any experience with soy beans and cow-peas. I desire to know if you think they will grow profitably in this part of the State as improvers of land and for hay.

What kind of peas to use, and whether sow broadcast or drilled.

2. What is the cause for cabbage growing better when transplanted than when seed are planted in hills?

3. Is it safe to let brood sows run on acorns when in pig?

*Carroll Co., Va.*

J. M. MARSHALL.

1. It is doubtful whether cow peas and soy beans will make a good growth in your county except in the valleys. Your elevation is too high. This would especially apply to soy beans, which require a long season for perfecting their growth. There are one or two varieties of the cow-pea which we think might succeed in your valleys where you grow tobacco, such as the Warren and the New Era. You might try these, sown either broadcast or in drill. If wanted to produce seed, they are better sown in drills two feet six inches apart and three or four inches apart in the drill.

2. Cabbage, like many other fibrous rooted plants, always make better growth and head better when transplanted. It is difficult to state a reason for this, but experience has demonstrated its truth.

3. We have not heard of sows in pig suffering from eating acorns.—Ed.

#### Crops in Orchard.

I have an orchard two years old. Will it hurt to put the land in wheat, then in black peas, and fallow in the fall?

*Greensville Co., Va.*

SUBSCRIBER.

The only crops which should be grown in an orchard are vegetable crops and clover and peas. Whilst it might not seriously injure the trees to grow a crop of wheat for one year, yet if the season were to be a dry one, it would materially check the growth. Our view is that if you want a particular crop, you should grow that crop only on the land. If you want trees, grow trees, and only such other crops as will help the trees by fertilizing the land.—Ed.

#### Fertilizer for Grape Vines.

Please advise the best form of fertilizer for young grape vines, and state how it should be applied. Should they be cultivated, and how? Is pure animal bone good for fruit trees?

*Baltimore, Md.*

S. D. JONES.

Bone meal and ashes make one of the best fertili-

zers for grape vines. The vineyard should be cultivated just as you would cultivate a crop of corn. Apply the fertilizer broadcast in the spring, and work it into the ground with cultivator or harrow.—ED.

#### Barley—Grass for Permanent Pasture.

Please tell me something about barley. How would it compare with oats and rye as a crop for grain and forage, and will it grow on thin land as well as rye, and when is the best time to sow it, and how much ought to be sown to the acre? How much rye ought to be sown to the acre? I am thinking of sowing a mixture of Virginia blue grass, Japan clover, orchard grass, and tall meadow oat grass for permanent pasture on land not very highly improved. How do you think it will do? J. A. DONELSON.

Campbell Co., Va.

Barley requires good, rich loam land to make a profitable crop. It does no good on thin land. It should be sown in the fall—say September or October. One and a half bushels should be sown to the acre. From one to one and a half bushels of rye should be sown. Rye will be likely to succeed much better in your county than barley. The grass mixture you suggest will be likely to meet your needs.—ED.

#### Grasses for Woodland.

Please discuss fully in the *Planter* how best to secure a permanent all-the-year-round pasture on swamp woodland, unplowed, in Northeast Louisiana, with good surface drainage, on which all small timber and undergrowth have been deadened, leaving large trees, such as oak, sweet-gum, etc., growing, which will partially shade the land.

What grass seed, sown broadcast over such unplowed woodland, will germinate, grow and perpetuate themselves from year to year, and supplant or supercede the rough native grasses? State quantity and proportion, as also the time when the seed should be sown.

Discuss particularly the merits of Bermuda grass, Japan clover, Giant beggar weed, Hairy vetch, etc., for the purpose stated. J. B. WEST.

Summit, Miss.

The grasses best adapted for growing on land shaded by trees are wood meadow grass, perennial rye grass, hard fescue, Virginia blue grass, Kentucky blue grass, and Japan and white clover. The seed should be sowed in the fall—August, September and October, at the rate of two bushels to the acre. Bermuda grass cannot endure shading, and is not, therefore, suitable. Beggar weed and Hairy vetch are, neither of them, suitable plants for a pasture field. They should be grown on cultivated land and make a green fodder crop, or can be cut for hay. The woodland should be harrowed over as far as possible before seeding the grasses, so as to give them a better chance of germinating. We have very rarely known the seeding of grasses in wood-land without cultivation to be a com-

plete success. The native coarse grasses which are indigenous to the soil are too firmly established to be run out by introduced varieties. Japan clover, however, will generally succeed in holding its own if not too densely shaded, and the blue grasses may gradually establish themselves.—ED.

#### THE PROBLEM OF SOIL FERTILITY.

PROF. L. A. CLINTON, CONNECTICUT.

Many farmers think that if they could have their soil analyzed that they would know then just what to apply in the way of commercial fertilizers. Soil analysis would show that in the surface 8 inches of soil of every grass field, there are some 3,000 pounds of nitrogen, some 4,000 pounds of phosphoric acid, and anywhere from 12,000 to 15,000 pounds of potash. These amounts are far in excess of what would be needed to produce crops for many years to come, and the information obtained from having the soil analyzed is really very slight, because the analysis does not tell how much of this plant-food is available for the plant's use.

Every farmer must be an experimenter, and every farm an experiment station. The farmer who has not the spirit of investigation, and who cannot learn for himself the treatment best adapted to his soil, will not make a success at farming.

Our experiment stations have conducted fertilizer experiments year after year. They have found that certain fertilizers upon certain soils in certain seasons are best for corn or for oats, or for other farm crops, but these results are of little value to the farmer so far as giving direct information as to the needs of his farm. They point in a general way towards better methods of treatment which will probably prove advantageous. If, as the result of many experiments, it is found that the soil in any portion of the State responds to an application of phosphoric acid, then the farmers living in that section may suppose that phosphoric acid is the element in which their soil is deficient, and that a fertilizer containing phosphoric acid is the one they should apply.

The problem of soil fertility is not one of plant-food alone. We are learning every year that bacteria play far more importance in the production of our crops than we had supposed. Alfalfa does not seem to thrive in Connecticut. Those who have tried it almost invariably report that it does not grow here. The tests made upon our college farm show that it does not thrive. I have recently dug up some plants which were attempting to grow upon the college farm. The roots contained no nodules whatever, while clover which was growing near was abundantly supplied with nodules. This indicates that the specific bacteria required for the growth of alfalfa are not present in our soil. Certainly the plant-food supplied is abundant, the climatic conditions are favorable, and we must look to bacteria if we expect to grow alfalfa successfully in Connecticut.—*American Agriculturist*.

Mention the *Planter* to your friends.

## Trucking, Garden and Orchard.

### WORK FOR THE MONTH.

Harvesting, storing and shipping all the summer-grown crops should now be completed as fast as possible, as frost may be expected at any time.

As fast as the land is cleared rake up all trash, leaves and weeds and burn the same. This is a much safer way of disposing of this than burying it in the ground or making it into compost. The larva and eggs of insects of all kinds, which are largely to be found in the trash, and the spores of all fungoid diseases which may have affected the crops, are by burning absolutely and certainly destroyed. Disposed of in any other way some of these are sure to escape and make trouble another year.

When the land is cleared it should be plowed deep and a dressing of lime be applied and harrowed in. This will sweeten the soil, which is apt to become soured by the heavy dressings of farm yard manure and fertilizer which must be used to successfully grow all vegetable crops. Such land as is not required for the growth of cabbages, kale, spinach and lettuce may be seeded with crimson clover, vetch and rye. These will help to conserve fertility and will make some vegetable matter to turn down in the spring.

Where orchards and small bush fruits have had peas sown in them these should be allowed to remain on the ground and a seeding of crimson clover, vetch and rye be thrown over them. Much of this will germinate and grow under the shade of the dead vines and will conserve the fertility accumulated by the peas and add to the quantity of vegetable matter to turn under in the spring.

Cabbages may be set out for the spring crop in all the Tidewater sections of the Southern States. The land cannot be made too rich or be too well prepared for this crop.

Kale, spinach and lettuce crops may be seeded in the same sections, and lettuce plants raised in beds may be set out. These lettuce plants may need to be mulched with straw or pine tags if the winter becomes at all severe, and therefore should not be planted largely unless these means of protection are at hand.

Lettuce plants should be set out in cold frames for winter cutting. Keep the lights off as long as the weather is mild, but look out for frosty nights and cover when threatening. The soil for the frames should

be fine loamy soil, sweet and friable, and rich in vegetable matter, and should have been got ready during the summer and frequently turned.

Asparagus beds should have the tops cut off and the weeds and trash raked off and burnt and be harrowed down and covered deeply with barn yard manure.

The pruning of raspberry, blackberry and grape-vine canes may be done at any time from now on during the winter. The old canes on the raspberry bushes should all be cut out and the new ones thinned out to a reasonable extent and be shortened back. Blackberry canes should be shortened back and the old dead wood be cut out.

Planting of apples, pears and peaches may be begun and be continued until the ground becomes frozen. Break the ground deeply, especially where the trees are to be set out, and make the holes big enough to allow of the roots being spread out. Do not use manure or fertilizer in the holes, but set the trees in the natural soil, using the top soil first to cover the roots and the bottom soil on top. Manure may be used on the surface as a mulch. In this issue will be found a list of fruit trees suitable for planting in Virginia and North Carolina.

### THE MANAGEMENT OF RASPBERRIES AND BLACKBERRIES.

A correspondent asks the Maine Experiment Station for information as to the time for pruning and transplanting raspberries and blackberries. In reply the following suggestions were made:

"The ideal treatment for raspberries and blackberries is to pinch them back at intervals during the summer and thus secure strong, sturdy bushes 3½ to 4 feet high, with laterals 1 to 1½ feet long, rather than to practice severe heading back after the plants have become long and 'leggy.' If, however, as is frequently the case even in the best managed gardens, the plants are at this season making vigorous growth which may not mature, they should at once be cut back to the desired height and the canes will harden before cold weather. Many prefer to cut back the bushes in the spring, after the extent of winter-killing is determined. Thinning the canes, which should always be practiced, may be done at any time during the season. In general one-half, or more, of the young canes which appear should be cut out.

"Blackberry and raspberry bushes may be transplanted this fall if the work is done immediately, but better results are usually obtained from spring planting. Currants, on the other hand, have given rather better results from fall setting.

W. M. M."

## WINTER PLANTING OF STRAWBERRIES AT THE SOUTH.

*Editor Southern Planter :*

Anywhere south of the Mason and Dixon line the strawberry may be set at any time during fall, winter or spring, provided the ground is not too wet to walk on or not actually frozen at the time. In many respects winter is the safest of all times to plant. Air and soil are then cool or cold and moist, just the condition that the strawberry revels in. For it is decidedly a cool weather plant, extending its root growth every day during the winter that the ground is not frozen, even though the frost keeps its leaves nipped off as fast as they peer out. The moment that the heaviest frost abates in the spring leaf growth begins, and close on the heels of this come the blooms. Then before most other fruit has well begun to bloom, strawberries are ripe and the average mortal is happy.

Heat and drought are the great foes of the strawberry. The Southern grower avoids harm from these foes at planting time by setting plants in weather as cool or cold as practicable. We plant largely in late fall and in the dead of winter. It is the rarest thing in the world for cold weather to do direct harm to the strawberry plant at the South. The only indirect harm it can do is on wet, stiff soil to heave or lift the crust of the soil up by freezing. This also lifts the plants and leaves the roots exposed to the wind and sun; when the freeze is over the soil subsides to its normal level.

There is no danger of this only on wet, soggy soil which keeps saturated, and is therefore greatly subject to heaving when frozen. Even on this soil planting may be safely done in dead of winter, provided care is taken to step directly on the plant after it is set. This compresses the soil around it, prevents an excess of water from soaking in just at that spot, and greatly decreases the heaving effects of severe cold.

But there is a much better plan than this whenever it is practicable. That is to put about a fork full of coarse manure evenly around and on the plants. This gives the desired protection of the soil around the plants from cold, and the fertilizing properties are leached out and washed in where the roots can at once appropriate them. In fact, this is the best way that stable manure can be applied to the strawberry plant, North or South. The coarse litter, after the fertilizing properties leach out, makes an excellent mulch to keep the berries clear of grit the following spring. If too much manure has fallen on the plant, it will be necessary to remove some of it about time growth begins in spring, and leave it around and between the plants.

If manure cannot be had to mulch the plants set in dead of winter on wet and soggy land, any coarse lit-

ter or straw will answer. Forest leaves do very well, only that they are more liable to be blown off by high winds, and being so much broader, they are more apt to smother the plants. Pine straw is an ideal mulch; than which there is nothing better.

The mulching directions for winter set plants which we have just given, is for the North, or for such soil at the South as is much given to wetness and to heaving in the coldest weather. We plant over one hundred acres every year on ordinary soil without any protection or any precaution except to set the plants properly.

O. W. BLACKNALL.

*Kittrel, N. C.*

## VIRGINIA STATE HORTICULTURAL SOCIETY.

*Editor Southern Planter :*

Members of the Virginia State Horticultural Society and the public generally are invited to attend the Annual Meeting of the Society which will be held in the Masonic Hall, Lynchburg, on December 2nd and 3rd, the meeting will be called to order by the President of the Society, Hon. Sam'l B. Woods of Charlottesville, at 10 A. M. To all who are interested in horticulture this will be a most instructive meeting, as the Secretary has succeeded in arranging for papers being read and subjects brought up for discussion by some of the foremost horticulturists in the country. The U. S. Department of Agriculture, at Washington, will be represented among the speakers, and leading men of our own State will also take part. Among the number will be members of the Horticultural Staff at Blacksburg, Commissioner of Agriculture Keizer, Prof. H. G. Heiges, late U. S. Pomologist, now Supt. of State Test Farm at Saxe, Va., State Senator S. L. Lupton, Hon. G. E. Murrell, Dr. W. L. McCue. W. H. W. Collingwood of the *Rural New Yorker*, will discuss conditions of the New York fruit market and best methods for handling fruit there. Prof. H. E. Van Deman, whose presence is always welcomed by the members of the Society, will be present throughout the meeting to tell us more of his experiences in practical horticulture. The subject of Packing, Grading and Handling Fruit will be exhaustively discussed by experts in the different classes, such as Apples, Peaches, Berries and By-Products. Those of your readers who attended the last meeting of the Society in Richmond will remember with what enthusiasm it was conducted, and the amount of information that was obtained from the discussions, and may be assured we shall not fall behind our record. Arrangements have been made for special rates at the Lynchburg hotels and for travel on the railroads. Following the plan inaugurated at the last meeting, which proved so popular, badges will

again be distributed to all members and invited guests of the Society. A programme of all arrangements for the meeting will shortly be issued to each member and will also be sent to any one else desirous of attending, on application to the Secretary. Among the other matters of interest, the subject of having a creditable Horticultural Exhibit at the St. Louis Exposition will be discussed and its advantages in advertising the State's resources in this line will be urged.

Crozet, Alb. Co., Va.

WALTER WHATELY,  
Sec. and Treas.

### CROWN GALL ON APPLE TREES.

*Editor Southern Planter :*

My old apple orchard is affected with the disease described in the last year's annual report of the State Commissioner of Agriculture as "crown gall." I have nursery trees, for this fall's transplanting, growing very near the old orchard. I propose to plant these nursery trees into an orchard about two hundred yards distant from the old orchard, and where apple trees never grew. How shall I manage them in transplanting so as to cure the disease if it already exists, and to prevent its occurrence if it does not exist.

One variety of these apples was grafted with twigs taken from trees that I am quite sure were diseased. Is there any assurance that they can be so treated as to make them healthy trees?

Any information you can give me on this subject will be highly appreciated.

King George Co., Va.

T. T. ARNOLD.

We asked the opinion of the Bureau of Plant Industry (Department of Agriculture) on the foregoing, and the following is the reply received from the Pathologist:

Your letter of October 9th, with letter of Mr. T. T. Arnold, in regard to crown gall of the apple, has been referred to me. We transmit the following reply to your correspondent's questions:

Crown gall has been pretty definitely proved to be contagious by inoculation experiments. The investigations of Prof. Toomey in Arizona, and Dr. Halstead in New Jersey, have both shown this. However, there is very little definitely known as to how the contagion spreads or the manner of infection. The disease is supposed to be caused by a parasitic slime mold, a low form of life which is on the border line between plants and animals.

These molds have been claimed at times by both the botanists and the zoologists. At the present time, however, they are considered to belong to the animal kingdom. The probabilities are very strong that crown gall is spread in the soil, possibly in the case of nursery trees by the cultivator dragging the germs from one tree to another.

There is no particular method of using fungicides or disinfectants of any sort that we can advise you to

use. In view of the fact that so little is known about crown gall, I would suggest that you select from your nursery trees only those which are perfectly healthy, and plant them in the orchard, if possible, avoiding in the cultivation of your orchard—the passing of the plows, harrows, cultivators, etc., from the old infected trees to the new young orchard.

Very truly yours,

M. B. WAITE,

*Pathologist in Charge of Investigations of  
Diseases of Orchard Fruit.*

Prof. Alwood, in the last report of the State Horticultural Society, says: "Pieces of the gall or earth from them scattered about trees appear to be able to cause the disease, and it spreads from tree to tree in the orchard by infected earth, or portions of gall being taken from one tree to another in the process of cultivation." We would advise the enquirer to be very careful not to set out trees from any land where any infected trees are found, and to be certain that his new orchard ground is itself clear of infected soil.—ED.

### PLANTING ONIONS—FIG TREES.

*Editor Southern Planter :*

Your correspondent, T. E. Person, Wayne county, N. C., page 573, October number, writes you about planting onion seedlings from the seed-bed. He has time to do so yet if he will afford a little straw to protect in case of severe weather.

Some time since (I think last year), you had an enquiry about a "barren fig tree." In that case, your enquirer had evidently a male tree. I note he said it was a "volunteer." I have known a number of such, all tracing their origin to imported dry figs. The early settlers seem to have brought to this country only the female or bearing trees. As the season is now approaching, he can graft.

Beaufort Co., S. C.

'76.

### FALL BEARING STRAWBERRY.

I give a few additional facts in regard to the fall-bearing Pan-American strawberry, briefly mentioned in American Agriculturist's report of the New York State Fair recently. I have visited the grounds of the originator several times this fall and each time found the half acre of plants loaded with fruit in all stages of maturity, from the buds just started to the ripe berries. I counted 22 fruit stems on a single one-year-old plant. The plants are propagated chiefly by dividing the crown. The runners, which are not numerous, begin bearing as soon as they take root. Altogether, it is a very wide departure from the usual habits of the strawberry and will be most cordially welcomed by all lovers of strawberries.—D. D. G., Alleghany county, N. Y., in the *American Agriculturist*.

Mention the *Planter* to your friends.

### APPLES ABROAD.

Cable from James Adam, Son & Co., Liverpool, October 10, 1902: "The market is active."

CHESTER R. LAWRENCE,  
92 State Street, Boston, Mass.

Messrs. Ed. Jacobs & Sons, London, England, cable sales of apples by the steamships Minnehaha and St. Louis, sold by them this day as follows: (Hudson River fruit):

Baldwins, 14s. 6d. to 17s. 9d., principally 15s. to 16s.; Greenings, 11s. to 16s. 6d., principally 14s. to 15s.; Solitz, 14s. 2d. to 18s.; Spvs., 11s. 6d. to 18s.; Kings, 14s. to 18s.; Russets, 15s.; Ben Davis (New Jersey fruit), 14s. 3d. to 17s. 6d.; Delaware Kieffer pears (bad condition), 11s. 6d.; Hudson River Kieffer pears, 16s. to 16s. 6d.

As you see from the above, notwithstanding the large shipments that are going across, London prices are good, and will continue to be good all the season on account of the great shortage in Nova Scotia. The large supplies now going across from Montreal and Boston nearly all go to Liverpool and Glasgow; steamship communication between those towns is better than with London, and in my opinion London will be the best market this season. Prices mentioned above are gross averages, not quotations, with wets, slacks and resale to be taken off.—W. N. White, in the *Country Gentleman*.

### PECAN CULTURE.

*Editor Southern Planter:*

Twenty years ago, when I first became interested in the pecan, there was not a nursery in Georgia from which many trees of this nut could be obtained. Even in Texas and Louisiana, where large quantities of pecans are gathered every year from the trees of native growth, comparatively little attention was given to this nut in the way of cultivation and improvement.

How different now. To persons who have not kept up with the progress in pecan culture during the last twenty years the meeting of the National Nut Grower's Association at Macon, Ga., a short time ago, would have been a revelation.

Enthusiastic, practical and intelligent pecan growers from Georgia, Florida, Alabama, Mississippi, Louisiana and Texas, were present, and their discussions of the various questions that arise in nut-growing were highly entertaining to persons who are interested in any line of horticulture.

Nut growing as an industry is likely to be radically advanced through the efforts of this Association, and a few years hence will assume proportions not dreamed of a few years ago.

The great demand for pecan nuts, at paying prices, has given quite an impetus to nut-growing in Georgia, so much so that this industry in the Cracker State is

fast becoming one of the most important in the line of horticulture.

At the recent meeting of the nut growers, referred to above, a very interesting address was delivered by Prof. J. B. Hunnicut, the editor of the *Southern Cultivator*. Having given close attention for many years to all questions connected with the farm and the garden, Prof. Hunnicut is well prepared to speak intelligently on the subject of pecan culture. He referred to an instance in which a large pecan tree produced sixty-four dollars' worth of nuts in one season; and to another in which the owner of a half acre pecan grove derived more money from his trees than from his two horse farm. He said: "Did you ever hear of a pecan tree dying? Did you ever see a dead one? I never did. They live for centuries—they ought to be planted as the shade tree of the South. Cease buying bonds, which are a debt on posterity, and plant pecan trees—something that will grow into profit for posterity. Plant fifty trees to the acre, and when they reach maturity they will produce, at a low estimate, \$25 to the tree."

The man who plants a large pecan grove in the United States, almost anywhere south of the fortieth degree of latitude, may rest assured that he is laying the foundation for an enduring fortune.

Hard Co., Ga.

L. W. PEEK.

We cannot endorse the advice to plant pecans almost anywhere south of the fortieth degree of latitude. In a Bulletin issued by the Department of Agriculture and prepared jointly by the Department and the American Pomological Society, pecans are advised only to be planted in Eastern North Carolina, South Carolina and Georgia below 500 feet elevation, and in Florida, Alabama, Mississippi, Louisiana Arkansas and Texas, and even in these sections not above 500 feet elevation, except in parts of Texas. They are not suitable for planting in any part of Virginia.—Ed.

### PARAFFIN IN HORTICULTURE.

A new and important use of refined paraffin wax seems to have been discovered by a resident of Ohio, living near Lancaster, who had two trees badly damaged by storm, one being a maple and the other an apple. In each case a large limb was broken down from the trunk, but still attached to it. The limbs were propped up and fastened securely with straps, very much as a broken leg might be fastened with splints, and then melted refined wax poured into and over all the cracks. This "surgical operation" was entirely successful. The paraffin prevented the escape of the sap, kept out the rain and moisture which would have rotted the trees, prevented the depredations of insects, and the limbs seem thus far to be perfectly re-attached to the tree.—*Country Gentleman*.

Mention the *Planter* to your friends.

**FRUIT LIST FOR VIRGINIA.\***

We take the following list from a Bulletin prepared by Prof. W. B. Alwood, of the State Experiment Station:

Prof. Alwood says: "The varieties of fruits best adapted to the soils of Virginia is next in importance to a study of the soils if not equal thereto. To actually make a critical study of this subject is beyond the possibilities of any one man or dozen men, but personal observation, supplemented by a consensus of the best experience gathered from the State at large, ought to furnish data of importance. It is in this manner we have prepared the

\*This list was first prepared for the Virginia State Horticultural Society by a committee of which Prof. W. B. Alwood is chairman, and is here reprinted in revised form.

**APPLES.**

NAME.	Color.	Quality.	Season.	Use.	Tidewater.	Middle Virginia.	Piedmont.	Appalachia.	REMARKS.
<b>SUMMER.</b>									
Early Harvest.....	Y. W.	8	V. E.	K. M. D.	*	*	*	*	* Not equal to next on list.
Early Ripe.....	Y.	9	E.	K. M. D.	*	*	*	*	* One of the best for culinary use.
Red Ashmun.....	R.	5-6	E.	K. M.	*	*	*	*	* Ripens unevenly.
Summer Pearmain.....	R. H.	7	M. E.	K. M.	*	*	*	*	
Yellow Transparent.....	Y.	7	E.	K. M.	*	*	*	*	
<b>AUTUMN.</b>									
Buckingham.....	R. Str.	9	L.	K. M. D.	*	*	*	*	* Excellent for culinary purposes.
Fall Pippin.....	Y.	10	M.	K. D.	*	*	*	*	* Excellent culinary and excellent for purposes.
Grimes (Golden).....	Y.	10	M.	K. M. D.	*	*	*	*	* Mostly a dessert apple. Late autumn in lower Va.
Malden Blush.....	Y. R.	7-9	E.	K. M. D.	*	*	*	*	* One of the best for family use.
Maugham (Fall Cheese).....	Y. R. Str.	7-8	M. L.	K. M. D.	*	*	*	*	* An excellent apple.
Smokehouse.....	Y. R.	8-10	M. L.	K. M. D.	*	*	*	*	* Fine dessert and cooking apple.
<b>WINTER.</b>									
Ben Davis.....	Y. R. Str.	4	L.	K. M.	*	*	*	*	* Early bearer. Ships well.
Grimes (Golden).....	Y.	10	E.	K. M. D.	*	*	*	*	* Early bearer. Ships well.
Stayman Winesap.....	R.	9	L.	M. D.	*	*	*	*	* Early winter, abundant in districts.
Winesap.....	R.	9	L.	K. M. D.	*	*	*	*	* Commercially unknown in our own districts.
Yellow Newtown (Aldo Pippin).....	Y.	10	V. L.	K. M. D.	*	*	*	*	* Best red variety where sold suits.
York Imperial (J. P. Winter).....	Y. R. Str.	7	L.	K. M. D.	*	*	*	*	* Should be limited to special soils.

list submitted. The writer has constantly observed the varieties grown in the State, noting the important points brought to light by his own observation and the observation of others. He has also received the direct aid of Messrs. J. B. Watkins, H. E. Van Deman, Chas. L. Wayland, J. E. Lupton, M. E. Fulcher, Geo. E. Murrell, J. G. Wertz, and J. W. Porter, in compiling this list. These gentlemen filled out provisional lists, which were compared, and the final list drawn up as it here appears. In this list are included only such fruits as are thought to be the standard old varieties, and a few of the most promising newer sorts.

"There can be no greater mistake made than to plant an ill assorted lot of varieties of fruit. A few well selected kinds is the first essential to such success in commercial fruit culture."

**PEACHES.**

NAME.	Color.	Quality.	Adhesion.	Color of flesh.	Season.	Use.	Tidewater.	Middle Virginia.	Piedmont.	Appalachia.	REMARKS.
<b>VERY EARLY.</b>											
Alexander.....	W. R.	5-6	S. C.	G. W.	V. E.	M. D.	*	*	*	*	
Shred.....	G. R.	6-7	S. C.	W. W.	V. E.	M.	*	*	*	*	
<b>EARLY.</b>											
Bishop (Early).....	Y. R.	9-10	F.	W.	E.	M. D.	*	*	*	*	
Early Crawford.....	Y. R.	8	F.	W.	E.	M. D.	*	*	*	*	
Mountain Rose.....	W. R.	7-8	F.	W. Y.	E.	M. D.	*	*	*	*	
St. John (Yellow).....	Y. R.	5-6	F.	Y.	E.	M. D.	*	*	*	*	Good commercial peach. One of the best in quality.
<b>MEDIUM.</b>											
Chinese (King).....	Y. C.	7-8	C.	R. W.	M.	K. M.	*	*	*	*	
Ebert.....	Y. R.	8	C.	W. M.	M.	K. M. D.	*	*	*	*	
Goldmine.....	Y. C.	10	C.	W. M.	M.	K. M. D.	*	*	*	*	
Ottomson Cling.....	O.	8-9	C.	W. M.	M.	K. M. D.	*	*	*	*	
Oldman Free.....	Y. C.	8-9	F.	W.	M. 100 L.	K. M.	*	*	*	*	Good commercial peach. Standard sort.
Stump.....	Y. R.	5-6	F.	W.	M.	K. M.	*	*	*	*	Standard sort.
<b>LATE.</b>											
Blyss (Orme).....	G. W.	7	C.	W.	L.	K. M.	*	*	*	*	One of best late market.
Head (Orme).....	Y. R.	10	F.	W.	L.	K. M.	*	*	*	*	
Snawey.....	Y. R.	5-6	F.	Y.	L.	K. M.	*	*	*	*	
Smock.....	Y. R.	5-6	F.	Y.	L.	K. M.	*	*	*	*	
<b>VERY LATE.</b>											
Abricht (Winter).....	W. Y.	.....	C.	W.	V. L.	K. M.	*	*	*	*	
Leopold.....	.....	.....	F.	Y.	V. L.	K. M. D.	*	*	*	*	
Starke.....	.....	.....	F.	Y.	V. L.	K. M. D.	*	*	*	*	

PEARS.

NAME.	COLOR.	Quantity.	Season.	Use.	Standard or Dwart.	Tidewater.	Middle Virginia.	Piedmont.	Appalachia.	REMARKS.
<b>SUMMER.</b>										
Bartlett.....	Y. Ru.	8-9	L. S.	K. M. D.	S.	**	**	**	**	Old standard.
Chapp.....	Y. C.	6-7	L. S.	M. D.	S.	**	**	**	**	Ross at core.
Elizabeth (Manning).....	Y. Ru.	6-7	E. S.	D.	S.	**	**	**	**	Abundant bearer.
Summer Doyenne.....	Y. Ru.	4-5	S.	M. D.	S.	**	**	**	**	Best of very earlys.
Lyson.....	Y. Ru.	8-9	S.	M. D.	S.	**	**	**	**	Finest in quality.
<b>AUTUMN.</b>										
Angouleme (Decker).....	Y. Ru.	5-6	A.	M. D.	D. & S.	**	**	**	**	Good grower—splendid quality.
Bosc.....	Y. Ru.	10	A.	M. D.	S.	**	**	**	**	Poor crop—splendid quality.
Kiefer.....	Y. C.	4-5	L. A.	K. M.	S.	**	**	**	**	Highest quality.
Seckel.....	Br. Ru.	10	A.	K. M. D.	D. & S.	**	**	**	**	Good quality, family use.
Sheldon.....	Br. Ru.	7-8	A.	M. D.	D. & S.	**	**	**	**	Good size and fair quality.
<b>WINTER.</b>										
Easter (Beury).....	Br. Ru.	5-6	W.	M.	S.	**	**	**	**	An inferior fruit in this section.
Lawrence.....	Y. Ru.	7-8	W.	M. D.	D. & S.	**	**	**	**	Early winter, excellent quality.

\* Japanese pears do not rot quite so badly as the best European pears here.  
 † Most European pears rot badly here.

EXPLANATIONS OF SIGNS AND LETTERS USED.

The star (\*) is used to commend a variety; when it is desired to highly recommend a variety a double star (\*\*) is used in the column under appropriate sections of the State, or in several or in all sections as may be thought proper. A single star commends a variety less highly, and the dagger (†) indicates that a variety is thought promising or should be tested.

COLOR is indicated by various letters; as A for amber; B, black; Bl, blue; Br, brown; C, crimson; D, dark; G, green; L, light; P, purple; R, red; Ru, russet; Sc, scarlet; Str, striped; W, white; Y, yellow. Combinations of these letters indicate shades of colors.

PLUMS.

NAME.	COLOR.	Quantity.	Adhesion.	Season.	Use.	Tidewater.	Middle Virginia.	Piedmont.	Appalachia.	REMARKS.
<b>* JAPANESE GROUP.</b> ( <i>Prunus triflora</i> ).										
Abundance.....	P. R.	6-7	C.	E. L.	M. D.	**	**	**	**	Good bearer, but not hard.
Burbank.....	P. Y.	4-5	F.	M. L.	M.	**	**	**	**	Good bearer; more hard than Abundance.
Ogden.....	Y.	6-7	C.	E.	K. M. D.	**	**	**	**	
Red June.....	R.	4-5	S. C.	V. E.	M.	**	**	**	**	
Wickson.....	C.	5-6	C.	M.	M.	**	**	**	**	
<b>† EUROPEAN GROUP.</b> ( <i>Prunus domestica</i> ).										
Berry (Green Gage).....	G. Y.	10	C.	M.	K. M. D.	**	**	**	**	A splendid plum.
Breadstain.....	Bl.	4-6	E.	K.	M.	**	**	**	**	Good for canning.
Genl.....	Bl.	4-6	C.	E.	K. M.	**	**	**	**	Great bearer—lots badly.
Lombard.....	P. R.	4-5	C.	M.	K. M.	**	**	**	**	Not best in season.
Yellow Egg.....	Y.	4-5	C.	M.	K. M. D.	**	**	**	**	Splendid plum.
<b>NATIVE GROUP.</b> ( <i>Prunus sp.</i> )										
Wild Goose.....	P. R.	4-5	C.	E.	K. M. D.	**	**	**	**	

QUALITY is indicated on a scale of 0-10. The figures set in this column indicate our judgment on this point, 10 being the highest standard.

SEASON is indicated, first by separating the varieties into groups as near as practicable, then in each group E is used for early; V E, very early; M, medium; L, late, and other combinations which will be readily understood.

USE is indicated by K for kitchen, meaning all culinary uses; M, market, and D, dessert.

## Live Stock and Dairy.

### PICTURES OF LIVE STOCK.

In our last issue we gave notice that it was our intention to make our January 1903 issue a special one of great interest to live stock owners, and that to aid in so doing we were anxious to receive pictures of some of the best live stock in the South, and asking for same to be sent us for selection and reproduction. We regret to say that very few breeders or owners of fine animals have responded to our request. We would again urge upon them that they have photographs made and sent us at once or we shall be unable to have the plates made in time. This opportunity of bringing their stock to the notice of the farmers of the South ought surely to commend itself to the attention of owners of fine stock. It cannot fail to result in profit to those who avail themselves of it.

### THE BEST BREED OF DAIRY COWS FOR THE WASTED LANDS OF THE SOUTH.

*Editor Southern Planter:*

I am a careful reader of your valuable journal, and much interested in stock raising and dairying because I was born and raised in a country (Switzerland) where stock raising and dairying is in a high state of perfection. I have made Swiss cheese for the last ten years in Ohio and Wisconsin. Now I have come to Virginia and bought a place here. It seems to me that this State of Virginia is going down, and especially this section, in value every year, mainly because the natives of the country do not care for anything better than the old way of farming, and know little or nothing of the value of good bred stock.

I have spoken to everybody I meet, and urged that we get together and improve our stock and go into the dairy business.

I want to ask you, and every reader of the *Southern Planter*, to incite interest in this matter. Which is the best kind of stock for our section and the whole State for dairying, and at the same time for the butcher?

We need a breed here which will be satisfied with the poor old fields, and at the same time do well.

I hope that in the next issue you will discuss this question, so we can talk this matter up, and that many will give their opinions. After that, I will give my opinion and views on the subject. I think this is the only way to bring this country up into the condition it ought to be.

Lunenburg Co., Va.

AUGUST BUERGL.

We have for years been urging upon the farmers of the South that they improve the quality of their live stock of all kinds by breeding to pure bred male animals of the different standard breeds, and we are glad to say with some effect. The leaven as yet has not worked all over the South, but it is beginning to do so. There are few sections where now there are not

at least one or two men showing what can be done with fine bred stock. A few years ago such men could only be found here and there at wide intervals over the whole South. We intend to continue this campaign in behalf of good bred stock of all kinds so long as we edit the *Planter*, and therefore our correspondents may count on our help in every way in our power.

The question of the best breed of cows for dairy and beef purposes (dual purpose cows) for the thin, wasted lands of the South is one difficult of solution. We are personally strongly impressed with the value of the Red Polls for this purpose. We have excellent reports from one or two parties who have tried them. The difficulty with this breed, however, is that they are scarce and difficult to get in numbers sufficient to meet the demand. We have also a good opinion of the Ayrshires, although they are more essentially dairy than dual purpose cows. Still we have seen Ayrshires make fair beef cattle. Where the lands are better and grass more abundant, Shorthorns cannot be beaten for either the dairy or the block, but on a great part of the Southern lands grass is too short and poor for them to do justice to themselves. We shall be glad to have the views of our readers on this subject.

That our correspondent is right as to the necessity for more and better stock in the South, there can be no question. This necessity for stock is even forcing itself upon the attention of the Western farmers on the great wheat plains of Dakota. Mr. Wing, writing in the *Breeder's Gazette* recently, says:

The cow is bringing prosperity to South Dakota. I have been much interested in studying the influence and effect of dairying. At Desmet there is a large co-operative creamery. It is perfectly equipped, and makes probably as good butter as can be found in the United States. This butter is practically all made from native prairie grasses. It is worthy of note that butter made from these grasses will stand up in much higher temperatures than Eastern butter. The flavor is delightful. There was a day when four elevators and a large mill could not handle the wheat brought to Desmet. To day not more than one elevator is operating. Wheat did not bring prosperity, dairying has brought it. Land values have trebled within ten years. Land now is worth from \$25 to \$50 per acre about here. Farther south and east it is worth even higher prices, as much as \$100 being paid for land in one section of the State. This creamery at Desmet paid out to farmers last month nearly \$10,000. In a year it pays about \$90,000, which, distributed in a community, is a great help. It is a sight to see the farmer's teams surrounding the creamery in the morning. Grade Shorthorn cows are principally used, and most of the calves are raised. Of course there is a great deal of grain grown also.

At Desmet I met John Armstrong, a stockman well known all over the Dakotas for his sound sense and progressive ideas. He is an ardent advocate of the dairy, live stock rather than grain farming. He has been here for many years. Concerning his business, he gives me the following:

We keep a strict account with our cows, and as we retired from the farm many years ago we went into the dairy business to see what could be done with up-to-date methods. The results have surprised us, and as the years go by and we get more and better dairy knowledge, we get better results. The cow is a wonderful animal, and we find great pleasure and profit in our study. Science has taught us that dairying is not drudgery, but an art. All feed bought is charged up to the cows, and they are credited with all milk sold and all the young stock and hogs raised on the skim milk. Our principal grain feed is bran and shorts; the milk is sold to the Desmet creamery, and nothing is charged for labor. I keep just sixteen cows, and the following is a statement of the expenditures for the last four years and the receipts:

	1898.	1899.	1890.	1891.
Cash per cow for milk...	\$49 66	\$55 27	\$56 02	\$60 09
Total cash receipts for milk.....	794 76	852 29	900 07	961 52
Cash pork raised on skim milk.....	215 00	175 00	196 00	198 84
Cash received from stock sold.....	427 00	687 00	673 00	611 67
Total gross cash receipts.....	\$1,436 76	\$1,714 29	\$1,769 07	\$1,772 13
Net cash received, feed deducted.....	1,184 76	1,414 29	1,419 57	1,522 15
Total pounds milk per cow.....	6,001	6,342	6,483	7,342
Total pounds butter per cow.....	300	317 5 oz	324	367
Cost butter per pound of feed.....	5½c.	4¾c.	7c.	6c.
Average price 100 pounds milk.....	74c.	84c.	88c.	92c.
Cost feed per 100 pounds.....	26c.	23c.	35c.	30c.
Gross cash receipts per cow.....	\$89 80	\$103 39	\$110 56	\$111 48
Cash receipts per cow, cost of feed deducted.....	72 05	83 40	88 57	89 48

Mr. Armstrong grows millets, fodder corn and principally prairie hay for winter feeding. He has some alfalfa also, and it is thriving quite well. It has the root tubercles already formed; they seem indigenous to this prairie soil. Whence? Why? He does not think alfalfa will soon cut much of a figure here; the wild grasses are too common and cheap. In truth, they are not nearly all cut yet. Yesterday I walked through what we call "maiden cane" in the mountain; it is much taller than my head. It is coarse, and not esteemed here, though we we glad to get it out there. Wheat bran is generally cheap and largely fed. Barley and oats are ground and fed. It is doubtful to my mind, if anything can be as cheap a source of protein as alfalfa, and prairie hay need not have protein added to make milk or growth.—Ed.

SOUTHWEST VIRGINIA LIVE STOCK SHOW AT RADFORD, VA.

Splendid exhibits were made by Major Cowan, of Montgomery; Major Bentley, of Pulaski; Mr. J. R. K. Bell, of Pulaski; Mr. W. W. George, of Smyth county; Mr. F. A. Heatwole, of Rockingham county; Virginia Polytechnic Institute; Mr. S. W. Anderson, of Greenbrier, and Mr. H. L. Morgan, of Smyth county.

Gwendolin the VII, a magnificent Montgomery bred cow, owned by Major Cowan, deserves special mention, having won four prizes at this exhibition. Indeed, she is one of the finest specimens of Shorthorns to be found anywhere. Her weight is about sixteen hundred pounds.

Another of the finest animals in the exhibit was Miss Ramsden's Knight, a Shorthorn bull of the purest strain, weighing 2,200 pounds, and owned by W. W. George, of Saltville.

The best bull in the Hereford herds was Actor, a splendid animal, owned by Mr. Anderson; the best cow, Miss Peerless, also owned by Mr. Anderson.

PREMIUM LIST—SHORTHORNS.

Best bull, 3 years old and over, seven entries—First prize, \$40, won by Miss Ramsden's Knight; owner W. W. George, of Saltville. Second premium, \$30, won by Governor Tyler; owner, F. A. Heatwole, Rockingham county.

Best bull, 2 years old and under 3, one entry—First prize, \$25, won by Red Cup; owner, J. T. Cowan, Montgomery.

Best bull, 1 year and under 2, five entries—First premium, \$20, won by Red Rock. Second prize, \$10, won by Radford; owner, W. W. Bentley, of Pulaski.

Best bull calf, seven entries—First prize, \$10, won by No Name; owner, W. W. Bentley, Pulaski. Second prize, \$5; owner, J. T. Cowan.

Best cow, 3 years old and over, nine entries—First prize, \$40, won by Gwendolin the VII; owner, J. T. Cowan. Second prize, \$30, won by Hawthorne XLVII; owner, Virginia Polytechnic Institute.

Best cow or heifer, 2 years and under 3, four entries—First prize, \$25, won by Rose of Weldon; owner, Virginia Polytechnic Institute. Second prize, \$15, Hawthorne LIII, Virginia Polytechnic Institute.

Best heifer, 1 year and under 2, thirteen entries—First prize, \$20, Gwendolin XI; J. T. Cowan, owner. Second prize, \$10, won by Japonica XXVI; W. W. Bentley, owner.

Best heifer calf, seven entries—First prize, \$10, won by Hawthorne LX; owner, W. W. Bentley. Second prize, \$5, won by Miss Ramsden's Knight's Beauty; owner, W. W. George.

Best cow and calf, seven entries—First prize, \$50, won by Gwendolin VII and calf; owner, J. T. Cowan. Second prize, \$30, won by Hawthorne XLVII and calf; owner, Virginia Polytechnic Institute.

HERD.

Best bull and not less than four cows or heifers. 2 years and over—First prize, \$60, won by Gwendolin Cup, with Gwendolin VII four times Blue Ribbon winner sired by the world-famous young Abbotts-burn, and four mates; J. T. Cowan owner. Second prize, \$30, won by Governor, with Lady Josephine and three mates; owner, Major W. W. Bentley.

Best young herd, consisting of bull and four heifers

between 6 and 24 months old, two entries—First prize, \$60, won by Red Rock and four yearlings; owner, Major Bentley. Second prize, \$30, won by No Name and six yearlings; owner, Major Cowan.

Best bull, of any age, nine entries—First prize, \$50, won by Miss Ramsden's Knight; owner, W. W. George. Second prize, \$20, won by Governor Tyler; owner, F. A. Heatwole.

Special premium by J. T. Cowan on best bull bred by itself to owner, \$20, won by Governor Tyler; owner, F. A. Heatwole.

Best cow or heifer, of any age, seven entries—First prize, \$50, won by Gwendolin VII; owner, J. T. Cowan. Second prize, \$20, won by No Name; owner, Virginia Polytechnic Institute.

Best bull bred by exhibitor, four entries—First prize, \$40, won by Gwendolin Cup; owner, Major J. T. Cowan. Second prize, \$20, won by Delany; Major Bentley, owner.

Best bull and four or more cows or helpers, bred by exhibitor, two entries—First premium, \$50, won by Red Rock and four cows; owner, Major Bentley. Second premium, \$30, Gwendolin Cup and four cows; Major Cowan, owner.

Best bull and four of his get, without regard to ownership—First prize, \$50, won by Champion Cup; owner, J. T. Cowan.

Best cow and her produce, without regard to ownership, \$40, won by Gwendolin III, and her offspring, Governor Tyler, Gwendolin VII, and Gwendolin XI; Major Cowan, owner.

#### HEREFORDS.

Best bull, 3 years old and over, two entries—Actor III, first prize, \$40, to S. W. Anderson, Blakes Mills, W. Va. Second prize, \$30, Gazette, to H. L. Morgan, of Saltville.

Best bull, 2 years old and under 3, five entries—Van, first prize, \$40, S. W. Anderson. Marquis of Salisbury, second prize, \$30; Virginia Polytechnic Institute, owner. Alpha, third prize, \$20; H. L. Morgan, owner.

Best bull, 1 year and under 2, five entries—Sylvanus, first prize, \$40; Britton XI, second prize, \$30; both owned by S. W. Anderson. Fitzmorris, third prize, \$20; H. L. Morgan, owner.

Best bull, 6 months old and under 2 years, four entries—Garfield II, first prize, \$30; Marmaduke VII, second prize, \$25; both owned by S. W. Anderson. Marquis third prize, \$15; Virginia Polytechnic Institute, owner.

Best bull calf, under 5 months old—Crimson Rambler, \$25; H. L. Morgan, owner.

Best cow, 3 years old and over, three entries—Francis J., first prize, \$40; and Princess Aline, second prize, \$30; S. W. Anderson, owner. Third prize, Cinderella, \$20, H. L. Morgan, owner.

Best cow or heifer, 2 years old and under—Miss Peerless, \$40; S. W. Anderson, owner.

Best heifer, 1 year old and under 2, eight entries—First prize, \$40, won by Janice; second prize, \$30, won by Anita II; both owned by S. W. Anderson. Third prize, \$20, won by Castalia Nymph; Virginia Polytechnic Institute, owner.

Best two animals of either sex, produce of one cow—First prize, \$30, won by Janice and Woodland. Second prize, \$20, won by Miss Aline and Miss Actress.

Third prize, \$15, won by Van and Gladys; owner of lot, S. W. Anderson.

Best four animals of either sex, any age, get of one sire, twelve entries—First prize, \$30, won by Miss Peerless, Anita II, Janice, and Ingleside. Second prize, \$25, won by Sylvanus, Andrea, Actor XXVI, and Miss Aline II. Third prize, \$20, won by Alpha, Fitzsimmons, Mountain Lad, and Crevison Reindeer; owned by S. W. Anderson.

Best heifer, 6 months and under 1 year, six entries—Aline II, first prize, \$30; Andrea, second prize, \$25, Alberta, third prize, \$15; all owned by S. W. Anderson.

#### GRAND SWEEPSTAKES.

Best bull of any age, \$30, won by Actor; owner, S. W. Anderson.

Best cow or heifer of any age, Miss Peerless, \$30; owner, Mr. Anderson.

#### POLLED ANGUS.

Best bull, 3 years and over, two entries—First prize, \$30, J. R. K. Bell, Pulaski, on Hardy. Second prize, \$20, won by Fyffe; owner, Virginia Polytechnic Institute.

Best bull, 2 years old and under 3—First prize, \$15, won by Newler; owner, J. R. K. Bell.

Best bull, 1 year and under 2—Tiptoe, first prize, \$10, Gay Quincey, second prize, J. R. K. Bell.

Best bull calf—First prize, \$7.50, to J. R. K. Bell on No Name. Second prize, \$2.50, to J. R. K. Bell, on Montvale Norice.

Best cow, 3 years old and over—First prize, \$25, won by Minor No. 10. Second prize, \$15, won by Lakeside Novice; both owned by Virginia Polytechnic Institute.

Best cow or heifer, 2 years and under 3—Fyfine, \$10; Virginia Polytechnic Institute, owner.

Best heifer, 1 year and under 2—First prize, \$7.50, Fyffe II; owned by Virginia Polytechnic Institute. Second prize, \$2.50; won by Mont Hilda IV; owner, J. R. K. Bell.

Best heifer calf—Hilda S.'s S. S. C. first prize, \$3; J. R. K. Bell, owner. Second prize, \$2, won by Mina XI; owner, Virginia Polytechnic Institute.

Best cow and calf—First prize, \$15, Minor X and calf; owner, Virginia Polytechnic Institute. Second prize, \$10, Dixie Betty and calf; owner, J. R. K. Bell.

#### TEST OF VIRGINIA-OWNED JERSEY COW.

Our Jersey cow, Fancy Nostar, 127,415, was fresh February 1, 1902, and since then has milked as follows: February, 769½ lbs.; April, 837½; June, 728; March, 932½; May, 819; July, 637; August, 600; September, 554½, and fell to calve in December, and still milking 18 or 19 pounds per day. Her milk shows near 5 per cent. butter fat, so she proves herself to be a very profitable cow, making over 300 pounds of butter fat in ten months. We much prefer yearly records to seven day tests to prove our cows are profitable.

Would like to encourage the use of scales and Babcock tests in cow stable as a means of putting the herd on a paying basis.

Forest Home Farm, Va.

H. T. PANCOUST.

## WHY WE PRACTICE WINTER DAIRYING.

*Editor Southern Planter :*

Formerly, with the exception of one cow to supply our own family with milk during the winter, we had our cows calve in April; but for a number of years past we have arranged to have them fresh in September, so as to obtain the better prices for dairy products which always rule during the fall and winter months. When the cows "came in" in the spring, of course the bulk of our butter was made in June, July and August, and during hot weather had to be solidly packed into firkins and tubs and held until cooler weather before shipping to market.

When ice was used in the tank to cool the milk, and the butter was kept well covered with brine in a clean, cool cellar, uncontaminated by foul odors, our butter was preserved in good condition, and sold in October about as well as freshly-made butter; but the taste of consumers has changed since then, and they are unwilling to buy old butter, be it ever so sweet and good, unless it is cheap. This being the case, the best thing dairymen could do was to change their arrangements so as to supply customers and consumers with freshly made butter at the time they want it, and are willing to pay well for what they want. In our case, I think the change from summer to winter dairying was beneficial in several ways:

1st. Cows fresh in the fall, kept in a warm, well ventilated stable, well fed and watered, will give milk for a longer period than spring cows. Supplied with good corn fodder or clover hay, and two feeds a day of wheat bran and corn meal, the flow of milk will be kept up until spring, and then, when turned out to pasture, will not shrink for a long time, and if the bran feed is kept up, it will increase the flow of milk considerably.

2d. We have the greater part of the season's make of butter to sell when the price is the highest, or if the cream is taken to the creamery, the result is the same.

3d. It is less trouble to make and market a good article in cool weather.

4th. Better calves can be raised, because they will be so much older and larger than spring calves to eat grass in the summer and endure the rigor of the ensuing winter.

5th. It brings the greater share of the milking, churning, or taking the cream to the creamery and feeding the calves (if calves are raised), at the season when business on the farm is not hurried, and the farmer and his family have the most time to attend to them.

Another thing, cows that calve in the fall are gen-

erally in flesh, with an abundance of strength to bear the demands of maternity and the constant strain on their systems to which good milking cows are subjected. Cows that calve in the spring are more apt to be in poor flesh and weak, and not likely to do so well, and perhaps retain the placenta. The retention of the placenta used to be more common in the old times, when the farmers kept their cows in the barn-yard. It is not so common since cows are generally stabled.

When a cow is well advanced in pregnancy she looks plump, and apparently in good health, but as soon as she calves, her owner is surprised to see how she has calved in on both sides, and that she is poor at the time she ought to be fat, if she is expected to maintain her good reputation in the dairy.

I never had a cow too fat when she calved but once, and then I had foolishly fed her a full ration of meal up to the time she calved, thinking I was doing a fine thing; but, alas! her udder was so full of fallow, there was no room for a store of milk, and the calf, which was a puny little thing, sucked nearly all the time, and could hardly get enough to keep from famishing.

It is said that the milk from poor cows has but very little cream in it. The reason is obvious: the poor cows have to retain the cream to keep the flesh on their bodies, and then cannot help growing poorer all the time.

The feeds which are practically valuable for milk cows in the winter are corn meal, buckwheat meal, wheat bran, buckwheat bran, wheat middlings, and ground oats. The latter is usually relatively higher in price than other grains which are just as good for milk production, and can be profitably sold and the money used for the purchase of bran.

Cows have a craving for something besides dry foods, and are fond of a variety. Ensilage is all right when well preserved, but we have always got along very well with pumpkins, potatoes, turnips, ruta bagas and apples for succulent foods in winter, and I think the cows were just as well pleased and made as good returns as if they had been fed ensilage, and the cost was certainly no greater.

The disadvantage of winter dairying is in having to feed more meal and bran to get a good flow of milk and keep it up until grass comes. It costs more to make winter milk and butter, but according to our experience, the higher prices of the winter market more than pays the additional expense for feed, and the grain fed to cows in the winter makes rich manure for the cornfield.

J. W. INGHAM.

When corresponding with advertisers, say that you saw the advertisement in the *Southern Planter*.

### THE RAZOR BACK HOG.

*Editor Southern Planter:*

To one who has given his entire life to the production of improved live stock, whose father and grand father followed the same honorable calling, and who believes that the best is none too good, an article like the one written by Mr. Hopkins in the October *Planter* (in which he advocates the use of the razor back hog), comes as a severe shock and makes one stop in wonder and ask if what he says be so of what account have all the years of toil and thought, and the great expenditure of money by breeders been to mankind if we must come back to the use of the *scrub* in order to make both ends meet? Does the life work of such great men as Booth, Bates, Marr, Grant, McCombie, Sotham, Dunham, and ten thousand others count for nothing? If so, then why not go back to the stage coach as a means of conveyance, to the ox as a beast of burden and take things easy. The whole matter rests right on this point. If improvement in live stock amounts to *any thing* then it amounts to *everything* and reaches to every branch of the business. The writer believes in pure-bred or high grade stock of the best quality, and thinks as much of good blood in the "mortgage lifter" as he does in the beef or dairy cow and saddle or driving horse.

We will never get our live stock too good, so that we will never produce a poor animal. Then let us use every means in our power to *improve* rather than help to deteriorate the great breeds our fathers gave their lives to build up.

The South needs all the good blood she can get, and needs good stock men behind the good blood. The lack of these is all that stands in the way of her being one of the greatest stock countries in the world.

Rockingham Co., N. C.

A. L. FRENCH.

### THE HOG AS A MORTGAGE LIFTER.

*Editor Southern Planter:*

We are constantly hearing it does not pay to raise hogs for profit with corn at present prices. Now, I want to prove it does pay. If the hog is handled right and forced along he can't find time to eat his head off in six months with 175 pounds to his credit. I have on my farm a brood sow that has littered three times in ten months, raised ten pigs each time, making thirty pigs in ten months. I have sold eighteen of these hogs at from five to six months old, weighing from 150 to 175 pounds each. The nicest weighed 150 at five months old. They brought me \$180 (one hundred and eighty dollars). I have two on hand now for family use which are worth \$25, which would make \$205 in eleven months. Now, who will deny that is

not turning over money as fast as any other farm animal. But I hear some one ask what did they cost? I did not keep accounts with these but I did with a litter of seven last year that were not as thrifty pigs. I fed them \$15 worth of grain in six months and sold four of them at six months old for \$28; had three left and \$13 for my trouble and milk. These hogs were sold at two cents less per pound than those I sold this year, and corn was selling at about the same price. Corn can't get far ahead of pork at any time. Then we have milk to help on the profit also. We can turn our money over faster in hogs than anything else on the farm that is handled in bulk.

Goochland Co., Va.

N. S. W.

### GALLOWAY CATTLE IN VIRGINIA.

*Editor Southern Planter:*

It may interest you and some of your readers to know that I have just purchased a bunch of registered Galloway cattle. They consist of five cows and one bull calf, all bought of Charles Deeds & Son, of Granville, Ohio.

These are excellent cattle and bred right. The young bull, Dewey III, won second in the calf class at the Ohio State Fair. I also secured the cow Sarah of Elrig, which won second in aged cow class at the same show.

These cattle won in competition with the herd of Mr. James Frantz, whose cattle won high honors at the International stock show last year.

I hope to give you further reports of these cattle which have just arrived at this farm. The cows are now all in calf to Straightback, who won second at Ohio State Fair.

Gloucester Co., Va.

N. S. HOPKINS.

We are glad to hear of this new acquisition to the herds of cattle in this State, and shall be pleased to hear further from them.—ED.

To reduce swelling in a cow's bags **shave up** some good turpentine soap and add half the quantity of soft water and one-third of strained honey; dissolve slowly on the stove; when cold it should be as stiff as vaseline; keep in stone jar (not tin), and rub all milk veins and bag well with it after milking, and two or three times daily. I found it was the best thing I ever tried. It saved several calves, after painful surgical operations and made cows bags firm and healthy that had been neglected over a year. Apply as soon as the least swelling is noticed, and on fresh (young) cows as soon as milked or before fresh, if bag seems red and unnaturally distended. It seems cooling, and cows like to be treated. It is good for man and beast, soothes all boils and carbuncles. From one who has tested it.

Onipeper Co., Va.

L. F. MAJOR.

## OFFICIAL RECORDS OF HOLSTEIN-FRIESIAN COWS.

From July 29 to September 1, 1902

One thirty-day record and twenty four seven day records have been received and approved during this period.

The thirty-day record is especially remarkable. DeNatsay Baker 55471, age 2 years, 2 months, 7 days; commenced record 8 days after calving; during thirty consecutive days thereafter, produced an average of 56.31 lbs. of milk per day—a total of 1,689.9 lbs. This milk contained 56.523 lbs. butter fat; equivalent butter 80 per cent. fat, 70 lbs. 10 5 oz., or 65 lbs. 15 1 oz. 85 7 per cent. fat—a daily equivalent of over 2 lbs. 5.5 oz. butter 80 per cent. fat or over 2 lbs. 3 oz. 85 7 per cent. fat. This heifer is owned by Chas. D. Pierce, San Francisco, Cal.

Another remarkable record for the season is that of the seven day record of Mattie Clay's Aaggie 2nd, 42178; age 6 years, 6 months, 10 days; commenced 10 days after calving. She produced 499.1 lbs. milk containing 19.168 lbs. butter fat equivalent to 23 lbs. 15 4 oz. butter 80 per cent. fat, or 22 lbs. 5.8 oz. 85.7 per cent. fat. She is owned by Pierce Land & Stock Co., San Francisco, Cal.

Another large seven day record is that of Velma Niva 41675, age 5 years, 11 months, 24 days; commenced 23 days after calving. She produced 454.3 lbs. milk containing 16.226 lbs. butter fat, equivalent to 20 lbs. 4.5 oz. butter 80 per cent. fat or 18 lbs. 14.9 oz. 85.7 per cent. fat. Owner W. B. Smith & Son, Columbus, Ohio.

## THE HOG PEN.

*Editor Southern Planter:*

So much has been written concerning the necessity for clean quarters for hogs that it would seem to the readers of agricultural papers that the filthy hog pen would, ere this, have been a thing of the past, but the old idea that the hog enjoys filth and that a stinking rail pen is good enough for hogs still prevails with many. A careful, thoughtful observation of a hog's actions when penned up in a close pen ought to teach any one better. Under such circumstances a hog will deposit all excrement in the farther corner of the pen, and he will dig great holes in the ground in order to get to fresh, pure earth. This only makes the matter worse, as the rain will make the fresh earth into mud, and the hog is compelled to wallow in his own filth in spite of all his efforts to do better. It seems as if self interest would prompt the owner to do a better part by his hogs, but there are many

whom you cannot make believe but that a hog will do as well in mud and filth up to his body as in a clean, nice pen. Some writers go to the opposite extreme and picture their ideal quarters for hogs so nicely that the plan disgusts the average farmer, and as such nice hog houses are not practical they are dropped without further consideration. A very good enclosure may be constructed by making a pen of slats light enough that two persons can move them onto fresh ground each day. A pen of this kind, eight by ten feet, will do very well for three or four pigs, and they can be moved about without much trouble. I prefer to let hogs have the run of a field when it can be done, but sometimes it is necessary to pen them.

*Albion, W. Va.*

A. J. LEGG.

## COST OF MILK.

For the past five years the New Jersey Experiment Station has kept an account of the cost of producing milk with its herd of 23 to 30 cows and publishes its findings in a report just issued. The average yield per cow was 6,479 pounds. The average cost of food per cow per day was 13.32 cents, of which 6 11, or 49 6 per cent., is due to purchased feeds, and 6.21, or 50 4 per cent., to the cost of farm crops. The average cost per quart of milk for the five years, including food, labor and interest and decrease in the value of the herd, is shown to be 2.38 cents. The cost of farm crops fed is the actual cost of producing them and not their selling price. Other feeds were charged at what they cost laid down at barn.

## SALE OF HEREFORDS.

BY CLEM GRAVES, BUNKER HILL, IND., AT INDIANAPOLIS, IND., SEPTEMBER 16.

All Hereford price records fell before the bids at the dispersion sale of Clem Graves' herd by the Indianapolis Sales Company. A bid of \$10,000 was made for the bull Crusader, a bid of \$7,000 for the cow Dolly 2nd, and the average on forty three head was \$1,007.

37 females sold for \$30,375—an average of \$820.95.

6 bulls sold for \$12,925—an average of \$2 154.15.

43 head sold for \$43,300—an average of \$1,007.

## TEST OF QUERNSEY COW.

The official record of Portia of Maplehurst, 602 37 pounds butter fat, which would be equivalent to 702 7 pounds butter, is the largest year's record of any cow made under regular and careful public supervision and test each month.

*Peterboro, N. H.*

WM. H. CALDWELL, *Secretary.*

Mention the *Planter* when corresponding with advertisers.

## The Poultry Yard.

### COST OF PRODUCING SUMMER EGGS.

During the past year a number of inquiries were received, asking for information as to the exact cost of producing a dozen eggs during the summer months. With this object in view we selected two pens of hens, one of Barred Plymouth Rocks, and the other of Andalusians. Each pen consisted of 12 hens and a male bird.

Each flock had a pen in the poultry house 12 feet by 14 feet, and a sodded yard attached 80 feet deep and the same width of the pen.

The hens were usually fed four times a day whole grain in the litter or straw, in the morning; meat or bone at noon, three or four times per week; other days no noon feed was given. Mash at four in the afternoon, composed of equal parts of bran, shorts and ground oats, moistened with skim milk; just before dark, a little whole grain.

April 22d to May 22d. Rocks—13 hens, 1 cock:	
Mixed feed—17.687 lbs., at \$1.33 per cwt.	23 576 cts.
Bone—12 687 lbs., at \$1 per cwt.	16 687 "
Mash—32.375 lbs., at 95c. per cwt.	29 137 "
Wheat—21.875 lbs., at \$1.13 per cwt.	27 79 "
Milk—32 lbs., at 15c. per cwt.	3 33 "
<b>Total</b>	<b>100.52 "</b>

Eggs laid, 16 dozen; cost per dozen, 6.28 cents.

Nearly all Rocks were broody during last week.

April 22d to May 22d. Andalusians—13 hens, 1 cock:	
Mixed cracked grain—14 3 lbs., at \$1.33 per cwt.	25.99 "
Green bone—13.75 lbs., at \$1 per cwt.	13 75 "
Mash—35 lbs., at 90c per cwt.	31.05 "
Wheat—24 lbs., at \$1.33 per cwt., or 68c. per bushel.	27.19 "
Milk—35 lbs., at 10c. per cwt.	3.5 "
<b>Total</b>	<b>101.48 "</b>

Eggs laid, 20½ dozen; cost per dozen, 4.9 cents.

May 22d to June 22d. Barred Rocks:	
Oats—2 lbs. 8 ozs., at \$1 per cwt.	2.8 "
Bone—2 lbs., at \$1 per cwt.	11. "
Mash—40 lbs., at 90c. per cwt.	36. "
Milk—40 lbs., at 10c. per cwt.	4 "
Wheat—34 lbs. 13 ozs., at \$1.13 per cwt.	39.58 "
<b>Total</b>	<b>93.38 "</b>

Eggs laid, 13 dozen and 10; cost per doz., 6.82 cents.

May 22d to June 22d. Andalusians—	
Milk—40 lbs., at 10 cts. per cwt.	4. "
Oats—3 lbs., at \$1 per cwt.	3. "
Wheat—35 lbs. 7 ozs., at \$1.13 per cwt.	40 15 "
Mash—40 lbs., at 90c. per cwt.	36. "
Bone—11 lbs. 6 ozs., at \$1 per cwt.	11 37 "
<b>Total</b>	<b>94.52 "</b>

Eggs laid, 18 dozen and 2; cost per doz., 5.21 cents.

June 22d to July 22d. Barred Rocks:	
Wheat—26.375 lbs., at \$1.13 per cwt.	29.80 cts.
Oats—6.25 lbs., at \$1 per cwt.	6.25 "
Mash—41.75 lbs., at 90c. per cwt.	37.57 "
Milk—41 lbs., at 10c. per cwt.	4.1 "
Bone—1 lb., at \$1 per cwt.	1.00 "
<b>Total</b>	<b>78.72 "</b>

Eggs laid, 13 dozen and 10; cost per doz., 5.69 cents.

June 22d to July 22d. Andalusians:	
Wheat—35.625 lbs., at \$1.13 per cwt.	40.25 "
Oats—6.25 lbs., at \$1 per cwt.	6.5 "
Mash—40 lbs., at 90c. per cwt.	36.00 "
Milk—40 lbs., at 10c. per cwt.	4 00 "
Bone—1 lb., at \$1 per cwt.	1.00 "
<b>Total cost</b>	<b>87.75 "</b>

Eggs laid, 16 dozen and 1; cost per doz., 5.42 cents.

July 22d to August 22d. Barred Rocks:	
Wheat—32.625 lbs., at \$1.13 per cwt.	37.99 "
Oats—9 lbs., at \$1 per cwt.	9.00 "
Mash—39 5 lbs., at 90c. per cwt.	35 55 "
Milk—40 lbs., at 10c. per cwt.	4 00 "
Bone—12 lb., at \$1 per cwt.	2.00 "
<b>Total cost</b>	<b>88.54 "</b>

Eggs laid, 14 dozen and 1, cost per doz., 6.28 cents.

July 22d to August 22d. Andalusians:	
Wheat—27.25 lbs., at \$1.13 per cwt.	30.79 "
Oats—14 875 lbs., at \$1 per cwt.	14 875 "
Mash—4.05 lbs., at 90c. per cwt.	36.45 "
Milk—40 lbs., at 10c. per cwt.	4 00 "
Bone—3 lbs., at \$1 per cwt.	3 00 "
<b>Total cost</b>	<b>89.115 "</b>

Eggs laid, 14 dozen and 9; cost per dozen, 5 cents.

Average cost per dozen for Rocks, 6.32 cents.  
Average cost per dozen for Andalusians, 5.38 cents.

W. R. GRAHAM,

Ontario Agricultural College Report.

### POULTRY AND DOG SHOW.

An advertisement in this issue announces the Second Annual Poultry, Pigeon and Pet Stock Show to be held in Richmond, Va., November 24th to 29th, 1902, in the Masonic Temple, corner of Broad and Adams streets. This show promises to be a banner show. Prizes are large, and competent judges will place the awards. The prizes in the dog department are very attractive, comprising many valuable presents donated by Richmond merchants. Entries close November 14th. *Send for premium list at once.* Address Frank Jenkins, Secretary, 517 West Broad street, Richmond, Va.

## The Horse.

### NOTES.

Major George Chrisman, a veteran breeder and farmer of the Valley of Virginia, and one of the leading spirits of the Harrisonburg Horse Show, sends me the following interesting communication. My Stud is rather a mixed one than otherwise, from the fact that soon after the War I began to breed draft horses because during hostilities nearly all others had been driven off, and those suitable for farm work were very scarce. I then brought three Percheron stallions here, and from that time the draft stock of Rockingham county began to improve. There has not been a year since 1863 that I have not had one or more good draft stallions doing missionary work in this section. Of my collection, numbering about thirty head, one-third are Percheron, the remainder being half bred Hackneys, saddle bred and half thoroughbred horses, while I own an interest in the Percheron stallion Bordeaux, in General Miles, a prize winning saddle stallion, and in Sam Corey, thoroughbred son of Long Taw and Algebra, by Imp. Highlander, who was a great steeple chase horse, and bids fair to sire a line of fine hunters and jumpers. Among my brood mares are a couple by Sam Purdy, 2:20½, dam by Tam O'Shanter, son of Planet, Eliza South, by General Miles, dam May Queen, by Forset Denmark; Maid of the Mist, by Montrose Squirrel, 1257, dam May Queen; Kate Montrose, by Montrose Squirrel, dam Sir Roger, Hackney, and others not only by the same stallions, but by Chorister, thoroughbred son of Falsetto.

I have some fine young geldings and mares from two years old and upwards, and these will be prepared for our annual horse show at Harrisonburg, where I hope to carry off a fair share of the ribbons offered.

One of the principal attractions at Morris Park, New York, on the 11th instant was the winning of the bay gelding Self Protection in the \$10,000 Champion Steeplechase with his owner, Harry Page, an amateur up. Self Protection was sired by thoroughbred Parapline, dam a half bred mare. He was brought East from Montana by Sidney Paget with a bunch of other horses and sold at auction for the mere bagatelle of \$40. Later he passed to Mr. Page, who has ridden the horse to hounds in twelve and fifteen miles runs across the country. A natural jumper, Self Protection has steadily improved in speed and general good qualities since the season opened. Pat Maney has trained Self Protection and owner Page has done the riding, and if instructions had been fully carried out according to the trainer's directions the horse would have won some good races that were lost. Mr. Page and trainer Maney will take the horse to England this fall and fit him for the Grand National Steeplechase at Liverpool to be run next March, when his owner will have the mount. The splendid career of this horse carries with it a lesson that Virginia breeders should find of profit, as in this State, as in no other in the country, are the pro-

duce of thoroughbred sires from general purpose mares to be found in great numbers, and it is just such breeding that resulted in so great a horse as Self Protection.

A grand success was the Richmond Horse Show, which began on Tuesday evening, October 14th, and continued through the week. The attendance exceeded all expectations, and the greatest lot of horses ever paraded on a tan bark arena in the South were shown. Entries came from Chicago New York, Philadelphia and other big centres. The management, including President J. T. Anderson, Secretary W. O. Warthen and others, were well pleased over the result, which financially proved a paying investment. Not the least pleasing feature for Virginia breeders and owners was the medium it furnished between buyer and seller, and some very satisfactory sales were recorded, among them being that of Julian Morris' chestnut gelding Churchill, 6, 16:2, by Palinurus, to Richard Wallach, agent for J. Hobart Moore, Chicago, for \$1,000, while the same party purchased of Harry O. Beattie, Vice-President of the Richmond Horse Show Association and M. F. H. of the Deep Run Hunt Club, the chestnut gelding Red Light, 6, 16:2, by King Bolt, Jr., for \$500. In addition to these other sales followed with smaller prices obtained.

One of the most consistent performers of the Maryland and Virginia Circuit of fairs and race meetings during the present season has been the brown mare Skyland Girl in the stable of Geo. F. Dyer, of Greensboro, N. C., by whom she has been trained and driven. This nine year old daughter of Simmons, 2:28, and Mamie Woods, 2:20, by Woods' Hambletonian, was campaigned by Dyer in the South during the latter part of 1901, winning several races and pacing to a record of 2:24½, which has been lowered several times during the present season, but the best performance of Skyland Girl was at Prospect Park, Baltimore, when the daughter of Simmons won the 2:24 class, pacing, and stepped three heats in 2:20½, 2:19½, 2:20½ with eight horses behind her. Before coming into Dyer's stable Skyland Girl was not looked upon as particularly promising, but in his hands she has developed both speed and race horse quality, and if she keeps right is likely to pace right around 2:10 over a good track this season.

The horse breeders of Virginia have formed an Association, the object of which is to encourage the breeding of fine horses in the State. A meeting was recently held at Dr. James Kerr's farm, near Warrenton, where a number of representative breeders were in attendance. Among those who enjoyed Dr. Kerr's hospitality and discussed the situation were Senator Henry Fairfax, the noted Hackney breeder and former owner of the famous Matchless of Lonsboro, Oak Hill Farm, Aldie; Gen. B. D. Spillman, of Warrenton; Robert Neville, former owner of Imp. Rigollette, Welbourne; James Hall; James K. Maddux,

Warrenton; E. Astley Cooper; Henry Harrison. Leesburg; H. Rozier Dulaney, Upperville, and other representative breeders and owners.

The Keswick Hunt Club, of Keswick, Albemarle county, like other Virginia organizations of a similar nature, promises to have a good season, and its members are looking forward to great sport riding to hounds.

Julian Morris, the well known horse show patron and breeder and owner of fine jumpers and hunters, is the M. F. H. of the Keswick Hunt, and among those who ride at the semi-weekly meets are Mr. and Mrs. Jack Allen, of Chicago, who are sojourning at Keswick for the hunting; Mr. and Mrs. H. E. Mc Gruder; Mrs. Dr. Thurman, Frank Randolph, George Macon, W. H. Lipscomb, Alexander Hamilton, John Sawyer, and others. Some twenty five or more hounds are kept by the Keswick Hunt, and foxes are said to be abundant in that section this season.

Geo. F. Dyer, of Greensboro, N. C. who campaigned the brown pacing mare Skyland Girl, 2:19, for A. P. Craddock, Lynchburg, has sold her to parties in Pennsylvania for \$1,000. She was a good winner for Dyer this season. She was sired by Simmons, dam Mamie Woods, 2:20, by Woods' Hambletonian. Skyland Girl was bred in Kentucky, but foaled the property of R. J. Reynolds, the wealthy manufacturer and head of the great Southern concern known as the R. J. Reynolds Tobacco Company, of Winston, N. C. Mr. Reynolds bought Mamie Woods while in foal, and kept her for several years after Skyland Girl was foaled.

Through an advertisement which I inserted in this journal last month a sale has been effected of the Hackney stallion Heidrick, son of Imp. Dangelst and Imp. Heroine, by E. W. Twardell, of Philadelphia, to Messrs. C. F. and Joseph Button, of Laurel Hill Farm, Walker's Ford Va., by whom he will be used in the stud, and should make an admirable cross for the production of good harness horses. Col. Jos. Button, widely known in political circles, went to Philadelphia, and finding the stallion as represented, made the purchase. Mountain, out of Heidrick's dam, has won numbers of prizes at New York, Boston and other big shows, while the few foals by Heidrick stamp him as a sire of merit.

The chestnut mare, Eliza Ingram, is showing great speed on the road for her owner. Mr. E. A. Saunders, of this city, and with it she has good manners and a level head. During the forepart of this season, Eliza Ingram reduced her record from 2:25 $\frac{1}{2}$  to 2:21 $\frac{1}{2}$ , while in her work she could trot right around 2:15. When retired from the road and track, this mare should make a valuable addition to any trotting stud, both on account of her rich breeding and speed, as she was sired by the famous pacer, John R. Gentry, 2:00 $\frac{1}{2}$ , out of Blondette, dam of Governor Holt, 2:15, by Leland.

Mr. S. G. Atkins is driving his bay mare, Marie,

2:30 $\frac{1}{2}$ , on the road, where she is steady and level-headed, and it takes a good horse to beat her in a brush. Marie was sired by Jolly Friar, dam Parker Holland, by Sam Purdy. Mr. Atkins' other fast mare, Red Light, 2:24, the daughter of Red Wilkes, Jr., and Moonlight, by Twilight, is in the stable of W. L. Bass at Acca Farm. Red Light showed enough speed early in the season to justify the belief that she would make a new record close to 2:15, but trained off and was let up in her work.

The bay mare Cassie Leo, bred at Walton Farm, Fall's Mills, Va., entered the list of standard speed at the recent fair and race meeting at Bethlehem, Penn., where she won the 2:50 class, trotting, in straight heats, time 2:24 $\frac{1}{2}$ , 2:24 $\frac{1}{2}$ , 2:23 $\frac{1}{2}$ . Cassie Leo was sired by Red Leo, 2:26 $\frac{1}{2}$ , the son of Red Wilkes that heads the Walton Farm, while her dam is Tea Rose, a member of the brood mare band there. Tea Rose was by Mecca, out of the great brood mare Moss Rose, by Woodford Mambrino, and she out of famous Primrose, by Abalah 15.

After the close of the Richmond Horse Show, a portion of the horses were shipped home, others went to Chicago, but the majority went to Lynchburg; and referring to the latter, the dates of which were October 22, 23 and 24, I may add that it was a great success, and dwellers in the "Hill City" hope to make it a permanent affair.

Charles A. Brown, of this city, has sold to J. W. Johnson, Houston, Va., the brown trotting gelding Sebacic, by Norval, 2:14 $\frac{1}{2}$ , out of Gladys, dam of Kitty Hawk, 2:27 $\frac{1}{2}$ , and Eufaula C., 2:28 $\frac{1}{2}$ , by Alcantara.  
BROAD ROCK.

#### IMPORTANCE OF LIGHT.

In the construction and equipment of stables, few points are so sadly neglected as that of light and ventilation. In some parts of the country, any sort of structure is considered good enough for the accommodation of horses, and but scant regard is paid to the results which housing in badly ventilated or otherwise defective buildings must exercise upon the health of the animals. An abundance of light and plenty of fresh air are two of the prime essentials in a stable. In addition to being the best of all preventives against the development of the bacteria, which are now known to be such fruitful causes of disease among farm stock, plenty of sunlight and abundant ventilation in the stable are absolutely essential to the maintenance of the animals kept therein in vigorous, healthy condition. It is well known to veterinarians that defective eyesight and the tendency to shying in horses are often the result of keeping the animals in dark, close stables, the effect of which is to weaken the eyesight of the animals, and thus render them liable to that impairment of the vision, which is the cause of nine out of every ten cases of shying in horses.—*Farmer's Gazette.*

Mention the *Planter* to your friends.

## Miscellaneous.

### OATS.

**Second in Regard to the Number of Bushels Raised in the Country—Different Varieties Cultivated—Flourish Best in a Cool Moist Climate—Believed to Have Sprung from the Wild Oats.**

*Editor Southern Planter:*

The oat crop in the United States has been harvested, and on many farms threshed and disposed of; but oats being one of our most important cereals, a discussion of the crop is in order at any time. The Crop Reporter of the Agricultural Department says that the nine States of New York, Wisconsin, Ohio, Michigan, Pennsylvania, Indiana, Minnesota, Nebraska and Illinois, produced the present year an average of over 14½ points above their ten years' average. Iowa, a great oats-raising State, not quite reaching the ten years' average.

Oats is the cereal which stands third in importance in the United States in regard to the number of acres cultivated, and second, in regard to the number of bushels produced. In the year 1900, corn, wheat and oats were raised as follows:

Wheat—Acreage, 42,493,385. Bushels produced 522,229,505.

Corn—Acreage, 83,320,872. Bushels produced, 2,105,102,516.

Oats—Acreage, 27,364,793. Bushels produced, 809,125,989.

The two States of Illinois and Iowa produced nearly one third of the oat crop of the United States.

Illinois produced 133,642,884 bushels. Average per acre, 38 bushels.

Iowa produced 130,572,138 bushels. Average per acre, 34 bushels.

Virginia, North Carolina, Tennessee and Maine produced a little over 5,000,000 each. The production per acre in Virginia was 15 bushels. In Maine (probably owing largely to the cooler climate), the production was 37½ bushels per acre.

The statisticians estimate the oat crop of the present year at 850,000,000 bushels—the largest ever raised.

The climate in the Southern States does not seem favorable to oats. In many localities, and especially in Northern Pennsylvania, there is no doubt that it is the most profitable grain raised unless it be buckwheat, which maintains a good price because it encounters no western competition. As we raise oats in the rotation with corn and wheat, the area of oats

could not be increased except by reducing the acreage of these crops.

All the varieties of oats belong to the genus *Avena*, which comprises the wild as well as the cultivated species. There are three pretty well defined classes of cultivated oats. The most common varieties have the husks, or hulls, adherent, and these are divided into two classes, in one of which (as an example the potato oats) the panicle which produces the kernels branches from either side of the stem, while on the other the heads branch only on one side of the stem—as, for instance, the Hungarian. There are also naked varieties, in which the kernels separate from the hulls and are called "Chinese oats" and "hull less oats."

Oats grow on all kinds of soils, from heavy clay to light sands, and on moist soils and dry soils, but are most at home, and flourish best, in a cooler and moister climate than that which is best adapted to winter wheat. There are winter varieties of oats, as there are of wheat, rye and barley, but these are not much grown except in the Southern States. Probably not one per cent. of the whole crop produced is winter oats, all the rest being sown in the spring of the year. Four fifths of the crop is raised where the mean annual rainfall is between 30 and 45 inches, and where the spring and summer rainfall is between 15 and 25 inches. In the hot, dry climates, about the Mediterranean, and eastward to Palestine, oats do not grow well, and are less raised than barley. Oats are not mentioned in the Bible—King Solomon fed his horses on barley. The oat was raised in Italy in a small way for horses as early as the Christian era, and also by the prehistoric inhabitants of Europe, for they have been found in the remains of their lake habitations in Switzerland. In Central and Northern Europe, where they grow best, their cultivation became extensive as soon as the people became civilized, and were used as the most important cereal for food. In Scotland, Norway and Sweden, they became the chief bread plant of the people. It is extremely difficult to make a light loaf of bread from oatmeal, and it was generally used, and is still generally used, for making batter cakes, and by boiling the meal in water, and making oatmeal porridge or mush, to be eaten with milk. The weight of oats varies in different localities, and in the same locality in different seasons, all the way from 20 to 46 pounds per measured bushel. In commercial transactions, 32 pounds is the legal weight in most of the States.

As a fodder for cattle on the farm, oat straw is considered to be of more value than any other kind of straw. It being softer, and having more leaves, cat-

tle prefer it, and when secured bright, and in good order, young cattle have been wintered on it without any hay or grain, but probably they did not grow so fast as if they had been fed a richer fodder. Oats produce a large quantity of good fodder when cut and cured in the green state, and the crop is largely raised as a forage crop in the States south of Virginia and Kentucky and east of Arkansas, where it is more difficult to produce large crops of hay from grass. The crop is also grown in the South for pasture. In California also it is grown to some extent for forage. It leaves the ground in good condition for the succeeding crop by furnishing a dense shade, and helps to keep down the growth of weeds.

Oats vary greatly in the amount of meal produced after the hulls are removed, and only the best kinds will produce half their weight in meal.

In Scotland two kinds of oatmeal are used—the one kind ground coarse, which we call oatmeal, and the Scotch call “groats,” which is boiled and eaten in porridge, which is also the manner it is eaten in Ireland and most European countries. The other kind of meal is ground fine like flour, and is used to make the famous cakes called “bannocks” in Scotland and oatcake in the north of England.

It is claimed by some that oatmeal is the most nutritious of all the substances prepared from the cereals, but it is doubtful whether it is more nourishing than cracked wheat, although it may be more palatable to many as a change of diet. Formerly, oatmeal was but sparingly used in this country for human food, but the consumption has increased enormously during the last twenty five years, and it is now found in all the groceries and stores, even on the frontiers of civilization, and barrels are now sold where only pounds were sold once. At first it was imported from Scotland and Ireland, but now the mills in this country are able to supply more than the home demand.

The wild oat is believed by many scientists to be the parent of the cultivated variety, which has been improved by being sown on better ground, and careful selection of seed. Prof. Backman, of England, succeeded in producing a good quality of cultivated oats from seeds of the wild variety after a few years of cultivation and selection.

Heavy oats from a more northern and cooler region, carried into a warmer and dryer one, rapidly deteriorate in weight. In consequence of this tendency to degeneration a considerable trade is carried on in oats from places North to places further South.

J. W. INGHAM.

When corresponding with advertisers, kindly mention the *Southern Planter*.

## SAVING PEA-VINE HAY—TIEING CORN SHOCKS.

*Editor Southern Planter :*

My peas were ready to be cut (some of the pods being ripe) when that article “Curing Pea vine Hay,” by O. W. Blacknall, appeared in the September copy of your valuable journal. Although I had my doubts about this new plan, the article was written and the manner was described with such certainty that I decided to try it.

The next day I started and finished in about ten days, having put up thirty stacks. When I then examined the first stacks, what do you think was the result? Hay on top and ensilage at the bottom, about half and half, as the Irishman says. I went at once to work to open the stacks put up later, and gave the lower part a day's sunshine, such as it is these short autumn days, and put them up again by nightfall, putting the dry upper half of the former stack at the bottom of the new one, but losing nearly all leaves on the damp vines in the transaction. I did not make my stacks any wider than four feet diameter, nor higher than seven feet from the foundation of old rails or poles; but I must admit that the atmosphere was always damp and sultry and hardly any wind blowing at any time during the two or three weeks. I think, however, that two or three poles or old rails tied to the stackpole to form an airshaft in the centre would be an improvement on the Blacknall plan, if it does not cause too much trouble. This may, however, not be necessary in really drying weather with a brisk West wind.

This reminds me of a story of a young physician, who attended to a blacksmith, sick with chills and fever. The latter, tired of taking so much medicine without any effect, ate a big dish of peas and meat and stopped the fever. The young doctor, hearing of this new cure, made a memorandum of it, and prescribed it a few days later to a tailor suffering with the same disease. The tailor, however, not being so robust and vigorous as the smith, died from the dish so hard to digest. Then the doctor made a note underneath stating that it was good for a sturdy blacksmith, but not for a delicate person like a tailor.

So far I had finished my letter, Mr. Editor, when I had to lay it aside on account of some urgent business, and before I took it up again there comes the *Southern Planter* along and brings another explanation from Mr. Blacknall which, I think, he might have inserted in his first description of “How to Cure Pea Vines,” as he now changes the eight or nine feet stacks into stacks of really but four feet high for green and sappy vines, such as mine were to a great extent.

Before I close, let me tell you how I tie my corn

shocks. Out of a two feet long and two inches thick piece of light wood (cedar will do) I make a sharp pin, to the thick end I fasten a crossbar, 1½ feet long. Just beneath this crossbar I drive two wire staples on opposite sides; to one of these I fasten a thick cotton rope about eight feet long, and at the other end of the rope a little hook, easily made of fence wire. I insert the pin in the shock, carry the rope around it, hook the hook in the second staple and twist by means of the crossbar until as tight as I want it, when I tie my string around it.

Experiments which I made this year with sulphate of potash, given to me for that purpose by Mr. T. Freeman Epes, of the Blackstone Guano Co., have shown to me plainly what the *Southern Planter* as well as Mr. Epes had always contended, viz., that it is not needed on our soils. I applied it on watermelons, sweet potatoes and Irish potatoes, all being manured with a complete fertilizer (a tobacco guano). Also I tried it on corn and peas, the latter having a light application of acid phosphate, and not the least sign of improvement could be seen. I did not weigh the roots or fruits.

Lunenburg Co., Va.

CHE. RICKERS.

#### TIDEWATER (VA.) NOTES.

*Editor Southern Planter:*

Thinking that you and your readers might like to hear a few words from this section, we beg to report. We have had no killing frosts to date; in fact, no damage has been done to our trucking interests up to the present time, but we are expecting it soon. Our truckers are busily engaged in shipping green peas and beans (snaps) to Northern markets. The yield of beans has been very fine indeed, and the quality most excellent. In many instances as high as one hundred and fifty to one hundred and seventy-five half barrel baskets of beans have been harvested to the acre, which sold in the Northern market at \$1.25 per basket. These snaps are grown upon land which has produced two other crops during the past twelve months.

Fall work is well along, and the soil is in excellent shape as regards moisture, and the fall crops are looking unusually fine. With the exception of one or two days, the weather has been very warm and pleasant. The second crop of potatoes promises to be fine, although some of the vines in those portions of the fields farthest away from salt water show signs of frost on the crop. The crop has not been damaged, and the yield will be well up to the usual crop. This crop furnishes the seed potato for our farmers and truckers to plant next February; also supplies quite a quantity of eatable potatoes for the local market.

Most of the corn is fully matured; but as our people persist in planting corn all the way from April to the first of August, there is much corn now in the roasting ear stage, and great loads of it are brought into the city daily for local consumption.

The silos of this section are being rapidly filled with corn, Soja beans, cow-peas, etc. Year by year our farmers are getting more and more forehanded and provident in the way of storing food for stock, and gradually the stock interests of our section are looking up.

The usual large area of winter cabbage will be set out in November and December, the ground for which is being rapidly prepared. The prices of farm crops is well maintained, sweet potatoes selling for \$1.50 per barrel, which is about 25 cents per barrel in excess of the usual price.

If you desire it, we hope to be able to give you reports of farm work from time to time during the winter months.

A. JEFFERS.

Norfolk, Va., 27th October, 1902.

We shall be glad to have the reports.—Ed.

#### CRIMSON CLOVER AS AN IMPROVER.

*Editor Southern Planter:*

I have noticed several articles in your editorials as to the use of Crimson clover as an improver of the soil.

I must say my experience with it has not been satisfactory as a continued improver upon the same piece of land. I have grown it since 1895, and have received good results from its uses during the first and second year, but after that I find the soil fails to improve, and goes back to its former state.

My experience is not alone; it is the experience of all farmers of this section who have sown it for any number of years.

In some plots I would mow the clover and turn the stubble under, and in other plots would wait until the clover matured and died and then turn it under, and I find the results the same, the land would return to its former state.

I have a field that grew 60 barrels of Irish potatoes and 6 barrels of corn per acre in 1896. Since then I have followed it every year in Crimson clover until it now refuses to grow the Crimson clover or the corn. The first and second year of sowing the Crimson clover I received the desired results in both clover and corn, but since then the land has continued to go back.

Knowing of the good results I have received from red clover in years past has caused me to discard the Crimson clover this fall and return to my first love, notwithstanding the report made by Cornell upon the three clovers.

Northampton Co., Va.

W. E. THOMAS.

The explanation of the failure of Crimson clover to improve land when grown continuously on the same field is simple. Crimson clover, like all the legumes, is a large consumer of phosphoric acid and potash. These it must have if it is to grow luxuriantly, and

thus supply nitrogen and humus for the feeding of the following crop. When first grown in the field its vigorous root system searches out and appropriates the phosphoric acid and potash in the soil, and it grows luxuriantly and supplies the following crop with food. The following years it fails to find sufficient of these foods for its healthy and luxuriant growth, and hence it fails to improve the land, but rather exhausts it. This you will find also to be the case with Red clover and all the legumes. They are nitrogen, and humus providers but phosphoric acid and potash exhausters. You can supply phosphoric acid and potash for four cents a pound. To supply nitrogen in the form of a commercial fertilizer will cost fifteen cents a pound. Give the land a dressing of acid phosphate, say, 300 pounds to the acre, and 50 pounds of muriate of potash, and it will then grow Crimson clover or Red clover, or any of the legumes, and these will get the nitrogen from the atmosphere needed to make the land capable of producing a good crop of either wheat or corn or the clover again. Possibly it may not be necessary to supply potash, as most Virginia lands have plenty of this mineral which only requires to be made available. A dressing of 25 bushels of lime to the acre will do this and also help to make the inert phosphoric acid available, and thus lessen the dressing of acid phosphate needed. We have several times previously explained this subject.—Ed.

#### A SUGGESTION TO FARMERS.

*Editor Southern Planter:*

Would it not be well to devote more space in your excellent paper to the publication of authentic and reliable reports of extraordinary crop yields, particularly such as are the result of special skill and energy under otherwise ordinary or even unfavorable conditions? Would it not be well to make this a standing heading of the paper, or a regular department, and keep it always open, with a standing invitation to contributors, subscribers, and others to send in something for it? Why should not our records of this kind be as interesting to farmers and as much sought after as records in speed of horses, or with bicycle, automobile, or baseball?

Such publications need not be confined to our own sections, or our own country even, but we might well go abroad to learn in this as in other lines.

Nothing teaches, impresses or stimulates like actual achievements.

Many who are cultivating the soil have no real conception of the capabilities of production in an acre of well tilled, properly cultivated and fertilized land, or of the possible value and results of a year's labor well directed. When possible there might be added to the

record an analysis of the special conditions under which it was made, with a statement of the lessons to be learned even by those differently situated, and much more, of course, by those working in similar situations and under similar conditions.

Such a record of actual achievements, and exposition of their nature and causes, could not fail, as it seems to the writer, to be at once instructive and stimulating.

READER.

We shall be delighted to publish such reports and invite our readers to help us to make this Department a full one. Tell us of your failures as well as your successes. Often as much can be learnt from a failure as a success.—Ed.

#### TO MAKE BOX MEASURES.

A box 24 inches long by 16 inches wide, and 28 inches deep, will contain a barrel or three bushels.

A box 24 inches long by 16 inches wide, and 14 inches deep, will contain half a barrel.

A box 16 inches square and 8 2 5 inches deep, will contain one bushel.

A box 16 inches by 8 2 5 inches square, and 8 inches deep, will contain one peck.

A box 8 inches by 8 inches square, and 4 1 5 inches deep, will contain one galloon.

A box 7 inches by 4 inches square, and 4 1 5 inches deep, will contain one quart.

A box 4 feet long, 3 feet 5 inches wide, and 2 feet 8 inches deep, will contain one ton of coal.

#### VIRGINIA POLYTECHNIC INSTITUTE,

(Agricultural and Mechanical College.)

We are glad to know that the term of this College just opened promises to be the most successful in its history. Already close upon 600 students have entered and more are still expected. This is a great change since the time when Dr. J. M. McBryde first took charge of the College, about ten years ago. At that time the students did not number 200, and the Faculty and buildings were barely adequate to the requirements of even that small number. Now there is a full Faculty amply large enough for even more than the large number enrolled, and the College is equipped with lecture halls, laboratories, workshops and dormitories adequate for all. The Experiment Station Farm in connection with the College has one of the finest barns in the country, a fully equipped dairy and cold storage plant, a fruit evaporating and preserving and vinegar-making manufactory, and a veterinary hospital and laboratory, whilst the different breeds of cattle, sheep and hogs are represented by choice animals. Students taking the agricultural and horticultural courses have every facility accorded them for becoming thoroughly proficient in their work. We hope to see many farmer's sons availing themselves of the opportunity and returning to the farm fully equipped for doing good work in advancing the agricultural interests of the State.

THE  
**Southern Planter**

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B. MORGAN SHEPHERD,  
BUSINESS MANAGER.

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Rate card furnished on application.

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The Southern Planter is mailed to subscribers in the United States and Canada at \$50. per annum; all foreign countries and the City of Richmond, 75c.

Remittances should be made direct to this office, either by Registered Letter or Money Order, which will be at our risk. When made otherwise we cannot be responsible.

Always give the Name of the Post Office to which your paper is sent. Your name cannot be found on our books unless this is done.

Subscribers failing to receive their paper promptly and regularly, will confer a favor by reporting the fact at once.

The Date on your Label shows to what time your subscription is paid.

We invite Farmers to write us on any agricultural topic. We are always pleased to receive practical articles. Criticism of Articles, Suggestions How to Improve The Planter, Descriptions of New Grains, Roots, or Vegetables not generally known, Particulars of Experiments Tried, or Improved Methods of Cultivation are each and all welcome. Contributions sent us must not be furnished other papers until after they have appeared in our columns. Rejected matter will be returned on receipt of postage.

No anonymous communications or enquiries will receive attention.

Address— THE SOUTHERN PLANTER,  
RICHMOND, VA.

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A Neat BINDER for your back numbers can be had for 25 cents. Address the Business Office.

PUBLISHER'S NOTES.

To Subscribers.

At this time of the year a very large number of people make selections of the magazines, journals, and newspapers which they intend to subscribe for and read during the following year. We are desirous that the *Planter* should be amongst the journals selected by all Southern farmers, as we know that from no other journal can they secure so much information that will be valuable to them. This is the testimony of hundreds of our subscribers whose letters are on file here. To secure the selection of the *Planter* in most cases only needs the suggestion of that journal by a friend. We feel that we can confidently ask our subscribers to make the suggestion to their neighbors and friends, and we now appeal to them to do this at once. In this way thousands of new subscribers can be added to our list, and each one added means giving us further help in making the journal still more useful to each individual reader. In thus helping us you are helping yourselves. Although the subscription price of the *Planter* is so small we are yet prepared to make it worth the while of our friends to help us. Send us the names and addresses of your friends whom you wish to see reading the *Planter*, and we will send them sample copies and tell you what we are prepared to allow you for your trouble. We are able to club the *Planter* with almost any magazine or newspaper published save the subscribers money in so doing. Tell us what you want, and we will figure what we can save you.

**Binders for the Planter.**

We have received a new supply of binders for the *Planter*, and shall be glad to send one holding the numbers for a year to any one sending us 25 cents in stamps or coin.

T. W. WOOD & SONS' FIELD-GROWN  
**HARDY ROSES**

Are the best and most satisfactory roses to plant. Set out in the fall any time up to severe freezing weather, they will give a magnificent supply of flowers next season. Roses, like trees, make root-growth during the winter, and are best set out in the fall. Write for our Special Descriptive Rose Circular, just issued, giving full information.

**STRAWBERRY PLANTS.**

All the best varieties. Fall planting gives much the best results as they make root growth during the winter. Our Descriptive Fall Catalogue, giving full information, mailed on request.

Cabbage, Cauliflower and Lettuce  
Plants for fall setting out, now ready.

T. W. WOOD & SONS,  
Seedsmen, - Richmond, Va.



THE IMPROVED  
**SCREW STUMP PULLER**  
Write to Prices.

Chamberlin Mfg. Co., Olean, N. Y., U. S. A.

**STUMP PULLER**

Most Powerful, Handiest and Strongest Built in the World.

It makes 4 kinds in sizes to suit all needs and of any desired strength. Saves time and does the work right. The operation of pulling stumps and trees by our method is simple and easy. Send for Free Catalogue.

CHICAGO STUMP MACHINE MFG. CO.,  
226 La Salle Street, Chicago, Ill.

**HERCULES STUMP PULLER**



Clears an acre of heavy timber land each day. Clears all stumps in a circle of 150 ft. without moving or changing machine. Strongest, most rapid working and best made.

Hercules Mfg. Co., 413 17th St., Centerville, Iowa.

There is more catarrh in this section of the country than all other diseases put together, and until the last few years was supposed to be incurable. For a great many years doctors pronounced it a local disease, and prescribed local remedies, and by constantly failing to cure with local treatment, pronounced it incurable. Science has proven catarrh to be a constitutional disease, and therefore requires constitutional treatment. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, Ohio, is the only constitutional cure on the market. It is taken internally in doses from 10 drops to a teaspoonful. It acts directly on the blood and mucous surfaces of the system. They offer one hundred dollars for any case it fails to cure. Send for circulars and testimonials. Address,

F. J. CHENEY & CO., Toledo, O.  
Sold by Druggists, 75c.  
Hall's Family Pills are the best.

**WITH THE ADVERTISERS.**

Stock markers of all kinds are advertised by F. H. Jackson & Co., Winchester, Ky.

The Truss and Cable Fence Co. are new advertisers in this issue. Look up their advertisement and get their prices before purchasing fence.

The Bona Vista Nurseries—Chas. F. Hackett, manager—are advertising choice nursery stock—apple trees principally.

Krauser's Liquid Extract of Smoke starts the season's advertising in this issue.

Newton's Patent Dehorner is advertised by H. H. Brown & Co., Decatur, Ill.

The Geo. Ertel Co., Quincy, Ill., is offering the "Victor" Incubator to the farmers and poultrymen of this section in another column.

The "Breeder's Gazette" has a full-page advertisement in this issue. Every farmer and live stock man ought to have this paper. We can supply it along with THE SOUTHERN PLANTER for \$1.75 a year.

The Melrose Castle Farm offers Ayrshires, Berkshires and Oxforddowns.

The Chicago House-Wrecking Co. has a special offer of Gasoline Engines in this number.

The Reliable Incubator and Brooder Co. of Quincy, Ill., starts the season's advertising with an advertisement in another column.

You can buy a nice Jersey bull calf from Mr. A. L. Blair, Howardsville, Va. He has two for sale.

Send for a 1893 "Iron Age" book to the Bateman Manufacturing Co., Box 167, Grenloch, N. J. Refer to the advertisement in another column.

A great sale of Shorthorns, Polled Durhams and Aberdeen Angus cattle will take place in Louisville, Ky., on November 13th. Look up the full-page advertisement and write to Mr. M. W. Neal for a catalogue.

The Acme Engine, made by the Rochester Machine Tool Works, is advertised regularly in our columns. If you need an engine of small power, better inquire about the Acme.

**FOR RHEUMATISM—YAGER'S LINIMENT IS THE BEST.**

**YAGER'S**  
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 Applies to RHEUMATIC JOINTS  
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**POPULAR**  
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 IN THE TREATMENT OF DISEASES REQUIRING  
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**EXACT SIZE OF BOTTLE  
 TAKE NO SUBSTITUTE.**

**GRINDS** EAR CORN, SHELLED CORN, OATS, RYE, BARLEY, KAFFIR CORN, ETC.  
 Fine or coarse for feed or family purposes. Has shako food. Burra are made of white metal, so hard that neither the tool will touch them. They will open and let calls or hard substances through without breakage. We furnish this mill with or without crushers and elevators.  
**CAPACITY** 10 to 45 bu. an hr., according to power used, kind of grain and fineness you grind. The only mill that grinds ear corn and all other grain successfully. With 24 or 30 H. P. Mills in 3 sizes for power up to 12 horse. Guaranteed to grind more ear corn than any mill made with same power, because greater and grinding plates are on separate shafts, reducing friction. We have 40 styles of grinders adapted to power wind mills, engines and horse power of all sizes. We also furnish power of all kinds for driving all kinds of machinery. Write for our Large Free Catalogue of 40,000 other articles.  
**MARVIN SMITH CO.** 55-59 N. Jefferson Street, CHICAGO, ILL.



WITH THE ADVERTISERS—Cont'd.  
 A useful instrument—a farm level—is advertised by Bostrom, Brady & Co., of Atlanta, Ga.

Users of Lion Coffee can get Holiday presents in the shape of games out of each package from now until Xmas.

Ask your dealer for Frazer's Axle Grease.

Write the O. S. Kelly Co., Dept. T., Springfield, O., for a catalogue describing the Kelly Duplex Grinding Mill.

The Hard Steel Wire Fence Co. would like to mail a catalogue to any one interested in fences.

Did you ever try Yager's Sarsaparilla and Celery? Ask your druggist for it.

M. B. Rowe & Co., Fredericksburg, Va., are offering a choice lot of young Devon cows.

M. Rosenbloom & Son, Richmond, Va., conduct a regular mail order house, furnishing all kinds of household articles at low prices.

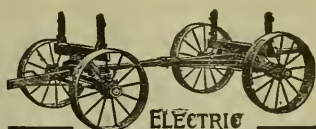
Stratton & Bragg, Petersburg, Va., are agents for some of the best known makers of farm implements and machinery in the country. The "Little Samson" Automatic Engine is one of their reasonable offers.

**MAGAZINES.**

In the November number, the Century marks its new year and volume by the introduction of a new type and a lighter looking page. It has a cover in colors by Adamson and adds to the range and interest of its experiments in color printing seven pictures by Maxfield Parrish, originally made in color for the series on "The Great Southwest," and which have already appeared in black and white. Apart from Mr. Parrish's artistic work, these pictures challenge attention as examples of what can be done with modern methods of color printing. They appear as frontispieces.

The article of greatest current interest is probably the first of the Century's articles on the trust, "The So-Called Beef Trust," being treated by Geo. Buchanan Trust. The aim of this series is neither to attack nor to defend the trusts, but to make accurate reports of the workings of "The Great Business Combinations of To-Day." Mr. Fife views his subject from many points of view—the packer's, the wholesaler's, the retailer's and the consumer's—and this furnishes material for both sides of the current controversy regarding the beef trade.

Two serial stories begin in this number—"The Yellow Van," by Richard Whiteing, author of that striking story, "No. 5 John Street," which is to be the long series of the year, and has for its subject the contrasts of life in rural England between the village people and the landowners; and "A Forsaken Temple," by Anne Douglas Sedgwick, author of "The Rescue," a story in two parts, which treats of the absorbing love of one woman for another and its effect upon the marital happiness of the latter. The illustrations are by Charlotte Harding. The concluding part of Mary Adams' "Confessions of a Wife," eagerly awaited by many readers, is also given, and sev-



**ELECTRIC**  
**Handy Farm Wagons**  
 make the work easier for both the man and team. The time being wide they do not clog into the ground; the labor of loading is reduced many times, because of the short life. They are equipped with our famous Electric Wheel Wheels, either straight or tread-appears. Wheels any height from 24 to 60 inches. White Hickory axles, steel fenders. Guaranteed to carry 4000 lbs. Why not get started right by putting in one of these wagons. We make our steel wheels to fit any wagon. Write for the catalogue. It is free.  
**ELECTRIC WHEEL CO., BOX 146, QUINCY, ILL.**

**It Never Chokes**  
 The larger the per. outlet the better. Double set of burrs and force feed.  
**The KELLY DUPLEX GRINDING MILL**  
 the model for grinding all grains and unshucked corn. Its feed regulator and grinds more easily and faster than other mills. Makes excellent meal, grinds feed to any fineness. Is most substantial, fitted to all power. Free catalog convinces you of its superiority. Write for it.  
**THE O. S. KELLY CO., Dept. T SPRINGFIELD, OHIO.**



**HEEBNER'S FEED CUTTERS.**  
 Feed all your fodder. By using Heebner's cutters with shredder attachment the whole of the nutritious stock is cut crushed and shredded, and rendered edible. No waste. Animals eat it greedily and thrive. Shredder attachments cost \$5.00. The model cutters cost. Also make Feed Presses, Layer Boxes, Little Oats and Penna. Thrashers, Wood Saws, Feed Mills, etc. Catalog free.  
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**FARMERS' MILLS**  
 French Burr and Attrition. For every farm purpose. Grind all grain for meal or feed. Crush and grind ear corn. Guaranteed to do more and better work than any other mill of same size.  
**15 DAYS' FREE TRIAL**  
 Their work speaks for and sells them. If, not superior to others, return. No charge. Write for catalog & discount.  
 Sprout, Waldron & Co., Box 50, Quincy, Pa.




**PALMORE'S**  
**Law and Collection Association,**  
 Established 1884. Claims collected in all parts of the United States. No collection—no charge.  
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**S. B. ADKINS & CO.**  
 4 and 6 Governor Street, RICHMOND, VA.

**EXPERT BOOKBINDERS**  
 and Commercial Printers.

**WE'LL PAY THE FREIGHT**  
 and send 4 Huggy Wheels, Steel Tire on, \$7.25  
 7 1/2 Rubber Tires, \$14.00, 1 mfg. wheels \$7.00 in tread. Top Buggies, \$28.75; Harness, \$3.50. Write for catalogue. Learn how to buy vehicles and parts direct. Wagon Umbrella PRKZ. W. Y. BODDY, Chestnut, O.



**LATEST** (Newton's Patent)  
**DEHORNER** Every  
**Guaranteed**  
**THOUSANDS IN USE.**  
 Ask your hardware dealer for them or write  
**G. L. BROWN MFG. CO., DECATUR, ILL.**



**Take Your Choice**  
 The Convex—very simple, quick to operate. The Bully V—tested and most powerful. Y-rite made. Sent on trial. Call Dehorner and other supplies. Send for catalogue. Western orders filled from Chicago.  
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**BOSTROM'S IMPROVED FARM LEVEL**  
 Pat'd 1902. WITH AND WITHOUT TELESCOPE  
 Is no MAKESHIFT, but the best one made for Terracing, Ditching and Drainage. Price \$5 and \$10, including Tripod and Rod. Send for descriptive circulars and Treatise on Terracing, etc., Free.  
**Bostrom, Brady & Co.,**  
 81 1/2 W. Alabama St., Atlanta, Ga.



**SAVE THE FREIGHT,**  
 that is, the excess freight you will have to pay if you ship loosely baled hay.  
**STEAM AND HORSE POWER**  
**"ELI" BALING PRESS** makes tight bales that pack the car perfectly. 33 styles and sizes. All steel, lightest and strongest. Illustrated catalogue mailed free.  
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**STEEL ROOFING**  
**FREIGHT CHARGES PAID BY US**  
 Strictly new, perfect, Semi-Hardened Steel Sheets, 2 feet wide, 6 feet long. The best Roofing, Siding or Ceiling you can use. No experience necessary to lay it. An ordinary hammer or hatchet the only tools you need. We furnish half free and paint roofing two sides. Comes either flat, corrugated or "V" crimped. Delivered free of all charges at all points in the U. S. east of the Mississippi River and North of the Ohio River.

**AT \$2.25 PER SQUARE**  
 Prices to other points on application. A square means 100 square feet. Write for free Catalogue No. 168  
**CHICAGO WEDGE CO., W. 35th and Iron Sts., Chicago**

**RUPTURE CURED** while you work  
 From \$10 to \$4 when cured  
 No cure, no pay. **ALEX. SPEIRS, Box 644 Westbrook, Maine.**

After Being on the Market TEN YEARS,

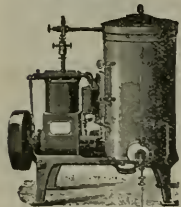
**The ACME Engine Still Leads**

For Churning, Cutting & Grinding Feed, Filling Silos, Sawing Wood, Elevating Water, and all Farm and General Uses where

Small Power is Required. Fuel, Kerosene Oil.

No Skilled Engineer required.

ROCHESTER MACHINE TOOL WORKS,  
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**ENGINES, BOILERS AND MACHINERY.**

When you want good rebuilt machinery at bargain prices, write for our Catalogue, No. 160 We carry all kinds of engines (gas, gasoline and steam power), boilers, pumps, and mill supplies in stock. CHICAGO HOUSE WRECKING CO. West 35th and Iron Sts., Chicago.

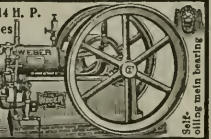
**BAILEY'S HYDRAULIC RAM**

Runs 24 hours a day and 365 days a year 40 years experience. Water for HOUSE, water for STOCK Water for IRRIGATION. Once started costs but ONE CENT per month. As simple as a wheelbarrow and as efficient as a Corliss Engine. Information and instruction in plain terms. Prices on ram or complete outfit by return mail. Address PRYCE W. BAILEY, Expert, Seneca Falls, N. Y.



**The WEBER 14 H. P. Gasoline Engines**

for running grinders, shred, ders, cutters, blowers, etc. Free catalogue gives all sizes. Weber Gas & Gasoline Engine Co., Box 100, Kansas City, Mo.



**IT COSTS YOU NOTHING**

to make a trial on your own premises and find out the Reliable Incubator can do. Return 1¢ if it does not suit. This is the guarantee we give you. It is the many special features, machine, the battery, incubator, etc. Poultry book, No. 19, 10¢ postpaid. Reliable Inc., 100 Broder Co., Box 8 - 11, Galois, Ill.



**VICTOR INCUBATORS**

Hatch every fertile egg. Simplest, most durable, cheapest, first-class machine as represented. We pay freight. Circular free, catalogue Geo. Ertel Co., Quincy, Ill.



**NOTICE - We have a No. 14 Power "MANN'S GREEN BONE CUTTER"**

In first-class condition, for sale, cheap. RICHMOND BUGGY AND WAGON CO., 1433 East Main Street, Richmond, Va.

**SEND YOUR NAME**

for our special 15 day trial proposition on the DANDY GREEN BONE CUTTER. The latest and best made. It will double your egg yield. Price \$5 up. STRATTON Mfg. Co., 604 7<sup>th</sup> ERIE, PA.



ral short stories; a highly novel tale, "The Swartz Diamond," by E. W. Thomson, "The Echo Hunt," by David Gray, author of "Gallops," and "The Journal of a Millionaire," by Geo. Hibbard.

The life of the metropolis, so often the subject of articles in the Century, is reflected in Edwin Blorkman's paper on "The New York Police Court," picturesquely and forcibly illustrated by Blumenschein, the rising young illustrator.

The big feature of the November St. Nicholas is the first instalment of Howard Pyle's new serial, superbly illustrated by the author. In this work Mr. Pyle has attempted to do for "King Arthur" what he did for Robin Hood several years ago. This noted author-artist brings his ripest experience to this new work, and the delightfully quaint style of the text is most sympathetically and adequately supplemented by the drawings. Any boy or girl with an ounce of romance is sure to be much interested in this story, which marks the return to the serial form of publication in St. Nicholas.

The November number of Lippincott's Magazine is filled with fiction, long and short, varied enough to suit readers of all sorts and sizes. The Monthly Novellette, "The Other Man," by Frederic Reddell, is a modern romance with the spice of mystery. From the diamond fields in South Africa the story quickly shifts to high life in England. A tragedy happily averted makes a good end to a tale which shows those desirable gifts, marked originality and spirited style.

Among the shorter stories there is one by Alice Brown, who, it is said, rivals Mary Wilkins in her portrayal of New England types. In this, "The State House Planter," she is at her best.

A deliciously unique story is that called "Her Spirit Husband" by Dorothy Richardson. A young girl seeking a position answers an advertisement and learns that she is wanted to keep house in a New York apartment for a "spirit husband," while the flighty Spiritualist wife gayly disports herself at the Waldorf Hotel. There is a startling denouement.

A name prominent in the world of letters is concealed by the pseudonym "Senex" as the writer of a delightful paper entitled "A Slender Sheaf of Memories." This embodies some unpublished letters of both Thackeray and Carlyle and bristles with anecdotes of famous English literati.

Some facts about "Edgar Poe's Last Night in Richmond" are told by a native of that place, Dr. John F. Carter, whose portrait heads the article.

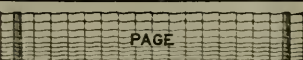
The soft coal smoke has evidently not dimmed the "Walnuts and Wine" department, for in the November number it shines out brighter than ever.

**THE WEEKLY TIMES AND SOUTHERN PLANTER.**

We beg to call attention to the change in the club rate of these two papers. We have been furnishing both for 65 cents a year. This price is now advanced to 80 cents, and all future orders must be at this price.



**HARD STEEL WIRE FENCE**  
Heavy lateral wires, heavy hard steel stays, coiled spring wire, Sure Grip lock. In strength, appearance, and durability, the Hard Steel cannot be excelled. Write for catalogue and prices. THE HARD STEEL WIRE FENCE CO., Cuyahoga Falls, Ohio.



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**IF YOU WANT**  
to know how PAGE Fences differ from all others, read pages 20 and 21 in our catalogue. Send for it. PAGE WOVEN WIRE FENCE CO., AUBRIAN, MICH

**LAWN FENCE**  
Many designs, cheap at wood. 32 page Catalogue free. Special Estimates and Corbets. Address COLLIED SPRING FENCE CO., Box 4, Winchester, Ind.

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PRICE AND QUALITY WILL PLEASE YOU - WRITE US NOW.  
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**SAN JOSE SCALE** and other insects can be controlled by using **Good's Caustic Potash Whale Oil Soap, No. 3.**

It also prevents Corn Leaf. Endorsed by entomologists. This soap is a fertilizer as well as insecticide. 50 lb. kegs, \$2.50; 100 lb. kegs, \$4.50. Half barrels, 270 lbs., at 3 1/2¢ per lb.; barrels, 425 lbs., at 3 1/2¢. Large quantities, special rates. Send for circular.

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**FRAZER Axle Grease** Best in the world.

Its wearing qualities are unsurpassed, actually outlasting 3 bars any other brand. Not affected by heat or frost. 60 cents per lb. FOR SALE BY ALL DEALERS.

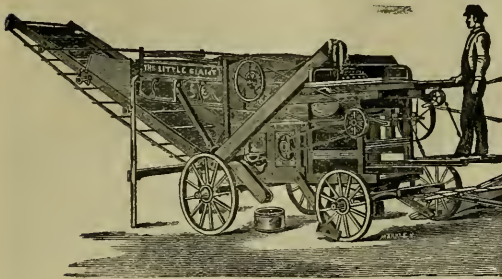
**AGRICULTURAL and BUILDERS' LIME**

Send for Circulars and Price-List. **FELLSWORTH LIME WORKS** REEVES CATT, Agent, Bodley, Augusta County, Va.

**Krausers' Liquid Extract of Smoke** Smokes meat perfectly in a few hours. Made from Turkey wood. Delicious flavor & tender texture. No smokehouse needed. Send for circular. E. KRAUSER & CO., Milton, Pa.



The most popular Machine in use for Peanut Picking and Grain Threshing are the



**HEEBNER'S,  
LITTLE GIANT AND  
PENNSYLVANIA**

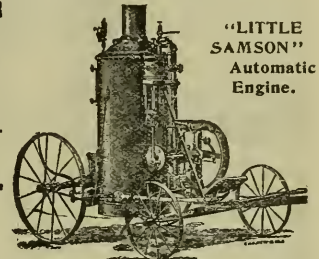
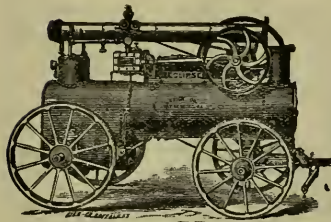
Machines, and they have splendid improvements for 1902. They are built in first class manner and are strong and durable. The price is within the reach of all. We guarantee them to do the work satisfactorily. We will mail catalogue and testimonials, and quote prices on application.

**RUBBER, LEATHER  
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ENGINES and BOILERS.**

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THE CELEBRATED  
**"CHASE" SAW MILLS**  
and  
**"DE LOACH" MACHINERY.**



**"LITTLE  
SAMSON"  
Automatic  
Engine.**

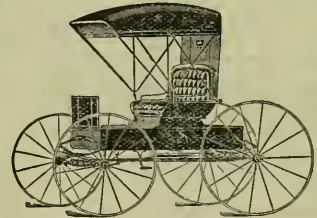
This cut shows our 5 and 7 h. p. "Little Samson" Vertical Automatic Engine, for running threshers, peanut pickers, cutting feed, sawing wood, etc. Larger sizes also furnished.

**STRATTON & BRAGG, 20 and 22 N. Sycamore St., Petersburg, Va.**

**WAGONS and BUGGIES**

**MADE  
RIGHT HERE  
AT HOME**

BY



**The BARBOUR BUGGY CO.,  
The HUGHES BUGGY CO.,  
The VIRGINIA WAGON CO.**

*All of Virginia.*

These vehicles are guaranteed to be as good as can be bought elsewhere; material and workmanship unsurpassed; all sizes and styles, prices low. We can save you time, money and freight by purchasing our vehicles. Send for our illustrated catalogues. Drop in our warehouse and inspect our stock. Inquiries cheerfully answered.

WE ARE ALSO AGENTS FOR THE **DEERING CORN BINDER.**

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At Union Mills, Fluvanna Co., FOR SALE

Having decided to retire from farming, I offer my splendid farm, "Stonehurst," consisting of 439 acres, together with all stock, teams, wagons, implements, etc., for sale. Forty acres of the above are low grounds, the balance being in nicely rolling land and woodland. I have 96 acres in grass.

The orchard consists of 1,500 apple and 250 pear trees, and is about 12 years old.

My herd of 40 registered Herefords are as good as can be found. Some 12 cows are due to calve in the early spring.

The residence is comparatively new; kitchen, barn, out-houses of all kinds are in good condition.

The implements, tools, wagons, plows, etc., are such as will be found on any well-directed farm.

The work and driving teams are in good condition and are splendid ones.

Owing to the death of my brother, who has managed the place, and my professional engagements here, I have determined to sell out.

If any one desires to step right in and take everything, I will sell at a bargain.

Dr. GEO. L. STONE, Richmond, Va.

## HOMES AND THE PLACE TO FIND THEM.

No place in the United States can a man do so well at farming, for the money invested, as in Virginia. Lands are cheap; climate good, and the best of markets close at hand. It is the State of all others, for a comfortable all the year round home. The James River Valley Colonization and Improvement Company offer superior advantages to land purchasers. For free 36 page land pamphlet, address

W. A. PARSONS, Vinita, Va.

## TO HOMESEKERS.

### "THE BUSINESS OF FARMING IN VIRGINIA"

Is the title of a new pamphlet issued by the Norfolk and Western Railway Company. We will gladly mail you a copy.

W. B. BEVILL, PAUL SCHERER, Agt.,  
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## WE HAVE A LARGE LIST OF FRUIT, POULTRY AND TRUCK FARMS.

Ten, Fifty and One Hundred Acres each, with good buildings, close to steam and trolley lines, easy access to the city. Also

**GRAIN AND STOCK FARMS**  
From 100 to 1,000 acres at low prices, all the way from \$5 to \$100 per acre. Write for Catalogue.

THE VIRGINIA LAND AGENCY, Richmond, a.  
J. R. HOCKADAY, Manager.

## FARM FOR SALE

In Bladen county, N. C. Consisting of 104 acres, 70 acres cleared and in good state of cultivation. A new five-room house, barn, stalls and gin house, 1 tenant house, 2 wells of good water, 1½ miles from steamer landing on Cape Fear river. Convenient to church and school; healthy and good neighborhood; 31 acres of native timber. Price, \$1,000. Must sell at once. Address

J. R. SQUIRES, SQUIRES, N. C.

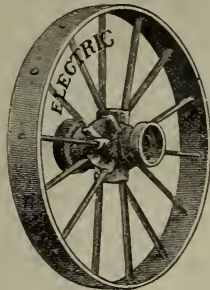
## Virginia Farms

All prices and sizes. Free list on application.

WM. B. PIZZINI CO., Richmond, Va.

## HAULING CORN FODDER.

With the biggest and perhaps the heaviest crop of fodder ever harvested, and with the fields cut up as they are by the unusual fall rains, farmers are puzzled as to just how to take care of their fodder. In this emergency we want to call your attention to the low down broad



wheel Handy Wagon made by the Electric Wheel Company, of Quincy, Illinois. This wagon at all times is one of the most convenient and useful articles a man could have on the farm. It is particularly useful in getting in the fodder and other late fall work. Most of our readers who have used this wagon are profuse in their praises of it. Some say they would not be without a handy wagon for three times what it cost.

Those of our readers who do not feel that they wish to make the necessary outlay to buy one of these wagons at the present time may have a low down broad wagon by simply buying a set of the Electric Wheels such as are shown in the cut. They are made in great variety of heights, and are made to fit any wagon. The simple removing of the old high wheels and substituting a set of the Electric's makes a handy, convenient, low down wagon at a very small item of cost.

We suggest that you get one of their free catalogues, and see if their proposition does not impress you as being a particularly good one at this time of year. Write for the catalogue to-day.

## DELOACH SAW MILLS.

Elsewhere in this issue will be found the advertisement of the DeLoach Mill Manufacturing Co. of Atlanta, Ga. This firm, as is well known to numbers of our readers, is among the leaders in the manufacture of saw mills and mill machinery in this country. They sustained a great loss during the past summer by having their entire plant destroyed by fire. That they lost no time from business and only delayed orders for a very short time, is remarkable. An extract from a recent letter informs us that their new plant is about completed, and is the finest in the country. The capacity of the plant is two hundred saw mills per month, exclusive of their side lines, consisting of shingle mills, planers, corn and buhr mills, etc. Among their specialties is the farmers' saw mill mentioned in this advertisement. They are having a great sale for it, and if you are interested in a good mill, write for circulars, prices, etc.

## I Can Sell Your Farm

no matter where it is. Send description, state price and learn how. Est. '96. Highest references. Offices in 14 cities. W. H. Ostrander, 1833 N. A. Bldg., Philadelphia

## VIRGINIA FARMS

\$3 PER ACRE AND UPWARDS.  
EASY PAYMENTS. CATALOGUE FREE.  
GEO. E. CRAWFORD & CO., Richmond, Va.  
Established 1875.

**FINE FARMS** in the great fruit grain and stock section of VIRGINIA. Best climate and water in the U. S. Near great markets, with best educational advantages. For further information, address

ALEXMARLE IMMIGRATION CO., SAM'L B. Woods, Pres. Charlottesville, Va.

## "PIEDMONT And that it implies."

Good land, climate, markets, shipping facilities, churches, schools, good health, moderate prices, easy terms.

MACON & CO., Orange, Va.

## FARM FOR SALE.

A tract of 1,250 acres, 500 of which is in a high state of cultivation, with buildings, located at Newberne, N. C.

Advantages in stock raising, vegetable, tobacco or cotton growing unexcelled.

For particulars address

S. GLEN VINSON, Mansfield, Ohio.

## THE KEELEY INSTITUTE GREENSBORO, N. C.

For the treatment of the LIQUOR, OPIUM, MORPHINE and other Drug Addictions. The Tobacco Habit, Nerve Exhaustion

## WANTED

Situation as farm manager by middle aged man of experience and education. Has had much experience in use of commercial fertilizers and in improving land. Is thoroughly familiar in use and handling improved farm implements and machinery. Competent in keeping accounts. Capable of managing large farm. References given, and correspondence solicited. Small family. Address  
W. F. LEWIS, 514 N. Eighth St., Richmond, Va.

## WROUGHT IRON PIPE

Good condition, used short time only; new threads and couplings for Steam, Gas or Water; sizes from 16 to 24 inches diameter. One or two on hand; \$50 on 1 inch 4c. Write for free catalogue No. 166.  
- CHICAGO HOUSE WRECKING CO.,  
W. 85th and Iron Sts., CHICAGO.

## VIRGINIA POLYTECHNIC INSTITUTE

(State Agricultural and Mechanical College), at Blacksburg, Va.

A Southern Institute of Technology. Thirty Instructors. Thoroughly equipped Shops, Laboratories and Infirmary. Farm of four hundred acres. Steam heating and electric lights in dormitories. Degree courses in Agriculture, Horticulture, Civil, Mechanical and Electrical Engineering, Applied Chemistry and General Science. Shorter courses in Practical Agriculture and Practical Mechanics.

Total cost of Session of Nine Months, including Tuition and other fees, Board, Washing, Text-Books, Medical Attendance, etc., about \$210. Cost to State students, about \$180.

Next Session begins September 22, 1902. For catalogue and other information, apply to

J. M. McBRIDE, Ph. D., LL. D., President.

# "The Best Farm and Stock Paper in the World."

That is what the United States Secretary of  
Agriculture, Hon. James Wilson, says of

**"The Breeder's Gazette."**



Established in 1881; published every Wednesday at Chicago; 36 to  
56 pages; profusely illustrated with original engravings. A

BEAUTIFUL CHRISTMAS NUMBER FREE to every  
yearly subscriber. Specimen copy of regular

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Special rates in clubs.



Agents Wanted in all Unassigned Territory. . . .

Address **J. H. SANDERS PUB. CO., Chicago, Illinois.**

MENTION THE SOUTHERN PLANTER WHEN YOU WRITE.

..ELMWOOD NURSERIES..

# ASPARAGUS

100,000 2-yr.-old Asparagus roots,  
5 varieties. A special rate of \$3.50  
per 1000 for 2 mos for BARR'S,  
PALMETTO, CONOVER.

# APPLES

A large general assortment, in-  
cluding WINESAPS and YORK  
IMPERIALS.

**Splendid Assortment of  
Ornamental, Shade  
and Fruit Trees.**

**EGGS** from B. P. Rocks, Light  
Brahmas, Brown Leg-  
horns, at \$1.00 per 13.

WRITE FOR OUR CATALOGUE.

**J. B. WATKINS & BRO., Hallsboro, Va.**

# TREES, TREES

I offer a fine lot of whole root trees.

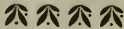
**APPLES, PEARS, PEACHES,  
CHERRIES, PLUMS, GRAPE  
VINE, RASPBERRIES, Etc.**

Save agent's commission by send-  
ing your order to the nursery.

**CATALOGUE FREE. All Stock Inspected  
and Fumigated.**

**WERTZ'S NURSERY, Salem, Va.**

# APPLE TREES



The Bonavista Nurseries will have some  
exceptionally fine apple trees for orchard this  
year. Wine Saps, Paragon (M. B. Twig),  
York Imperial (J. F. Winter), Albemarle  
Pippin, etc.

We did not have a complaint last season.  
Every tree is perfect and guaranteed, taken  
from the nursery block the day it is shipped,  
carefully packed.

Our prices are the lowest.

**CHAS. F. HACKETT, Manager,  
Greenwood, Va.**

**200,000**

## CABBAGE and LETTUCE PLANTS.

\$1.50 per 1,000, 25 cents for 100, by ex-  
press. Ready to plant out now. Vari-  
eties: Charleston, Succession and  
Early Jersey Wakefield.

**MARK T. THOMPSON, Rio Vista, Va.**

KEEP COMFORTABLE.

Who has not heard of the Lehman  
heater? The man who uses during the  
winter an open buggy or a closed carriage  
can make himself comfortable by its use.  
The cold weather is now about to visit us,  
and the demand for some handy and un-  
cumbersome appliance to obviate the  
frigidty of the northern climate is appar-  
ent, and the less cumbersome and more  
useful the article the more acceptable it  
is. This achievement has been reached by  
the Lehman heater. It takes up but  
little room; is always ready and for two  
cents will keep a carriage warm for twelve  
hours in the depth of winter.

Twenty years ago the bulk of the peo-  
ple slept in a cold room, waking and  
dressing in it, and went forth into a prac-  
tically cold house, breakfast being gene-  
rally over before the inadequate furnace  
arrangement of those days sent heat  
through all the house or apartment. The  
consequence was that injury to health  
ensued. As above stated, the Lehman  
heater fills the bill. It should be more  
generally known. It is made in the solid  
est fashion, and should be in the hands  
of every man who uses a horse convey-  
ance.

There are 175,000 in use by horsemen,  
etc., who speak very highly of them.  
You cannot enjoy your ride in cold  
weather without one. Don't fail to write  
for circular and price list to Lehman  
Bros., manufacturers, 10 Bond street, New  
York, mentioning *The Southern Planter*  
when so doing.

OF VALUE TO HORSEMEN.

Do you turn your horses out for the  
winter? If so, we want to call your at-  
tention to a very important matter.  
Horses which have been used steadily at  
work, either on the farm or road, have  
quite likely had some strains whereby  
lameness or enlargements have been  
caused. Or perhaps new life is needed  
to be infused into their legs. Gombault's  
Canstic Balsam, applied as per directions,  
just as you are turning the horse out, will  
be of great benefit; and this is the time  
when it can be used very successfully.  
One great advantage in using this remedy  
is that after it is applied it needs no care  
or attention, but does its work well and  
at a time when the horse is having a rest.  
Of course it can be used with equal suc-  
cess while horses are in the stable, but  
many people in turning their horses out  
would use Caustic Balsam if they were  
reminded of it, and this article is given  
as a reminder.

A charming story for girls in the No-  
vember St. Nicholas is entitled "Where  
the Surprise Came In." Charlotte Sedg-  
wick, the author, tells a story of a cook-  
ing club which became so proficient that  
the members decided to prepare a din-  
ner and invite their boy friends. It hap-  
pened that one boy was a favorite, and  
each girl, unknown to the other, invited  
the same lad. What came of it all  
makes up a very laughable and enter-  
taining tale.

Mention *The Southern Planter* when  
writing advertisers.

## THE SPEED OF THE BLOOD.

IT TRAVELS AT A TERRIFIC RATE  
THROUGH THE BODY—SOME  
INTERESTING STATISTICS.

The mileage of blood circulation reveals  
some interesting facts. A drop of blood,  
for instance, takes but 21 seconds to go  
the whole round of the body. In sixty  
seconds it covers 207 yards. In the course  
of a year it travels 6,320 miles.

The blood is life. While it retains its  
natural purity, this speed is maintained  
and its vitalizing power is continued. But  
impurities enter into it. The blood gets  
draggy. It refuses to perform its work.  
Rhenmatism, nervousness, dyspepsia,  
scrofula and a host of other diseases are  
the result. The blood needs cleansing.

In other days they cleansed the blood  
by drawing it from the body. Blood let-  
ting was a common occurrence. To day  
YAGER'S SARSAPARILLA WITH CELERY does  
the work. Its medicinal merit is one  
of the triumphs of modern methods.  
It combines the value of the two most  
helpful drugs in the pharmaceutical list.  
By direct and indirect action it renovates  
the functions of the body and puts them  
in the proper condition to do the work  
intended by nature.

It is invaluable for young or old. Mrs.  
C. R. Tyler, of Lisbon, Va., says:

"I take pleasure in recommending to  
the public YAGER'S SARSAPARILLA  
WITH CELERY. My husband and little  
daughter have both taken it with best  
results. Our little two year old girl is  
especially benefited; everybody that  
sees her has something to say about the  
way she has improved, and I hope every  
body that has sick children will give it a  
trial."

YAGER'S SARSAPARILLA WITH  
CELERY is sold by leading druggists,  
60c. a large bottle. Made by Gilbert  
Bros. & Co., Baltimore, Md.

**For  
Colds**

Honey-Tolu will positively cure  
the most stubborn cough or cold  
if taken according to directions.

**HONEY-TOLU**

is harmless—the most delicate in-  
valid child can take it with perfect  
safety. Invaluable for all affec-  
tions of the throat and lungs.  
All druggists, 25c. a bottle.  
Made by Gilbert Bros. & Co.  
Baltimore, Md.

If your merchant does not have them  
in stock, ask him to order for you

**GLEASON'S  
HORSE AND CATTLE  
POWDER.**

YOU NEED IT FOR YOUR HORSES, ETC.



## SILVER LAGED WYANDOTTES

Choice purebred specimens of either sex, \$1 each, in any quantity. Eggs in season.

Dr. H. H. LEE, Marlington, Rockbridge Co., Va.

### THE IMP. FRUIT AND POULTRY FARM

—OFFERS—

## 200 Purebred BARRED P. R. COCKERELS and PULLETS

At only \$1 each or \$5. This stock is purebred and guaranteed satisfactory.

The IMP. FRUIT and POULTRY FARM, Staunton, Va

## BROWN LEGHORNS (Single Comb.)

Some fine, vigorous, farm-raised cockerels that will please you, for sale. Only \$1.00 each.

R. W. HAW, Jr., - Centralia, Va.

## FOR SALE!

Pure MAMMOTH BRONZE TURKEYS, TOULOUSE GESE, BARRED PLYMOUTH ROCK CHICKENS, GUINEAS and PEA FOWLS; Eggs in season except from Pea Fowls and Geese.

Enclose stamp for reply.

Mrs W. F. JACKSON, - Olga, Amelia Co., Va

## RICHMOND SHOW....

My S. C. White Leghorns won 1st and 2nd prize also silver medal at the Richmond show last year. Choice cockerels for sale. write for prices. C. G. M. FINK, 1409 W. Leigh St., Richmond, Va. 2nd V.-Prest, Va. Pigeon, Foultry and Pet Stock Association.

### —FOR SALE—

## PURE WHITE HOLLAND TURKEYS.

Early spring birds, Toms, \$3.50, Hens, \$2.50, Trios, \$7.50.

E. I. COOKE, - Ware Neck, Va

## BUFF ROCKS and R. C. BROWN LEGHORNS,

\$1.00 each. INDIAN PEACH TREES, Red to the seed, 25cts. each.

A. F. BONHAM, - Chilhowie, Va.

## FOR SALE, CHEAP

Some well bred BRONZE TOMS and HENS at a bargain. Address  
DUCK and POULTRY DEPT.  
Walter P. Laird, Supt. Fair Oaks Farm, Spray, N. C.

## COLLIE PUPS!

By prize-winning imported sires and trained dams. Eligible. Fit for bench, ranch or farm. Price, \$10, either sex. Also a book on the care and training of the Collie for all practical uses. Price, 50c. Copy of book free to purchaser of Collie.

Stock Farm, "MAPLEMONT," Albany, Ver.

## GO SOUTH.

For full particulars write A. JEFFERS, Norfolk, Va.

### CHEAP PAINT.

It is notorious among paint manufacturers that in some parts of the country no paint can be poor enough to fail of acceptance. The only quality regarded is color. If the hues be bright and attractive, no matter how poor the material, it will "go," and the best material will not "go," if anything cheaper is offered.

Now this is a reversal of all paint logic. It is very important that paint shall beautify one's house, but still more important that it shall protect the structure from the weather. The judicious man selects his paint, first, with regard to its protective value; second, with a view to its beautifying effect; and third, in consideration of economy.

Nothing can be more beautiful than some of the aniline dyes, but they don't protect, and in the measure that a paint protects it is economical, and when paint ceases to protect, no matter what its appearance, is usefulness has ended.

Test any painted surface by moistening it with water; if the water remain on the surface, the paint is still serviceable; if it is absorbed, the paint has outlived its usefulness.

It is this quality of shedding water indefinitely that gives to zinc its unique value as a paint material. Paint containing a goodly proportion of zinc white never becomes absorbent, and therefore, so long as it endures its usefulness remains. Chalking has some advantages in the eyes of the painter, who doesn't think paint should last too long, but from the standpoint of the man who pays the bills, a paint cannot last too long if it continues to protect his property as long as it lasts.

STANTON DUDLEY.

The November St. Nicholas must appeal especially to the boys. It contains a profusely illustrated article on "A Trip Through the New York Navy Yard" by Joseph Henry Adams. "Baby Elton the Quarter-Back," by Leslie W. Quirk, is a timely story of college and foot ball, in which one of the players is suddenly afflicted with a sprained ankle "accidentally on purpose" in the middle of a game in order that "Baby Elton" may have a chance to show his prowess. How well he acquits himself is the interesting part of the story.

### SALE OF LIVE STOCK.

The Kentucky Live Stock Breeders Association will hold its Second Annual Sale at Louisville, Ky., on November 13. The offerings at this sale will be 100 head of beef cattle, consisting of Shorthorns, Aberdeen-Angus and Polled Durhams. The contributors to the sale are all well known Kentucky breeders, whose name is a guarantee that the animals of the respective breeds will be exceedingly choice, both as to breeding and individuality. Look up the advertisement, and write to Mr. M. W. Neal, Secretary, 514 3rd street, Louisville, Ky., for catalogues, which are now ready.

### YAGER'S LINIMENT.

In case of accidents, a bottle of Yager's Liniment should be handy. Good for man and beast.



Warranted to give satisfaction.

## GOMBAULT'S CAUSTIC BALSAM

A safe, speedy and positive cure for

Curb, Splint, Sweeney, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a HUMAN REMEDY for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address  
THE LAWRENCE-WILLIAMS COMPANY, Cleveland, Ohio.

USE  
**FOUTZ'S  
HORSE  
AND  
CATTLE  
POWDER**

A medicine which makes sick animals well, the diseased whole, the weak strong and the thin fat. It will restore lost Appetite, cure Worms and cure Cholic Gough, Heaves, Influenza, Diarrhea, Flatulency and all Stomach and Bowel trouble.

The finest of all animal vitalizers and tonics and the only one which increases the coefficient of digestibility of protein.

**PRICE**  
25¢ PER POUND  
5 POUNDS \$1.00  
10 POUNDS \$2.00  
CHARGES PAID

Get the Genuine or send to us, Parham No. 18, France.  
Sold by All Dealers.

**DAVID E. FOUTZ  
BALTIMORE, MD.**

**DEATH TO HEAVES**  
Strangles

Newton's Heave, Cough, Dis-temper and Indigestion Cure. A veterinary specific for wind, throat and stomach troubles. Strong recommendations. \$1 per can. Dealers, mail or Ex-paid. Newton Horse Remedy Co. (7) Toledo, Ohio.

# V. P. I.

## Farm Bulletin

Nice BERKSHIRE PIGS for sale now. Also a few DORSET RAM LAMBS left.

D. O. NOURSE, Prof. of Agr.  
Blacksburg, Va.

## FINE STOCK AT A BARGAIN.



One trotting bred brown gelding, coming 4 yrs. old, 15½ hands, weight 1000. Trim as a fawn, and dealing in style and action. Can negotiate a mile in 3 minutes under the lines without effort. His future is big with promise. Sinevy, hardy and tough. With just a bit more of age and service will make a model family horse. On any city market he would go "like hot cakes" at \$200. To sell at once we will take \$150.

One fine, three-year-old family milk cow. Gentle and fresh to milk. Price, \$30.

Nine head beautiful, reg. Angora Goats; one Buck; Price, \$20. Six Does; Price, \$12 each. Two Buck Kids; Price, \$10 each. Lump price of nine goats, \$100.

Two fine, reg. Dorset Ewe lambs, about 1 yr. old. Price, \$10, each.

One fine, 4-yr.-old Dorset Ram, very large; he is a prize winner. Price, \$20.

Address W. M. WATKINS & SONS,  
Cottage Valley Stock Farm,  
Randolph, Charlotte Co., Va.

## ABERDEEN-ANGUS

Bull calves, \$40 to \$60, heifers 5 to 7 mos. old, \$75. Limited quantity

## NEW SIBERIAN MILLET

Seed at \$150 per bush; this millet will produce a crop of seed and a fair quality of hay at the same time. It is fully two weeks earlier than the German millet, of finer quality, but will not yield quite as much.

C. E. JONES, Carysbrook, Va.

## ANGUS BULL CALVES

Registered and unrecorded. Stock first-class, and breeding the best.

## SHROPSHIRE SHEEP

First class yearling rams, and ewes of all ages. Several FINE FARMS for sale.

WARREN RICE, - Winchester, Va.

..OAK HILL FARM..

Holstein and Jersey Cattle,  
Biltmore Berkshires.

Wishing to reduce my stock, will sell cheap every thing from Oak Hill Farm is guaranteed first-class, and as represented. Address

Oak Hill Station SAM'L HAIRSTON,  
on the Farm. Wenonah, Va.

## WATER CLOSET COMBINATIONS,

Porcelain Bowl, Hardwood Seat and Tank, Nickel Plated Flush and supply pipes, complete, each \$11.00.

Cast Iron Roll Rim Bath Tubs, length 5 ft. Complete with full set of nickel plated fittings, each \$11.00.

They are new goods, ask for free catalogue No. 166 on plumbing and building material.

Chicago House Wrecking Co., W. 55th and Iron Sts., Chicago

## REPORTS.

U. S. Department of Agriculture, Washington, D. C. Bureau of Animal Industry. The Dairy Industry and Dairy Markets in Porto Rico.

Section of Foreign Markets. Bulletin 29. Distribution of Agricultural Exports of the United States, 1897-1901.

Weather Bureau. Proceedings of the Second Convention of Weather Bureau Officials, August 27, 28, and 29, 1901.

Farmers' Bulletin 156. The Home Vineyard, with special reference to Northern Conditions.

Crop Reporter, October, 1902.

Arizona Experiment Station, Tucson, Ari. Bulletin 44. The River Irrigating Waters of Arizona. Their Character and Effects.

Colorado Experiment Station, Fort Collins Col. Bulletin 72. The Ground Water.

Bulletin 73. The Feeding Value of Beet Pulp. Feeding Beet Pulp and Sugar Beets to Cows.

Press Bulletin 13. The Best Time to Cut Alfalfa.

Columbus, Ohio. Journal of Horticultural Society, September, 1902.

Kansas Experiment Station, Manhattan, Kan. Bulletin 111. Quality in Beef.

Bulletin 113. Baby Beef.

Maryland Experiment Station, College Park, Md. Bulletin 84. Some Feeding Experiments with Cows and Tables for the Computation of Rations for Animals.

Bulletin 85. Alfalfa for Maryland.

New Hampshire Experiment Station, Durham, N. H. Bulletin 92. Silage Studies.

New Mexico Experiment Station, Mesilla Park, N. M. Bulletin 42. Alkali.

Bulletin 43. Drainage and Flooding for the Removal of Alkali.

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Pennsylvania Experiment Station, State College, Penn. Bulletin 60. The Rearing of Calves on Milk Substitutes.

Virginia Weather Service, Richmond, Va. Report for September, 1902.

Imperial Department of Agriculture, Barbadoes, West Indies. Agricultural News, September 27, October 11, 1902.

## CENSUS BULLETINS.

210a. Manufactures. Chemicals and Allied Products. (Errata.)

224. Manufactures. The Localization of Industries.

245. Manufactures. Electrical Apparatus and Supplies.

246. Manufactures. Iron and Steel.

When corresponding with advertisers, kindly mention that you saw their advertisement in the *Southern Planter*.

## • FILSTON FARM. •

SECOND LARGEST

## JERSEY HERD

IN AMERICA. FOUNDED 1882.

BULL CALVES, and for the first time, Heifers bred to Imported Golden Peter, and Heifer Calves and a few aged Cows.

BERKSHIRES, all ages, sired by Imported Storm King, or Imported Esau 2nd, Size, good shape and large litters.

Visitors welcome. Address for Book of The Farm, or prices

E. M. GILLET, Clerk, Glencoe, Md.

ASA B. GARDINER, Jr., Manager

## Swift Creek Stock and Dairy Farm



Has for sale a large number of nice young registered A. J. C. C.

JERSEY BULLS  
AND HEIFERS.

None better bred in the South. Combining closely the best noted and up-to-date blood in America. Bulls 10 to 12 months old, \$25.00. Heifers, same age, \$30.00. POLAND-CHINA PIGS, \$5.00 each. Send check and get what you want.

T. P. BRASWELL, Prop., Battleboro, N. C.

## FOR SALE.

1 pure-bred JERSEY COW, in milk, 5 yrs. old. Price, \$30.

1 pure-bred JERSEY CALF, 4 months old. Price, \$25.

2 half-bred RED POLL HEIFERS, age 15 mos. 2 half-bred RED POLL BULLS, aged 10 and 5 mos. Price, \$15 and \$25 respectively.

2 STANDARD TROTTER STUD COLTS, aged, 14 and 4 mos., also

20 Pure-bred P. R. COCKERELS, 75c. each.

M. E. ANDREWS, Hurt, Va.

## 2 JERSEY BULL CALVES

Eligible for registry. FOR SALE.

Prices reasonable.

A. L. BLAIR, - Howardsville, Va.

## FOR SALE!

Purebred POLAND-CHINA PIGS of the best prize-winning families.

RED POLLED CATTLE, some good ones that show 100 lbs. for each month they have lived.

A few choice purebred SHROPSHIRE SHEEP.

MAMMOTH BRONZE TURKEYS from prize-winners at Madison Square Garden show.

MAMMOTH PEKIN DUCKS from prize-winners at Madison Square Garden and Philadelphia.

Raised over 500 chickens this year, and will sell some fine young BARED PLYMOUTH ROCKS at 75 cts. each, if sold in next 30 days, and in lots of not less than three.

## ARROWHEAD STOCK FARM,

Sam'l. B. Woods, Prop. Charlottesville, Va.

JACKS  
FOR SALE.

1 to 8 yrs. old. Fine Jacks a specialty. Write for what you want.

W. E. KNIGHT & CO.,

Nashville, Tenn.

# HEREFORDS.



## BERKSHIRES.

Young stock for sale at all times.  
Information and terms upon application.

EDW. G. BUTLER, ANNEFIELD FARMS,  
BRIGGS, CLARKE CO., VA.

## POLAND-CHINA

Pigs, eligible to registration, 8 weeks  
old, \$5.00.

## HEREFORDS.

Grade calves, either sex, \$25.00.

J. C. GRAVES, Barboursville,  
Orange County, Va.

## POLAND-CHINAS

Closely related to such famous hogs as  
Anderson's Model, Model of 97 and  
Hands Off. Pigs, boars, gilts and bred-  
sows for sale. Also some good SHORT-  
HORN bull calves and SHROPSHIRE sheep.  
Stock guaranteed as represented or  
money refunded.

J. F. DURREITE, - Birdwood, Albemarle Co., Va.

# Berkshire Pigs

I have a few young pigs for sale. Thor-  
oughbred stock. Eligible to registry.  
Baltimore strain. Prices quoted on  
request.

HENRY W. WOOD,  
Hollybrook Farm. Richmond, Va.

## Large ENGLISH BERKSHIRES

M. B. TURKEYS Very Fine.

B. P. R. Chicken Eggs in season.

HAWSLEY STOCK FARM,

J. T. OLIVER, Allen's Level, Va.

## ..ESSEX PIGS..

Some extra fine  
pigs, 8 to 10 weeks  
old, \$10 per pair. All  
stock offered is  
eligible to registry.  
Southdown sheep,  
spring lambs and  
yearling ewes for  
sale. Prices on application.

L. G. JONES, BETHANIA, N. C.

THOROUGHbred

## O. I. C. PIGS

FOR SALE. Prices Right, Va.

F. S. MICHIE, CHARLOTTESVILLE, VA.

### ANNOUNCEMENT.

#### SUNNY HOME HERD OF ABERDEEN ANOUS CATTLE.

The majority of the females of this herd  
were brought from Huron county, Ohio  
(March 1st, 1901), where the herd was  
founded several years ago by selections  
from the great herds of J. P. and D. N.  
Hine, pioneer breeders of Angus in Ohio,  
Anderson & Findlay, Lake Forest, Ill.  
(oldest and most extensive breeders of  
Angus in America), and Hon. M. H.  
Cochran, of Quebec.

These females are sired by the following  
famous bulls: Gay Blackbird, Columbian  
winner, and sire of more great herd bulls  
than any other bull in this country; Er-  
moor, the great Erica Sire, son of Royal  
Erie—greatest sire of high priced females  
on this continent; Eulalie's Erie, 2d prize  
yearling bull at World's Fair, Chicago,  
son of Heather Lad 2d, one of the most  
famous bulls of the breed; Baron Ida,  
three times a champion at State Fairs,  
first prize in his old age at Pan-American;  
Beau Bill, champion at four West-  
ern State Fairs for two years; Dark  
Prince, by Allblack, the sire of Black  
Monarch of Emerson, sire of the highest  
priced female ever sold in America  
(Black Cap Judy sold at \$6,800); Eulalie's  
Laddie, in use for the past two years, is  
proving that "good blood breeds on."

Every animal sold from this herd car-  
ries with it a strict guarantee of produc-  
tiveness.

Every animal shown at Raleigh Fair,  
Jan., 1901, received a first prize, and Miss  
Stubbs (by Dark Prince) was champion  
beef heifer of any breed. See advertise-  
ment.

#### THEODORE ROOSEVELT ON "THE PRESIDENCY."

Before his nomination for the Vice-  
Presidency, Theodore Roosevelt wrote  
expressly for The Youth's Companion an  
article on "The Presidency." It will be  
published in the number for November  
6th, this being one of the remaining  
weekly issues of 1902 sent free from the  
time of subscription to every new sub-  
scriber who at once sends \$1.75 for The  
Companion's 1903 volume. When this  
article on "The Presidency" was written  
no one could have foreseen, or dreamed  
even, that its author would so soon be  
called upon to take up the duties of the  
great office. For this reason alone, what  
Mr. Roosevelt has to say possesses extra-  
ordinary interest, and will be eagerly  
awaited by persons of all shades of po-  
litical opinion.

A twenty eight page Prospectus of the  
1903 volume of The Youth's Companion  
and samples of the paper will be sent  
free to any one. Address 144 Berkeley  
street, Boston, Mass.

#### MAKE YOUR COWS BREED.

The Dairy Association of Lyndonville,  
Vt. are advertising a preparation called  
"Kow-Kure," which is recommended to  
bring cows in heat. They would like to  
send a pamphlet to any one interested.

To make cows pay, use Skerries Cream Separators.  
Book "Business Dairying" & Cat. 806 free, W.  
Chester, Pa.



## BY USING KOW-KURE THE GREAT COW MEDICINE

Watch every cow and at the first sign  
of disorder in appetite, digestion or flow  
of milk, give a dose of KOW-KURE.  
Carefully follow the directions as given  
on the box and that cow will get well.

KOW-KURE is in powder form, to be  
given in regular feed. It cures abortion,  
barrenness and scours, removes retained  
afterbirth and caked udder, strengthens  
the appetite, purifies the blood, vitalizes  
the nerves and prevents disease. It in-  
creases the milk. It is a medicine for  
cows only, made by the

DAIRY ASSOCIATION,  
LYNDONVILLE, VT.

HUNTVILLE, N. J. Jan. 20, 1902.

DAIRY ASSOCIATION, LYNDONVILLE, VT.

Dear Sirs:—After having used your Kow-  
Kure for the past 18 months in our dairy of 60  
head of cattle, I must say that it is the greatest  
cow medicine on earth. It does what you  
claim for it, if used as directed. Before using  
it I was discouraged with abortion and after-  
birth and other complaints. Since using Kow-  
Kure I have not been troubled with any of  
these diseases, and money wouldn't hire me to  
live without it in the barn, ready for use.

Respectfully,

WM. V. PIERCE,  
Mgr. Chapel Road Dairy Farm.

## ELLERSLIE FARM

Thoroughbred Horses  
AND SHORTHORN CATTLE,

Pure Southdown Sheep  
and Berkshire Pigs.

FOR SALE. R. J. HANCOCK & SON,  
CHARLOTTESVILLE, VA.

EAST RIVER SIDE

## SHORTHORNS.

Choice bull and heifer calves for sale.  
Will make price very low for next 60  
days.

JAMES F. CLEMMER, Summerdean, Va.

## Ayrshires, Berkshires and Oxford-Downs.

Ayrshire calves of both sexes, Berkshire  
pigs and boar, and 2 Oxford-Down rams For  
Sale. MELROSE CASTLE FARM,  
Enos H. Hess, Mgr., Cassanova, Va

**The EGGS**  
which some coffee roasters use to glaze their coffee with—would you eat that kind of eggs? Then why drink them?

**Lion Coffee**  
has no coating of storage eggs, glue, etc. It's coffee—pure, unadulterated, fresh, strong and of delightful flavor and aroma.

Uniform quality and freshness are insured by the sealed package.

"BRED-IN-THE-PURPLE."  
**DUNTREATH BERKSHIRES**  
FOR SALE.  
Two sows and two boars (same litter), three months old on 6th—VERY CHOICE, also two sows and one boar (same litter), six weeks old on 15th Nov., all eligible to register.  
**NONE BETTER IN AMERICA.**  
DUNTREATH FARMS, P. O. Box 666, Richmond, Va.

**WOODLAND FARM DORSETS.**  
Virginia has a good many of our Dorsets, and we note our old customers writing for more. That's because we send out only good ones.  
Joseph E. and Willis O. Wing,  
Mechanicsburg, Ohio.

**THOROUGHBRED SHROPSHIRE BUCKS**  
For Sale. ONE IMPORTED BUCK, 2 yrs. old, YEARLING and several LAMBS at farmers' prices.  
Apply to **MANAGER,**  
ANTRIM STOCK FARM, Warrenton, Va.

**MARK YOUR STOCK.**  
Use the  
**KENTUCKY ALUMINUM EAR LABEL.**  
Made by F. H. JACKSON & Co., Winchester, Ky. Write to them for free samples.

**ANGORA GOATS** are handsome, hardy and circular address E. W. COLE & CO., Kenton, Ohio.

**"Crop Growing  
Crop Feeding"**

BY PROF. W. F. MASSEY.  
383 Pp. Cloth, \$1.00; Paper, 50c.

We offer this splendid work in connection with the **Southern Planter** at the following prices:  
Southern Planter and Cloth Bound Volume, \$1.26  
Southern Planter and Paper Bound Volume, 90c.  
Old or new subscriptions.

Mention the *Southern Planter* when writing advertisers.

**PAMPHLETS.**

A treatise on the art of Cider and Vinegar making as an industry, embracing formulas for the manufacture of cider, vinegar and other fruit wines. By W. D. Carlisle, Royal Orchards, Afton, Va. This little pamphlet will be found useful to orchardists in enabling them to utilize their waste products.

Triplic Extract of "Sarnol" Fluid. Specific for destroying ticks and preservative against the Texas fever. L. Dela Torre, Hotel Lafayette Brevorst, Fifth Avenue and Eighth street, New York. If what is stated in this pamphlet is borne out in practice, this fluid will be found a valuable acquisition in Southside Virginia and North and South Carolina. It is said to be largely used in South America.

**CATALOGUES.**

Zenoleum. Zenner Disinfectant Co., Detroit, Mich. Piggies troubles and their treatment from a scientific standpoint.  
Pinehurst Nurseries, Pinehurst, N. C. North Carolina Woody and Herbaceous Plants and other Ornamentals.  
Premium List of the Virginia Poultry and Pet Stock Association and Virginia Bench Show, November 24-29, 1902.  
The Glucose Sugar Refining Co., The Rookery, Chicago. "Feed Your Stock for Best Results." This catalogue points out the value of gluten feeds.  
The McSherry Manufacturing Co., Middletown, Ohio. How to Grow Pedigree Wheat. Suggestions for Bettering and Improving of Crop Conditions.

**PAGE WOVEN WIRE FENCE.**

In a recent letter from the Page Woven Wire Fence Company, of Adrian, Mich., they say:

"We were never so well equipped as at present to furnish Page Fences. Having our own steel, rod and wire mills, and having very largely increased our weaving capacity; with about 1,400 employees on our pay-roll, converting the iron into high carbon steel, the steel into ingots, blooms, billets, rods and wire, and with double the number of looms that we had January 1st, 1900, we feel that we are in pretty good shape to supply the demand for 1903.

"We make a standard style of fencing for every farm, poultry, stock or railroad requirement; use double-strength horizontal wires in all these styles coil or spiral every one of them from end to end the whole length of the fence, thus providing for expansion and contraction, and Page-Wire will retain this coiled shape even after it has been drawn out straight a thousand times.

"No locks, staples or other devices are used to hold the horizontal and cross-bars together, because Page Fence is a real woven wire fence. Horizontals and cross-bars woven together is all there is of it."

Their advertisement appears regularly in our columns, and if you have not yet investigated the merits of their fencing, you should write for catalogue, descriptive matter and prices now.

**HONEY TOLU**

Will cure that cough or cold. Try it.

**Our Clubbing List.**

The following list of papers and periodicals are the most popular ones in this section. We can **SAVE YOU MONEY** on whatever journal you wish.

**DAILIES.**

	PRICE	WITH
	ALONE.	CLUBBER.
The Dispatch, Richmond, Va.....	\$3 00	\$3 00
The Times, ".....	8 00	3 00
The Post, Washington, D. C.....	6 00	6 00

**SEMI-WEEKLIES.**

The Dispatch, Richmond, Va.....	1 00	1 25
The World (three-a-week), N. Y.....	1 00	1 25

**WEEKLIES.**

Harper's Weekly.....	4 00	4 00
" Bazaar.....	1 00	1 40
Montgomery Advertiser.....	1 00	1 00
Nashville American.....	50	75
The Baltimore Sun.....	1 00	1 85
Breeder's Gazette.....	2 00	1 75
Hoard's Dairyman.....	1 00	1 85
Country Gentleman.....	1 50	1 75
The Times, Richmond, Va.....	50	80
Religious Herald, Richmond, Va.....	2 00	2 25
Central Presbyterian, ".....	2 00	2 50
Christian Advocate, ".....	1 50	1 75
Turf, Field and Farm.....	4 00	4 00
Spirit of the Times.....	4 00	4 00
Horseman.....	8 00	8 00

**SEMI-MONTHLIES.**

Wool Markets and Sheep.....	50	75
Dairy and Creamery.....	50	75
Commercial Poultry.....	50	75
All three.....	1 50	1 15

**MONTHLIES.**

North American Review.....	5 00	5 00
The Century Magazine.....	4 00	4 25
St. Nicholas.....	8 00	3 25
Lippincott's.....	2 50	2 50
Harper's.....	4 00	4 00
Forum.....	8 00	3 25
Scribner's.....	8 00	3 25
Frank Leslie's.....	1 00	1 85
Coemopolitan.....	1 00	1 85
Everybody's.....	1 00	1 85
Musey.....	1 00	1 85
Strand.....	1 25	1 85
McClure's.....	1 00	1 85
Puritan.....	1 00	1 85
Review of Reviews.....	2 50	2 75
Leisure Hours.....	1 00	1 25
Blooded Stock.....	50	50

Where you desire to subscribe to two or more of the publications named, you can arrive at the net subscription price by deducting 50 cents from "our price with the Planter." If you desire to subscribe to any other publications not listed here, write us and we will cheerfully quote clubbing or net subscription rates.

Subscribers whose time does not expire until later can take advantage of our club rates, and have their subscription advanced one year from date of expiration of their subscription to either the *Planter* or any of the other publications mentioned.

Don't hesitate to write us for any information desired; we will cheerfully answer any correspondence.

We furnish no sample copies of other periodicals.

No. 1 Iron Age Double and Single Wheel Hoe.

No. 2 Iron Age Combined Double and Single Wheel Hoe, Hill and Drill Seeder.

No. 3 Iron Age Combined Harrow and Cultivator.

Improved Robbins Potato Planter.

No. 6 Iron Age Horse Hoe and Cultivator.

**Look for the full name IRON AGE branded on the tool.**

Don't be imposed upon by dealers selling implements made in imitation of the famous Iron Age brand. All the **IRON AGE tools** are **MARKED WITH THE FULL NAME**. The name is for your protection. It is a guarantee of best materials, best ideas, best workmanship, and all the merits that have made Iron Age tools popular with three generations of farmers and gardeners. Write for a **FREE** copy of the **IRON AGE BOOK** for 1902, telling all about these marvelous labor savers, and giving prices on Cultivators, Horse Hoes, Seed Drills, Wheel Hoes, Riding Cultivators, the Improved-Robbins Potato Planter, &c.

**BATEMAN MFG. CO., Box 167, Grenloch, N. J.**

### HIGH CLASS FEED MILLS.

Whoever is so fortunate as to get a copy of the catalogue issued by Sprout, Walvon & Co., of Muncy, Pa., will find in it a number of machines out of which the farmers will reap profit. These people have thoroughly mastered the farmer's needs, and surely have mill-making down to a science. The catalogue cannot even be glanced over without seeing that their feed mills have the most perfect adaptability, and that the patterns and make are of exceptionally high character. They have been some thirty years in the business. Their mills covering everything from the first roller process patent flouring mills down, are found in all sections of the country. Their most marked point of excellence, and the one which is of vital interest to the readers of this journal, is their celebrated line of mills for crushing and grinding ear corn, shelled corn, oats, rye, barley, spires for feed, and the making of family meals, mixed chaff, etc. This latter class of mills, stands in such high repute everywhere that the manufacturers feel they are taking but few chances when they send them out, as is their custom on fifteen days' trial, allowing purchasers time and opportunity to test thoroughly on their own premises before closing contract. Their mills and the plan of selling should attract the attention of every farmer who grinds feeds. Their advertisement is found elsewhere in this journal. If you are interested, look it up and write for the company's catalogue.

### NOT AN ILLOGICAL CONCLUSION.

An enterprising clothing merchant had advertised on every board fence in his neighborhood: "Unsurpassed Clothing! Money back without Argument!" This is what recently occurred:

"I was here a year ago and bought a suit of clothes. They are about worn out."

"Yes," replied the merchant very affably.

"And now I've come to get my money back without argument."

"Get your money back?"

"Yes."

"Didn't you wear the suit a whole year? What do you want your money back for?"

"To get another suit of clothes."—X. Y. Z. in November Lippincott's.

## HOLSTEINS and DORSETS.

Two young cows, one to be fresh in December, other in the spring. Two heifers, one year old. One bull calf, four months old.

### FOUR DORSET RAMS

Rams sired by an Imported Buck. Address

**T. O. SANDY, Burkeville, Virginia.**

Norfolk and Western and Southern R. R.

## DEVON COWS....

Ten young **DEVON COWS**, thoroughbreds and high-grades with Calves by their sides. Want to sell them during this month. Can be seen if day's notice is given. Also **JERSEY CATTLE** and several **YOUNG GUERNSEY BULLS**. **BERKSHIRE PIGS** not akin. Several young **BOARS** ready for service.

**M. B. ROWE & CO., Fredericksburg, Va.**

\* VIRGINIA DIVISION. \*

## Farmers Mutual Benefit Association.

A Fire Insurance Association, chartered by the State for the farmers of Virginia, under an amended and well protected plan.

Insures, against Fire and Lightning, only country property—no stores or unsafe risks. Average cost per year for three years have been \$3.66 per \$1000, including dwellings, barns, produce, &c.,—about one-third the usual cost of insurance to farmers. Amount of property insured \$325,000. Estimated security in real and other estate, \$600,000.

For further information, address,  
MENTION THIS JOURNAL.

**CHAS. N. FRIEND, General Agent,  
CHESTER, VIRGINIA.**

Don't erect another rod of fence until you investigate the

### Truss and Cable Wire Board Fence.

It is stronger, lasts longer and costs less than any other. One man can build it. Six wires in every strand. Perfect provision for contraction and expansion. Sold direct from factory at wholesale prices. Agents wanted. Sample free.

**THE TRUSS & CABLE FENCE COMPANY**  
329 Federal Building, Youngstown, Ohio.

## TREAD POWERS.

For a thoroughly good, reliable power, for use on the farm; one which is ever ready for use and which is readily adaptable to all conditions and all kinds of work, and one which will generate and maintain power at the least possible cost, Heebner's Level-Tread Horse Powers are recommended. These are advertised elsewhere in these columns, and are manufactured by Heebner & Sons, Lansdale, Penna. Multiplied thousands of these powers are in use in all parts of this country and are giving perfect satisfaction. One should not express surprise at this happy condition of affairs, however, when it is known that these people have been making their special line of machines for more than sixty years. In addition to Tread Powers, the Heebners also make the renowned Little Giant and Pennsylvania Threshers and Cleaners, Union Feed and Ensilage Cutters, Feed Grinders, etc. Everything they make is sold under a guaranty and fully warranted. Write them for catalogue and kindly mention the paper in writing.

## GLEASON'S HORSE AND CATTLE POWDER.

Messrs. Gilbert Bros. & Co. of Baltimore, Md., are advertising this well-known preparation in another column. For keeping stock in good condition, they claim it is the best powder on the market. If you have not tried it, do so. It is sold on the guaranty that if used as directed, it will accomplish what is claimed for it. Your merchant or druggist handles it.

## PURE BRED PERCHERONS.

Editor *Southern Planter*:

I invaded the State of Maryland, and showed ten head of pure-bred Percherons including sucklings at Hagerstown and Frederick, where I won 16 premiums, 14 firsts and two seconds. I think I will go to Ohio and Pennsylvania next fall with a herd of Shorthorns and a car-load of Percherons. We must show the States that old Virginia, while away down alphabetically in the list of States, she is away up in fine stock.

Yours truly,

JNO. F. LEWIS.

Lynnwood Stock Farm, Oct. 26, 1902.

## SHORT COURSE OF PRACTICAL INSTRUCTION IN AGRICULTURE, HORTICULTURE, DAIRYING, &amp;c.

The University of Tennessee offers a short course from January 2nd to March 14, 1903, in Agriculture, Horticulture, Dairying, &c., which will be found to be of the greatest service to young farmers, and those intending to be farmers. To take this course, which runs over ten weeks, need not cost more than \$40, exclusive of railroad fare. The student gets the advantage of the splendid equipment and able staff of the College. Tuition is free. The only expense is the board and a small incidental fee of \$7 and \$2 for syllabus of lectures. This is an opportunity which should be largely availed of.

Mention the *Southern Planter* when corresponding with advertisers.



**FARQUHAR Portable Saw Mills**

with Engines and Boilers Complete.

Made in seven sizes, friction feed, cable lighting cog, patent chain set works and improved dogs. **AJAX CENTER CRANK ENGINES** are constructed with especial reference to the peculiar work required of them. This combination of engine and mill makes the best sawmill outfit on earth.

**AJAX Center Crank ENGINE**

Illustrated catalog of farm machinery and implements, free.

**A. B. Farquhar Co., Ltd**  
York, Pa.

## GILT-EDGED FAMILY COWS

Bred from high-testing Jersey Cows a specialty.

We have more high-testing St. Lambert Cows than can be found in any herd in America.

**INDIAN GAMES**—The king of table fowls.

**WHITE WYANDOTTES**—The best general-purpose fowl.

**WHITE LEGHORNS**—The greatest of all egg producers.

Address

**BOWMONT FARMS, SALBEM, VA.**

## SIR JOHN BULL'S PIGS.

All testify to his prepotency, nor is

## UNCLE SAM

Unlike him in strong points of transmission or reproduction.



Every pig I ship has individual merit, aside from the purest English strain of **LARGE BERKSHIRES** that I could import from the most famous breeder in England.

**LET ME HAVE YOUR ORDERS PROMPTLY FOR FALL SHIPMENT, at Farmers' Prices.**

**HUNTING DOGS and PUPS FOR SALE.**

**THOS. S. WHITE, Fassifern Stock Farm, Lexington, Va.**

A. J. C. C. JERSEYS,  
BERKSHIRE SWINE.

## A FEW BULL CALVES FOR SALE

From cows making 800 to 360 pounds butter-fat each milking period. Milk is weighed **EVERY** milking and tested frequently, so we **KNOW** what we say.

## BERKSHIRES

Of the best Hood Farm and Biltmore strains.

Southern R. R.

**FOREST HOME FARM. - - - PURCELLVILLE, VA.**

## THE OAKS. 6 SHORTHORN BULL CALVES,

(Eligible to registry) FOR SALE; Also 4 Grades.

100 high-grade **SHROPSHIRE EWES**; good ones, and some of them bred. I never offered a better lot of stock.

**B. B. BUCHANAN, BEDFORD CITY, VA.**

# Great Combination Sale

—OF—

# BEEFCATTLE

—TO BE HELD AT—

## Louisville, Ky., Thursday, Nov. 13, 1902

100 HEAD OF CHOICELY-BRED

## SHORTHORNS, ABERDEEN-ANGUS and POLLED DURHAMS.

This is the second combination sale held under the auspices of the

### Kentucky Live Stock Breeders' Association.

It has been the endeavor of the Committee to accept nothing but the choicest animals, both in breeding and individuality, and they believe that on the day of the sale prospective purchasers will find as fine a collection of beef cattle as ever went into the sale-ring south of the Ohio river.

**AMONG THE CONTRIBUTORS ARE:—**

**SHORTHORNS**—Ormsby Bros., of Lakeland, Ky.; W. F. Brockman, of Hartsville, Ind.; Geo. C. Bird, of Croppers, Ky.; L. L. Dorsey, of Anchorage, Ky.; G. Letterle & Son, of Harrod's Creek, Ky.; F. G. Hogan, of O'Bannon, Ky.; Jas. S. Ray, of Louisville, Ky.; E. R. Bagby, of Bowling Green, Ky., and J. R. Coldwell, of Horse Cave, Ky.

**POLLED DURHAM**—Richard Cobb, of Danville, Ky.; J. W. and B. B. Stith, of Bloomfield, Ky.; Ben. A. Stith, of Elizabethtown, Ky., and J. R. Coldwell, Horse Cave, Ky.

The **ABERDEEN-ANGUS** will be creditably represented by Otto G. Callahan, of Helena, Ky., and H. S. Weaver, of Moorefield, Ky.

Each breeder has aimed to put into this sale animals that would be creditable representatives of his herd. It is believed that the breeding and individual merit of the animals catalogued will justify this claim.

**CATALOGUES NOW READY AND WILL BE MAILED UPON APPLICATION.**

Address **M. W. NEAL, Sec., 514 Third St., Louisville, Ky.**

Col. R. E. EDMONSON, Kansas City, Mo., and Col. S. S. MEDDIS, Louisville, Ky., Auctioneers.

## THE BEST PLAN.

There is always a best plan of life insurance for each individual; it is, however, sometimes difficult to tell which it is. The difficulty lies not so much with the present as with the future. Circumstances may unexpectedly change and create unlooked for requirements. Therefore it is essential that the policy selected be flexible and readily adaptable to possible future changes.

The new policies of the Northwestern Mutual Life Insurance Company embrace in the one contract about everything that is desirable in life insurance. The rights of both insured and beneficiary are recognized to the fullest extent possible, and the policies are easily adaptable to contingencies impossible to foresee at time of application, but which, as shown by the experience of the company, may at any time arise. They are the best, most flexible, most equitable, and most comprehensive policies issued. See advertisement on back cover.

INTERNATIONAL LIVE STOCK EXPOSITION.

UNION STOCK YARDS, CHICAGO.

NOVEMBER 29TH TO DECEMBER 6TH.

The entire entries for the Third International Live Stock Exposition are all in and General Manager Skinner is happy over the outlook. There are more entries this year than at last year's show in nearly all breeds, showing how earnestly the breeding interests of the country are undertaking to demonstrate the value of their breeds as meat producers.

Mr. Skinner said: "Having visited a great many of the show-yards this season, I am particularly pleased that about all the good things of the year are going to 'round up' here. The animals entered are the prize winners at the various fairs, and I am sure that the exhibit will make the most critical judges marvel at its excellence."

## CATTLE DISHORNERS.

The practice of dishorning cattle is growing in public favor every year. About the only question that now arises is, What is the best knife for doing the job? We are very glad in this connection to call the attention of our readers to the advertisement of George Webster, which appears elsewhere in this issue.

Mr. Webster has been long and favorably known as the manufacturer of the Convex Dishorner. This year he has brought out in addition a brand new "V-Knife," which he calls the "Bully V." It is the strongest and most powerful "V-Knife" on the market. The driving-cogs on the handles are made on eccentric, so that the greatest power is exerted at the outset when the hard surface of the horn is attacked.

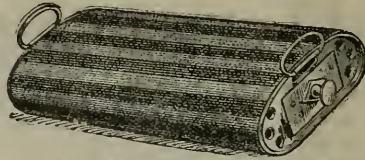
Write for his complete catalogue. Address Geo. Webster, Christiansa, Pa., and mention this journal.

## POLAND CHINAS.

Mr. J. F. Durette, Birdwood, Va., is offering some nice Poland Chinas this month. Look up his advertisement.

## "A BLESSING TO MANKIND."

Is the Expression Used by Those Who Enjoy a



Lehman  
Carriage  
and  
Sleigh  
Heater

They are Simple, Safe, Practical, Efficient and Economical. Over 175,000 of our Heaters in Actual Use. No Carriage or Sleigh is Complete without One.

Sold by all Carriage, Harness and Hardware Dealers. Circular and Price-List for the asking.

LEHMAN BROTHERS, Mfrs.,  
10 BOND ST., NEW YORK.  
Mention Southern Planter when writing.

JAMES W. ERRINGER,  
Gen'l Western Sales Agt.,  
297 Wabash Ave., CHICAGO, ILL.

SUNNY HOME HERD OF  
**ABERDEEN-ANGUS CATTLE.**

—SIRES IN SERVICE—

EULALIES LADDIE 41861 assisted by BARON ROSEBERRY, The WESTERTOWN ROSE son of GAY BLACKBIRD (the sire of Gay Lad).

Most of the leading families of the breed—Coquet, Queen Mother, Westertown Rose, Ross of Adno, Nosegay, Violets, etc.,—sired by such noted bulls as Gay Blackbird, Ermoor 18171, by Royal Erie; Eulalies Erie 15568, by Heather Lad 2nd; Bean Bill 18637; Baron Ida 20184; Dark Prince 80638.

Quality combined with best of breeding, our motto. No fancy prices, but business cattle at business prices.

Write for what you want.

A. L. FRENCH, PROPRIETOR, FITZGERALD, N. C.  
Rockingham Co., 24 miles south-west of Danville, Va., on D. & W. Ry.

**POLAND-  
CHINAS.**



TECUMSEH G, 49283.

I have a limited number of pigs by my fine boars, "TECUMSEH G," 49283, and "MONARCH," 48705, and can furnish pairs not akin or related to those previously purchased. Young boars and sows of all ages. Send to headquarters and get the best from the oldest and largest herd of Poland-Chinas in this State at one-half Western prices. Address **J. B. GRAY, Fredericksburg, Va.**

SEND FOR A PREMIUM LIST. SHOW YOUR STOCK.

**THE GREAT POULTRY, DOG, PIGEON AND PET STOCK SHOW,**

To be held **NOVEMBER 24-29, 1902,**

**In the MASONIC TEMPLE, - RICHMOND, VA.,**

Will far surpass any show of the kind ever held in Virginia. All birds will be scored by America's most noted poultry judge, Mr. T. E. Orr, the present Sec. and Treas. of the American Poultry Association, who, for 10 years past, has officiated at the largest shows everywhere. Mr. Orr will deliver a lecture during the week. Judges in other departments of equal prominence. **LIBERAL CASH PREMIUMS.**—On single birds, \$3 first prize. On pens, \$5 first prize. Uniform Cooping. Ground floor hall. Grand Working Exhibit of Incubators and Brooders.

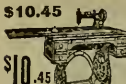
**THE DOG DEPARTMENT WILL BE A GREAT ATTRACTION.**

**PREMIUM LIST NOW READY.**

Address

**R. C. BRAUER, Supt.,**  
Richmond, Va.

**FRANK JENKINS, Sec.,**  
517 W. Broad St., Richmond, Va.



\$10.45

Buy a 20 year guaranteed Sewing Machine, with high arm, lat-draft regulator, etc. etc. improvements, choice nicely nickelled and all of drop head cabinet or 7 the latest improvements. drawer upright cabinet for 84. (See ad shows) Our ball bearing machines everything in stoves, oak are highest grade made every \$1.00 to \$10.00 shipped on trial without charge to \$1.00 heaters. Catalog shows 10 styles, also stove pipe and all kind of fire.



\$3.90 for this Oak Heater.

burns wood, soft or hard coal, has heavy cast iron base, draw center grate, corrugated fire box, double screw.



This scale only \$6.95

Weight from 1/2 to 50 lbs. size optional from 17 1/2 to 25 lbs. Guaranteed to Weigh Correctly.



\$2.67

For men's Electric Washer. Several times the capacity of the standard hand-cranked hooped tubs. Corrosion and strong. Sars to the labor.



45c

For this double-breasted linen shirt, well made, seribit, silk lined. About 1000 yards.



75c

Buy this long wool lined coat. Good look, strong, heavy. Has 275 styles and a bargain.



\$1.65

Buy this large wool lined trunk. Good look, strong, heavy. Has 275 styles and a bargain.



\$1.95

Buy this new and improved stove. Good look, strong, heavy. Has 275 styles and a bargain.



8 CENTS.

Buy this new and improved stove. Good look, strong, heavy. Has 275 styles and a bargain.



33 CENTS

Buy this new and improved stove. Good look, strong, heavy. Has 275 styles and a bargain.



37c

Buy this new and improved stove. Good look, strong, heavy. Has 275 styles and a bargain.

Send for Our Catalogue

of over 400 pages, size 9x11 inches. Postage is 10c, but if you will cut this ad out and send it to us we will mail the catalogue FREE.

MARVIN SMITH CO., 55-57 N. Jefferson St., CHICAGO, ILL.

WHEN EDGAR ALLAN POE RE-CITED "THE RAVEN."

"I became acquainted with Mr. Poe during his last visit to Richmond, in 1849, at Duncan Lodge, the home of our mutual friend, Mrs. Jane Mackenzie, and of Poe's sister, Rosalie," says Dr. John F. Carter in a paper in Lippincott's Magazine, for November, on the American poet's last night in Richmond.

"It was at Mrs. Mackenzie's that I first heard Poe recite, at her request, 'The Raven' and 'Annabel Lee,' only the family being present. From an unusually lively mood he lapped at once into a manner, expression, and tone of voice of gloomy and almost weird solemnity, gazing as if on something invisible to others, and never changing his position until the recitation was concluded. It happened that he had just before requested of Mrs. Mackenzie the loan of a sum of money, which request she was for the time unable to comply with; and she now said to him, 'Edgar, what do you think of giving a public recital of those poems?' It would probably prove a financial success. The result was that a-out a week later there appeared in the city papers a notice that on a certain evening the poet would give a recitation of his own two favorite poems in the Exchange concert room, tickets to be had at a certain bookstore. Over two hundred of these were printed, the charge of admission being fifty cents each.

"On the appointed evening I, then a young man of twenty-four, accompanied Mrs. Julia Mayo Cabell and another lady, both warm personal friends of Poe from his childhood, to the place of the proposed recitation. We arrived some moments after the appointed time, and, to our surprise, found, instead of a full audience, only nine persons assembled, we, together with the usher, making thirteen in number. Some time elapsed before Poe made his appearance, when he took his place on the platform, bowed, and resting his hands on the back of a chair, recited 'The Raven' and 'Annabel Lee,' but in a mechanical sort of way, and with a total lack of the weird and gloomy expression which had given them such effect at Mrs. Mackenzie's. On concluding, he again bowed and abruptly left the platform."

"The proceeds of this experiment was six dollars, in consideration of which, Mr. Boyden, proprietor of the Exchange, would make no charge for the use of the hall, lights, and attendance."

CASTALA HEREFORDS...

The breeding cows and herd bulls at "Castala" have been selected with one aim: THE BEST, REGARDLESS TO COST. Herd headed by the \$3,000 Imported SALISBURY, assisted by LARS, JR. I have now for sale a very fine bunch of bull calves by these bulls, also a few females. Visitors are welcome and met at stallion.

Write your needs. MURRAY ABOCK, - Keswick, Va.



BACON HALL FARM. HEREFORD REGISTERED CATTLE. "TOP" BREEDING, CALVES NOT AKIN. MOTTO—Satisfaction or no Sale. E. M. GILLET & SON, Verona, Balto. Co., Md.

C. C. Taliaferro, NASONS, VA. 1902. "MOUNT SHARON REGISTERED HEREFORD CATTLE \* STOCK FARM." BRONZE TURKEYS \* MUSCOVY DUCKS \* REMINGTON SHROPSHIRE SHEEP \* REMINGTON POLAND-CHINA PIGS. NOW OFFERS FOR SALE

HEREFORD CATTLE.—Calves, entitled to registration, \$75 to \$100. Grade Calves by "St Edward" \$25 to \$40. SHROPSHIRE SHEEP.—Bucks, one year old and over, \$15 to \$20. Buck Lambs, July delivery, \$10, and \$12. Ewe Lambs, July delivery, \$8, and \$10. POLAND-CHINA HOGS.—Pigs, six weeks old, \$5. Pigs, two or three months old, \$7.50. Pigs, five months and over, \$15 to \$20. M. BRONZE TURKEYS.—Toms, \$4. Hens, \$3. Eggs, per sitting of 12, when in season, \$4. MUSCOVY DUCKS.—Pure White Drakes, \$1.25. Pure White Ducks, \$1. Pairs, \$2.25; trios, \$3. BARRED PLYMOUTH ROCKS. ROSEN GEESSE.—Ganders, \$2.50. Geese, \$2.50. Eggs, per sitting, \$3.00 WILLIAM L. Jr., No. 21058, half brother of Artzell, will serve a limited number of mares for \$25 the season. Mares boarded at lowest figures per month.



## THE BOY IS COMIN' HOME.

I TELL you it is busy times jest now for me and marm,  
The Boy is comin' home to spend Thanksgiving 'on the farm;  
'Tis ten long years since he went West to mingle in its strife,  
He's done first-rate, and, furthermore, he's got a Western wife.  
We got the letter yesterday, and marm she laid awake  
Full half the night to praise the Lord and think what she must bake.  
If I should feed the turkey now as she declares I must,  
Why, long before Thanksgiving' he would swell all up and bust;  
I've had to grind the choppin'-knife and go to choppin' mince,  
And things are brewin' rich and fine and fit to feed a prince.  
The Boy, he writ for chicken-pie, "With double crust," says he,  
"And mixed with cream, that lovely pie you used to make for me."  
He wants a big red apple from the hill-side Northern Spy,  
And butternuts,—I've got 'em round the stove-pipe, brown and dry;  
He wants to lay the fire himself with maple hard and sound,  
And pop some corn upon the hearth when all are gathered round.  
He wants the things he used to have when he was but a lad,  
'Tis somewhat strange, it may be, but it makes us mighty glad;  
We're both a little whiter, but our love, depend upon't,  
Is jest as green and stiddy as the hills of Vermont.  
It flustered marm a bit at first about the Western wife,  
What she should do for one so fine and used to city life;  
But tucked between the Boy's big sheets she found a little slip,  
She read it with a happy tear, a gently quivering lip:  
"Dear mother," them's her very words, "I write this on the sly,  
So don't tell John, but make for him a big, big pumpkin pie;  
I know it will delight him, for he still is but a boy,—  
His mother's boy,—and so he fills his wife's glad heart with joy."  
And so, you see, 'tis busy times jest now for me and marm,  
The Boy is comin' home to spend Thanksgiving 'on the farm.

—JOHN MERVIN HULL, in *November Lippincott's*.

## VACCINATED.

She was a sweet young thing, and as he walked along by her side he suddenly remembered that she had been vaccinated and hastened to make inquiries. "You have been vaccinated, haven't you?" he asked. "How is your arm?" She turned to him a face that only too plainly showed that she was suffering, and replied mournfully, "Oh, it's so sore I can hardly walk on it." And then she wondered why he laughed.—L. F. S. in *November Lippincott's*.

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HAS THIS CHILD NO RIGHTS?

WHAT A FATHER'S "RIGHTS" OVER HIS CHILD CAN DO.

A sad and pitiable scene was witnessed here last week at a preliminary trial in the court-house, in which a little white girl, eight or nine years old, was a witness. It developed in the examination that she could neither read nor write, had never been to school or to Sabbath school, had never heard a prayer offered, did not know what it was to pray, and did not know until that morning that God made her. And this here in Anderson county, with churches and free schools dotting every hillside. To our certain knowledge there are three churches and three school houses within reach of this little girl and yet she had never been in either. Would her condition have been any worse in heathendom? Is there any difference between her and a Hindoo child so far as spiritual knowledge and enlightenment are concerned? We very much doubt if there is a negro child in the country of the same age who has never been to school or to Sunday school or heard a prayer. And yet here is a little white girl almost within sight and sound of churches and schools who might have been "in darkest Africa" so far as any benefit to her is concerned. If she is reared in this way nothing, but a miracle can prevent her from growing up a vicious and immoral woman. And yet we are told that the law must not interfere with the right of a father to control his children. What right has this father to control his children? What right has this father to rear his child in this way? What right has he to disregard the claims of society upon him to rear his children for useful and honorable womanhood and manhood? Has not the State a paramount right to see that he does regard the claims of society upon him? Has not the child itself some rights in the premises which the State is bound to protect it in, even from an indifferent and careless father? Has he a right to bring into the world and rear children much as an animal would? Never! We need a compulsory school law and need it badly.—Anderson (S. C.) Mail.

We need a compulsory school law as badly in Virginia as they do in South Carolina.—Ed.

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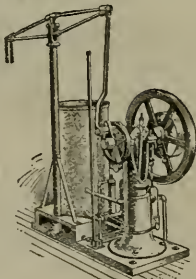
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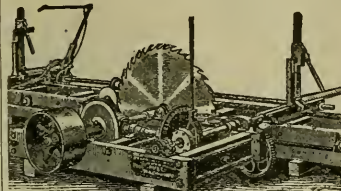
## WEST POINT.

By MARY WASHINGTON.

In celebrating the West Point Centennial in June, 1902, the fact seems to have been overlooked that the Academy made a start (though a feeble one) in 1794. As far back as 1776, Congress directed the board of war to establish a military school, but apparently both Congress and the board forgot the order, as nothing came of it. Washington advocated such a school, being strongly convinced of the great need of it. In his annual message to Congress in 1793, he strongly advised the founding of such an academy. The next year, Congress provided for creating a corps of engineers and artilleryists of 32 cadets, and ever since that time the grade of cadet has existed in our army. The Academy was actually founded that year, the cadets occupying a stone building near what is now called Trophy Point, but it was destroyed by fire two years later, and the school closed.

In 1798, a second regiment of artilleryists was created by Congress, and it was provided that 56 cadets should be instructed with these regiments, and that four teachers of art and science should be allowed them. In 1800, President Adams sent to Congress an elaborate scheme for a military academy which should also include the training of naval cadets. An act of Congress, approved March 16, 1802, established a corps of engineers, to consist of 7 (seven) officers and 52 cadets—these to constitute a military academy. The first academic year opened on July 4, 1802, with ten cadets. The latter were allowed then to enter between the ages of twelve and thirty-four. The curriculum was extremely narrow

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and limited, a knowledge of decimals and vulgar fractions being all the mathematical lore required. In the winter, the scholars took recess.

The academy struggled on feebly till the War of 1812, when our Government was made to realize its great need of trained soldiers. Indeed, Washington felt this need even during the Revolutionary War, he having had to get men of European birth and training for his field engineers. With war at their doors, Congress hastily passed an act in 1812, reorganizing the military academy on principles which have, in the main, been followed ever since. The number of cadets was fixed at 250, and the number of Professors increased. The standard of scholastic requirements was also considerably raised, though it still fell far short of what it now is. Thus the academy, planned and advocated by Washington, seconded by Adams, and actually established by Jefferson, became firmly rooted under the administration of Madison.

Major Sylvanus Thayer, one of the earliest graduates of West Point, was made superintendent in 1817, and retained that position sixteen years. His services were of inestimable value, and he was called "The Father of the Military Academy." A statue has been erected to him on the grounds, and the beautiful "Thayer Memorial Hall" affords another proof of the gratitude and reverence that attach themselves to his memory. "Honor," "obedience," and "efficiency" were made the watchwords during his administration, during which were formed the men who led our columns to victory in the Mexican war. Even now his influence is potently felt, and his memory warmly cherished.

In 1852, Gen. (then Col.) Robt. E. Lee, became superintendent at West Point, and discharged his duties with the faithfulness and efficiency he always showed in his work. He strongly advocated enlarging the scope of instruction, and his efforts resulted in procuring a five-years' course. Since that time, however, it has been shortened to four years. At the breaking out of the Civil War, there were 85 Southern Cadets at West Point, but they all resigned and returned home except twenty-one.

The West Point reservation includes 2,336 acres, and about 160 buildings, with a population of about 1,600. There is also a very large floating population in summer, when the "yearling" Cadets and those of the three years' standing are generally visited by their mothers, sisters or other relatives, to say nothing of numerous outsiders who are attracted to West Point by the beauty of the scenery and by the many delightful and interesting features of summer life there. I saw no sweeter sight there than the mothers, strolling over the grounds with their stalwart, soldierly young sons, on whom they gazed with rapt tenderness and pride, as if they discerned an incipient Stonewall Jackson or Robert E. Lee in the young fellow. And how dutiful and attentive these Cadet sons are! Carrying their mothers to the open air concerts and hops which take place on alternate nights throughout the summer, frequently ignoring the fairest young girls for the sake of their mothers. I have heard the lat-

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ter begging their boys to go off and dance with the young people, and they would reply "But, mother, it is a great deal more pleasure to be with you."

In the many beautiful strolls and works of West Point, you often see a couple whom you imagine to be lovers of the most sentimental kind, but when you approach them closely, you find them to be mother and son. It is certainly a beautiful and cheering phase of human nature, and it is pleasant to see that absence from home and the treadmill of a military life do not dull the sweetest sentiment of a boy's nature. My remarks may have suggested the idea that the young girls are neglected at West Point, but such is not the case. They always have an abundance of partners and attention, as there are two classes (aggregating nearly 250 cadets) available for this purpose, and probably not more than forty or fifty of them at a time have their mothers visiting them. The cadets who have been at West Point two years go home on furlough, and the "Plebes" or new cadets are not allowed to take part in any social function; hence, in the summer vacation, the third and first class alone represent West Point society, and they do so with great credit both to themselves and the Academy, for they have a fine bearing and polished address, and are beautiful dancers.

One of the most interesting figures now at West Point is Calvin Tits, a young fellow from Illinois, who was bugler of the Fourteenth U. S. Infantry

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during the war with China, and who was the first man of the allied forces to scale the walls of Peking. For this daring act (equal to any of the feats of Roland or other knights of chivalry), Congress ordered a medal of honor struck off for him, which the President presented to him and pinned on his coat at the West Point Centennial Celebration in June. Also the President gave him, the previous year, an appointment to West Point in recognition of his distinguished valor. He is modest and unassuming, and of a religious turn of mind.

#### A QUESTION OF SEX.

A bright little Washington girl, four years old, who is a descendant of Gorbright, the veteran journalist of a decade ago, shows a decided ability to think and decide for herself quite up to the standard of her brainy ancestor.

She was repeating her prayers at bedtime recently, the Lord's Prayer first, and as is her habit, winding up with a petition for blessings on the various members of the family of both sexes. But this time, when she came to the conclusion, she hesitated a moment as a new idea struck her, and then in a most devout tone added—

"Amen and a-women!"

"Why, daughter, you must not say that! What did you say 'a-women' for?" asked her mother in surprise.

"Well," replied the young philosopher, "didn't I pray for women as well as men?"—MARGARET SULLIVAN BURKE, in *November Lippincott's*.

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RED LEO, 28028. Record, 2:26½.

(See American Trotting Registry, Vol. XIV.)

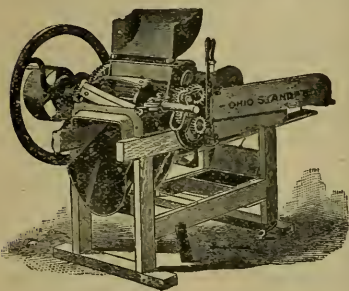
Sired by Red Wilkes, 1749, the greatest living sire; Dam Dictator Girl, by Dictator.

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FEE, \$25 the season, with usual return privilege.

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With or without fertilizer attachment.

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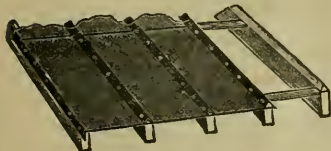
Has no equal for grinding shelled grain, corn and cob into excellent feed. The Horse-Power is very useful for running other machinery as well. A full line of mills for horse and steam power.



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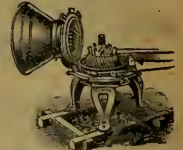


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Will work in any land, and with less draft than any other disc plow.



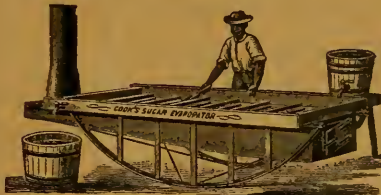
Belt Power Press.



Disc Drill



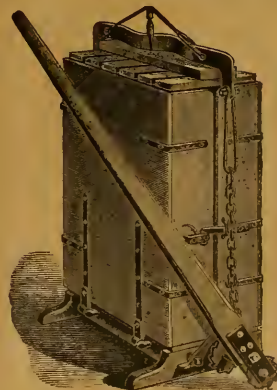
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