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"THE FARMER IS THE FOUNDER OF CIVILIZATION."--WEBSTER.

The Lancaster Farmer,

A MONTHLY NEWSPAPER:

DEVOTED TO

AGRICULTURE AND HORTICULTURE, PRACTICAL ENTOMOLOGY, DOMESTIC ECONOMY AND GENERAL MISCELLANY.

EDITED BY PROF. S. S. RATHVON.

VOLUME VIII.---1876.

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The Lancaster Farmer.

Prof. S. S. RATHVON, Editor. LANCASTER, PA., JANUARY, 1876. Vol. VIII. No. 1.

OUR CENTENNIAL GREETING.

"God and Liberty."

The national "year of jubilee" has been ushered in, and the Centennial Anniversary of American Independence is near its historic advent. Accidents, incidents, and impulsive ebullitions only *occur*, but great historic events *transpire*. They are the developments or visible effects of a long line of minor auxiliary events that point to their ultimation, and their permanence and continuance are but the superstructures, based upon fundamental principles that had an existence anterior to the denouement through which they became cognizant to the world at large. The intelligent mind, noting carefully the history of the American colonies, from the landing on Plymouth Rock down to the ever-memorable culmination of events on the fourth of July, 1776, must have often been impressed with the fact that, eventually,

"America would be FREE."

Freedom was the great boon vouchsafed to the human family in the "Garden of Eden," and it was through the perversion of freedom that sorrow, suffering, and moral death came into the world. A true humanhood cannot exist separated from the responsibilities of freedom. In the absence of freedom, man becomes an irresponsible machine, the plaything of destiny and a slave.

The wheels of time are rapidly carrying us towards the consummation of the first century of our national existence, and it behooves us to take a retrospective view of the past hundred years, and note the political, moral, and social progress we have made during all that long period, and determine how far the present is in advance of the past. In almost every department of human industry, invention and skill, we will observe there has been wonderful progress made, some conspicuously great, some mediocre, and others almost imperceptibly small. To all appearance, the "civilizing foundation of society" is far in the rear, in the progressive race, and this is an *effect* that must have its *cause* in the moral, intellectual and domestic economy of the people it comprehends. There is hardly a human occupation that does not exhibit the most striking difference between now and a hundred years ago, in its results, saving, perhaps, the single occupation of farming. It is unquestionable that the farmer cannot produce a greater quantity nor a better quality to the acre than he could one hundred years ago, and there *must be* a reason for it. Has he made a right use of his freedom, or has he not used it at all? Has he made use of his brain power, or has he relied solely upon his muscular power? These questions we leave those to answer "whom they most concern;" suffice it to say, that it is impossible for ignorance to form a rational conception of the real height and depth and breadth of freedom, for "he is a freeman only whom truth makes free." Slavery to customs because they are *old*, and prejudices against innovations because they are *new*, are forms of servitude that no freeman will endure with impunity. An influential and popular agricultural cotemporary in his address to his patrons says, "farmers, as a general thing, do not read as much as mechanics. But one in a hundred reads a really good, trustworthy agricultural paper, or meets a farmers' club to discuss questions of practical interest to him. The rest are not well versed in matters pertaining to their own business," and much more to the same effect, which may be some of the reasons why farming has not made the same progress during the past hundred years that other occupations have. Will they continue so through the coming century? They themselves must answer. The same authority also says, "It is doubtful whether there is a farmer in the world worth a million dollars, or a tenth of that sum, who has made it by farming." It is equally questionable with us, if farmers generally *desire* to be millionaires, or whether they *should* desire it. What the country most needs is more farmers, smaller farms and more thorough cultivation. Immense overgrown farms are neither evidences of general prosperity nor progress. William B. Astor died leaving an estate estimated at $100,000,000, whilst 25,000 poor in the city of New York are living in abject poverty or in states of semi-starvation. We are no agrarian, for this would probably be the same condition of these people in a year or two hence, if a division of his estate was made among them to-day. But there are a hundred thousand hardy, industrious young men, who would "go west" and become farmers to-morrow, if they had the pecuniary means to locate a farm and stock it.

True freedom involves not only moral intelligence, but also equality. There cannot, or will not, exist equality—even before the law—where poverty and immense wealth are in conflict. If, in a hundred years hence, our country exhibits fewer rich men, no poor people, more intelligent farmers and a higher state of cultivation, "all other things being equal," it will be a greater evidence of solid prosperity than is exhibited to-day.

But, as we remarked in the beginning of our article, this is our national *year of jubilee*. Not a single adult individual who participates in it will ever participate in another centennial of American independence. Therefore, it behooves the farming public to make a record on this occasion that will be worthy of handing down to their remotest posterity.

Less exposed to contaminating social influences, less profligate as a class, more constitutionally robust, more industrious and farther removed from temptation than other men, there is more hope for the farmer in this country than for any other class of its citizens. Let them therefore "make friends of the unrighteous mammon"—that is, imitate the virtues and make use of the intellectual resources of the worthy among other classes, and they will exhibit the same evidences of mental and physical progress; and the humble aim of THE LANCASTER FARMER will always be to assist them in this. Every physical demonstration is but a manifestation, in correspondence with moral and intellectual culture. With these remarks we wish our patrons a happy and prosperous CENTENNIAL year.

THE MAY-FLY.

(*Ephemera vulgata.*)

The May-fly has been, historically, very badly treated, and made appear a much poorer creature than it really is. As children, we were told on the best nursery authority that there was a poor gnat that lived a single day, and then died—a story which filled our little minds with wonder and pity. It was a relief to learn afterwards that this one day of winged existence was preceded by three years of aquatic life; but this was qualified by the intelligence that through this long period it lived on mud. Such, indeed, was the assertion of Swammerdam, and this strange opinion, stamped with his great authority, has been received and handed down for more than two hundred years almost to our own day. Mud was always found in the larva on dissection; therefore it must eat mud and live on it. Messrs. Kirby and Spence had some misgivings on the subject, and thought it must eat, in addition, decaying vegetable substances. The Rev. J. G. Wood, with his usual sagacity, while testifying to the constant presence of the mud, thinks it probable that it is taken involuntarily with its other food, whatever that may be. In a translation of Louis Figuier's entertaining summary, entitled "The Insect World," published in this country last year, it is correctly stated that this larva feeds on small insects; but no authority is quoted, and the mud question is not stirred.

My acquaintance with the *Ephemera* was made accidentally some years ago. Dipping for *Daphnia* and other small crustaceans, an advanced larva or pupa of *Ephemera vulgata* was included in the capture, and altogether transferred to a small *aquarium*. In a fortnight afterwards not a water flea was left. The pupa, quivering with excitement from head to tail, swooped with unerring aim on the doomed crustaceans so long as any were left and he felt an appetite. A second supply was given, and shared the like fate; and now the growth of the pupa was completed. One fine May morning the graceful fly was found in the window, from which it escaped into the open air.

It had left three or four *exuviæ*, thrown off from time to time, and one of these, perhaps the last, exhibits, when mounted in balsam, a perfect impression of the mouth, and may throw some light upon the nature of the food. The jaws, when open, form a wide funnel for the more ready capture of a nimble prey; when closed, they seem designed to interlace each other and form a compact front to bar all escape. The teeth exhibit a row of slightly curved bars on one side, opposed on the other to a raised block, crowned with sharp serrated edges, and could be brought together with crushing effect on the poor little crustaceans. The back of the mouth is partly closed by a singular and curious contrivance; a deep, egg-shaped sack extends across it, opening into the throat by valves or slits, fenced on the outside with fine hairs, which would permit the downward passage of a too lively daphnia, but prevent its return. And here we may probably account for the constant presence of mud in the intestinal canal. A mouthful taken involuntarily in a struggle at the bottom with a lively prey, and swallowed with it, would be retained by the fine sieves across the throat, and pass into the stomach. Such a condiment might be even beneficial (for all such contingencies are weighed) by dividing the food, or, as seems very likely, by increasing the gravity of the body after a meal, and so enabling the larva to remain without effort at the bottom. My aquarium contained no mud, and yet the pupa throve well; but in streams and eddies it might be different for so light a creature, furnished with a large breadth of bronchial plates, to maintain its place or remain in concealment without ballast; or it might be useful in other ways which we cannot even guess.—S. S., in *Science Gossip*.

Although the foregoing relates to a foreign insect, yet surely *some* of our readers must know what an *Ephemera* or "May-fly" is; but that they *all* do not know was made very manifest last summer, about the period when the "Rascal Grasshopper" was committing such direful depredations upon the crops of the Western States.

A train of cars passed on the railroad through Lancaster, and stopped for a short time to detach or attach a car, one of which cars caused considerable anxiety. This was a car loaded with lumber, and all over it, in groups of from ten to fifty, were sitting these Ephemerans, which some people (of the usual intelligence on other subjects) supposed might be the aforesaid "hopper," in one of its forms. To those born and raised, or for a number of years, residing on the banks of a river or creek, the May-fly must be one of the most familiar objects of the insect world. The

various species appear in the spring, and at different periods during the summer, and we are quite confident that *we* noticed them and made bates of them "to catch the little fishes" more than fifty years ago; and we even at that early period noticed their second transformations and exuvia or cast-off skins. The Bank Swallows along the Susquehanna fared sumptuously on these May-flies in their brief season. Although highly organized, they are rather delicate in their structure, feeble or sluggish in flight, and during their brief imago period do not partake of any food; indeed, although it is clear that they do to a great extent live on small aquatic animals, and have a mouth organized for that purpose while they are *larvæ*, yet in the mature state the mouth is only rudimental or obsolete, and they have not the power, if they even had the will, to appropriate any kind of food. We see them yet, in rows like soldiers, on the fence rails along the Susquehanna, the *Chiques* and the *Conestoga*.

When they first evolve from the pupa and pseudo-pupa state they are, usually, or nearly white, but they finally change to darker colors, from a sulphur yellow to a reddish brown, according to the species. The wings become hyaline or purple tinted. The two fore-feet usually project in front of the body, sometimes raised upward at the ends, and the wings are closely held back to back, and nearly perpendicular. They are further usually distinguished by two or three long hair-like filaments at the hind end of the body, and the eyes are proportionately large, and of a golden or coppery lustre. The genus *Ephemera* is the type of the now extensive family EPHEMERADÆ, to which belong many genera and species. Perhaps the most common example of these insects along our waters is the "two-tailed May-fly," called in some localities in the West the "Mormon-fly" (*Palingenia bilineata* of Say). Before their brief lamp of life is extinguished, the females deposit their eggs in the water, and from these subsequent broods are reared. Their use in the economy of nature is probably solely to furnish food for the higher orders of animals, especially fishes and birds.

OUR CULTIVATED VEGETABLES.

No. 4.—Asparagus (Asparagus officinalis).

This delicious vegetable is supposed to have come into use as food about two hundred years before the Christian era; its excellent qualties are said to have been made known by that most distinguished and ancient writer on agriculture, the elder Cato; he has treated no subject with greater care, the last chapter of his great work being devoted to this vegetable. It appears to have been known to the ancients as growing wild, under the name of *Corruda*. Cato advised the sowing of the seed of this plant in the beds of the Vinedresser's reeds, which are cultivated in Italy for the support of the vines; and they should be burnt in the spring of the third year, as the ashes would act as a manure to the future crops. He also recommends that the plants be renewed after eight or nine years. Athenæus, who wrote about the third century, tells that this plant was divided into two varieties, the mountain and the marsh; and that in some parts of Lybia they attained the thickness of a Cyprian reed, and were several feet in height; he also informs us that the plant was used as a remedy in all diseases. But Diphilus, a physician, who lived and wrote about the same time, and the author of a work "On Diet fit for persons in Good and Bad Health," declares that asparagus, was very hurtful to the sight. Pliny states that asparagus, which formerly grew wild, so that every man might gather it, was in his time carefully cherished in gardens, particularly at Ravenna, where the cultivated plant was so large that three heads would weigh a pound, and were sold for an *as* (about three farthings); but, according to Martial, those grown at Ravenna were no better than the wild.

The Roman cooks used to choose the finest heads of this vegetable and dry them; and when wanted for the table, put them into hot water and let them boil quickly for a few minutes; hence the proverb, "Do it quicker than you can cook asparagus,"—when anything was required in haste. Suetonius informs us in his "Life of Augustus," that this was a favorite expression of that emperor, when he wished that any affair might be concluded without delay. Pliny states that the uncultivated kinds grew upon the mountains in different countries, and that the plains of upper Germany are full it. Juvenal, in a description of a dinner given to a friend, mentions the mountain asparagus:

> "Asparagus, besides,
> Pickled by my bailiff's plain but cleanly bride,
> Who, when the wheel's domestic task is o'er,
> Culls from the hills my vegetable store."

It was believed by the ancients that if a person anointed himself with a liniment made of asparagus and oil, the bees would not approach or sting him. They also had another absurd idea, that pounded rams' horns buried in the ground would produce this vegetable.

We cannot trace the cultivation of asparagus in England; it is evidently indigenous to the country, for Gerard states that the manured or garden asparagus, which comes up of the size of the largest swans' quills, is the same as the wild, but, like other vegetables, is made larger by cultivation. The wild, he says, is "found in Essex, in the meadows adjoining a mill beyond a village called Thorpe, and also at Singleton, not far from Curbie, and in the meadows about Moulton, in Lincolnshire; likewise it groweth in great plenty near unto Harwich." The same author informs us that in Queen Elizabeth's time it was sodden in flesh-broth, or boiled in fair water and seasoned with oil, vinegar, salt and pepper, then served at men's tables for salad. Evelyn, in his "Acetoria" (1699) says, "that next to flesh, nothing is so nourishing as asparagus; it was sometimes eaten raw with oil and vinegar, but was more delicate if speedily boiled, so as not to lose its color." He tells us he did not think the large Dutch kind, "which was raised in high manured beds, so sweet and agreeable as those of moderate size, and yet to show what *solum*, *cœlum*, and industry will effect, the honorable and learned Charles Hutton made my wife a present of sixteen asparagus, the whole bundle containing only sixty; weight 15¼ pounds. So allowing four ounces to each asparagus, one was as much as one would desire to eat, and what was most observable, they were not raised or forced by any extraordinary compast but grown in a more natural, sweet, rich and well cultivated soil about Battersea." Miller, in his "dictionary," states that a friend of his procured some seed of the wild kind, which he cultivated with great care in very rich ground, yet could not get the roots to produce a stem more than half the size of the garden kind which grew on the same bed, but he always found the wild sort come up ten days or a week earlier in the spring, and that the shoots were exceedingly sweet. Leonard Meager, in his "English Gardener," published in 1683, informs us, that in his time the London market was well supplied with forced asparagus; the means employed were by placing the roots on warm manure beds. Battersea, Mortlake and Deptford used to be the principal localities from which the metropolis was supplied; Mortlake alone, at one time, had more than a hundred acres under this crop, and a Mr. Grayson, of that place, once produced a hundred heads that weighed 42 pounds. There are accounts of some very large heads of this vegetable being produced on some parts of the continent; thus, we read in Keysler's "Travels," that at Darmstadt, in 1730, some large asparagus heads were grown, some of which weighed half a pound; some hundreds of these heads were sent as a present to the Elector Palatine.

The asparagus trade in France is becoming of more importance every year. The principal place of its culture near Paris is Argenteuil, from which place in 1820 about five thousand bundles were sent to the market, but now the product probably exceeds a million. It is grown to a very great size, the maximum attained at the present time being eight inches in circumference; but a dish of such grass costs from 40 to 50 francs. In the south of France this vegetable is frequently grown between the vines. There was an asparagus-growing company started at Brunswick in 1869; several hundred acres are devoted to this vegetable, and it bids fair to rival that of Argenteuil. This vegetable might be cultivated in England with great success, in soils consisting of little else than sea-sand, dressed annually with seaweed, on many spots on the coast that will hardly produce any other vegetable. A few years since a very large variety was introduced from America under the name of "Conover's colossal asparagus."

The wild asparagus is found in many parts of Europe where the soil is light, containing an amount of salt, which appears to be necessary for this plant. The salt steppes of Russia, Mr. Loudon tel's us, are covered with it, and horses and oxen eat it like grass. In England it is found growing in Cornwall, Mullion Island, near Lizard's Point, Kyname Core, called Asparagus Island; also on the western and southwestern coast. Among the various virtues attributed to this plant is one given by Antonie Mizold, in the seventh century, who states that if the root is put on a tooth that aches violently it causes it to come out without pain. The sprouts contain a peculiar crystalline substance called *asparagine*, which was formerly used in medicine, but is not now retained in the pharmacopia. Sometimes a decoctive is given as a diuretic in dropsies.

Loudon states that the flower stalks of *Ornithogalum* are used in some parts of Gloucestershire, and sold in Bath under the name of Prussian asparagus; also the stalks of the "salsify." The mid-rib of the beet is sometimes dressed as this vegetable, and the young buds of the hop are said to be scarcely inferior in taste. The tender shoots of the *Typha*, a kind of reed, are eaten by the Cossacks like asparagus. Under the general name of asparagus the ancients were accustomed to class all young sprouts of vegetables which were used in that state. The word is almost literally Greek, signifying a young shoot before it unfolds its leaves, as handed down to us by Dioscorides. Gerard gives nearly the same definition, but in English, he states, it is called "sperage." Parkinson says our English writers "called asparagus 'sperage;' when these names were vilely corrupted into '*sparrow*-grass,' and thence frittered down into grass, I am unable to say." Batty Langly, in "Principles of Gardening" (1728) says, "the top of the bud is of the form of a sparrow's bill and from thence vulgarly called sparrow-grass." In low Dutch it is called "coralcrunt," or *Herbe caralli*, coral-wort, in respect to its berries, the seeds of which have been recommended as a substitute for coffee. The young plants gaown in pots make most beautiful decorations for the room or dining-table.—*H. G. Glasspoole, Science Gossip*, 1875.

We cannot inform our readers at what period asparagus was introduced into the United States, nor could such information be of any material advantage to them at the present time. It was not probably first introduced as a culinary vegetable, but as something mainly ornamental; at least, such is our earliest recollection of it, which extends back a period of about fifty years. It was then called "sparrow-grass," and was used to decorate rooms and objects on festal occasions, especially when it was in its beautiful red and wax-like fruit. Although a few stalks of it were grown in many gardens, and the branches twined around looking-glasses and picture frames as fly screens during the summer season, yet we do not know of its being very specially cultivated for culinary purposes. During the last twenty-five or thirty years, however, it has been coming more and more into use, and is now one of the cherished objects of the market gardener. It is now so unlike the original wild plant from which it sprung, that no one

but a professed and practical botanist would be able to recognize the native plant in its native localities. The leading varieties which have been cultivated from the original, and which are now the most popular in the United States, are the "*Large Purple Top*" and the "*Colossal*," and seedsmen and truck gardeners esteem these in the main "good enough," without giving themselves much trouble about others. On the subject of this vegetable, Mr. Landreth, in his *Rural Register* for 1875, says: "There are, it is said, several varieties of asparagus, but the difference mainly arises from the nature of the soil. On strong loamy land the growth is more robust, and the shoots more tender than on sandy soil. The variety termed *Colossal* is of extraordinary size, and the concurrent testimony of experienced market gardeners leaves no room for doubt that it really is of much more vigorous growth than ordinary—whether the habit be fixed by culture, long directed to one object, or is the result of accident. We feel sure, however, that *any* variety will surely grow as large as desirable, if the plants have plenty of room and manure. Market men frequently plant 3 by 4 and dress heavily every year; the strong shoots occasionally exposed in market, are produced under the influence of excessive stimulation. The quality of asparagus will mainly depend on the strength of the soil; it is a voracious plant, and can readily digest any amount of the strongest manure food, which it is better to apply on the surface, late in autumn, to be forked in early in spring. Salt is also an excellent application to asparagus beds. The brine from beef or pork barrels produces a strong and vigorous growth." Asparagus, like peas, we only have access to for a short season in early summer, and then we see nothing more of it again for another year. On the subject of "forcing" and a continuous supply, "Schenk's Gardeners' Text Book" says: "With marketmen it is a matter of profit to produce asparagus out of season; this must be accomplished by artificial heat. The first plantation may be made in the middle of autumn, and others every four weeks afterward until the middle of March; by which means a continued supply of shoots can be obtained from December up to the first cutting in the open ground. The process is simple and easily practiced. The materials for the hot bed should first undergo fermentation, that when under a frame the heat may be gentle and regular; because if it be violent, it is apt to bring the plants up weak and 'spindling.' Dung may be advantageously mixed with ashes and tan-bark, which mixture, by insuring mildness and regularity in heat, is better than dung. The maximum heat ought not to exceed 65°."

Select the earliest and finest seeds, and these will be grown on the earliest and finest shoots—those having large close heads—allowed to run up to seed without having been cut. In the autumn when the berries are ripe they should be stored in a dry place until spring, for sowing. In this vegetable, like nearly all others, the improvement of the plant largely depends on judicious *selection* in the first place, and then manure and salt culture afterwards.

QUERIES AND ANSWERS.

Mr. F., Lancaster city, Pa.—The beautiful wild duck you exhibited to us in December last, is a specimen of what is known among naturalists as the "Long-tailed Duck," (*Harelda glacialis*) and what is most remarkable in reference to this individual is, that it should have been captured alive in a public street of Lancaster city. Although it is not considered rare in Lancaster county, yet its usual habitat is seas, bays, and larger streams, or rivers, and rarely swamps or marshes. Its favorite food consists of mollusks, crustaceans, and marine worms, and presumably aquatic insects also, as well as the fruit of aquatic vegetation, and so forth. This is the third wild bird that has been captured within the corporate limits of Lancaster city, within about six months. A very perceptible change takes place in the plumage of this bird during the winter season, but this subject was still in its summer garb. The form of its long tail approaches that of the common "Pin-tail," but that species is much larger, and is of a mottled grey in color, whilst the species under consideration is black and white, with the outlines of color distinctly marked, and no admixtures whatever, except around and above the eyes, which is a light bluish grey. A specimen is now in the museum of the *Linnæan Society*, but this one would be desirable should its proprietor get tired of it.

J. B. E., Lime Valley, Lan. co., Pa.—We are not able to determine positively the species of the larvæ infesting your blackberry canes near the roots. They are comparatively new to us, having never seen but a single individual on any former occasion, nor have we been able to find but a single reference to it in any of the books in our possession, or to which we have access, and that is on page 167, vol. 1, of the *American Entomologist*, edited by Prof. Charles V. Riley. This was a more practical and useful journal of entomology than any that ever came under our observation, and yet its publication was suspended for want of adequate support. The largest specimens of these "borers" are fully an inch in length, and are of a very pale yellow color; the smaller specimens nearly white; the head and feet a pale yellowish brown, and the jaws nearly black. They possess the characteristics of Lepidopterous larvæ, (moths,' &c.) and we have no doubt they belong to that order of insects. We are not acquainted specifically with the moth, but it is very probably an *Ægerian*, and very nearly allied in size and form to *Ægeria cucurbitæ*, which is sometimes so destructive to the squash and pumpkin vines, and of which we on one occasion found about twenty individuals in a single vine, all located in the joints, and no where else, especially in those that had thrown out rootlets. The most familiar examples of these insects are the peach tree borer, and one of the currant cane borers, another being a *beetle*. Some of the infested canes had holes near the ground, large enough for the entrance or escape of the larvæ, but as the canes were excavated above said holes as well as below them, they are evidently apertures of egress, and not of ingress, instinctively prepared by the larvæ for the escape of the moths next spring. As we have never been very successful in breeding moths belonging to this family, and as we are less favorably situated now than formerly for that purpose, we would request our correspondent to supply us with some infested canes early next spring, or, to cut off some of the canes above the holes, invert a box over them having a cotton gauze or a muslin top, and capture the insects when they appear in the moth state in the spring or summer. As they were still in the larvæ state on the 8th of December, and very inert, they most likely remain in that condition all winter, and only undergo their pupal transformation after their spring revival. These borers seem to subsist entirely upon the pith of the blackberry canes, and follow that down to its termination in the roots, where they remain in winter quarters. We made this observation, that all *our* specimens had their heads upward, and yet their bodies entirely filled the channels they occupied. They must have bored downward, and could not have turned inside of the channel they made. Could they have come up from below backward, cut the hole in the side of the cane, and then by means of it, backed down again to their winter quarters? We have witnessed as curious things as that in the economies of the insect world.

As to a *remedy* for these borers, we would not recommend the digging up and entire destruction of the "patch." Blackberry canes, under any circumstances, are but temporary. We would suggest the cutting out only such canes as are infested, and in most cases this will be apparent. Follow the excavation in the cane as far as it goes downward, or until the borer is reached. Where the pith terminates or contracts, there the borer stops; at least we found none below that point. The infested portion may be cut out without injury to the sound portion which remains, and the next season the stalks may be "as good as new." This work should be done, however, in the fall, or early in the spring, to make it sure.

Honey Ants.—On page 172, Nov. number of THE FARMER, under the caption of "Information Wanted," we referred to some *ants* that had been sent us from some unknown locality, and by some unknown person. A few days ago, Mr. W. T. Strachan, of Santa Fe, New Mexico, called on us on his return from that territory to Lancaster, and informed us that it was he who had sent them, and that he had received them from a Mexican, but he could not give us much information about their history or habits. These ants are probably allied to the "sweet scented ants" of Texas, referred to in a recent paper on the subject, by Dr. G. LINCECUM, or they may be the victims of another species referred to by the same author; the latter which he designates as the "Robber Ants," and states that they eviscerate another species for the purpose of obtaining the sweet contents of the stomach; and that other species may be the one which we have received through Mr. S., as the great capacity of its stomach, or honey receptacle, no doubt would constitute it a "booty" that would excite the cupidity of a robber. Mr. S. has kindly put us in communication with Mr. E. MURPHY, of Santa Fe, and through him we expect, in due time, to obtain the information we desire, and also more perfect specimens. As this is about all on this subject we are able to contribute at this time, we must therefore await the developments of the future, for a more satisfactory description of them.

Dr. J. P. H.—The small brown cocoons which you gave us last spring, developed two species of widely different insects, one of which must be parasitic on the other, but "which is which" we have not yet determined, especially as one is a *Coleopterous* insect, and the other *Hymenopterous;* and they emerged from the cocoons during our absence from home. When we received these cocoons we opened one of them and made the following record:

"May 3, 1875. A soft brownish silken cocoon, about three-quarters of an inch in length and the same in circumference, with a compact, smooth, seedlike cocoon of nearly the same length within it, of a drab color. Within this a short, fat, white grub, or *larva*, without feet, and composed of a head and 13 segments; two dark eye-like spots on the white head, and a dark colored *labrum*, or upper lip, but no visible *mandibles* or jaws; a white projecting *labium*, or lower lip, and two labial appendages (*palpi*). The segmental divisions very distinct, with warty, or tubercular protuberances along the sides, especially on those segments between the thorax and the abdomen. About a dozen of these cocoons were turned up in plowing in a piece of new land." The larvæ resembles that of the chestnut weevil, and also that of the early stages of the common wasp (*Polistes*). On the 1st of August we found the ends of five of the cocoons opened, and *three* specimens of a species of *Ripiphorus*, and *two* of a species of *Ichneumonidæ;* but which of the two spun the cocoons, if either of them, we are not able to determine. They are probably both parasitic on some other larger insect, which may have spun the cocoons. The necessity of earning our bread at an occupation that is almost entirely incompatible with the continuous and successful results of investigations of this kind, is one of the great "drawbacks" we are laboring under, and hence we are often defeated, and our partial observations amount to almost nothing. We are confident that no other insect had access to these cocoons while they were in our possession. That they were plowed out of the ground, we have only from "hearsay." But our record made at the time and the subsequent development of the insects are *facts*.

The Dandelion (*Taraxicum densleonis*) was in bloom in Lancaster county the present month, a phenomenon which only realy occurs in this latitude.

PARIS GREEN.

As the discussion on this subject, which was going on last summer and which unsettled the minds of many timid people, has now partially subsided, and in order to inform our readers in advance, how far our own recommendations have been justified by the opinions and experience of what we deem competent authority, we publish the following excellent article from the New York *Semi-weekly Tribune* of December 28, 1875. We do this the more readily, because two years ago we were compelled to investigate a report that a whole family in the city of Reading, Pa., had been poisoned by eating Paris-greened potatoes, and when, by the assistance of Mr. Herman Stricker, of that city, the case was finally "holed," it was found to be clearly "bosh," without any foundation in *fact* whatever.

Paris Green as an Insect Destroyer.

The readers of the agricultural department of the *Tribune* will remember that about a year ago the value of Paris green as an insecticide, and especially as a remedy against the ravages of the Colorado potato-beetle and the cotton worm, was fully discussed in these columns. So far as past experience and the facts, at that time known, permitted, its influence on the plant, on the soil, and on man, either indirectly through the soil or through the plant, was considered; the conclusion arrived at being that, used with ordinary caution and judgment it was a valuable and safe remedy. This had long been the conclusion of practical men in the Mississippi Valley who had used it extensively; but the question was opened again by a paper read by Dr. J. L. LeConte, of Philadelphia, before the National Academy of Science, which paper, from the theoretical side, strongly condemned the use of the poison for the purposes mentioned, and which naturally attracted considerable attention and was harped upon by the manufacturers of "potato bug machines," or their glib agents. The National Academy, after the reading of Dr. LeConte's paper, appointed a committee to "investigate and report upon the subject of the use of poisons applied to vegetables, or otherwise, for the destruction of deleterious insects and other animals," etc.; but that committee has, I believe, made no report yet. Prof. R. C. Kedzie, of the Michigan Agricultural College, has, however, been carrying on a series of interesting experiments during the summer, and while visiting the college last August I had the pleasure of witnessing and making notes of the professor's operations. As he has since given these results to the American Public Health Association, and published an abstract of them in the *Detroit Free Press*, I take the liberty of giving them wider circulation.

First, as to the use of the mineral for the Doryphora. Does Paris green poison the tuber? Tubers taken from vines that had been repeatedly dosed with the ordinary mixture—as much Paris green, in fact, as they would bear—gave no trace of arsenic. Regarding the idea, which has been suggested, that the use of the poison rendered the tubers watery and waxy, the conclusion is that such condition is brought about by the stunted growth and destruction of the vines caused by the insect, which thereby prevents maturity of the tuber. Does Paris green poison the land? This is meant, of course, in the sense of rendering the land unfit for the growth of crops; and Prof. Kedzie justly considers not only its immediate but its remote effect. Theoretically, one would naturally infer that Paris green is converted into an insoluble precipitate or salt with the hydrated oxide of iron which exists in most soils; but not resting the matter on theoretical or abstract reasoning, Prof. Kedzie made careful tests and experiments. He passed a solution of arsenious trioxide through common garden soil, and filtered Paris green in a solution of hydrochloric acid through dry earth. In neither case could any poison be detected in the filtrate by the severest tests. Soil taken from a field of wheat that had been sown with Paris green at the rate of five pounds to the acre, showed no trace of the poison when submitted to any or all of the tests which the soil would get by natural solvents in the field, but distinctly showed the arsenic when treated with dilute sulphuric acid. The Paris green was sown on the ground early in spring, and was thick enough to give a very distinct green tint to the surface. The grain and the straw were submitted to careful chemical examination, as were also cabbages grown in soil that had the year before been in potatoes and received a heavy sprinkling of green. No trace of the poison was found in either, and it was observed that the chipmucks ate large quantities of the grain without injury. The more practical conclusions from Prof. Kedzie's experiments may be thus summed up:

1. Paris green that has been four months in the soil no longer remains as such, but has passed into some less soluble state, and is unaffected by the ordinary solvents of the soil.

2. When applied in small quantities, such as alone are necessary in destroying injurious insects, it does not affect the health of the plant.

3. The power of the soil to hold arsenious acids and arsenites in insoluble form will prevent water from becoming poisoned, unless the green is used in excess of any requirement as an insecticide.

These experiments of Prof. Kedzie's accord, so far as they refer to the influence of Paris green on man through the plant, with others by Prof. McMurtrie, of the Department of Agriculture, which showed that even where the green was applied to the soil in such quantities as to cause the wilting or death of the plants, the most rigorous chemical analysis could detect no trace of arsenic in the composition of the plants themselves. They also fully bear out the opinions which I have always held, and justify the advice which I have given.

Before leaving this subject of remedies for the Colorado potato-beetle, it may be well to say a few words about two other compounds that have been strongly recommended and advertised as such. The most notable of these is that advertised as "Potato Pest Poison" by the Lodi Chemical Works of Lodi, N. J. It is put up in pound packages, which are sold at $1 each, with directions to dissolve four ounces in two quarts of hot water, then pour into a barrel containing 30 gallons of cold water, and use on the vines in as fine a spray as possible. Analysis shows it to be composed of one part pure salt and one part of arsenic (arsenate of copper), and it has the general color and appearance of common salt. Early in September, during quite hot and dry weather, I had this poison tested in a field of late potatoes belonging to Mr. W. Hinterthur, of La Clede, Mo., the field having been badly infested during the summer, but about half the vines having been saved by pretty constant hand-picking. These were at the time fairly covered with the insect in the egg, larva, and beetle states. Five rows were treated with the poison, both according to directions and by finely sprinkling the dry powder over the vines. As soon as the powder touched the larvæ, they writhed and became restless as with pain, the powder dissolved and formed a translucent coating upon them, and in about three hours they began to die. The beetles were not so easily affected, though they too were in time killed by it. Used as directed, it destroys, but hardly as efficiently as the ordinary Paris green mixture. A pound of Paris green, costing much less than a pound of the Lodi poison, will go nearly as far in protecting a field of potatoes, and I cannot see any advantage to a farmer from the employment of a patent poisonous compound of the nature of which he is ignorant when a cheaper one is at hand. The color of the Lodi poison is also very objectionable, as there is much more danger in the use of poisons when their color renders them undistinguishable from ordinary salt. The other powder is one prepared by a gentleman in Philadelphia, and strongly recommended as a "potato-bug remedy." It was given to me by Dr. J. L. Le Conte for trial. It is a dull, yellowish powder, which, when analyzed, proves to be crude "flowers of sulphur," containing 95 per cent. of sulphur and 5 per cent. of impurity and coloring matter, such as yellow ochre, sand, etc. A thorough trial on the potato patch above mentioned showed it to be entirely worthless. In conclusion, the fact that Paris green, cautiously handled and judiciously used, is an excellent and cheap antidote to the ravages of the Colorado potato-beetle cannot be too strongly urged. That it is useful against some other insect pests is also true; but it is sometimes recommended for suctorial insects, which it will not affect as it does those which masticate, and its too general use should be opposed. In an emergency it may be used against the canker worm, as J. B. Upson, of Rockford, Ill., (*Weekly Tribune*, June 2, 1875) and others have shown. Yet I cannot recommend it in such a case where other available preventive means are at hand—means which are as simple as they are dangerless.—*Prof. C. V. Riley.*

SELECTION AND CHANGE OF SEEDS.

We commend the remarks of our venerable correspondent, J. B. Garber, esq., to the candid considerations of our agricultural friends, based as they are on close observation, and a long life of practical experience. We believe that "in-and-in-breeding" of live stock is generally considered deteriorating, and therefore that the crossing of breeds at certain intervals tends to their improvement. It is not sure, however, that this law obtains to the same extent in the vegetable kingdom. From our own observations and the experiences of practical agriculturists, we would repose more confidence in judicious and thorough "selection," than in an entire change of seed. The experiments with foreign seeds in this country, in our view, have been anything but successful in a general sense. Perhaps if more attention had been paid to proper selection, backed by thorough culture and judicious manuring, the results would have been more favorable. Even in many cases where the change of seed has seemed to produce a good effect, it has been merely a spasmodic result, attributable more to a favorable condition of the season and other latent unknown causes, than to a change in seed; and, in another season and under different circumstances, things have relapsed into their former condition. A single experiment, on either a small or a large scale, is not always sufficient to determine such a question. Indeed, we are of opinion that in experimental agriculture, no greater mistakes have been made than those which estimated general results on the effects of special and limited experiments. If one hill produces a hundred potatoes it does not by any means indicate that ten hills will produce a thousand—unless they are so far separated that one cannot by any means absorb the elementary substances due to another. Neither will a popular furore determine the result, because the people sometimes become psychologised on these questions, and rush pell mell into new experiments and enterprises, without thoroughly examining the premises. Still, with all this, there *may* be cases in which the change of seeds alone, have produced a desirable effect, (see Dec. No., p. 187, col. 1) and yet, even *crossing* may be of no account in its continuous results, if no regard is paid to subsequent careful selection.

We are compelled to defer to our February number several papers that otherwise would have appeared in this number. Therefore, those of our correspondents who do not see their communications or contributions in print the present month, will please attribute it to a want of room. "First come, first served," is a rule we usually adopt unless in cases, the publication of which will not admit of a postponement. We hope, therefore, our friends will not abate their zeal to make The Farmer throughout the Centennial year, a faithful exponent of the state of husbandry as it exists in the great county of Lancaster in 1876.

THE FACTS OF NATURAL HISTORY.

No. 7.

No animals belonging to the Sloth family (BRADYPIDÆ) now exist in North America, and only two species in South America, neither of which is a great deal larger than the domestic cat. But in some of the Southern States, and especially in South Carolina and Georgia (as also in South America) in the superficial deposits of those localities, gigantic remains of animals allied to the "sloth" have been discovered in a fossil state, among which are the *Megatherium*, the *Megalonyx* and the *Mylodon*, all of which are of colossal size—the first named having a skeleton eighteen feet in length and eight feet in height, the bones of the femur being three times as thick as that of an elephant. These animals were vegetable feeders, as their cogeners in South America at the present day are—defoliators of forest trees; and when we think of the enormous quantities of this kind of provender they must have annually consumed, the army worms and the Colorado potato-beetles sink into utter insignificance. "Our lines have fallen upon pleasant places," when our age is compared with those periods in the world's physical history which produced these gigantic animals.

The sloths, of which there are two distinct species, namely, *B. tridactylus* and *B. didactylus*—belong to the order EDENTATA, or quadrupeds without teeth in the fore-part of their jaws; and some belonging to the same order—the "Ant-eaters," for instance—have no teeth at all. The family and generic names mean "Slow-foot," and are Greek compounds. The specific names mean "three-fingered" and "two-fingered."

Most of the accounts of old naturalists have rather misrepresented these animals than given a true account of their history and habits. Even the great CUVIER condemned the sloth as a degraded and miserable animal, unable to move without pain, and misshapen and distorted in form; and others have stated, that when compelled to move by hunger, it moved very slowly and lazily, and fairly whined and cried with pain. Yet it has been clearly demonstrated by more recent authorities, that no animal is better fitted for its position in nature than the sloth. WATERTON says that in its wild state, "the sloth spends its whole life in the trees, and never leaves them but through force or accident; and what is more extraordinary, not *upon* the branches, like the squirrel and the monkey, but *under* them. He moves suspended from the branch, he rests suspended from the branch, and he sleeps suspended from the branch"—in this latter respect his habit being not much unlike that of the bat. In fact, as Sidney Smith observed, "he passes a life of *suspense*, like a young clergyman distantly related to a bishop."

In order to fit it for this singular or very peculiar mode of life, the sloth is provided with long and powerful arms, which are furnished with strong curved claws, and these the animal hooks around the branches, and maintains its suspended position without any special effort. These long claws are very inconvenient when it is on the ground, for they then turn in upon the palms or soles of the feet, and it shuffles along awkwardly and inconveniently; but when it is up among the branches, it is capable of moving with great rapidity, particularly in a gale of wind, when it can pass from branch to branch, and from one tree to another, with an activity that no one would suppose if they had only seen it on the ground. It is also gifted with great tenacity of life—even surpassing the "opossum" in that respect—and will survive injuries that instantly prove mortal to almost any other animal. Our illustration represents the *two*-fingered sloth (*Bradypus didactylus*), which is larger, has shorter limbs, a longer muzzle, and less tail, than the *three*-fingered species (*B. tridactylus*), and the artist seems to have represented it under the erroneous impression that it only moves in an agony of pain. Although our subject has only two claws on the front feet and three on the hind ones, yet both species are fundamentally five-toed animals, the rudiments of the undeveloped claws being concealed. The hair on the head, back and limbs is long, coarse and elastic, bearing some resemblance to dry grass, which gives the animal a forbidding aspect. The color is grayish, often spotted with brown and white, particularly when young.

Some writers have made out a third species—the *Bradypus torquatus* of Geof.—which others deem only a variety; but it differs not only in color, but also in the bony structure of the head.

The sloth is an enormous feeder, and never leaves a tree as long as any of the foliage remains upon which it feeds, and when the tree is isolated, it is said to let itself drop to the ground, rather than take the trouble to come down the trunk before it ascends another one. The females bring forth only one young at a time, which they constantly carry with them from place to place. These animals are indigenous to the hot parts of South America, and where the forests are so dense as they are there, with the branches of the trees often interlocking each other for miles, it is seldom necessary for them to come to the ground in changing their positions. Their long, coarse and shaggy hair protects them from the attacks of insects; and, as Prof. Buckland remarks, "the peculiar conformation of these animals ought no more to excite our compassion than the circumstance of fishes being deprived of feet." They are just as admirably adapted and fitly organized for their singular mode of life as any other subjects of the animal world. Their stomachs are very large in proportion to their size, and are divided into four compartments, somewhat analogous to the four stomachs of ruminants, but without the network leaflets of their internal parts, while the intestines are comparatively short. In this respect—although purely vegetable feeders—they differ from ruminants, in which the intestines are very long. Of course, they are not very desirable pets, and cannot be domesticated, but those captured and confined will continue their forest life by hanging to a perch, if an opportunity of the kind is offered.

THE SLOTH, OR AI (Bradypus didactylus).

We often think we can discover human characteristics that are in perfect outward correspondence with these animals in others; and perhaps, if we look a little deeper, we may discover more or less of them in ourselves.

Potatoes for Stock.

Mr. Billings, of New Hampshire, who has been experimenting on the subject, says he thinks potatoes are worth thirty cents per bushel to feed to stock. They are not only nutritious, but are excellent appetizers and promoters of digestion. Experiments go to show that a peck of potatoes will produce as much milk as a bushel of beets, turnips or carrots.

DEATH TO THE APPLE TREE BORER.

I have waited for some one to invent an easy way of killing the apple tree borer; but the chisel, mallet, knife and wire are only recommended, and in using them I have had to cut a six inch apple tree until I could see daylight through it to kill a single borer. My way of getting at this miserable "worm of the dust" is an easier one and more effectual. I cut a sumac or alder one foot, more or less, long, punch out the pith, cut one end with a slope, hunt the borer's hole, clean it out at the entrance with a wire, place the bevelled end of my tube against it, take some putty like clay that I get in our spring branch, plaster it water-tight around the end next the tree, fill the tube with very strong soap suds, and the thing is done. No matter how crooked the hole is, or whether it goes up or down, the suds in the tube will force itself to the end. I have tried it two years and have not failed once. Of course, any kind of small hollow tube will do, and anything that will make it water-tight will do to plaster it with.—*Cor. N. Y. Tribune.*

We confess we have some faith in the above remedy, and we thank the discoverer of it exceedingly, for his "of course," otherwise it might have involved the troublesome necessity of hunting up a sumac or an alder cane, things which are not always on hand on farms that have no neglected fence corners or barren ridges. We fully apprehend the difficulty of reaching and dislodging the borer by the mechanical means described, without often doing serious injury to the trees, the mutilation of which might happen to be worse for them than the depredations of the *borers*. It is known that fluids, by a hydrostatic law will rise very nearly as high as their source, and therefore we would recommend a tube two or even three feet in length, in order to make sure that the fluid is raised high enough to reach the borers, for we have found them as much as eighteen inches above the point of ingress.

Of course, the rise of the fluid in the tube is effected by atmospheric pressure—whether it be a soap solution, a tobacco decoction or simply water—and to facilitate this we would suggest an old funnel or an old tin cup attached to the top, as a sort of reservoir. Perhaps an old discarded dinner horn, the wide end upwards and the narrow end properly attached to the aperture in the tree, would be better still, provided it did not leak and was properly fastened above. Now, we are not recommending these old articles simply because they are old—as if that were any merit—but because, if such old articles were at hand it would save the expense of providing new ones. We have tested the effects of "Dr. Pierce's nasal douche" in forcing fluids upward, and therefore an apparatus made on that plan would be best of all. This is simply a fluid-containing vessel with an elastic tube attached to or near the bottom. This might be hung on a lower branch near the trunk of the tree, and the lower end of the tube securely attached to the aperture of the borer. If there were no apertures below through which the fluid might escape, it would, in time, be forced up to the borer and destroy it.

Some such kind of apparatus, acting upon similar philosophical principles, might be confidently left to do its own work in its own good time, and if skillfully executed, we think it would be effective. We know that the simple application of hot water, made through the nozzle of a tea-kettle, has been destructive to both ants and borers, but then it could only affect those which were below the aperture through which it was poured. The foregoing apparatus, however, seems to cover the whole ground.

The infestations of wood-boring insects are becoming so numerous over the whole country that it becomes absolutely necessary to employ skilled and persevering applications in order to destroy them. Farmers, therefore, cannot afford to be negligent any longer. They *must* do something, and whatever is done must be done with their might. Remedies are often applied in a careless, hurried manner, and then unhesitatingly denounced, when the cause of

failure was, perhaps, to be attributed more to the slovenly manner in which it was done than to the quality of the remedy. This remedy seems to us to be a practical one, and ought, therefore, to be properly tested.

THE PILGRIM'S PROGRESS.

1620-1875.

[The following significantly and graphically expressed epitome of the past two hundred and fifty years of progressive American history is worthy of a more convenient and permanent record than the columns of a weekly newspaper, and therefore we transfer it to the columns of THE FARMER, as a chronological table of events that must be useful to all who are able to comprehend it, and if there are any among our readers who have not this ability, we would admonish them to learn to read immediately; and if they can read already, to form a habit of reading something every day, if it is but a single page of THE FARMER or any good American history, and not omitting the "Scriptures of truth."]

1620. The Pilgrim Lands on Plymouth Rock and sets up for himself.

1621. Keeps Thanksgiving—in no danger of over eating.

1622. Builds a meeting house.

1623. Proclaims a fast day.

1628. Puts down a May pole at Merry Mount as a rebuke to vain recreations.

1635. Is crowded for accommodations, and stakes out a new farm at Connecticut.

1637. Makes war on the Antinomians and the Pequot Indians—and whips both.

1638. Starts a *college*.

1640. Sets up a *printing press*.

1643. Goes into a confederacy—the first Colonial Congress.

1648. Lays down the *Cambridge platform*. Hangs a witch.

1649. Sets his face against the unchristian custom of wearing long hair, "a thing uncivil and uncomely."

1651. Is rebuked for "intolerable excess and bravery of apparel," and is forbidden to wear gold and silver lace and other such gew-gaws.

1651. Coins Pine Tree shillings—and makes the business profitable.

1663. Prints a Bible for the Indians.

1680. Buys a "hang-up" clock and occasionally carries a silver watch that helps him guess the time of day. About this period learns to use French forks at table; a new fashion.

1692. Is scared by *witches* again, at Salem; but gets the better of them.

1701. Founds *another College*, which, after awhile, settles down at New Haven.

1704. Prints his first *Newspaper*, in Boston.

1705. Tastes *Coffee*, as a luxury, and at his own table.

1708. Constructs another *Platform*—this time at Saybrook.

1710. Begins to sip *Tea*—very sparingly. It does not come into family use till five and twenty years later.

1711. Puts a letter into his first *Post Office*.

1720. Eats a *Potato*—and takes one home to plant in his garden as a curiosity.

1721. Is *Inoculated* for the small-pox—not without grave remonstrance from his conservative neighbors. Begins to *sing by note*, on Sundays, thereby encountering much opposition and opening a ten years' quarrel.

1740. Manufactures tin ware, and starts the first *Tin Peddler* on his travels.

1742. Sees Faneuil Hall built. The cradle of Liberty is ready to be rocked.

1745. Builds an *Organ;* but does not yet permit it to be played in the meeting house.

1750. Buys a bushel of *Potatoes* for winter's use—all his friends wondering what he will do with so many.

1755. Puts up a *Franklin stove* in his best room, and tries one of the newly invented *Lightning Rods*.

1760. About this time begins to wear a collar to his shirt. When he can afford it, takes his wife to meeting in a *Chaise*, instead of on a pillion, as heretofore.

1765. Shows his dislike to stamped paper, and joins the "Sons of Liberty."

1768. Tries his hand at *Type Founding*—not yet successful—in Connecticut.

1770. Buys a home-made *Wooden Clock*.

1773. Waters his *Tea* in Boston harbor. Plants *Liberty Trees* wherever he finds good soil.

1774. Lights Boston streets with oil *Lamps;* a novelty (though "New Lights" had been plenty, some years before).

1775. Shows Lord Percy how to march to "Yankee Doodle." Calls at Ticonderoga, to take lodgings for the season. Sends General Putnam (under the command of several colonels) with a small party to select a sight for Bunker Hill monument.

1776. *Brother Jonathan*—as he begins to be called in the family—declares himself free and independent.

1780. Buys an "Umbrilla," for Sundays; and whenever he shows it, is laughed at for his effeminacy.

1791. Starts a *Cotton Spinning* factory.

1792. Has been raising Silk Worms, in Connecticut; and now gives his minister (not his wife) a home-made silk gown. Buys a *Carpet* for the *middle* of the parlor floor.

1793. Invents the *Cotton Gin*—and thereby trebles the value of southern plantations.

1795—1800. Wears *Pantaloons* occasionally, but not when in full dress. Begins to use *Plates* on the breakfast and tea table.

1802. Has the boys and girls *vaccinated*.

1806. Tries to burn a piece of *Hard Coal* from Philadelphia; a failure.

1807. Sees a boat go by *Steam* on the Hudson.

1815. Holds a little *Convention* at Hartford, but doesn't propose to dissolve the Union. Buys one of Terry's patent "Shelf Clocks," for $36, and regulates his watch by it.

1817. Sets up a stove in the meeting house and builds a fire in it on Sunday; an innovation which was stoutly resisted by many.

1817. Begins to run a *Steamboat* on Long Island Sound—and takes passage on it to New York after making his will.

1819. Grown bolder; he crosses the Atlantic in a steamship.

1822. Lights *Gas* in Boston (but doesn't light *Boston* with gas till 1829). At last learns how to make *Hard Coal* burn, and sets a grate in his parlor. Buys a *Steel Pen* (one of Gillott's, sold at $83 per gross). Has his every day shirts made without *Ruffles*.

1825. About this time, puts a *Percussion Lock* on his old musket.

1826. Buys his wife a pair of queer-shaped *India Rubber* overshoes. Puts on his first False Collar. Tries an "Experimental" railroad by horse-power.

1828. Tastes his first *Tomato*—doubtingly. Is told that it is unfashionable to feed himself with his knife—and buys *Silver Forks* for great occasions.

1833. Rubs his first *Friction Match*—then called a "Lucifer," and afterwards "Loco Foco." Throws away the old Tinder Box with its flint and steel.

1835. Invents the *Revolver*, and sets about supplying the world with it, as a peace-maker. Tries a *Gold Pen*, but cannot find a good one yet—nor till 1844. Builds a real *Railroad*, and rides on it.

1837. Gets in a Panic—and out again, after a free use of "shin-plasters."

1838. Adopts the new fashion of putting his letters in *Envelopes* (a fashion which does not fairly prevail till seven years later.)

1840. Sits for his *Daguerreotype*, and gets a picture fearfully and wonderfully made. Begins to blow himself up with "Camphene" and "Burning Fluid;" and continues the process for years, with change of name of the active agent, down to and including "Non-explosive Kerosene."

1844. Sends his first message by the *Electric Telegraph*.

1847. Buys his wife a *Sewing Machine*—in the vain hope that somehow it will keep the buttons on his shirts. Begins to receive advices from the "Spirit World."

1855. Begins to bore and be bored by the Hoosac Tunnel.

1858. Celebrates the laying of the *Ocean Cable*, and sends a friendly message to John Bull. Next week, begins to doubt whether the Cable has been laid at all.

1861. Goes South, to help compose a family quarrel. Takes to using Paper Money.

1861-65. Climbs the Hill Difficulty—relieved of his pack, after January 1, 1864; but loses Great-heart, April 14, 1865.

1865. Gets the Atlantic Cable in working order at last, in season to send word to his British cousins (who have been waiting for an invitation to his funeral) that he "lives yet."

1865-75. Is reconstructing, and *talking about* Resumption. Sends his boys to the Museum to see an old-fashioned Silver Dollar.

1875. Goes to Bunker Hill, to pay honor to the illustrious men who commanded General Putnam. Gets ready to celebrate his second golden wedding by a grand family re-union, this year, in Philadelphia.

THE FRUIT GROWERS' SOCIETY.

The seventeenth annual meeting of the Pennsylvania Fruit Growers' Society will be held at Doylestown, Bucks county, commencing on Wednesday, the 19th of January. All fruit growers and horticulturists in the State are free to participate in its deliberations. Essays are being prepared by prominent horticulturists on various subjects, and many questions of importance relating to fruit culture and kindred topics will be discussed. Contributions of fruits, especially new and rare varieties of merit, are solicited. The Pennsylvania Railroad Company will issue orders for excursion tickets only in case 50 or more are guaranteed to be taken. Those, therefore, who desire to attend the meeting by this route should at once send their names and address to the Secretary, E. B. Engle, Marietta, who will secure and distribute the orders, for tickets, in case the requisite number make application.

It may be a matter of interest to many of our readers to know that the following topics for essays and discussions have been suggested; upon some of which essays are in course of preparation, and others will be taken up and discussed during the sessions:

1. Should Northern and Eastern Winter Fruits be recommended for Southern and Eastern Pennsylvania?
2. The Preservation of Fruits by Ice or Refrigerator Process.
3. Should Fruit be sold by Weight?
4. Is Fruit or Vegetable Gardening most Remunerative?
5. Hybridization of Fruits by design.
6. Our yards, and how to take care of them.
7. Orchards and their management.
8. The interests of the Society at the Centennial.
9. The Cultivation of the Apple, including the best varieties, best mode of culture, and protection from injurious insects.
10. Pear Culture, embracing the most profitable varieties, best soil and methods of culture.
11. The Cultivation of the Cherry, etc.
12. Peach Culture, including cause of yellows and other diseases.
13. The Plum, best kinds to plant, destruction of curculio, etc.
14. Quince Culture.
15. The Strawberry, best varieties and mode of culture.
16. The Raspberry and Blackberry.
17. The Currant and Gooseberry.
18. Grape Culture.
19. The best evergreen and deciduous shade and ornamental trees.
20. Roses and Shrubbery, best varieties for yard and lawn.
21. Hardy herbaceous and bedding plants.

We invoke the special attention of our readers to the meeting of the above society, and hope that Lancaster county will be able to send a strong delegation to Doylestown. From its programme of proceedings it will be seen that

the meeting this year will be more than usually interesting. We can hardly realize that it is already seventeen years since this society was organized, here in the city of Lancaster. We were present at its christening, and also at several other meetings, and we have always regretted that our peculiar infirmities have disqualified us for an active participation in its proceedings. It is not particularly pleasant at a gathering of any kind where we cannot hear what has been transacted. Our various specialties now also prevent us from preparing essays on subjects allied to horticulture, and our vocal weakness disables us from reading one when prepared. We nevertheless feel an interest in all that relates to its general efficiency and its onward progress. We sincerely hope that the practical "fruit growers" of Lancaster county will duly honor their foster-child on the present occasion. Let the meeting in all respects be a credit to our county and a fitting initiation to our *National Centennial.*

TIME FOR READING.

"I have no time to read," is the common complaint, especially of women, whose occupations are such as to prevent continuous book perusal. They seem to think, because they cannot devote as much attention to books as they are compelled to devote to their avocations, that they cannot read anything. But this is a great mistake. It isn't the books we finish at a sitting which always do us the most good. Those we devour in the odd moments, half a dozen pages at a time, often give us more satisfaction and are more thoroughly digested than those we make a particular effort to read. The men who have made their mark in the world have generally been the men who have in boyhood formed the habit of reading at every available moment, whether for five minutes or five hours. It is the habit of reading rather than the time at our command that helps us on the road to learning. Many of the most cultivated persons, whose names have been most famous as students, have given only two or three hours a day to their books. If we make use of spare minutes in the midst of our work, and read a little, if but a page or a paragraph, we shall find our brains quickened and our toil lightened by just so much increased satisfaction as the book gives us. Nothing helps along the monotonous daily round so much as fresh and striking thoughts, to be considered while our hands are busy. A new thought from a new volume is like oil which reduces the friction of the machinery of life. What we remember from brief glimpses into books often serves as a stimulous to action, and becomes one of the most precious deposits in the treasury of our recollection. All knowledge is made of small parts, which would seem insignificant in themselves, but which, taken together, are valuable weapons for the mind and substantial armor for the soul. "Read anything continuously," says Dr. Johnson, "and you will be learned." The odd minutes which we are inclined to waste, if carefully availed of for instruction, will, in the long run, make golden hours and golden days that we shall be ever thankful for.

We believe in the above, and it is in substance just what we have been preaching through the columns of THE FARMER and elsewhere, these seven years or more. A great many people who think they have no time to read just now, but at some future period they will give their attention to reading, are laboring under a fatal hallucination; because, in nine cases out of ten, that time is not likely to ever come. It is impossible to put off reading to some future period, and begin it then with a view of "reading yourself up." *You must form a habit* of reading, no matter how little or how much you may be able to read at a time. You must form a habit of reading just as you may form a habit for using snuff, tobacco and cigars; or for using alcoholic stimulants; or for gossiping and idleness; or for frequenting cock-pits, bull-baits, dog fights, or other disreputable and demoralizing places. These habits, whether good or evil, become the predominating principles of the mind, and are controlled by the yearnings of the affections, without which no *real* habit can be formed. If the affections are perverse and evil, there is no remedy more efficacious than *the expulsive power of a new affection;* a *good* affection that is in opposition to the *evil* one. Under such an impulse a habit for reading and writing may be formed as surely as an opposite one. This habit must become a part of the daily life, and then, if ever the time comes when the subject is able to relinquish the occupations of physical labor altogether, he will be in a proper condition to pursue his love of reading with profit and contentment, in obedience to the habits and affections he has previously formed. No man who gives his whole mind and life to money-making, or any good or evil specialty, will ever be contented in doing anything else, especially if he has grown old in the pursuit of such specialties. There is an old "saw" to the effect, that "if a man is not healthy at forty, wealthy at fifty, and wise at sixty, he never will be healthy, wealthy and wise." And although there may be exceptions to this as a rule, yet in its general application and its most obvious meaning, there is much truth in it. It means that if the proper habits to accomplish these ends have not been formed at the periods named, they are not likely to be ever formed. As to the *kind* of reading a man ought to do, will depend somewhat on his occupation or profession, and whether it will be compatible or incompatible with said occupation, one thing is certain, that men and women could find more time to read and write than they do, if they only *willed* it. Look at the many frivolous things in the domain of fashion which might be dispensed with, and let the time and money spent therein be devoted to things less conventional and more *useful.*

For THE LANCASTER FARMER.

A PLEA FOR THE CHICKEN-HAWK.

In the discussion of the bird question at the last meeting of the Lancaster County Agricultural and Horticultural Society, while it was agreed that all other birds should be protected by law from the gunner, the society seemed unanimous in their verdict that the chicken-hawk should be the target of every rifle and shot-gun in the country. At one time I entertained similar views in regard to the chicken-hawk, but I have not shot one for years, being fully convinced that he is a friend of the farmer.

Darwin shows how, in many cases, the crop of clover-seed is dependent on the supply of cats in the neighborhood. Humble-bees distribute the pollen on the clover-blooom; field-mice destroy the young humble-bees; cats catch the mice. But the chicken-hawk is a better mouser than the cat. Nothing hurts the eye of the farmer worse than to see great bare spots in his grass fields, where field-mice have worked under the snow and destroyed the roots of the clover.

I have a fine large hawk that every day sits for hours perched on a horizontal dead branch of an old chestnut tree in the field. He forms a fine, clear cut picture against the wintry sky as he sits there motionless as a statue. Now and then he swoops down and takes up a mouse, with, perhaps, some dead grass, in his talons. I would not exchange him for the best game cock or the best Bramah in the country. True, he sometimes catches a rabbit or a partridge, or bears off a pullet for his crop, but he is fully entitled to these as part pay for his services as a mouser.

It is true that, viewed from a sentimental standpoint, birds of prey afford but few traits to challenge our admiration. But science teaches their use, and when science and sentiment come in conflict, we are bound to accept the surer results of the former.

The crow is also a much maligned bird. Thanks to his sagacity, this "bird of ill omen" generally escapes the shots of his persecutors. The crow is represented as living to a great age. Tennyson alludes to this in the sonorous line—

"As the many wintered crow that leads the clanging rookery home."

The crow has a decided taste for "grubs," and does good service in the corn field in early spring. I have known this bird to hook cut-worms out of a hill of corn with its beak, and leave the grain untouched.

I once was very much amused at one of these ebony birds that found a nest of hen's eggs near a neighbor's barn. I saw him roll the eggs out of the nest, and then fly off to a grove near by. Presently two crows returned from the wood, and had a happy time eating the eggs. I judged that one of these was the crow that found the eggs and the other was his wife, though I cannot be qualified that such was the fact. Perhaps it was another crow's wife. If my first conjecture in regard to their consanguinity was right, the bird certainly showed more solicitude for the comfort of his *alt frau* than some husbands I know of. I feel kindly towards these black scavengers, and throw the butchering offal where they can get it. They get terribly hungry when the ground is covered with snow.—*J. C. Linville, Salisbury, January* 4, 1876.

For THE LANCASTER FARMER.

THE DAIRY.

I propose to commence with this number of your journal a series of articles on dairying, for the benefit of such as shall avail themselves of the results of my observations and experience, and also invite the fair criticisms of those who may differ with me.

The importance and extent of this branch of industry is such as will justify not only a more extended and thorough knowledge, but also closer attention in all its departments. One or two facts will justify my assertion, viz: There is entirely too large a proportion of inferior butter thrown upon the markets of the country, such as cannot grace and should not disgrace the table of any that claim neatness. On the other hand, the demand has never been supplied with a first-class article. The sale of milk and cream has grown into such an extensive business that both seller and buyer should better understand their mutual relations to each other in this department.

The manufacture of cheese has also grown into an immense business, but in this section it is scarcely attempted, and my knowledge thereof is so limited that I shall touch it very lightly.

I shall divide my subject as follows: First, the different breeds of cattle. Second, feeding, care and management of milk cows, and calves intended for such. Third, the management of milk and cream supplied to customers. Fourth, the making of butter. Fifth, the various kinds of cheese. Sixth, marketing and general remarks.

The Different Breeds of Cattle.

There is scarcely a breed of cattle that has not its advocate, and justly so, as all have some points of value. The Texas "ranger" is valued for his horns and hide, if for nothing else. Our native breed has many advocates, but the question arises, where do we find it unless it be that just alluded to? Importations from foreign countries have been made for a long time, but especially during the present century the importation of horned cattle has largely increased. The result is that wherever the resources of our country have been developed, progress and improvement have followed, at least to some extent: consequently this foreign blood has become diffused to a certain degree among nearly every herd throughout this broad domain. It is therefore hardly proper to claim a native breed. For convenience sake, however, I shall quote them as such. There are unquestionably as good milkers among our natives as can be found among any other breed, but there is not that uniformity of excellent milkers found in other breeds. The same is the case with shorthorns or Durhams. These, however, have been selected and bred more in view of their beef than milking qualities. One assertion I will here make which I would be glad to see fairly disproven, *i. e.*, that the best beef and milking qualities are rarely (if ever) found in the same animal. That both qualities are, to a certain extent, generally developed in the same animal is not denied; and as farmers generally are about equally interested in the production of beef and milk, it is more convenient to keep stock of this kind than to have separate breeds for the different purposes. For strictly dairy purposes, however, cows should

be selected especially for their milking qualities; and just here is where too many are at a loss, whether by purchase, or breeding and rearing, in view of this object.—*H. M. E*, *Marietta, Pa., Jan.* 10, 1876.

[TO BE CONTINUED.]

For The Lancaster Farmer.

DRESS ORCHARD TREES.

Old fruit trees should be scraped in winter with the *tree scraper*, taking off all loose, rough bark and insect nests in the cavities. Look over the whole of every tree and clear it of insect nests; some are easily seen, others have to be carefully looked for. One is a gluey patch the color of the tree bark; look sharply for it and scrape it off. All moss growing upon trees should be scraped off, as it is as injurious to trees as itch and scab are to animals. The scraping is as beneficial to old trees as is currycombing to horses and cattle. It prevents *barkbound*. The washing of stems and large branches of trees with a solution of carbolic acid, soap dissolved in lukewarm water, and a portion of the flowers of sulphur mixed with it, is a good method for destroying the insects. The best time to do the washing is after the spring opens. It will then stick to the trees, and when the insects come out the poison kills them in their infant state; and by that the foliage and fruits of the trees may all be saved. One of the most valuable features of The Farmer is, that it has a highly scientific *Entomologist* as its editor. Our crops, live stock and ourselves would be ruined, were it not for the science of entomology. Our mothers knew the science so far as to keep us clear by combing our heads in our young days. Birds of the air and farm poultry are destroyers of insects. Air birds should not be shot, but fed well in winter with small grains and weed seeds from the winnowing machine.—*Old Cultivator.*

For The Lancaster Farmer.

ABORTION OF COWS.

As the question of cattle breeding was up for discussion before the December meeting of the Agricultural and Horticultural Society, without resulting in any special expression of opinion that could benefit any one, I would beg leave to ask a question in this connection which I think is of special importance to dairymen. We had been thinking of preparing for the coming Centennial with a number of good cows, but we have been more or less discouraged by a singular coincidental occurrence among our cows. It perhaps cannot be called a disease, yet it is very similar to contagion. Our cows are miscarrying to a very alarming extent; the stock of very few cow-owners escape. Three of my neighbor's cows miscarried last winter, and one of them twice in succession. This singular affliction happens to all grades of cows: to those that are well kept, as well as to those indifferently or poorly kept. What may be the cause of it? What may prevent it? To what extent has it happened in other parts of the country?—*Conestoga, Jan.* 5, 1876.

[We are not a "Looney Mactwalter," and must therefore confess our ignorance of the cause, remedy, or extent of this singular mishap among the cows, but the above may bring them out. In conversation with an intelligent reading farmer from the eastern part of the county, in relation to this subject, he stated that cows are exceedingly sensitive and easily affected in this respect; especially in dairies, or where herds are kept. The sight and smell of blood sometimes produces abortion in cows; and where one in a herd miscarries, the sight of the *placenta* or *fœtus* will affect others, as it were, similarly. This is well known among horse-breeders, and therefore the pregnant dam is carefully shielded from improper sights, smells and sounds.

Some animals, and especially *ruminants*, are very peculiarly constituted. When one dies or is slaughtered, the survivors utter the most melancholy moans and bellowing over the carcass or the blood, and it is astonishing how completely they can distinguish between the blood of their own kind and that of other animals. Sometimes these manifestations become furious, and the animals seem to be in a state of nervous paroxysm, which pervades their whole system. Any one raised on a farm must have often noticed this. It is therefore not so astonishing that it should terminate in abortion. The remedy is to guard them against all improper contact. In cases where but one cow is kept there is less exposure and a less occurrence of it.—*Ed.*]

For The Lancaster Farmer.

IS A CHANGE OF SEED NECESSARY?

At the meeting of the Horticultural Society, last Monday, I was somewhat surprised to hear all the speakers advocating the necessity for farmers to "change their seed grain;" that wheat, potatoes—indeed, all grain and root crops—are *improved* by procuring seed from a distance, or by simply changing seed with their neighbors, or from a gravelly or slaty to a limestone soil, and vice versa.

I know very well that this idea "of a change of seed" is a favorite hobby with writers on the subject; at least by such as pretend to be scientific farmers. But have those advocates of "changing seed" experimented themselves, and for a series of years found it to be true as they say? or, do most of them "follow the say so" of pretending scientific writers? or, can they bring proofs of the theory from their own experience? A single favorable or unfavorable season will not prove anything for or against it. Or, again, have they been in the habit of selecting the most perfect seeds for propagation, and yet found their grain to deteriorate after a number of years? or, have they taken the seed at random from the heap, and, in consequence, found their crops less than formerly? Give us facts, gentlemen!

It is now many years since a Mr. Cooper, of New Jersey, tested this question of "changing seed" more thoroughly, and, I think, conclusively, than it had ever been tested before, or since. His statement was substantially as follows: That when he first commenced to select his seed corn, with much searching through his field, he found only a few stalks with two ears, or nubbins; these he selected and planted the following season. Of this second crop he found many stalks with two ears. Again selecting the largest and earliest ripe ears, he improved the crop, so that in a few years there were but few stalks with less than two, and some with three ears. Continuing this course of always selecting the largest, earliest and most ears on a stalk, he so improved his crop during a term of thirty years (when he published the statement) that very few stalks could be found with less than three, and many with four large ears. He did not change his seed from one farm to another, but continued "breeding in and in" from the same old stock that at first produced only one ear or nubbin to the stalk.

He operated in the same way with squashes and other vegetables, and in each case the improvement was truly remarkable. His improved corn was sought after for seed from all directions; as also his seeds of vegetables. These experiments of Mr. Cooper, I think, fully establish the fact that by proper selection of seed grain no deterioration of the grain will result; not alone with corn and wheat, but with all vegetable growths suitable to the climate.

Well do I remember that, about forty years ago, the Hessian-flies ruined our wheat in Lancaster county and elsewhere to such an extent that many farmers harvested less than the seed sown. Large quantities of wheat were imported from Europe. Many farmers purchased this imported grain for seed, and some even for bread, at two and a half to three dollars per bushel. Like my neighbors, I, too, procured small samples of more than a dozen varieties to test their adaptability to our soil and climate. Not one variety did any good; all mildewed, rusted, and the grain was very imperfect. So I did not grow more than two varieties after the first year; but as they did not promise well, these were also dropped. With the discarding of these new wheats, I afterwards found several new *weeds* had been received with these varieties of wheat, and which gave me some trouble to clean out again. Then I may also state that the old blue-stem wheat was for many years our best wheat; but when the Hessian-flies made their appearance, fly-proof wheat (like curculio-proof plums) made their advent, and our old blue-stem wheat had to give place to newer kinds. These in turn were again replaced by other varieties. Then the Mediterranean variety came to be tried, perhaps twenty-five or thirty years ago. At first it was a rough, thick-skinned berry. The straw was soft, and very subject to lodge, and the grain light and imperfect. Yet this variety was grown on our farm without change of seed for at least twenty years. It gradually improved; the straw became shorter, stiffer, not so liable to lodge; the berry became lighter in color, thinner-skinned, and generally a superior wheat to what it was when first procured.

Again, some years since other celebrated wheats had to be tried, and the old Mediterranean was discarded, in the hope of getting still better varieties; but in a few years, by "change of seed," we again secured the old Mediterranean, which still succeeds about as well as heretofore, although I do not believe that this "change of seed" had the least effect in improving the variety.

Thus giving my experience and opinions for what they may be worth, I would say in conclusion, that my experience with many varieties of wheat in this matter "of changing seeds" confirms me in the belief that by always selecting the most perfect seed, there is no necessity for exchanging seed with your neighbor, or to procure the same variety from a distance, but select the best from your own crop and farm, where it has been acclimated, or naturalized, as it were, and with good cultivation and needed fertilizers, and favorable seasons, we may raise good crops to the end of time from our own carefully selected seed, and thank Providence "that our lot has been cast in pleasant places." All the benefit I ever secured by "a change of seed" was *a fresh crop of weeds.—J. B. Garber, Columbia, Pa., Dec.* 10, 1875.

For The Lancaster Farmer.

LADIES' PARLOR OR WINDOW FLOWERS.

The lady readers of The Farmer should be careful of their parlor or window plants now, and for two months to come. Give them full sunshine; keep near the glass while the sun shines upon them. Draw them back from the glass a little when the sunshine is over, as there is a cold air close to the glass on very cold days. On mild days, the nearer the glass they are kept the better. They look lightsome and pretty in the winter, when all looks desolate out-doors; they are also companions which give no offense; even when ill-treated, they mildly speak of it by their drooping and yellow leaves. Those with sweet-scented leaves are pleasant company now, and the blooming species will put forth their flowers in due time. On very cold nights move them from the windows and set them in the warmest part of the room until the house is heated in the mornings. They all should be sparingly watered in January and February, as they then are not making fresh growths, and if dry, the cold of nights will not so much injure them. Those generally grown in rustic stands and hanging baskets will flourish even if the sun never shines upon them. *Geraniums* are best for pot culture, yet many other choice species do well. *Begonias* and *Bouvardias* bloom all the winter. Crocuses, Hyacinths and Van Thol Tulips bloom beautifully during winter and early spring. *Calla* produces its large white lilies in early spring. The species with variegated leaves look very lively all winter.—*W. E.*

For The Lancaster Farmer.

WHY DON'T MY CHICKENS LAY?

That is the question I have been asking myself with unusual frequency as the holidays draw nigh, and in view of the equally important fact that I am asked 35 or 40 cents a dozen for eggs every time I go to market. The solution of this conundrum has given me no inconsiderable amount of careful thought, and I am apparently as far from a satisfactory explanation of the riddle as I was in the beginning, and feel disposed to "give it up." In the hope that some reader of The Farmer can see further into the question than myself, and make plain what is now obscure, I will state the facts bearing on the case.

My object in keeping chickens being the production of eggs and poultry for household use, and not for sale or speculative purposes, I limited myself from the beginning to twelve hens and one male bird, and by so doing I have been enabled to compare each year's results with its predecessors. I have never kept any of the so-called "fancy" varieties, but have cultivated the unpoetical, old-fashioned "dunghills." I am free to say that these have never yielded the seemingly fabulous number of eggs which hens are said to lay sometimes, nor have they come up to the figures which the scrupulous care and attention I have given them would reasonably lead me to expect. Compared with the accounts given in poultry journals of prolific hens, mine make a rather poor showing; but what is still worse, the long period during the autumn and early winter when they drop no eggs at all, makes the keeping of them very unsatisfactory.

Without having a regularly built hennery, I nevertheless offer such inducements to my chickens as should insure me better returns. My hen-house is a nice, warm and well-ventilated one, amply large to comfortably accommodate twice or thrice the number of fowls I keep. I never shut them up in it; the small door for ingress and egress is always open, and they avail themselves of this circumstance by never staying in the house except during the night. I have a large, dry stable to which they can resort during the heat of summer, and where they are always found during the cold days of winter or in rainy weather. They have, besides, the run of an ample grass lot, and a flock of geese could not crop the young grass more industriously than they do. In a small yard there is a patch of open ground wherein they can dust themselves when so inclined. To afford them the opportunity of doing the same in winter, I have fixed up a corner in the stable where they can enjoy themselves in a bath composed of street dust and sifted coal ashes, and it is matter for astonishment to see how constantly they avail themselves of this luxury.

In the matter of food, I depart somewhat from the regime laid down in the books. I do not keep corn lying about the yard and stable all the time; I feed them twice a day, morning and evening, but never throw down more at a time than they can eat. I exercise a wide latitude in the kind of food I give them, and this is constantly varied. Every refuse scrap of the kitchen is scrupulously saved; a large pan is generally on the kitchen stove, into which apple, turnip and potato parings are thrown, and whatever else in the way of bits of meat, bread or mush that may be left at meal time; often a few handfuls of cracked corn are added to render the compound still more acceptable. In the fall and winter, when brewers' grains are to be had, I mix them quite freely with the contents of the pan, and I find this mixture more acceptable to them than anything else I can offer them. Sometimes I boil mush, and mix it with the brewers' grains; this is generally their morning meal in winter. In the evening, corn in its natural state is given them; occasionally this order of feeding is reversed. At all seasons pounded oyster shells are thrown to them, and if they for some reason do not get them for a short time, they eat them with as much avidity as corn when they are again thrown down. Two or three times a week either pepper or powdered sulphur is thrown into the pan on the stove and boiled with their food. In lieu of wood-charcoal, I burn corn in a pan until it is virtually turned into charcoal, and give it to them; this they eat readily, while they object to natural charcoal. Owing, as I believe, to the plentiful feeding of sulphur and pepper, my chickens have never been affected by any epidemic disease; they are, besides, remarkably free from vermin; occasionally I have lost one, but that was rarely. They at all times during the summer have access to fresh water, and in winter I take care that they have all they need.

The above, I think, is very fair treatment for hens, and makes me all the more curious to know why they stopped laying on September 20th, of this year, and have not, up to this writing, December 20th, laid a single egg. Last year they quit laying on October 1st, and one hen, a spring pullet, began to lay on December 28th and some of the rest towards the close of January. None of my chickens are more than three years old, while fully one-half were raised last year; so this long cessation from laying does not arise from the age of the fowls. Last summer I raised a brood of pure Black Spanish, out of which I selected four choice birds; they are now nearly or quite full grown, but so far have shown no symptoms of going into the business for which they are so noted.

Notwithstanding the fact that such long intervals have occurred during which my hens did not lay, yet all things considered, they have paid me well for my care. My twelve hens laid during the year 788 eggs and I raised forty young ones; at the market price of eggs during the spring and summer, the product would have been $15.00 at the very lowest, while my young chickens at twenty-five cents each were worth $10.00 more; the food I purchased amounted to about $12.00, leaving a very handsome profit. Last year I got only 754 eggs from the same number of hens; this is an average of only 63 eggs to each one, a number entirely too small. I had fowls, however, both during the past and the present year, that laid as many as 75 and 80 eggs before they wished to sit.

But after all, the old difficulty still remains; if it pays me to keep these hens, even with the long holiday they allow themselves, it would have paid me still better if they had laid continuously; as they did not do so, the query arises, would any of the fancy breeds have done better? Why, with all the care and attention I give them do they not lay between September and January? Brewer's grains I was told would correct that defect; I am satisfied it does not contribute to that result, but it is admirably adapted to fattening poultry, and the chickens that come on my table are far superior to any I see on market. There yet remains one remedy untried, which, unless my query is satisfactorily answered, I will put into practice next fall. Once, on the far off plains of Kansas, seeing an honest granger's wife with a huge basket full of eggs, curiosity tempted me to ask how she contrived to get so many eggs from the few hens that were running around. "I give," she said, while a merry twinkle played about her laughing eyes, "I give them plenty of corn and run them up hill."—*F. R. D., Lancaster, Dec. 20, 1875.*

For The Lancaster Farmer.

ALL HAIL! CENTENNIAL YEAR, 1876!

The year 1876 has come in and brings with it the centennial birthday of our independent nation. It will be an eventful one in the history of our republic. It now rests with ourselves to render it illustrious or the reverse. A hundred years ago the people of the original thirteen States which were then settled, clamored for self-government. A congress of sages assembled in Philadelphia, and after full consultation, they made out a "Declaration of Independence" and unanimously signed it. That, with a conflict of arms in the field by the heroes of the time, secured for us the independent republican government which we now enjoy.

We have resolved to commemorate that event this year by an international exhibition, that our country may step upon the platform of nations, and be recognized as an equal with others. Our National Congress is now in session to sign a second "declaration of independence" in the form of an appropriation sufficient to help defray the expense of preparing for the Exposition. We fain hope that every member of the present Congress is a patriotic gentleman, and has the honor of the nation and his own manly dignity at heart; and that all of them will show their loyalty in voting for the appropriation as promptly and unanimously as did the gallant heroes and sages of a hundred years ago.

Will any free-born American sell his birthright now, when the nation is at the height of its glory? Will any adopted citizen seek to demean the land which has raised him from a *subject* to a *sovereign?* Was ever there a *union* so noble and grand as ours is? It has surmounted all difficulties that have come in its way, and withstood all assaults that have sought to sever it.

Oh! glorify the *Union*, which patriots formed;
Gild the records of the past, the present and all;
Oh! wisdom still guide us and virtue preserve us,
Dear brotherly-love bind us—ward off our downfall.

—*Walter Elder, Philadelphia, Jan. 1, 1876.*

For The Lancaster Farmer.

LOOK OUT FOR CANADA THISTLE.

Eastern Pennsylvania is likely to be overrun with "Canada Thistle" (*Cirsium arvense*). Lancaster county, as well as the rest of the counties of Eastern Pennsylvania, are receiving hay in bales from Rochester, New York, and other western parts of that State. It exists in abundance from Elmira to Geneva and Rochester, and in all the surrounding counties from whence hay is shipped to the east. The hay is bought by county towns and country villages, from whence the manure is hauled out among the farmers, scattering the seeds broadcast among them. When once on a farm, it will take years to make it clean again, as they are not easily destroyed. We may feel assured of this, else we would not find them growing in all Western New York.—*L. S. R., Oregon, Pa., January 3, 1876.*

[We hardly think that Canada thistle could be brought here in baled hay, especially not in the "first crop," because that is cut before the thistle is in seed, or "fruit," as the Botanists say. In "second crop" it would be more likely; but we have had this noxious weed in this county long since. About fifteen years ago we noticed a most magnificent field of Canada thistle north of Lancaster, and not more than half a mile beyond the city boundary.—*Ed.*]

SUCCESSFUL ORCHARDS.

The Rochester *Rural Home* gives an account of the orchard of S. C. Davis, in Orleans county, N. Y. He has 90 acres in orchard, containing 2,500 apple trees, 500 of which were planted in 1858, and the remainder in 1862 and 1868. The young apple orchards cover 55 acres, and are chiefly composed of the Baldwin, Rhode Island, Greening and Roxbury Russet, with some autumn apples. He has besides these 2,700 trees or bushes of the Orange quince, covering 10 acres, and planted six and ten years ago. The crops from these quinces the last two seasons were 50 and 53 barrels. Besides these, there are 2,000 peach trees, 350 planted in 1858, the rest in 1865 and 1868. The first 350 have yielded in all years over $4,000. There are also 2,000 standard pear trees, 1,900 of which are Bartletts. From the first planted (100 in 1864) 100 barrels have been picked. We are not informed what the apple trees yielded, nor what the quinces sold for.

Subscribers will please renew their subscriptions for 1876. Cannot each one send us an additional subscriber?

THE CENTENNIAL EXHIBITION.

The Progress of the Great Work--A Birds-Eye View of the Buildings and Grounds--Details of the Live Stock Department.

A recent visit to Fairmount Park, on the occasion of the presence of the President of the United States, Judges of the Supreme Court, and Members of Congress, revealed remarkable progress in the great work, since our former visit. The remarkably mild and open winter we are having is highly favorable to the prosecution of outdoor work, such as grading the grounds, and there is no longer reason to doubt that all the details will be completed in time for the opening in May. The appropriation of a million and a half of dollars which has been asked of Congress to complete the work will no doubt be granted, as the representatives of every department of the government who inspected the buildings on the occasion referred to, expressed themselves highly pleased with what they saw, and the national honor seems now to be at stake in the matter.

The accompanying engraving represents a correct birds-eye view of the appearance of the Centennial grounds and the relative relations of the buildings to each other.

The Main Building is the extensive structure, running diagonally, near the centre of the cut. It covers about as much space as the other four united. *Machinery Hall* is the next largest building, and runs toward the right, in the same range, with only a street between. *Agricultural Hall* is near the lower corner, to the left. *Horticultural Hall* is the ornamental structure standing next above the last in the view. *The Art Gallery* is the stone edifice with the large dome, standing between the last and the first buildings named. This is also called Memorial Hall. It was erected by provision made by the State of Pennsylvania, and it is designed to be permanent. The white line seen above these buildings is the Schuylkill river, which runs to the right toward the Delaware. Beyond it lies the great body of the city, from which rise many steeples and towers. On the farther side, to the left, appears a faint line, showing the Delaware river, which borders the city on the east, and runs southward, to the right.

In addition to these there will be about one hundred and fifty smaller buildings, erected for the headquarters of different states and nations, and for special exhibition of the products of different industries, many of them presenting beautiful architectural designs.

We print below, as specially interesting to our readers, the details of the arrangements made for the exhibition of live stock by Burnet Landreth, Chief of the Bureau of Agriculture, and approved by Director-General A. T. Goshorn. These details of a single department will give the reader a fair idea of the magnitude of the enterprise.

Live Stock.

1. The live stock display at the International Exhibition will be held within the months of September and October, 1876; the periods devoted to each class and family being fifteen days, and the division as follows:

Horses, mules, and asses, from September first to fifteenth.

Horned cattle (of all varieties), from September twentieth to October fifth.

Sheep, swine, goats and dogs, from October tenth to twenty-fifth.

Poultry will be exhibited from October twenty-eighth to November tenth.

2. Animals to be eligible for admission to the International Exhibition must be, with the exception of trotting stock, walking horses, matched teams, fat and draught cattle, of such pedigree that the exhibitor can furnish satisfactory evidence to the Chief Bureau, that—

As applied to the thoroughbred horses, as far back as the fifth generation of ancestors on both sides, they are of pure blood, and of the same identical breed.

As to short-horned cattle, they are registered in either Allen's, Alexander's, or the English herd-books.

As to Holsteins, Herefords, Ayrshires, Devons, Guernseys, Britannys, Kerrys, and other pure breeds, they are either imported or descended from imported animals on both sides.

As to Jerseys, that they are entered in the Herd Register of the American Jersey Cattle Club, or in that of the Royal Agricultural Society of Jersey.

As to sheep and swine, they are imported or descended from imported animals, and, that the home-bred shall be of pure blood as far back as the fifth generation.

3. The term breed, as used, is intended to comprehend all family divisions, where the distinction in form and character dates back through years of separation; for instance, it is held that the progeny of a pure-blood Jersey and a pure-blood Guernsey, is not a thorough-bred, but a cross-bred animal, and, as such, is necessarily excluded.

4. In awarding prizes to animals of pure blood, the judges will take into consideration chiefly the relative merits as to the power of the transmission of their valuable qualities; a cardinal object of the exhibition being to promote improvement in breeding stock.

5. In case of doubt relative to the age of an animal, satisfactory proof must be furnished, or the animal will be subject to examination by a veterinary surgeon; and should the state of dentition indicate that the age has not been correctly stated, the person so entering as an exhibitor will be prohibited from exhibiting in any class.

6. The forms of classification for awards, as given under each head, are intended (excepting in the case of trotting stock, walking horses, matched teams, fat and draught cattle) to apply to the animals of any pure breed that are entered for competition.

7. The Exhibition being open to the world, it is of the first importance that the best of their kind only be brought forward, as the character of the stock will be judged by the general average of those exhibited.

8. Exhibitors will be expected to furnish their own attendants, on whom all responsibility of the care of feeding, watering and cleaning the animals, and also of cleaning the stalls, will rest.

9. Forage and grain will be furnished at cost prices, at depots conveniently located within the grounds. Water can be had at all hours, ample facilities being provided for its conveyance and distribution throughout the stock-yards

10. Exhibitors must supply all harness, saddlery, vehicles and other appointments, and all such must be kept in their appointed places.

11. The Commission will erect ample accommodation for the exhibition and protection of live stock, yet contributors who may desire to make special arrangements for the display of their stock, will be afforded facilities at their own cost. Fractions animals, whether stallions, mares with foals, or bulls, will be provided with stalls of suitable character.

12. All stalls will be regularly and distinctly numbered; corresponding numbers on labels of uniform character will be given to each exhibitor, and no animal will be allowed to pass from its stall without its proper number attached.

13. Numbers *alone* will distinguish stock in the show-yards, preceding the awards of prizes.

14. The judges of live stock will make examination of all animals on the opening day of each serial show, and will for that day have exclusive entrance to the show-yard.

15. No premium will be awarded an inferior animal, though there be no competition.

16. All animals will be under the supervision of a veterinary surgeon, who will examine them before admission, to guard against infection, and who will also make a daily inspection and report. In case of sickness, the animal will be removed to a suitable enclosure especially prepared for its comfort and medical treatment.

17. When animals are taken sick, the exhibitors may either direct the treatment themselves, or allow the veterinary surgeon appointed by the commission to treat the case. In this latter event the exhibitor will be charged for all expenses incurred. All possible care will be taken of animals exhibited, but the commission cannot be held responsible for any injury or accident.

18. A ring will be provided for the display and exercise of horses and cattle.

19. On the last day of each serial show, a public auction may be held of such animals as the exhibitors may desire to sell. Animals may be sold at private sale at any time during their exhibition. During the period of a serial show, no animal, even in the event of being sold, will be allowed to be definitely removed.

20. An official catalogue of the animals will be published.

21. Exhibitors of thoroughbred animals must, at the time of making their entries, file with the Chief of the Bureau a statement as to their pedigree, affirmed or sworn to before an officer authorized to take affidavits, and the papers so filed shall be furnished to the Jury of Experts.

22. The ages of live stock must be calculated up to the opening day of the exhibition of the class to which they belong.

23. Sheep breeders desiring to exhibit wool, the produce of the flocks, will display not less than five fleeces.

24. All animals must be entered according to the prescribed rules, as given in forms of entry, which forms will be furnished on application to the Chief of the Bureau of Agriculture.

Breeding Horses.

Mares entered as breeding animals must have had foals within one year of the show, or if in foal, certificates must be furnished to that effect.

All foals exhibited must be the offspring of the mare with which they are at foot.

Awards will be made to respective breeds for: Pure bred turf stallions, six years and over. Pure bred draught stallions, six years and over. Pure bred turf stallions, over four years and under six years. Pure bred draught stallions, over four years and under six years. Pure bred turf stallions, over two years and under four years. Pure bred draught stallions, over two years and under four years. Pure bred turf mares six years and over. Pure bred draught mares six years and over. Pure bred turf mares, over two and under six years. Pure bred draught mares, over two and under six years.

Awards will be made for: Trotting stallions, six years and over. Trotting brood mares, six years and over. Trotting stallions, over four years and under six. Trotting fillies, over four years and under six. Trotting stallions, over two years and under four. Trotting fillies, over two years and under four.

Running and Trotting Horses

shall be judged according to their record up to August 15th, 1876, due regard being had to present condition.

Awards will be made for: Running horses having made fastest record. Trotting stallions having trotted a mile within two-thirty. Mares and geldings having trotted a mile within two-twenty-five.

Walking Horses.

Fast walking horses, whether bred for agricultural purposes or the saddle, will compete in the ring for awards.

Matched Teams.

Awards will be made for: Matched teams having trotted a mile in two-thirty-five. Matched stallions for heavy draught, over sixteen hands high, and over fifteen hundred pounds weight each. Matched geldings for heavy draught, over sixteen hands high, and over fifteen hundred pounds weight each. Matched mules for heavy draught, over fifteen hands high, and over fourteen hundred pounds weight each. Matched mules for heavy draught, over fifteen and a half hands high, and over thirteen hundred pounds weight each.

Breeding Asses.

Awards will be made to respective breeds of: Pure bred jacks over six years. Pure bred jacks over three years and under six. Pure bred she-asses over six years. Pure bred she-asses over three years and under six.

Neat Cattle.

No cow will be eligible for entry, unless accompanied with a certificate that, within fifteen months preceding the show, she had a living calf, or that the calf, if born dead, was born at its proper time.

No heifer entered as in calf will be eligible for a prize, unless accompanied with a certificate that she has been bulled before the first of April, or presents unmistakable proof of the fact to the judges.

No bull above one year old can be entered unless he have a ring in nose, and the attendant be provided with a leading stick, which must be used whenever the animal is taken out of stall.

Awards will be made for the best herd of each respective breed, consisting as follows: One bull. Four cows, none under fifteen months. Neat cattle, of each respective breed, will compete individually for awards. Bulls 3 years and over. Bulls over 2 years and under 3 years. Bulls over 1 year and under 2 years. Cows 4 years and over. Cows over 3 years and under 4 years. Cows or heifers in calf, over 2 years and under 3 years. Yearling heifers. A sweepstake award will be made for the best bull of any breed. A sweepstake award will be made for the best cow of any breed.

Fat and Draught Cattle.

Animals entered as fat and draught cattle need not be of pure blood, but will compete on individual merits.

Fat cattle must be weighed, and, in general, those will be judged best which have the greatest weight with the least surface and offal.

Awards will be made for: Best fatted steer of any age or breed. Most powerful yoke of oxen. Most rapidly-walking yoke of oxen. Most thoroughly-trained yoke of oxen. Most thoroughly-trained team of three or more yokes of oxen.

Breeding Sheep.

All sheep offered for exhibition must be accompanied with certificate to the effect that they have been shorn since the 1st of April, and the date given.

If not fairly shorn, or if clipped so as to conceal defects, or with a view to improve the form or appearance, they will be excluded from competition.

Awards will be made to respective breeds for: The best pen of five animals of same flock and including one ram, the ewes all having had living lambs the past spring.

Awards will be made to respective breeds for: Rams 2 years and over. Shearling rams. A sweepstake award will be made for the best ram, respectively of long, middle, and fine-wooled breeds.

Awards will be made to respective breeds for: Ewes in pens of three, all having had living lambs. Shearlings in pens of three. A sweepstake award will be made for the best pen of three breeding ewes, respectively of long, middle, and fine-wooled breeds.

Fat Sheep.

Fat sheep entered for competition must be weighed, and in general those will be judged best which have the greatest weight, with the least surface and offal.

Awards will be made for: Pen of three best fatted sheep of each breed. Pen of three best fatted sheep of any breed.

Breeding Swine.

Every competing sow above one year old must have had a litter, or be in pig, and the owner must bring proof of these facts, if required.

If a litter of pigs be sent with a sow, the young pigs must be sucklings, the offspring of the sow, and must not exceed the age of three months.

Awards will be made to respective breeds for: The best pen of one boar and two breeding sows. For pen of sow and litter.

Awards will be made to respective breeds for: Boars 2 years old and over. Boars 1 year old and under 2 years. Boars between 9 months and 1 year. Breeding sows 2 years old and over. Breeding sows 1 year old and under 2 years. Pen of three sow pigs between 9 months and 1 year. A sweepstake award will be made for the best boar of any breed. A sweepstake award will be made for the best sow of any breed.

Fat Swine.

Fat swine entered for competition must be weighed, and in general those will be judged best which have the greatest weight with the least surface and offal. 1st, 2d and 3d prizes will be awarded for: Pair of best fatted hogs of each breed. Pair of best fatted hogs of any breed.

Dogs.

Awards will be made to respective breeds for: Dogs of 2 years and over. Dogs of one year and under 2. Pups. A sweepstake award will be awarded for the best dog of any breed displayed by a foreign exhibitor. A sweepstake award will be awarded for the best home-bred dog of any breed.

Awards will be made to respective breeds for: Bitches of 2 years and over. Bitches of 1 year and under 2. Bitch pups. A sweepstake award will be awarded for the best bitch of any breed displayed by a foreign exhibitor. A sweepstake award will be awarded for the best home-bred bitch of any breed.

Poultry.

Poultry can only be exhibited in coops made after specifications furnished by the Bureau of Agriculture.

Awards will be made to respective breeds for: Pairs of 1 year and over, of chickens, turkeys, ducks, geese, swans, pigeons, guineas and ornamental birds. For pairs under 1 year.

Fish.

Living fishes will be displayed in both fresh and salt water aquaria.

Awards will be made for: Largest display of fish of each species. Largest display of fish of all species.

OUR PARIS LETTER.

Farming and Stock Raising on the Continent of Europe.

Correspondence of THE LANCASTER FARMER.

PARIS, December 30, 1875.

EXPERIMENTING WITH SHEEP.

Experience attests that sheep, when shorn, fatten more rapidly than those left in the possession of their fleece; horses, lean or even sickly, put up flesh quickly if clipped in due season and with the ordinary precautions. Animals thus treated acquire an increased appetite and maintain the desire for more food for a longer period. M. Welske, of Proskeau, has conducted experiments with great care to test the facts found to be true by practice. He selected two full grown merinos, in good health, equal in age and nearly so in weight. They were fed on 2¼ pounds of meadow hay, ½ pound of crushed barley, and less than a quarter of an ounce of kitchen salt, daily; their solid and liquid excrements were specially preserved and frequently analyzed, contemporaneously with their food; they were supplied with a fixed quantity of water daily and were weighed every morning; the temperature of the building during the experiments was nearly uniform. After being thus treated for seven days, no perceptible difference was discovered in their relative weights. After an interval of ten days they were shorn; the appetite which had appeared languishing, suddenly became sharp. The shearing exercised little influence on the digestibility of the food, and any difference was unfavorable to the shearing; on the other hand, the animals consumed less water, pulmonary and insensible perspiration having diminished, as in practice is known to be the case. But more nitrogen was eliminated, that is, less went to the formation of meat, though no change had taken place either in quantity or quality of food.

SHEARING THEN IS APPARENTLY UNFAVORABLE TO NUTRITION.

The loss of the fleece is the loss of so much heat, demanding the greater consumption of food; in other words, producing a more vigorous appetite. For draught animals this result is beneficial, for it stimulates the sources of strength. Horses, when clipped, become more energetic, lively and robust; and if they display an improved condition without any change in rations, the cause must be sought in a better appetite and a superior assimilation of food. In the case of fattening stock, if this power of assimilation be a little less, the amelioration of the appetite is a compensation, for the animals will thereby put up more flesh; and to maintain the appetite in an excellent state during the finishing stage of fattening, is the object to be realized. More food means thus more beef and mutton, and hence the advantage of the shorn over the unshorn animal.

THE FOOT AND MOUTH DISEASE

continues to make its ravages here; it is a malady more troublesome and annoying than dangerous; it is unpleasantly contagious also, especially for pigs; it does not destroy the animals, but retards their development and production. The Veterinary College of Alfort, recommends the isolation of the affected and the free use of diluted carbolic acid in the sheds; to break the pustules with a rag stopper and gargle the mouth with a preparation of honeyed water sharpened with vinegar, alum or brandy, several times a day, administering linseed or other meal drinks requiring only to be swallowed; when the feet are sore the bedding ought to be very dry and clean, and the ulcers touched with a mixture of alum and carbolic acid in 95 parts of water; if fever be declared along with diarrhœa, half a pound of Glauber salts is added to the drinks to cleanse the blood. Connected with the malady, is a plan of insurance in operation in upper Savoy; the farmers of a townland form a society of insurance; each animal insured pays fr. 2, and an additional franc as an annual premium. In case of loss, the farmer receives the full price of the animal, provided he has followed the instructions for treating it when diseased. At Lille there is a society that will insure cattle against all risks, the premium being five per cent. on the estimated value of the animal; a single farm can insure as far as fr. 300,000.

THE ANIMAL FOOD QUESTION.

When consumed green or in flower, buckwheat affects sheep and pigs by producing dizziness and eruptions on the skin. Sportsmen attest that this intoxication is common with hares that eat the plant.

A farmer remarks, that after storms, buckwheat exercises its peculiar influences most strongly.

The high and increasing price of oats draws much attention to substitutes for that food, which cannot be equaled for horses. Bearing in mind that the nutritive qualities of plants vary more in respect to climate than to season, it is not surprising to witness different results from the same description of aliment. Barley raised in southern is superior in quality to that grown in northern climates. In the East, in Spain and in Arabia, horses fed on barley acquire more vigor and power of endurance, while in temperate climates it is fattening and refreshing in its effects. To excite fowls to lay or to hatch, oats and light wheat are given; to fatten them, barley. Whenever the French invaded Spain, their cavalry was decimated by inflammatory diseases produced by feeding the horses on barley. On the other hand, Arabian horses, when imported into France, can only be kept in good condition by being fed, not on barley, but on oats. Barley is a tonic in warm climates, but enervating in temperate ones. Maize is but an auxiliary, it can never become a substitute; it has not sufficient force-producing power. M. Adenot experimented with feeds of equal rations, of nine pounds each, of maize and oats, on 48 of his wagon horses, extending over a period of two months; the animals lost one-fifth of their draught power, which they recovered, however, when their full oat ration was restored; the economy in the way of oats disappeared by loss of strength. One-eighth of maize with oats turned out well, but then the maize must be American, not French. How nearly soever related maize and oats may be chemically, in physiological effects they are widely different. Thaer and Dombasle recommend buckwheat for farm horses, as being capable of replacing in part oats; their opinion is questioned, but buckwheat differs in richness, according as it may have been saved, when matured or otherwise. M. Adenot has found a mixture of 13 pounds of oats with six of rye, very successful; his experience extended over fifteen years, the stables containing not less than 350 draught horses; the mixture was not equal in producing vigor to oats alone, but was not the less a capital feed when grain was scarce. In former times wheat was given to stallions during the season of serving, and to mares when suckling, but wheat fattened rather than imparted strength or produced muscle.

IN THE PRODUCTION AND REPARATION OF MUSCULAR FORCE,

beans rank with oats, exciting the appetite, and excellent for horses that digest badly their full feed of grain. Field peas are favored by some for post horses, improving their wind while forming a change of food. Oats being unrivalled, many farmers object to either bruise or break them; containing less farinaceous matter, they nourish less, in the sense of fattening less; this quality Messrs. Magne and Baillet attribute to an aromatic principle in the skin, analogous to vanilla, and to which the stimulating action of the grain is to be traced. Now mountain oats, small and light, are more exciting than others, because they contain less farinaceous and more of stimulating matters, and hence why many breeders keep stocks of mountain and lowland oats, giving feeds of each alternately, never mixing, for where the ingredients of rations differ in volume, much that is small becomes unmasticated or incompletely mixed with saliva. M. Monclar, of Tarn, finding wine to be so cheap and oats so dear, has employed the former as an element in rations for his horses, and with excellent results. This is the first time wine has been so employed; but is long known in France to be of singular efficacy when horses are overcome with great fatigue; some sprinkle the wine over the oats and others administer it as a drink. Horses are very fond of wine. M. Becwer is the most extensive fattener of live stock on the continent; after years of experience he concludes,

THE BEST AND MOST SUCCULENT MEAT IS FURNISHED

by pigs fattened on milk, than animals fed on grain, the following ranking in order of merit: maize, barley, oats, to which may be added, peas. Potatoes produce a meat light, flabby and insipid, losing much in cooking; bran, in the case of hogs, yields a flesh poor and of a bad taste; oil, seeds and cake impart flaccidness and a disagreeable taste to the meat, and beans make it hard, indigestible and unsavory. M. Beewer counsels for the finishing of pig fattening, a diet of boiled grain, or the latter bruised, with milk; peas added to the rations of pigs, four weeks before slaughtering, will impart an agreeable flavor to the meat.

Belgium has suffered during the present year very much from

ADULTERATED CLOVER SEED,

which is mixed with colored sand and the seed of the plantain; the latter is said to have been superseded by the seeds which escape from the refuse of imported wool. The magnifying glass reveals the impurity.

THE BEET SUGAR MANUFACTORIES ON THE CONTINENT

may consider themselves fortunate if they can make the two ends meet this year. France produces twice as much sugar as she consumes, but fiscal export regulations prevent her from entering advantageously the foreigh market. Many farmers decline to sell their beet this year to the manufacturer, who only gives fr. 16 the ton for the roots, selling the pulp at fr. 15; net profit per ton, for the cultivator, one franc, to which must be added the expenses of transport both ways. It is thus more profitable to consume the roots on the farm. The new continuous presses extract more sugar than the old hydraulic apparatus, but the pulp derived from the former is found to be less valuable. The chemists discuss the question as to the action of leafing the beet, for feeding purposes, on the production of sugar. Messrs. Corenwinder and Viollette assert the practice diminishes the production of sugar, and further, entices the plant to absorb salts from the soil, which resist the extraction and crystallization of the sugar; however, the more eminent Claude Bernard differs from both these chemists, alleging we are still ignorant as to how the plant forms its sugar, whether by the root or by the leaves decomposing the carbonic acid of the air, under the influence of the green coloring matter and the sun's rays, the sugar then being distributed throughout the tissue.

Dr. Petermann recommends

TWO MEANS OF REDUCING BONES:

throwing them into the wine tank, or mixing them with wood ashes and quick lime, as a compost. Professor Kupfferschlaeger, of Liege, recommends their being burned with weeds and the ashes incorporated with the soil.

MISCELLANEOUS.

Unhappily there is nothing new to record respecting the phylloxera; the habits of the bug are being better observed, and the effects of the several remedies—inundation always excepted—await the test of time.

Dr. Pierre asserts that fruit plantations—cider orchards particularly—require to be as methodically manured as ordinary cultivated crops.

Cider is economically prepared, by adding seven pounds of red garden beet to every 2½ bushels of apples, pressing all together; the cider must not be used till the following July, when it will be free of the beet flavor.

OUR LOCAL ORGANIZATIONS.

Proceedings of the Lancaster County Agricultural and Horticultural Society.

The stated monthly meeting of this society took place in the Athenæum on Monday afternoon, the 3d of January—Johnson Miller, President, in the chair. The following members were present: Johnson Miller, E. S. Hoover, Milton B. Eshleman, Martin D. Kendig, E. S. Hershey, Jacob B. Garber, Alex. Harris, Harvey Brackbill, Elias Brackbill, Henry Erb, Israel Landis, Calvin Cooper, John Grossman, Reuben Weaver, Martin Fry, John M. Stehman, Levi S. Reist, Peter S. Reist, S. S. Rathvon, Levi W. Groff, Levi Pownall, Reuben J. Erb, John N. Eby, Jefferson Grosh, Aaron H. Summy, Edwin Reinhold, A. C. Ilius, Jacob M. Myers, John Gingrich, W. J. Kafroth, John B. Erb, Elias Hershey, Abraham Bollinger.

John N. Eby, A. C. Ilius and C. Coble were elected members.

On motion, it was agreed that the Athenæum be the place of meeting until the society order otherwise.

JOHNSON MILLER offered a resolution in regard to a more stringent law for the protection of numerous birds that are often slaughtered by sportsmen, and yet may not be strictly classified as insectiverous birds, such as the partridge, woodcock and reed-bird.

Mr. MILLER announced that he would gladly receive from farmers in the county any sample of grain for exhibition at the Centennial—said samples to be properly labeled in regard to species, locality, and any other particulars that may be given. Messrs. Milton B. Eshleman, Martin Fry and Simon P. Eby were appointed by the chair as a committee to draft a suitable resolution in regard to the birds, and present the same to the society, with a view to seeking legislative action on the subject.

The annual election for officers then took place by ballot. Mr. Calvin Cooper was chosen President. On leaving the chair, Mr. Miller returned thanks for the co-operation of the society during the two years of his service, and Mr. Cooper expressed his appreciation of the honor conferred upon him. Jacob B. Kafroth, Martin H. Kendig, Jacob Bollinger and Jacob B. Garber were elected Vice-Presidents; E. J. Hoover, Cor. Secretary; Alex. Harris, Rec. Secretary; Levi W. Groff, Treasurer. On motion, Jacob Stauffer as botanist, S. S. Rathvon as entomologist, and Simon P. Eby as librarian, the present officers, were continued for the ensuing year.

THE PRESIDENT'S ANNUAL ADDRESS.

Mr. MILLER read the following address:

Gentlemen: A kind and all-wise Ruler has carried us from time to time, until now we enter upon the year one thousand eight hundred and seventy-six—a period which will be the most important in the history of this nation and country since the days of Washington, whose mortal dust reposes in Mount Vernon's sacred soil, and whose spirit appears to rise in the vision of true and patriotic citizens of all nations, reminding them that we have now fairly entered upon the great Centennial year of American Independence.

In looking over the past record of our proceedings, and comparing them with the present, you have reason to be assured of success in the future. Ten years ago this society was organized by a few of the most intelligent and progressive farmers of this county, to whom we owe our obligations to-day for having an agricultural and horticultural society in this county. A few of them are still with us, and to them I would say, yours was a noble beginning. But since that time many were the trials through which this association has passed. It was, at times, only since I am a member, a question whether we could keep in existence an organization of this kind or not; and I will here say, that the men who organized it always "stood by the flag."

The past year has been one of more than ordinary interest to this society, as well as to all farmers in this wide county, from the fact that the Pennsylvania State Agricultural Society has held its annual exhibition at Lancaster. It was natural that this society should give it all the encouragement it could; this was done by the adoption of resolutions of welcome, and the appointment of a county committee to encourage the farmers to become exhibitors, and take an interest in a matter in which they had not had the pleasure to participate since the year 1853. The society, as well as the farmers in general, responded. The State Fair was a grand success. On the whole, it might have been better in some departments, but I learned from the officers of the State Society that they were well pleased, and that it would likely be held here during the Centennial year.

I call your attention to this matter, that in case it be held here, measures may be taken to have Lancaster county the in front. The experience of last year's fair has proved to many of us that the county has the material to make a good fair. It only wants stirring up, and by so doing we can assure the State Society a better fair next year. The people are aroused now, and we hope we may have another chance to show our resources, and bring to perfection what we commenced last summer.

I have upon many occasions indicated the importance of having a more complete organization of the farmers in the form of agricultural and horticultural societies—the many advantages and good results that might be brought to all by consulting each other upon such matters as we farmers and fruit growers find ourselves daily engaged, and in which we often find ourselves puzzled for want of knowledge. Who in all this broad land has more need of a thorough knowledge of his profession than the farmer? The mechanic must study his material and each piece before he can put together his machinery; the doctor must first study his patient before he administers his medicine; the miller must know how to regulate his grinders, and study the ups and downs of the markets; the lawyer books himself upon all points of law; and all other professions and callings have their organized societies for the encouragement and discussion of matters pertaining to their respective callings; and all for the general good. But when you come down to the farmer, where is he? Some one might say, at home, at his work. Too much so. It is right and proper to be at home and at work, but let us for a moment reflect how small a number of farmers of this world-wide known county of Lancaster come here and participate in the discussion of questions that come right home to every farmer and fruit grower in the county. Instead of twenty-five to thirty regular attentive members in the county coming together every month and discussing views and opinions in regard to agricultural matters, we should have an agricultural and horticultural society in this county of at least a thousand members, that would have a hall of their own as large as the main room in our Court House.

It appears to me it is not in accordance with the moving spirit of the Centennial year, that I stand before you to-day and present the facts as I do in regard to our Agricultural and Horticultural Society in this county, but I am simply telling the truth. The question presents itself to me—how can we get our farmers interested and bring them together? It would be my desire to do so by having a society in each township, where they could come together once a month and talk agricultural and horticultural matters over, and call these together once a year, and remain in session, say for a week, as a county society. Invite all to come, bring sons and daughters and wives; get all interested in the agricultural improvements of the day for the general good of all classes and all people. Some say, "belonging to an agricultural society don't pay." If you ask them to subscribe for a good agricultural paper, such as THE LANCASTER FARMER, which should be in the hands of every farmer in the county it represents, they will tell you in plain Dutch they know all about farming. This may be in some cases true, but you can best judge by the way they manage their farms. Scripture says we shall not judge, or we will be judged; we will then only take things as they look, and form our own opinions.

And what do we see in a majority of cases? There are exceptions to all rules; but I say, in a majority of cases we see the farmer who reads no paper, but

thinks he is made to work from morning till night, with nothing to improve the mind for the temporal as well as the spiritual welfare of the soul and body, succeeding nowhere in this enlightened age. Passing his farm, you will at once notice in every field some implement left in the mud, just where he was done using it, exposed to all the changes of weather from one season to another; fences blown down, cattle allowed to run at large in fields of waving grain; in fact, everything out of place, and no place for anything, instead of having system and order all around, a place for everything, and everything in its place. I do not wish to dictate to the farmers of Lancaster county, but merely throw out these hints for example. I have enough to take care of at home to have things in order and system in all the departments of my farm, and I confess that, much as I read and much as I try to have things represent the appearance of a model farm, I have plenty to do without minding other farmers' business. But if I am to hold the position among the agricultural people of this county, I want free scope to express myself, and point out to our farmers the miserable condition in which we find entirely too many farms in this intelligent county of Lancaster. I would here say to the members of this society, that the very best way to show the people that we mean business, is to have our farms in first-class trim; everything in order—system; treat our fellow-men, our helping hands, so that they know we love them; that we have as much regard for their morals and their personal health as we have for our own. Let us be temperate in all things, kind towards all, poor or rich, neighbor or friend. It is then, and only then, that people will perceive that the fruits of our society can be seen, and that we mean to show our faith by our works. On the other hand, what more do we gain by belonging to an agricultural society, and what do we gain by having these books and papers? Why, in the first place, we have the satisfaction of coming in communication with our friends all over the county, and have a day of rest for the body, and devoting that day to the improvement of the mind; consequently, we know better how to manage our works; and there is a saying with a great deal of truth in it, that good management is doing half the work. But those men will tell you they get the proceedings in the papers, and know what we have been doing, and that they save expenses of time and money by not attending meetings—showing that they are still interested in reading the proceedings of this society, which is all right and proper. But it shows that they want us to spend time and money, and when anything new presents itself, or we make a new discovery in grain or whatever it be, they have their head open to catch up anything by which they can make an almighty dollar. For this reason we would like more farmers to join in with us and make the improvement still greater. On the other hand, the advantages of reading books and papers are equally good. I would here impress, in the strongest terms, the importance of reading, for our young and rising farmers. Let me tell you that every dollar spent for books and papers will pay ten-fold in the future; such practice has a wonderful tendency to improve the moral as well as intellectual faculties of the young man. For instance, the young man who makes reading a study will naturally be at home in the evenings—*just where he ought to be.* Every farmer, and everybody else should be at home with his family. We all have an example of many a young man who, instead of finding pleasure at home in reading, has made the nearest town, in the saloon or hotel, his place for spending his most precious time, and the games there practiced have led many a fine young man on the road that leads from misery to destruction of both soul and body, which were calculated by the Creator for the improvement of mankind.

Allow me to-day, through my annual address, to again caution my agricultural friends throughout the county, young and old, against the terrible risk they are running, by spending their time, that should be devoted to the improvement of mind and body, in the dangerous ways that lead to the destruction of the morals of any human being. Gentlemen, please bear with me if I deviate from the text that perhaps should be kept in view for an address to an agricultural society. I merely point out some of the dangers to which the young and old engaged in agriculture subject themselves, which, in my opinion, can all be avoided by simply supplying reading and thinking matter to the mind.

Now, coming back to our society, we all know we have not made the progress that we should have made since we are in existence. On the other hand, we have done more than our predecessors, as we have kept alive, holding regular meetings for the last ten years; and stand to-day upon better ground than we have since I became a member. We have had a little trouble in regard to a room in which to hold our meetings; but by consulting our new County Commissioners, who have this day taken their seats, I have no doubt that we can have the old room, if the one we now occupy does not suit. I merely suggest this. The society must be its own judge in this matter. I would only add, judge well before you act, and secure some permanent place for our meetings.

Have we not been a little to blame for not making the progress we should have made? If we would advertise more and invite the people more generally, we could perhaps secure a better attendance. I know not the condition of our treasury, but it appears to me it would allow a little expense in this direction. Another matter I would suggest—that our Secretary should keep an account hereafter with the members in regard to the annual fees. We are all honest enough to pay up, yet an account would always show who has paid and when.

The year we have just entered upon, as I said in the beginning of my address, will be one of great importance as the Centennial of our Independence. Secured by our fathers one hundred years ago, it will be celebrated by an International Exhibition at Philadelphia, to which I now invite your attention. It is proper that this society should take part in the exhibition, and to do so it becomes your duty to appoint a Centennial Committee to arrange upon what plan, and in what form, you shall be represented at the exhibition. I will leave this matter to your consideration, hoping some action will be taken at the next meeting.

I have been appointed by the Commissioner of Agriculture at Washington, to make up a collection of grains from this district to be exhibited in the museum of the Agricultural Department at the Centennial Exhibition. I will make the collection and deliver it to Washington within the next sixty days, and any member or farmer in the county who has anything to exhibit will please hand it to me, and he will receive all the credit and honor for the same. The exhibition is a matter which every American citizen from ocean to ocean should feel proud of, and give a helping hand in some way or other to make it a triumphant success. I, for one, will do my whole duty, in any position I may be placed in. The buildings in progress of construction at Fairmount Park are very extensive, and I hope that the people of Pennsylvania, and this county in particular, will occupy some space in them. I would like to have this society in some form represented. It is, however, for you to say how.

I will now call your attention to a matter in which you are to take some action. I refer to the resolutions I presented to-day. The farmers and fruit growers in particular have suffered extensively from insects of late years. The ravages of these insects is greatly owing to the fact that sportsmen are in the habit of shooting partridges and other birds that feed upon these insects, which have become so numerous as to injure and sometimes totally destroy fruit and other crops. The farmers have, time and again, warned the men that trespass over their land with hounds and guns, and the only reply they generally get, was an insulting remark from the scoundrels, who should be punished by law for the cruel act of shooting by wholesale the harmless, nay, beneficial birds, both to the fruit-grower and farmer. Believing that this society has the influence among our members at Harrisburg to secure the passage of a proper game law for Lancaster county, I present this matter to your consideration, hoping we, as the representatives of the agricultural and horticultural interests of this county, will take such action as will put a stop to the matter complained of.

Perhaps I have now occupied too much of your time, and will soon come to a close. I have now been two years your chairman, and conducted your meetings to the best of my knowledge and ability. I have done all in my power to encourage the farmers to join with us, that this society may be an honor to Lancaster county; and not only that, but that the members and farmers and fruit-growers might be benefited, and the cause of agriculture and horticulture be pressed forward to a point at which it may overlook all other industries with pride.

This is the position that farmers should have. History gives evidence that the farmers have made our best presidents, and we should have more farmers upon the floors of Congress and in the State Legislature, from the fact that agriculture is the greatest of all enterprises of this State and country. Let us have more representation from the farm and field, and economy and retrenchment will mark conspicuously the records of both State and National legislation. These are my principles, and I will follow them out in whatever position my friends may see proper to place me. May we all work hand in hand for the advancement of this society. With the help of God, may the Centennial year be one of health, joy and happiness to us all.

OUR PAST AND FUTURE PROSPERITY.

PETER S. REIST read the following essay:

MR. PRESIDENT—It affords me great pleasure in being able to congratulate you, and the members of this society, on the approaching National Centennial; that it has pleased Divine Providence to permit us to enter the one hundredth year of our republic. We cannot be too thankful to our Heavenly Father, the giver of every good and precious gift, for the privilege of enjoying such a government as ours.

We are here at this period of our National progress, not by our own choice, nor by our own superior efforts or good management, but by circumstances controlled by an over-ruling providence. We are enjoying privileges handed down to us by our forefathers, who settled this country many years ago, under numerous privations and hardships, having fled from the oppressions and persecutions of their fatherlands, to seek a land of freedom here. Under the control of a foreign government, they endured foreign dictation until the 4th of July, 1776, then they declared themselves free and independent—that independence which we now happily enjoy, and the Centennial anniversary of which we are now preparing to celebrate.

Great are the changes and many are the improvements in human economies since the year 1776. Then we had no railroads, canals, reapers, steam engines, threshing machines, and but few manufactories of any kind. We could not count three hundred carriages at one funeral, nor five thousand—or even five hundred persons in attendance at one camp-meeting. Neither did we have so many flourishing towns and cities as now, nor so many beautiful churches with steeples and towers pointing up, heavenward. Our school system was in its infancy, if it had an existence at all, and our literary status was still in its embryo state. The arts and sciences were only known to a favored few. Our *Union* consisted of only thirteen States with a population of three millions. Our commerce was very small, our currency and finances in a state of confusion, and our territories still inhabited by the "painted children of nature."

Now we have railroads, canals, steam engines, and thousands of other improvements, with thirty-seven States and Territories, a population of forty millions, and immense production of cereals, minerals and fabrics, and a commerce equal to that of any other nation.

But now comes a great problem in this our Centennial year—our long anticipated jubilee. Notwithstanding we are loaded with a heavy weight of debt, and are perhaps encumbered with some other drawbacks to our prosperity, what is our appreciation of the benefits we derive from the many improvements we are enjoying, and of the privileges incidental to an advanced state of intellectual culture? If we appreciate these things as we ought, what will become our duty to our posterity? Is there room for any more improvements? Can we expect as many inventions in the next one hundred years as in the one just closing? To these queries, so far as they will admit of it, I feel compelled to give a negative response; because our forests, placed here by a far-seeing Providence, have been swept away most unmercifully, and are on the road of destruction so rapidly, that in the near future our posterity will not have much left to thank us for—nothing to build up as fine and costly edifices as those of the past.

In a few years our fine prairies, now unoccupied, will be settled upon, so that our posterity will not have the benefit of the irrigation that their predecessors have had, and will have to fall back upon our old exhausted lands that have been long abandoned, which will bring in a new era. The destruction of our forests is a matter which we ought not to pass over too lightly. Scripture tells of a people who will reap where they did not sow. So we might say with regard to our forests: we reap, but do not sow. If any one person is more to blame than another on this subject, it is the statesman, who worked more for himself—for power and political interest—than for the people, showing that much of political economy has been lost. Agriculture and husbandry, to raise the different products of our broad acres, are the fountains and foundations of national prosperity. Good, wholesome laws, carried out by the people, make a nation prosperous. Suffice it, then, to say, that the more a people are united and educated on a common platform, the more prosperous they will be. The profligate must become more economical, and the avaricious more liberal. Indeed, it might be successfully demonstrated that, in many instances, the miser is a greater hindrance to the progress of any community or country than a spendthrift.

The masses of the people must be taught to select such statesmen and such officers, from the President down to county and township officers, as will work for the interests of the people, and not merely for themselves or for monopolies and political "cliques;" for men who will act as men, in every sense of the word. Let this society become a shining example to societies in general. Let us work not only for the benefit of ourselves, but also for our fellow beings, and for our posterity. Let us aim to improve our seed, our modes of culture, and our products of every description. Let us endeavor to increase our average as well as our acreage, so as to raise such surplus as will create a balance of trade in our favor, to pay the interest we largely owe to foreign countries. In addition to all this, and as intimately associated with it, let us expand and elevate our minds by the cultivation of our intellectual faculties. Let us extend a generous support to the agricultural literature of our country. There is no more reason that farmers, as a class, should be illiterate, than there is for any other class of people being so. Indeed, farmers from their secluded condition, and their freedom from night occupations, have opportunities of mental culture far superior to those of most mechanics.

By doing our duty to God, to our neighbors, to our families, and to ourselves, and continuing to do as our forefathers did, adding and incorporating into our labors the improvements which time has developed, we shall be destined to become one of the strongest and most powerful nations upon the face of this earth; and, although we cannot expect to see it, our second Centennial may find our country—

"Redeemed, regenerated and disenthralled."

MISCELLANEOUS BUSINESS.

A vote of thanks was tendered both gentlemen for their productions.

A pear branch covered with a scale insect, was exhibited by Mr. Erb. Prof. Rathvon recommended oil as an application late in March to destroy the eggs. The common name of the insect is oyster-shell bark louse, *Aspidiotis conchiformis*.

MR. COOPER called attention of the members to the meeting of the Pennsylvania Fruit Growers' Society, at Doylestown, on the nineteenth of January. If fifty members go from this section, the Pennsylvania road will furnish excursion tickets. On motion, a committee of three, consisting of Johnson Miller, J. H. Brackbill and Levi S. Reist, was appointed to represent this society at the Doyestown meeting.

MR. JOHN B. ERB exhibited Pennock apples, a bottle of Blackberry wine and sweet apples. J. H. Byerly, East Lampeter, forwarded a small bag of Russian grass seed. Mr. M. B. Eshleman exhibited specimens of a large potato, Brownell's Beauty.

On motion, a committee of ten was appointed to assist Mr. Miller in his contributions to the Agricultural Bureau. M. B. Eshleman, I. L. Landis, J. H. Brackbill, P. S. Reist, H. M. Engle, E. Hoover, J. M. Stehman, M. B. Kendig, Levi W. Groff and J. B. Erb were named as the committee.

On motion, Mr. Cooper was made a committee to confer with the Fruit Growers' Society in regard to a representation at the Centennial.

Several questions were submitted for disenssion:

MR. ERB. Is it profitable to turn land worth more than $100 an acre into forest?

MR. EBY. Should the planting of forest trees be encouraged?

MR. PETER S. REIST. Is swine flesh a proper food for man?

MR. KENDIG. How can the comfort of our homes be increased?

MR. POWNALL, of Octoraro Agricultural Society, was introduced.

On motion, society adjourned to meet at the Athenæum, at 1 o'clock, on Monday, the 7th of February.

THE GRANGERS IN LANCASTER.

History and Objects of the Order of Patrons of Husbandry.

Perhaps a more intelligent and solid body of farmers never before convened in Lancaster city or county than that which represented the STATE GRANGE, of Pennsylvania, and held its sessions in our Court House, commencing on Tuesday, the 14th of December last, and continuing to the end of the week. Although not morbidly secret in its organization and the attainments of its objects, yet in its business meetings its doors are closed against the intrusions of the public, but the principles and the *essential* transactions of the order are usually published in their organs, and the newspaper and periodical press in general. The *non-essentials*—that is, non-essential to the public good—they usually keep among themselves, for the very good reason that they do not concern the public, and are purely *family* secrets. As our space is limited, and most of the transactions of the late meeting have already been published in the columns of the local press, we deem it sufficient on the present occasion to append the following synopsis of the rise, progress, and the present *status* of the Patrons of Husbandry, as well as the principles of their affiliation.

The origin of this order is attributed to Mr. O. H. Kelley, a native of Boston, who, in 1866, being then connected with the department of agriculture in Washington, was commissioned by President Johnson to travel through the Southern States and report upon their agricultural and mineral resources. He found agriculture in a state of great depression, consequent upon the radical changes wrought by the civil war and the abolition of slavery. At the same time there was much dissatisfaction among the farmers of the West and Northwest in consequence of the alleged high charges and unjust discriminations made by railroads in the transportation of their products. The farmers also complained of the exorbitant prices exacted by middle men for agricultural implements and stores. Mr. Kelley conceived the idea that a system of co-operation, or an association having some resemblance to the order of Odd Fellows or Masons, might be formed with advantage among the dissatisfied agriculturists. For this purpose a plan of organization was determined upon by him and Mr. William Saunders, of the department of agriculture. The name chosen for the order was "Patrons of Husbandry," and its branches were to be called granges (Fr. *grange*, a barn). The constitution of the order provides for a national grange, and State and subordinate granges. There are ceremonies of initiation, rituals and injunctions of secresy, though in some respects the order is not secret. The officers of a grange, whether national, State or subordinate, are elected by the members, and comprise a master, overseer, lecturer, steward, assistant steward, chaplain, treasurer, secretary, gate-keeper, Ceres, Pomona, Flora and lady assistant steward. Women are admitted to membership upon the same terms and with equal privileges as men, but only those persons interested in agricultural pursuits are eligible. Regular meetings of the National and State Granges are held annually, while subordinate granges usually meet monthly or oftener. The constitution was adopted, and on December 4th, 1867, the National Grange was organized in Washington; its headquarters are now in Georgetown, D. C. In the spring of 1868 Mr. Kelley founded a grange in Harrisburg, Pa., one in Fredonia, N. Y., one in Columbus, O., one in Chicago, Ill., and six in Minnesota. The number of granges soon began to multiply rapidly, and in 1874 they had been organized in nearly every State and Territory of the Union. In 1871, 125 granges were established; in 1872, 1,160; in 1873, 8,667; and in the first two months of 1874, 4,618. At the beginning of 1874 the number of granges in the United States was 10,015, with a membership of 750,125. The total number of members in April, 1874, was estimated at about 1,500,000. The order has its greatest strength in the northwestern and western States, and is well represented in the South. At the annual meeting of the National Grange in St. Louis, Mo., in February, 1874, a declaration was adopted setting forth the purposes of the organization as follows:

"To develop a better and higher manhood and womanhood among ourselves; to enhance the comforts and attractions of our homes, and strengthen our attachment to our pursuits; to foster mutual understanding and co-operation; to maintain inviolate our laws, and to emulate each other in labor; to hasten the good time coming; to reduce our expenses, both individual and corporate; to buy less and produce more, in order to make our farms self-sustaining; to diversify our crops, and crop no more than we can cultivate; to condense the weight of our exports, selling less in the bushel, and more on hoof and in fleece; to systematize our work, and calculate intelligently on probabilities; to discountenance the credit system, the mortgage system, the fashion system, and every other system tending to prodigality and bankruptcy. We propose meeting together, talking together, working together, buying together, selling together, and, in general, acting together for our mutual protection and advancement as occasion may require. We shall avoid litigation as much as possible by arbitration in the grange. We shall earnestly endeavor to suppress personal, local, sectional, and national prejudices, all unhealthy rivalry, all selfish ambition. Faithful adherence to these principles will insure our mental, moral, social and material advancement."

One of the chief aims of the organization is to bring producers and consumers, farmers and manufacturers, into direct and friendly relations; for this purpose co-operation is encouraged among farmers in the purchase of agricultural implements and other necessaries direct from the manufacturer. The organization therefore is maintained for social and economic purposes, and no grange can assume any political or sectarian functions without violating a fundamental principle of the organization.

DOMESTIC ECONOMY.

New Process for Preserving Meat.

Many attempts have been made to discover a process by which fresh meat can be so preserved as to bear transportation or storage for a long time in tropical countries and yet retain all its essential qualities. These attempts have rarely been successful, but it is now claimed that a process has been found which will keep meat sweet and sound for any length of time under any conditions of climate. Mr. Gaullieur, a merchant at No. 26 Cedar street, New York, interested in the process, gives the following history of it: For a number of years past Prof. F. Sacc, a professor of chemistry at Neufchatel, Switzerland, and a friend of Humboldt and Liebig, has been making experiments concerning the preservation of meat. Within a year his experiments have reached such a point as practically to demonstrate beyond doubt the success of his efforts. His process is cheap and simple. It consists merely in treating the fresh meats with the acetate of soda, dissolved in water, and poured over the meat like ordinary brine. Treated in this way the meat will bear any influence of climate. When it is desired to use the meat, all that is necessary is to soak it in hot water for a short time, when the acetate of soda will leave it.

In order to convince the practical business men engaged in the provision business on the Produce Exchange of the value of the process, Messrs. Gaullieur and Sacc submitted it to a test, the result of which is told in the following certificate:

On the 3d ult., Prof. F. Sacc, the recent inventor of a mode by which meat can be preserved perfectly fresh in any climate for an indefinite period, together with Messrs V. M. Yber and H. Gaullieur, called upon us to pack for them two barrels of beef. We have much pleasure in certifying that the beef was brought to our store fresh from the Washington market, and after having been subjected to this peculiar chemical process, was packed by us the same day and allowed to remain close by a stove in our office for two weeks in a temperature of about 70°. And that now on examination after its return from Havana, whither it had been shipped by us per steamer Vera Cruz, we find the meat perfectly sound, in no way unpleasant or disagreeable to the taste on being cooked, and that it has preserved all the freshness of its color and appearance that it presented at the time of being put up.

Mr. Gaullieur also sent a barrel of the meat to Key West, Fla., where a sample was taken by the agent of Mallory's steamship line, who also approved the condition of what he ate. The barrel was returned to Mr. Gaullieur who now has it on exhibition. Messrs. Mallory & Co. have made arrangements for a supply to be used on their vessels instead of the salt meat heretofore given to the crew. The process costs about one cent per pound of meat.

Fruit and Vegetables by Weight.

Only the other day we marketed a load of onions and sold them by measure. We have a standard bushel basket and measured twenty-five bushels. Arriving at the grocer's, as he had stepped out for a few moments, leaving a little girl in the store, we unloaded our onions with a basket that stood by the door, and had them in the cellar when he returned. They measured out twenty-seven bushels and a half. The grocer looked at the basket and then inquired with a dissatisfied air, "Have you given good measure?" "Yes, as much as the basket would hold." The money was paid for them, but we saw that his bushel basket was a sale basket and not the one he used in buying.

The truth is, there is no justice in our measurements of vegetables and fruits, and just as long as measures are employed there will be injustice. The baskets sold for bushel baskets are not of the same capacity. The fruit baskets have diminished in size from a bushel down to a peck, and scant at that. There being no standard in the matter, each producer suits himself as to size. We maintain that the only satisfactory way of handling produce is to bring everything to the test of a scales—potatoes and peaches as well as corn and wheat. Purchasers have in their power to correct the prevalent system, and while there is so much talk about specie basis let us also have a pound basis.—*Detroit Free Press.*

Keep the Feet Warm.

Many of the colds which people are said to catch commence at the feet. To keep those extremities warm, therefore is no effect an insurance against the almost interminable lists of disorders which spring out of a "slight cold." First, never be tightly shod. Boots and shoes when they fit closely press against the foot and prevent a free circulation of the blood. When, on the contrary, they do not embrace the foot too tightly the blood gets fair play, and the places left between the leather and the stockings with a comfortable supply of warm air; second rule is never to sit in damp shoes. It is often imagined that unless they are positively wet it is not necessary to change them while the feet are at rest. This is fallacy; for when the least dampness is absorbed into the sole it is attracted nearer to the foot itself by its own heat, and thus perspiration is dangerously checked. Any person may prove this by trying the experiment of neglecting this rule, and his feet will become cold and damp after a few moments, although, taking off the shoes and warming it, it will appear quite dry.

KEEPING MEALS WAITING: Little things often interfere with our comfort very much, and one small annoyance is for men to delay coming to dinner when called. Sometimes they have an hour or more of work which they will do before quitting, and then they go to the house to find the dinner cold and the cook discouraged. Nothing is more disheartening to a tired woman than a table full of dirty dishes ornamenting the table an hour and a half later in the day than usual. Punctuality is a virtue that men should learn, if they are in the habit of being uncertain about coming to meals. Any woman worthy the name housekeeper will be regular with her meals if it lies within her to have them so.

A NEW INDUSTRY has sprung up in France by which common chicken feathers are utilized and converted into a valuable product. The operation is to cut the plume portion of the feathers from the stems by means of ordinary hand scissors; the stems placed in a common bag, which, when full, is closed and subjected to a thorough kneading with the hands. At the end of five minutes it is stated that the feathers become disaggregated and felted together forming a down perfectly homogeneous and of great lightness. It is even lighter than natural elder down, and sells in Paris for about two dollars per pound. It is another illustration of the French talent for utilizing everything.

Red Pepper and Vegetables.

A piece of red pepper, the size of your finger nail, put into meat or vegetables when first beginning to cook, will aid greatly in killing the unpleasant odor arising therefrom. Remember this for boiling cabbage, green beans, onions, chickens, mutton, etc.

Household Recipes.

DRIPPING CAKE.—Mix well together two pounds of flour, a pint of warm milk and a tablespoonful of yeast; let it rise about half an hour, then add half a pound of brown sugar, a quarter of a pound of currants and a quarter of a pound of good fresh beef dripping; beat the whole well for nearly a quarter of an hour and bake in a moderately hot oven.

APPLE COBBLER.—Pare, core and slice twelve large tart apples; add to them the juice of two lemons, grated peel of one, and sweeten to taste; stew very slowly for two hours, and then turn into a mould. When cold, serve with cream.

DELICIOUS ROLLS.—Half a teacup of butter, mix well with one pound of flour, half teacup of yeast, a little salt and enough milk to make a good dough. Let it set in a warm place for about two hours to rise. Then make into rolls and bake in an oven.

APPLE JOHNNY CAKE.—Scald one quart of fine or medium corn meal with one quart of boiling water, and add one pint of sweet apples, pared, cored and chopped. Mix evenly, spread one inch thick on a tin, and bake forty minutes in a quick oven, or until the apples are tender. Serve warm.

GRAHAM SODA BISCUIT.—One quart of Graham flour, one teaspoonful of soda dissolved in two-thirds of a teacupful of molasses; mix with milk and water.

JUMBLES.—One and one-fourth pounds of flour, three-fourths of sugar, three eggs, a little nutmeg, three-fourths of a pound of butter. Roll them in sugar.

HARD GINGERBREAD.—Four pounds of flour, three of sugar, one and a half of butter, one-fourth of a pound of ginger, ten eggs, one teaspoonful of saleratus; seeds if you like.

RICE JELLY.—Stir one pound of rice flour with a half pound of loaf sugar into a quart of boiling water; let it cook slowly for twenty minutes and put into a form to cool. To be eaten with beaten cream, milk or wine sauce.

BRIGHTON BISCUIT.—One cup of butter, two of sugar, two eggs, half a cup of milk, one teaspoonful of soda, and sufficient flour to roll out thick. Sift granulated sugar over the top before baking, to give them a sparkle.

CITRON CAKE.—Eight eggs, their weight in flour, the same of sugar, the weight of five in butter, a little mace; chop some citron fine and put in a layer of cake and a layer of citron alternately.

RYE AND INDIAN DROP CAKES.—One pint of Indian meal, one-half pint of rye meal, two eggs, two spoonfuls of molasses, a little salt; work it with cold milk so as to drop from a spoon into hot fat; be sure to have a smooth batter.

POOR MAN'S CAKE.—One cup of sugar, one cup of milk, one tablespoonful of butter, one teaspoonful of dry cream of tarter, one-half teaspoonful of soda dissolved in milk, one egg, a little cinnamon, and flour to make it as stiff as pound cake.

RECEIPT FOR MAKING INK.—The *Scientific American* gives the following receipt for the manufacture of writing ink: Twelve ounces nutgalls, eight ounces each sulphate of indigo and copperas, a few cloves, four or five ounces gum arabic, for a gallon of ink. The addition of the sulphate of indigo renders the ink more permanent and less liable to mould. It is blue when first written with, but soon becomes an intense black.

TO PURIFY DAMP CLOSETS.—For damp closets and cupboards which generate mildew, a trayful of quicklime will be found to absorb the moisture and render the air pure; but of course it is necessary to renew the lime from time to time as it becomes fully slaked. This last remedy will be found useful in safes and strong rooms, the damp air of which acts frequently most injuriously on the valuable deeds and documents which they contain.

GENERAL MISCELLANY.

Bermuda Grass Growing in Favor.

One of your correspondents of late cites an instance of hay being made from Bermuda Grass, and you ask for further information. It was once almost universally looked upon by planters of the South as a great curse; now it is beginning to be valued at its true and great worth. The peculiarities of this grass are that it will grow in poor soil, and will stand the most lengthened drouths. The lawn around the old Capitol at Milledgeville, Ga., was frequently admired and remarked upon for its perpetual verdure. It was a mixture of blue grass and Bermuda; in summer the blue grass dried before the constant heat and the Bermuda flourished, while in the mild winter both flourished, but specially the blue grass. At the Thomasville meeting of the Georgia State Agricultural Society, Mr. B. L. Lumsden, of Macon, Bibb county, told his experience in making hay with various grasses. He believes Bermuda to be the best grass for that section (Middle and South Georgia) for pasturage and hay, and that it is one of the best for renovating the soil. He got 10,000 pounds an acre in two cuttings from fairly good land; a gentleman near him cut from thirteen acres enough to sell for $393 at the price of $18@20 per ton, unbaled, in Macon. Later in the season this same is worth $1.50. Dr. Moody of Greene county, Ga., reported to the State Agricultural Society that he cut 13,333 pounds from one acre. Dr. Pavanel, near Charleston, by the use of superphosphates, produced eight tons of very superior Bermuda grass hay from an acre. Mr. Lumsden says it can be cut three or four times in a season. This grass is propagated in the South by the roots, in the Bermuda Islands it has a seed. Its botanical name is Cynodon dactylon, and it is said to be the sacred grass of India. The Rev. C. W. Howard, now at Rising Farm, Dade county, Ga., in his excellent little pamphlet on "The Grasses of the South," gives it a prominent place, and cites many instances of its value, and concludes that the old fields of the South may be restored to their original fertility with Bermuda grass and sheep.—*H. E. C. Kingston, Tenn., in N. Y. Tribune.*

Educating Horses.

Horses can be educated to the extent of their understanding as well as children, and can be as easily damaged or ruined by bad management. We believe that the great difference found in horses as to vicious habits or reliability comes more from the different management of men than from variance of natural disposition in the animals. Horses with high mettle are more easily educated than those of less or dull spirits, and are more susceptible to ill training, and consequently may be as good or bad, according to the education they receive.

Horses with dull spirits are not by any means proof against bad management, for in them may often be found the most provoking obstinacy; vicious habits of different characters that render them almost entirely worthless. Could the coming generation of horses in this country be kept from their days of colt-hood to the age of five years in the hands of good, careful managers, there would be seen a vast difference in the general characters of the noble animals.

If a colt is never allowed to get an advantage, it will never know that it possesses a power that man cannot control; and if made familiar with strange objects, it will not be skittish and nervous. If a horse is made accustomed from his early days to have objects hit him on the heels, back and hips, he will pay no attention to the giving out of harness or of a wagon running against him at an unexpected moment.

We once saw an aged lady drive a high-spirited horse attached to a carriage, down a steep hill, with no hold-back straps upon the harness, and she assured us that there was no danger, for her son accustomed his horses to all kinds of usages and sights that commonly drive the animal into a frenzy of fear and excitement.

A gun can be fired from the back of a horse, an umbrella held over his head, a buffalo robe thrown over his neck, a railroad engine pass close by, his heels bumped with sticks, and the animal take it all as a natural condition of things, if only taught by careful management that he will not be injured thereby. There is a great need of improvement in the management of this noble animal; less beating and more of education.—*In-Door and Out.*

Salt for Domestic Animals.

Salt is not only a mild aperient or deobstruent, but it operates, to some extent, as a tonic. It is a very great rectifier of the acidity of the stomach when taken in proper quantities; and it not only renders very palatable food which would be disagreeable and insipid without it, but it keeps the functions of the stomach in a healthy state, and often alleviates the effects of debility and disease. The true way is to have a tub of salt placed where cattle, horses, and sheep can have access to it at all times, whether they are in the pasture or in the barnyard. Then when the appetite calls for a lick of salt, they can go and get it, at the very time it is most needed, and when it will exert the most beneficial effect on digestion or any part of the system.

A good plan is to keep salt in a small tub or strong, water-tight pail in the pasture during the pasturing season, and in the yard during winter. Animals will not consume as much when they are supplied with it in this way as they will when they are salted once or twice during a week. It is slovenly and wasteful to throw salt on the ground for animals, and especially for sheep, as they will often waste half as much as they consume.

For salting sheep, drive three or four high stakes around a pail, or small tub, leaving one side only, so that they can thrust their heads separately into it. For cattle and horses, encircle the tub with a lot of boulders as high as the top of it, or drive a half dozen strong stakes around it letting them extend above it a few inches, to protect it from being pawed to fragments. If the tub is water-tight, in case it should rain in it there will be nothing lost, as they will lick the salt water as they will the salt; and should the water evaporate, the salt will remain. When sheep or neat cattle are kept in pasture where there is much clover (*trifolium pratense*), they usually have a great hankering after salt; and if they can have access to it, they will go and lick, more or less, several times during the day; and they will rectify the acidity of the stomach, and keep them from bloating. Many a farmer has lost a fine animal, in consequence of bloating, which one pound of salt would have kept in good health.—*Scientific American.*

Winter Yard for Sheep.

One of the important things in the winter care of sheep is, that the yard where they are allowed to run should be absolutely well littered and dry. They never should be compelled to move about or stand in yards that are covered with muddy litter, much less the actual mud itself. It is sometimes difficult in the West, with our changeable winters, with alternate freezing and thawing, to keep the yard in proper condition without using a large amount of litter.

It should, however, be done at any cost of material, and when once there is a sufficient layer of straw in the litter, the subsequent quantity will be found to be but little. Since on most western farms there is always much straw that must go to waste, and since also the litter and drippings make most valuable manure, it will be found to be economy in the end, from this point of view.

Besides this, the clean outdoor bed to stand on in wet weather, and the clean and warm one in cold weather, will so promote their well being, and consequently health, as to prevent the occurrence of those diseases incident to sheep that must be subject more or less to wet, and, at certain seasons of the year, spongy pasture.

Muddy yards prevent sheep, and, indeed, all animals, from moving about and taking the exercise absolutely necessary to comfort and health. The absolute dryness of the yards is especially susceptible to foot rot, fouls and other diseases incident to mud and uncleanly care.

If a little straw be scattered over the yard at proper intervals after the first good coating is given in the autumn, the sheep will pick a little of the better portions, and be all the better for what they tread under foot.—*Western Rural.*

Stock-Keeping on Small Farms.

It is stated in the report of the French Minister of Commerce, that in the department of the Nord, the smallest farms support the greatest number of animals. While the small farms of Lille and Hazebrouck, besides a greater number of horses, maintain equal to fifty-two and forty-six head of horned cattle, the larger farms of Avesnes sustain only forty-four to fifty head. But the small farms cannot support as many sheep in proportion as the larger, because sheep require frequent change of pasturage.

Some later statistics prove the point more clearly that small farms are capable and do sustain a larger proportion of manure-making animals. In the department of Puy de Dome, Dr. Jusserand says the commune is divided into 4,600 parcels, owned by 591 proprietors. In 1790 seventeen occupied two-thirds of the whole, and twenty others the remainder. Since then, the land has been much divided, and the sub-division is now extreme. What has been the effect on the quantity of cattle? A considerable increase. In 1700 there were about 300 horned cattle, and from 1,800 to 2,000 sheep; there are now 676 of the former, and only 533 of the latter. Thus 1,300 sheep have been replaced by 376 oxen and cows; and the quantity of manure has increased in the ratio of 400 to 729, or more than 48 per cent., not to mention that the animals, being now stronger and better fed, yield a much better contribution than formerly to the fertilization of the ground. Such is the testimony of facts on this point; and it will be, and, we think, that if all the facts bearing upon the subject of large and small farming are once collated and estimated fairly, the advantages will turn in favor of the small farms.

Yard for Pigs.

I believe that the one great reason why pigs do not prove more profitable on a great many farms is, because they do not have enough clean yard-room in which to run and forage. Too often they are confined to a small pen and a very small yard, both of which are dirty. They have not even a clean grass spot, or grass or other green food to eat, but must constantly stay in a close yard or pen. For large hogs this restriction is injurious, but for little pigs it is very much worse. Young animals want liberty to exercise their muscles and clean grass on which to feed. A few farmers let their pigs run at will, but they are apt to do a great deal of mischief. One of my neighbors, who raises a great many pigs, used to let them run into my garden, corn and potatoes, tread down my grass, and they did a great deal of damage to my crops; but he always had nice pigs, and there was no evident reason except that he allowed them full liberty out of doors. Now, I do not approve of having a drove of pigs running through gardens and crops, but I think it would pay even small farmers to fence in an eighth or a fourth of an acre of land adjoining

their hog-yards, and let their pigs run a part of the time every day in this inclosure. When they get large enough to root turf land, they can be shut into their ordinary yards or else have the tendons of their noses cut or rings put in to keep them from doing mischief. But whether it is used for large hogs or not, it would certainly pay farmers who raise many pigs to furnish them such a yard.—*Live Stock Journal.*

The Cheese Production.

A writer in *Harper's Magazine* gives some very interesting facts in relation to the astonishing growth of American cheese production. In 1850 the cheese aggregate value of the butter and exported from this country amounted to only $334,000. About this time a farmer in Oneida county, N. Y., named Jesse Williams, originated the cheese factory system, and his success was so great that farmers in other sections of the State began to follow his example. The system developed so rapidly that there are now five hundred cheese factories in New York alone, and in the entire country about ten times that number. As a result the exports of cheese in 1861 amounted to $3,323,631, and continued to increase until in 1874 they reached $12,000,000, and for 1875 the figures will be larger still. In 1874 the exports of cheese from the port of New York amounted to 96,834,691 pounds, and Canada in the same year exported 20,000,000 pounds. The principal cheese producing States are New York, Ohio, Vermont, Illinois and Massachusetts. Cheese is a very nutritious article of food and the best substitute for meat. The scarcity of meat in England and other European countries, has led the laboring classes to adopt cheese as a substitute, and to this fact is largely due the increased demand for the product of our American cheese factories.

Lice on Poultry.

J. H. Fry, of Pilatki, Florida, in a letter to the *Poultry Bulletin*, says: "I noticed in your June number a communication from E. G. Lathrop, complaining of lice on his fowls; I have kept poultry for years, and some seasons have been troubled more than others with lice. I don't think I ever saw them worse than this season. I have lost some valuable eggs by the hens being driven from their nests by lice—also lost two hens from the same cause. I have tried almost everything, and failed, until it occurred to me to use tobacco stems mixed with a little bay; and to test it more thoroughly, I removed a hen that was literally covered with lice, and in a few days would have had to run. I cleaned the eggs and put her in a fresh box, and to-day, June 14th, I can positively assert that she came off clean, with several fine Partridge Cochins, and not a single louse could I see on removing her from the box. I have put tobacco stems in all my laying, and I am so much pleased with the experiments and results so far, that I should like to hear that some of our fanciers or breeders, whose fowls are troubled with vermin, had tried the above remedy for themselves.

Dominique Fowls.

The London *Field* says of this variety, which it denominates American: There are two or three useful and good breeds of poultry that are known in England. One of the oldest established, and certainly one of the most useful, is the Dominique. This breed more closely resembles our Cuckoo Dorking than any other English variety. It differs, however, in having only four toes—a great advantage, by the way, in a practical point of view—and in the legs being yellow. The Dominique cocks are very showy birds, with full saddles and hackles, and abundant well-matched sickle feathers. They should weigh from six to eight pounds when mature. As table fowls they should necessarily be short-legged, full-breasted and broad in the back. The ear lobes should be red, and the wattles and comb neat; the former of medium size. The merits of this breed will recommend them to persons residing in the country, as well worthy of promotion in the poultry yard, whether as makers of eggs or of meat; as sitters or nurses, they are invaluable.

Agricultural Life in Missouri.

What can be pleasanter, says an exchange, than the life of a Missouri farmer? At daylight he gets up and examines the holes around his corn hills for cut worms, then he smashes coddling moth larvæ with a hoe handle until breakfast. The forenoon is devoted to watering the potato bugs with a solution of Paris green, and after dinner all hands turn out to pour boiling water on the chintz bugs in the corn and wheat fields. In the evening a favorite occupation is smudging peach trees to discourage the curculio; and after a brief season of family devotion at the shrine of the night-flying coleoptera, all the folks retire and sleep soundly till Aurora reddens the east and the grasshoppers tinkle against the panes and summon them to the labors of another day.

LITERARY AND BUSINESS NOTICES.

The Rural Journal. This is a neat eight-page quarto, published by Hiram Young, esq., York, Pa., at fifty cents a year, the first number (for January, 1876) of which is now before us. The *Red Rose* of Lancaster extends friendly greetings to the *White Rose* of York, and recognizes in its representative journal a faithful fellow laborer in the cause which has for its specialty the moral and physical progress of the American farmer. Mr. S. B. Heiges is the agricultural editor, "assisted by a corps of able contributors," and if these auxiliaries can be secured and continued, the *Journal* must be a success, for if the farmers of our neighboring county do not become impressed with the high tone and sterling quality of their local agricultural press, they are not the stuff we have been taking them for.

Report of the Pennsylvania Fruit Growers Society. This is a royal octavo pamphlet of fifty-six pages, in covers, containing the proceedings of the meeting of the society, held at York, beginning Jan. 20, 1875. In addition to the transactions of the society the president's annual address, and the various essays read before it; it contains a full-page illustration of the leaf and fruit of the *Christine* or *Telegraph* grape, and full-page, uncolored, illustrations of *Hale's Early* and *Susquehanna* peach; a seedling pear, raised by S. B. Heiges *Cornell's Fancy* and *Belmont* apple and the *Golden Drop* plum. The paper, printing and engraving are of a good quality and execution, and on the whole, is a credit to the society and its efficient officers.

Somebody has sent us a copy of "Josh Billings' (Sentenial) Farmers Allminax," for 1876, on the title page of which, in his peculiar orthography, he says: "The kalkulashuns on this allminax are made for the latitude, and longitude; and sanktitude of Independene Hall, Philadelphia." Perhaps there is no writer of the present period who lets off more significant, domestic and social truths, in his own peculiar and popular way, than this same Josh Billings. The following advice is certainly appropriate to the present *fast* age: "Go slo young man; if you tap both ends of your cider barrel at once, and draw out of the bung hole besides, your cider ain't a going to hold out long." That's just as plain as "open and shut."

The Health Reformer for December is decidedly the best of the year. Besides a rich variety of instructive articles on health topics it contains a large amount of interesting matter under the head of Literary Miscellany, and Popular Science. The Farm and Household and News Departments, two new features, add greatly to the practical utility of the journal. It is one of the best family papers published, and ought to be in every family in the land. Published at Battle Creek, Mich., at $1.00 a year. Specimen copies free.

We have received from J. B. Root, Seed Grower, Rockford, Ill., his Garden Manual and Seed Catalogue, and take pleasure in calling attention to a work of so much value to every owner of a garden and every lover of flowers. It is filled with practical hints and instructions derived from a large experience as a market gardener and a florist, and contains half as much matter as $1.50 works on the subject. It is sent to applicants for 10 cents, which amount is allowed on the first order for seeds. See advertisement in another column.

The annual Vegetable and Flower Seed Catalogue of Gregory, the well-known seedsman of Marblehead, Mass., is advertised in our columns. We can endorse Mr. Gregory as both honest and reliable. The bare statement of the fact that he grows so large a number of the varieties of seed he sells, will be appreciated by market gardeners, and by all others who want to have their seed both fresh and true.

Attention is directed to the advertisement of Ellwanger & Barry, Nurserymen, Rochester, N. Y. They are well known, and acknowledged to be the largest and most successful growers of Fruit and Ornamental trees, Shrubs and Plants, in the United States.

THE PROGRESS OF INVENTION.

Official List of Patents,

Relating to the Farm, the Dairy, Apiary, &c.,

For the month ending January 7th, 1876.*

Corn Planters; J. B. Abbott, San Jose, Ill.
Cheese Preservers; J. G. Black, Lextonville, Wis.
Harvesters; Jas. O. Brown, Massillon, Ohio.
Bee Hives; Orson Colvin, Vicksburg, Michigan.
Furrow Gauges for Plows; B. B. Hawes, Morrisville, Vermont.
Gang Plows; Frank A. Hill, San Leandro, Cal.
Corn Markers; John McGregor, Princeville, Ill.
Corn Harvesters; Jacob Townsend, Eagletown, Ind.

*Prepared expressly for The Lancaster Farmer by Louis Bagger & Co., Solicitors of Patents, Washington, D. C., from whom complete copies of the Patents and Drawings may be obtained.

Grain Separators; W. W. Johnston, Summitville, O.
Potato Diggers; W. R. Martyn, San Francisco, Cal.
Harvesters; L. J. McCormick, Chicago, Ill.
Cultivators; Thos. J. Price, Macourt, Ill.
Operating Prison Doors; R. Richter, Indianapolis.
Corn and Seed Planters; H. P. Sullivan, Xenia, Ill.
Harvester Rakes; H. H. Bridenthal, jr., Latrobe, Pa.
Harvester Rakes, S. F. Cranston, Lansingburg, N. Y.
Harvesters; Jean P. Delseseaux, Milbrae, Cal.
Potato Diggers; Nathaniel Rugg, Richmond, Va.
Milking Pails; A. M. Bailey, Middlefield, Conn.
Corn Planters; Alex. Hearst, Peoria, Ill.
Sulky Plows; Geo. Moore, Fayette, Oregon.
Processes for Preserving Eggs.
Butter Packages; H. P. Adams, Cleveland, Ohio.
Milk Pails; John Amole, Buckley, Ill.
Plows; Thos. E. C. Brinley, Louisville, Ky.
Cultivators; Herman D. Green, Ithaca, N. Y.
Seat Guards for Harvesters; E. Hale, jr., Chicago, Ill.
Harvester Cutter; P. Howell, Buena Vista, Pa.
Grain Separators; C. B. Nichols, Troy, Pa.
Harvester Rakes; W. N. Whiteley, Springfield, O.
Grain Binders; Jno. J. Atwater, Mepford, Minn.
Milk Coolers; Bruce C. Bort, Chateaugay, N. Y.
Portable Hay Presses; M. McCarty, Puebla, Col.
Rotary Spade Cultivators; D. W. Brodnax, sr., Rockdale, Texas.
Mowing Machines; Wm. C. Douthett, Springdale, Pa.
Check Row Planters; William H. Johnson, Farmers City, Ill.
Beaters for Cotton-Openers; Richard Kitheon, Lowell.
Bee-Hives; Elvin Armstrong, Jerseyville, Ill.
Processes of Preparing Preserved Fruit; John F. Bossford, New York, N. Y.
Grain Conveyer Shafts; Henry I. Chase, Peoria, Ill.
Fences; Wm. A. Couch, Hannibal, Nev.
Corn Uncoverers; Hugh N. Gilchrist, Swan Creek, Ill.
Corn Planters; Conrad Goneiner, Dale, Wis.
Plowing and Seeding Machines; D. McVaw, Gallatin, Texas.
Plows; Joseph Philip, Smithton, Ill.
Butter-Carriers; B. F. Roberts, Benington, Vt.
Gang Plows; Timothy M. Shaw, Lebanon, Tenn.
Hay Loaders; Chas. M. Young, Meadville, Pa.
Sway Bar Guides for Harvesters; W. R. Baker, Chicago, Ill.
Grain Separators; D. H. Caswell, Nashville, Tenn.
Seed Planters and Fertilizer Distributer; M. P. Curlee, Corinth, Mass.
Fences; John Dwyer, Marion, Ohio.
Hand Seed Planters; Thomas J. Hubbell, Napa City, Cal.
Reciprocating Churns; Wm. McKinley, Bellaire, O.
Cultivators; E. B. Moore, Bell's Mills, Ala.
Feeding Belts and Partitions for Corn Shellers; Wm. B. Quarton, Fremont, Ohio.
Corn Drills; John R. Rude, Liberty, Ind.
Grain Separators; C. F. Butterfield, Garden City, Minnesota.
Adjustable Locks and Dogs for Hay Elevators; J. R. Fitshous, Centre Hill, Pa.
Grain Meters; B. M. Pulliam, Toleno, Ill.
Reel Rakes for Harvesters; R. C. Taylor, Lockport, N. Y.
Milk Coolers and Heaters; M. L. Bush, Huntington, O.
Self-Rakes for Reapers; S. B. Gilleland, Salisbury, Mo.
Potato Bug Destroyers; Isaac W. Griseom, Woodbury, N. J.
Corn Husking Implements; H. W. Hill, Decatur, Ill.
Plows; Henry H. Hubley, Manorville, Pa.
Manufacture of Grain-Cradle Fingers; C. P. Kelsey, Richmondville, N. Y.
Grain Separators; L. Thesbald, Plainwell, Mich.
Churn Dashers; John R. Underwood, Nelsonville, O.
Wheel Harrows; F. Bramer, Little Falls, N. Y.
Churn Dashers; R. M. Case, Auburn, N. Y.
Plows; N. G. Pinney, New Hudson, Mich.
Combined Reels and Rakes for Harvesters; A. Stoler, Philadelphia, Pa.
Hooks for Harrows; J. D. Tracy, Sterling, Ill.
Plows; John Worrell, Clayton, Ind.
Bee-Hives; Daniel Cox, Kingston, Mo.
Convertible Revolving Harrows; Benj. G. Devoe, Kenton, Ohio.
Milk Coolers; N. D. Ferguson, Carthage, N. Y.
Grain Separators; Lewis W. Hasselman, Indianapolis, Ind.
Potato Diggers; Robert Reydemann, Krebsow, Prus.
Clover Separators; G. F. Metzger, West Fayette, N. Y.
Milk Coolers; Isaac H. Wanzer, Elgin, Ill.
Churns; Daniel McCarty, Crappers Depot, Ky.
Guano Distributars; J. T. Horton, Widemans, S. C.
Apparatus for Storing and Preserving Grain; Hans P. C. Lassen, Chicago, Ill.
Gang Plows; J. R. McCormick, Georgetown, Texas.
Corn Stalk Knives; Peter C. Moore, La Fayette, O.
Portable Fences; I. W. Pancoast, Libertyville, Iowa.
Drag Rake Handles; Hugh Smith, Passumsic, Vt.
Portable Fences; Horace Tell, Bristol, Md.
Churns; James Watson, Port Colborne, Canada.
Stump Extractors; J. A. Hart, Lionesta, Pa.
Horse Rakes; Chas. B. Perkins, Kenduskeag, Me.
Cultivators; Joshua Pierpont, Bushnell, Ill.
Horse Rakes; Wm. C. Raynor, Milwaukee, Wis.
Sulky Plows; H. Richardson, Janesville, Wis.
Plows; John Sewell, Bowdon, Ga.
Drills and Fertilizer Distributors; Aladan S. Wishart, Lumberton, N. C.

OUR FENCE CORNERS

The Lancaster Farmer.

The December number of THE LANCASTER FARMER, concluding the seventh volume of that most excellent journal, has been received. We cannot say that this is a holiday number, because all the issues of THE FARMER are of such a character that even the holidays are unable to improve the constant superiority of this favorite home paper. The present number contains an index to the volume which is just concluded; more than one thousand separate articles have appeared in its handsome pages during the year, having direct bearing on every branch of farm economy and containing a wealth of useful and necessary information to the honest tillers of the soil, that will repay them an hundred fold for the subscription outlay. Its conscientious editor has spared no labor, as its columns show, to keep it in the front rank of agricultural journalism; it should be a regular visitor in every Lancaster county farmer's home. Think of it, farmers! only $1 per year is asked for this home organ! Don't suppose the contents are on a level with the price! The latter is purposely fixed at a sum which leaves you no excuse to do without it; if you take it one year you will never give it up. Take our advice and begin the new year by sending $1 with your name to Pearsol & Geist of Lancaster, and you will have made the best investment of the year.—*New Holland Clarion.*

Somebody has said, that if you want to know the real character and quality of a man, all you have to do is to inquire of his family or among his neighbors, and that *their* testimony will be a nearer approximation to what he is than all the world outside of them. This may be drawing the lines too strong, nevertheless a great truth may be lying, in many instances, somewhere in that direction. In any event, *we* feel more satisfaction in the good opinion of those who *know* who and what we are, than in those who know us only from reputation, although we by no means ignore an honorable reputation. We cordially "clasp hands" with our appreciative brother of the *Clarion*, and hope that we may never fall short of the endorsement of one so well qualified to speak in any behalf. We commend his paper as a "tip-top" local journal, and one that must ultimately work its way to an extended public favor. The New Holland *Clarion* is a "live" paper, and is willing to "let live," by a manly recognition of the perfections of others, and a charitable criticism of their defects. Our efforts shall ever be to keep THE FARMER at not less than its present standard, and if our friends vouchsafe the needed aid we honestly assure them it shall be vastly more, for our motto is "*Upward and Onward.*"

How to Keep a Subscriber.

An indignant farmer recently entered the office of the Elizabeth *News*, and ordered his paper stopped because he differed from the editor in his views regarding the advantages of subsoiling fence rails. The editor, of course, conceded the man's right to stop his paper, but he remarked coolly, looking over his list:

"Do you know Jim Sowders down at Hardscrabble?"

"Very well," said the man.

"Well, he stopped his paper last week, because I thought a farmer was a blamed fool who didn't know that timothy was a good thing to graft on huckelberry bushes, and he died in four hours."

"Lord, is that so?" said the astonished granger.

"Yes, and you know old George Erickson, down on Eagle Creek?"

"Well, I've heard of him."

"Well," said the editor gravely, "he stopped his paper because I said he was the happy father of twins and congratulated him on his success so late in life. He fell dead within twenty minutes. There are lots of similar cases, but it don't matter; I'll just cross your name off, though you don't look strong, and there's a bad color on your nose."

"See here, Mr. Editor," said the subscriber, looking somewhat alarmed, "I believe I'll just keep on another year, 'cause I always did like your paper, and come to think about it, you're a young man, and some allowance orter be made," and he departed, satisfied that he had made a narrow escape from death.

"Bankrupt."

The word in Italian was *banco rotto*, or broken bench. It was used by the money changers in Italy who did business in benches or stalls in the Exchange, and when any fell back or became insolvent, his bench was broken and he was called a *banco rotto*. When the word was adopted into English, it was nearer the Italian than it now is, being "bauker-out."

A YOUNG GENTLEMAN remarked to his female companion, the other evening, "Ah! the most beautiful evening in my recollection. Luna looks peculiarly beautiful." "Was that her just went by?" quickly asked the young lady.

$1 a Year { To subscribers in the county. SINGLE COPIES 10 CENTS. To subscribers out of the county. $1.25.

THE LANCASTER FARMER

DEVOTED TO AGRICULTURE, HORTICULTURE, DOMESTIC ECONOMY AND MISCELLANY.

"THE FARMER IS THE FOUNDER OF CIVILIZATION."—WEBSTER.

Prof. S. S. RATHVON, Editor. LANCASTER, FEBRUARY 15, 1876. PEARSOL & GEIST, Publishers.

FAMILIAR TALK WITH THE READER

It is with a feeling of pride that we refer to the varied and substantial character of the contents of this issue of THE LANCASTER FARMER. We think the practical farmer will sustain us in pronouncing it the most valuable number we have yet printed; and we have no hesitation in challenging the world to produce another agricultural publication which furnishes a greater amount or larger variety of valuable information for *less than ten cents*, which is all it costs its Lancaster county patrons. And it is gratifying to us to be able to give a large measure of the credit for the value of this issue to our many esteemed and practical contributors, the number of which are steadily on the increase. We have, perhaps, issued numbers which were more attractive in the amount and variety of their illustrations, but none which contained more able articles from the pens of writers who are practically versed in the topics they discuss.

And with this issue of THE FARMER in the hands of our readers, who embrace many of the leading intelligent and progressive farmers of this great county, may we not be pardoned for appealing to them to make a special effort to increase its circulation? We frequently receive letters from distinguished agriculturists, horticulturists, and stock-breeders abroad, expressing surprise that such an able and valuable publication should confine its efforts mainly to securing home support. They say it is too good to limit its usefulness to the "pent-up Utica" of a single county: but these kind and appreciative friends do not consider that Lancaster county is an empire in itself—the richest agricultural county in the United States—containing material to furnish a subscription list of 5,000, with only one out of two of her farmers among its patrons. If only every second farmer in the county would become a subscriber, we would be able, with facilities already at command, to make THE LANCASTER FARMER the most beautiful and valuable publication of its class in the world, for such is the ambition of both editor and publishers. The bound volume for 1875, a limited number of copies of which can be furnished, is worth ten times its cost, and in a few years cannot be bought for any such sum. Then let every one of our present subscribers exert himself to send us one or more new subscribers, that we may be able to still further improve THE FARMER, until the farmers of Lancaster county can claim the credit of being represented in the field of agricultural literature by a publication which shall stand without a rival.

IMPROVED LIVE STOCK.

We take pleasure in calling the attention of our readers to the advertisement of W. Atlee Burpee, importer, breeder, and shipper of live stock. Mr. Burpee is a grandson of Dr. Washington L. Atlee, (brother of Dr. John L. Atlee, of this city,) well known to many of our readers. We believe there is no other man of his years who has won a more deserved and extended reputation as a reliable and conscientious breeder and dealer in the kinds of stock which he makes his specialties. We are very careful about what we commend in THE FARMER, and the judgment now given is based only on a thorough knowledge of the man and his ability to make good all engagements with his customers.

CONTENTS OF THIS NUMBER.

OUR FENCE CORNERS

THE OLD FARM HOUSE.

The easy chair, all patched with care,
Is placed by the cold hearth-stone;
With witching grace, in the old fire-place,
The evergreens are strewn,
And pictures hang on the whitened wall,
And the old clock ticks in the cottage hall.

More lovely still, on the window sill,
The dew-eyed flowers rest,
While 'midst the leaves on the moss-grown eaves,
The martin builds her nest,
And all day long the summer breeze
Is whispering love to the bended trees.

Over the door, all covered o'er
With a sack of dark green baize,
Lays a musket old, whose worth is told
In the events of other days;
And the powder-flask, and the hunter's horn,
Have hung beside it for many a morn.

For years have fled with a noiseless tread,
Like fairy dreams away,
And in their flight, all shorn of its might,
A father—old and gray;
And the soft winds play with the snow-white hair,
And the old man sleeps in his easy chair.

Inside the door, on the sanded floor,
Light, airy footsteps glide,
And a maiden fair, with flaxen hair,
Kneels by the old man's side—
An old oak wrecked by the angry storm,
While the ivy clings to its trembling form.

Why He Broke His Pledge.

"See here, Mr. Jonesby, do you know that you *cheated* me out of a pound and a half of *pork?*"

"Why no, I was not aware of it; but how? Mr. Smithers."

Why, you see, that the 200 pound pig that you promised me if I kept the pledge ten weeks, only weighed 198½ pounds.

Did it, indeed. Well, I am sorry for that, and will make good what it lacked.

"Its too late now; I have *smashed* the pledge. When a man don't keep his word with *me*, I don't keep my word with *him*."

Poor, wronged Mr. Smithers; fraudulent Mr. Jonesby. When will people ever get their rights?

When *pruiciles* and not *puyies* prevail.

Precocious boy, munching the fruit of the date tree—"Mamma, if I eat dates enough, will I grow up to be an almanac?"

An old lady from one of the rural districts, astonished a clerk in one of the stores a few days ago, by inquiring if he had any "yaller developments sich as they did up letters in."

A PRECOCIOUS boy was asked which was the greater evil of the two—hurting another's feelings or his finger. He said the former. "Right, my dear child," said the gratified questioner; "and why is it worse to hurt the feelings?" "Because you can't tie a rag around them," exclaimed the dear child.

A VERMONT genius is trying to manufacture false hair from basswood. It is to be hoped he will succeed. It will be more pleasant for a fellow to gaze from his pillow in the morning upon the switch hanging over the back of a chair and wonder what tree it came from, than to speculate upon what dead woman it was once attached to.

THE other day a German, leaning against a hitching post on Washington street, looked up at the sky and remarked: "I guess a leedle it vill rain some-dime pooty queek." "Yez do, eh?" replied an Irishman at his side. "Well, I want yees to understand that yees have no business to come over to America and say anything forninst the weather. What the devil do yees purtend to know about American weather, anyhow, ye furrin galoot?" The German had no more to say.

HE was a New Yorker. He had never seen the country before, and read when at school the great editor's "What I know about farming," and considered himself posted. He came to southwest Minnesota on business. A friend drove him out to see the country; they passed by a cornfield where some men were pulling corn. What is that? said the New Yorker. That is a field of corn, said his friend. What are those men doing? said yankee. They are pulling the corn, said his friend. Ah, I see, said yankee, they pull the corn off and let the sticks stand for another year. The subject was dropped.

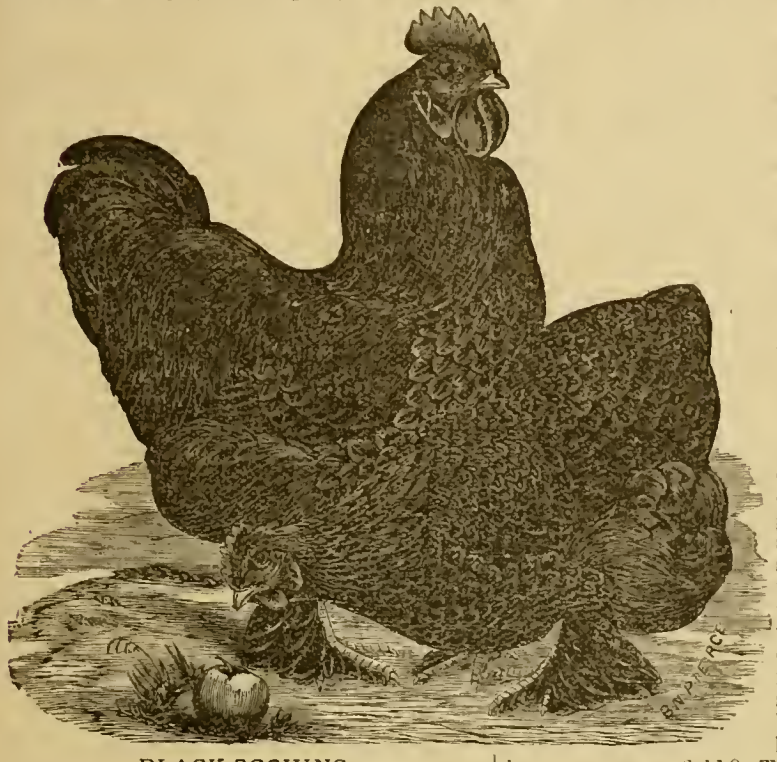
HENRY M. ENGLE, of Marietta, a valued contributor to THE FARMER, and well known over the State as a successful and enterprising fruit grower, met with a severe loss on the 25th of January in the destruction of his barn by incendiary fire, with all its contents, including twenty-nine head of cattle, involving a loss of $5,000, on which there was only $1,800 insurance. The stock, especially several head of Alderney cows, was very valuable, and the loss to Mr. Engle was a severe one; but he is a man of too much pluck to be discouraged by such reverses.

The Lancaster Farmer.

Prof. S. S. RATHVON, Editor. LANCASTER, PA., FEBRUARY, 1876. Vol. VIII. No. 2.

BLACK COCHINS.

We give herewith a pleasing illustration of a first-class pair of this variety, representing "Nicodemus" and "Jet," owned by Dr. F. W. Byers, Lena, Ill., who kindly furnished us the following notes in reply to a correspondent of our *American Fanciers' Gazette*, which, having sold, we will give the readers of THE LANCASTER FARMER the benefit of Dr. Byers' experience with this variety, in his own words. —*W. Atlee Burpee, Philadelphia, Feb. 5.* 1876.



BLACK COCHINS.

A writer in the August *Gazette*, speaking of Cochins, says the Blacks are very little known, only one pair being shown at the Provincial Exhibition at London. Mr. Wright, in his Illustrated Book of Poultry, gives this variety only a slight notice, seeming to consider them an inferior fowl as they are now bred in England. However, in the United States, and especially here in the West, they are regarded as a very superior breed.

At one of our poultry shows last winter, the number of entries of Blacks was equal to those of any other Cochin variety, and the display a very creditable one throughout. It is true they are not so large as the Buff, but careful breeding is bringing them to true shape and size. They are closer in feather, consequently do not show size like the loose feather fluffy Buff. In color they are glossy black, shading to bottle green, with bright red comb wattles and ear-lobe. They differ in shape and gait usually from the other Cochins, and by selecting such as conform to characteristics of Buff and Partridge, they are assuming the true Cochin type. The back is long, sloping to root of tail like a Game, and the tail itself is more like that of the Brahma. The legs are rather pearly, furnished with feathers, but to offset this we have never seen a vulture hock or any approach to it among the blacks. They are also free from "slip wings" and twisted feathers in wings, defects so common in many Asiatic families. If they are a *cross*, as some contend, it is our opinion that they carry some Game blood. They are sprightly and active in their movements, splendid foragers, and are sure to come off "first best" in a fight with their cousins. Black Cochins breed more true to feather than anything we have seen kept in the poultry line—never throwing any brown or dingy colors. In some we find a little white in the underfeathering, which, by some of our poultrymen, is not considered objectionable, as black and white are corresponding colors. For this climate we do not believe they have any superiors. They possess extreme hardiness—seem to feel well when other varieties are pinched up with cold. They are a first-class table fowl, attain a fair size, and with little inclination to sit, are excellent layers. The young rear with very little attention, and when fully matured are, indeed, attractive and beautiful. The cock, especially, is an aristocratic, stately looking fellow, stands erect, presenting a very handsome and imposing appearance.—*Fred. W. Byers, Lena, Ill., January* 25, 1876.

TOULOUSE GEESE.

This variety is doubtless the largest known. Men in general have an aversion to geese, and we don't blame them either; for what could the little noisy, voracious, unruly common geese be considered on a farm but a nuisance, unless securely penned in some swampy field? This natural aversion we were not exempt from till we tried the magnificent Toulouse, and then it was changed to a liking for these geese. In appearance, they are noble and dignified, and will thrive without water to swim in, if plenty be provided for drink. They are never unruly, and can be fenced as easily as sheep; are very quiet, not noisy, and extremely hardy. They are good layers, averaging about forty eggs each, in a season, and are seldom broody. If the old stock is not kept fat, and after spring opens only on pasture and vegetables, without grain, nearly every egg will hatch.

The goslings are much stronger when young than the common, and are more easily raised than a pig. We use hens for hatching, and in summer have placed them on a fresh grass-plat, and reared them without any mother. Their growth is so rapid that at four weeks old they will weigh from six to eight pounds each, and at three months, from fifteen to eighteen pounds. At four weeks old they need no further housing, and can be taken from the nursery and placed in the open pasture to graze and shift for themselves, provided they have their regular meals of soft feed, which should be continued till they are three or four months old. In France and England, Toulouse geese are prized for their great size, excellent flesh, and abundant yield of soft, fine feathers, of which they will average about half a pound to the "picking," and would be profitable for this purpose. In the severest weather they require no shelter, and we never feed mature birds any grain when the ground is bare, where they have access to pasture fields.

In color, geese and ganders are exactly alike, viz: a uniform, handsome gray, with breast and underparts of body a shade lighter. They are so mild and tractable in disposition, and possess so many good traits, that they are profitable where they can be kept, and especially where grain and grass are cheap. There are hundreds of waste places upon which, with a trifling expense, large numbers of these geese could be raised. To show how prolific they are, we have known, for two seasons past, one hundred goslings to be raised each year from the eggs of eight females, besides a large number being sold for hatching purposes. For all purposes, the Toulouse should be voted the "goose of the period."—*The Poultry Nation.*

THE RED ECHYMYD.

(*Echymys rufus.*)

This animal is indigenous to Brazil, Guiana, and Paraguay, in South America. It is about the size of the common rat of North America, and is also called the "Spinous rat." It is a reddish gray in color, and the tail is flattened and somewhat shorter than the body. It constructs long subterranean burrows. It is allied to the "Dormice," the last group in the family SCIURIDÆ, according to CUVIER. It seems to be a connecting link between the squirrel family and the rat family. Like the "Dormouse," it also has four molar teeth, which differ, however, in formation from the animal named. The fur is somewhat rough, interspersed with short flattened spines or prickling quills. These animals are true RODENTS, or "gnawers," and their food and feeding habits are similar to those of squirrels, mice, and dormice. Their place is not unanimously, and, therefore, not permanently fixed, in the order of classification. There are two groups of these animals, belonging to the genus *Echymys*, one of which has hairy tails and the other scaly tails, the former being more nearly allied to the squirrels, and the latter to the common rats and mice.

THE HOUSE-MOTH.

The simple term *Moth* includes a multitude of different species of destructive insects, not even belonging to the same family or order; but it is presumed that every intelligent housewife knows what we mean when we say *House-Moth*. That there were, or may still be some who do not know a moth, even when they see it, we have seen ludicrously demonstrated on several occasions. On one particular occasion we entered a house and found the good lady thereof engaged in her "shaking up" and midsummer investigation of her previous winter blankets and woolen clothing, and mournfully deploring the ravages of the "pesky" house-moths. She painfully recognized their pernicious work, but she did not seem to have an intelligent idea of the little creatures that caused the havoc among her woolens; for just as we entered, she removed a bundle of old newspapers, and immediately seized a dusting brush, and with the back of it, in rapid succession, dealt a series of blows upon something that was as rapidly making its escape to some other place of concealment, as often as it was exposed to view. This, she alleged, was one of the "infernal moths," and she was determined to summarily extinguish it with the back of the brush. We ventured to admonish her that she was quite mistaken, and that any insect that could run as swiftly and hide as quickly as the one she was pursuing, could not possibly be the one that had so effectually scored her blankets and woolen clothing—that the real author of the mischief never made any attempt to run away, and indeed could not run. We called her attention to the true moths, on the carpet, on the walls, and on the furniture, slowly dragging their variously colored woolen cases along in the direction of the places from which they had been dislodged; and which, on the slightest disturbance, would draw in their heads and collapse the ends of their cases.

Hers had been a sort of "wild-goose chase" after a species of *Lepsima*, those three-tailed, silvery-scaled, swift-running, degraded NEUROPTERA, which, whatever else they are guilty of, are not very formidable as the destroyers of blankets and woolen clothing; although it is said they will occasionally eat woolen cloth, and the surface of photographs.

"As the winter passes away and the genial sun once more pours his warm rays over the earth, making all things bright and cheerful, blankets, overcoats, wraps, furs, and all articles that can comfortably be dispensed with, will be laid aside for those of thinner texture." And here is just where a rational caution should be observed in regard to the articles thus laid aside during the summer season. The "House-Moths" (*Tinea tapeztella, vestianella, et pellionella*) may be seen in its winged state from the first of May to the first of July, and sometimes until the first of August; but it is most abundant in the month of June, and it is during this month that the greater number of the eggs are deposited, although there are either several broods, or successive alternations of the same brood. About this period too it is when most of the winter fabrics are put away, and the eggs are so small, and adhere so firmly, that they may easily be packed away with the articles intended to be preserved. Although such preventives as tobacco, pepper and camphor are recommended, and no doubt to a certain extent are beneficial, our experience has taught us that the most effectual remedy is in packing the articles in fine linen or paper bags, with every aperture completely closed, through which a moth could possibly deposit its eggs. If no eggs have been inclosed with the articles, this precaution is perfectly safe.

A writer from Paris under date of January 3, 1876, states that in that city there are persons who make it a business to receive furs and woolen articles, and for a reasonable compensation, keep them free from moths until they are again wanted. Where no such establishments exist, or where people prefer to have their property in their own custody, the bagging process should be used, and this may be also extended to woolen carpets. We would recommend the use of tough strong paper (manilla) out of which small flour sacks are now made, but care should be taken that every hole, no matter how small, be perfectly closed. Cayenne pepper, or pieces of red-pepper pods, tobacco and camphor, may also be put among the articles; but if we could be certain that we have enclosed no eggs, these articles would be altogether unnecessary. Under any circumstances they will do no harm if they do no good.

Be sure you do not improvise a woolen bag, for this would only attract the insects, and they would destroy the covering before attacking its contents. Before bagging articles to be preserved they should be violently beaten and shaken, and all the moths, if any, in them should be at once thoroughly destroyed. Some people are in the habit of hanging their articles out in the sun, to give them "an airing," as they call it, without seriously disturbing the moths. The Paris writer says—"As the gnawing insects cannot invade linen or cotton, it is enough to have this envelope impenetrable at all points, provided we do not attempt the preservation of an object already infested with vermin or with their eggs and larvæ." Under certain peculiar circumstances, however, we have found that moths will invade both linen and cotton, but if it be closely woven stout material, it is questionable if they could penetrate it as they do woolen cloth. On one occasion a box in our store, containing pieces of canvas, padding and cotton flannel, which had been for years undisturbed, was finally removed in making some improvements. On examining its contents hundreds of moths were found in it, and these had scored the linen and cotton material as well as the woolen, forming their cylindrical cases out of one kind as freely as another, the only difference being that they did not cut *through* the linen and cotton as they did through the woolen. Ordinarily, however, moths are rather nice in their tastes, for we have found the finer and softer fabrics more liable to their infestations than those of a coarser and harder quality; but, where opportunities for this discrimination do not exist they will attack everything and anything that is woolen, and rather than starve, they will also appropriate linen and cotton, unless its surface is too smooth and hard to make an impression upon it.

The sum and substance, then, of these remarks is, that the cheapest, safest and easiest remedy against moths, is the perfect isolation of the articles we desire to preserve, and where this has been perfectly accomplished, there is little need of anything else; nevertheless, as we are liable to omissions and other inadvertencies, the introduction of pulverized camphor, pepper and tobacco will not be amiss as repellents, if they do not kill.

Every parent moth that is seen should be killed—a little silvery whitish and sluggish day and night flier, that appears most abundantly in May and June, and just slow enough in its flight to be easily clapped between two shingles, made in the form of bats or paddles, one in each hand. Its little cylindrical cases should also be gathered and destroyed, as they contain the *larvæ*.

WHAT KIND OF OIL?

In the proceedings of the January meeting of the "Agricultural and Horticultural Society," reported on page 14 of the January number of THE FARMER, where we are reported as having stated that *oil* was the best remedy for "scale insects," or "bark lice;" the next question would naturally be, "*what kind of oil?*" and, indeed, that question *had* been answered briefly, before the meeting closed, although no report had been made of it.

In a fuller answer of that question, allow us to relate one of our experiences in the oil-remedy as well as other remedies, and also the practical results of their application by other experimenters. Some ten or twelve years ago, a neighbor of ours had two fine young pear trees that were badly infested by the "Oyster-shell Bark-louse," and some one had recommended scrubbing them with fish-brine, applied with a stiff brush. After the application of the brine and the scrubbing, the trunks and larger branches of his trees had a reddish or rusty appearance, but before the end of the succeeding summer season it became manifest that they were not cured, and the insects reappeared all over the surface almost as numerously as they had been before the remedy had been applied. The proprietor became discouraged, neglected his trees, and finally one of them died, and as the other seemed to be slowly following in the wake of the first one, it was also subsequently removed; opposite and north of these trees, on our own premises stood a pear tree, and an apple tree, both of which became infested with these insects, as well as a number of "sweet-brier" or wild-rose bushes. We also scrubbed our trees and bushes with saline and alkaline solutions, as well as soap, and tobacco decoctions, but finally we had to succumb and remove the trees and bushes in order to arrest the further spread of the infestation. Some years subsequently we received a copy of Mr. Walsh's Report of the destructive insects of the State of Illinois, (we think it was his first and only report, for, by an accident he lost his life sometime thereafter.) In this report he gave some detailed experiments in the different remedies for the destruction of this pest, from which it appeared that oil had, on the whole, been the best, if not the only reliable remedy, so far as his experience extended.

We received this Report in the winter (either in January or February) and in the following spring, after the buds of the trees had begun to burst, Major Howell invited us to look at half a dozen fine dwarf pear trees on his premises, with which something seemed to be "the matter." On viewing and examining his trees we immediately recognized the same pests that had destroyed our neighbor's and our own trees, and, on the strength of Mr. Walsh's experiments, we did not hesitate to recommend the oil remedy. Mr. H. informed me that he had a quantity of "neat's-foot oil," and inquried if that would answer, and we replied that we thought it would.

We need hardly say that *neat's foot oil* is an oil extracted from the marrow of leg bones of animals, especially those of ruminants or ox-kind, and farmers are generally well acquainted with it, but it is always limited in quantity, so that there is hardly enough on hand at any time or place to make a general application of it as an insecticide. Be that as it may, Mr. H. applied it, and finer, cleaner, healthier trees we never saw than his were during the following summer. Every scale was loosened and the subsequent rains washed them off, and left the trees as perfectly renovated as could be reasonably expected from trees so badly infested; but about midsummer it could hardly have been told that they had ever been afflicted with bark-lice. Now, it is not to be inferred from this that no other oil will answer the purpose but neat's-foot oil, for we presume that any pure and clean liquid oil will answer. There are some oils, however, that we would by no means recommend, such, for instance, as *linseed-oil*, or any oil that leaves a gummy or mucilaginous deposit on the bark, and by which the pores would be closed. Nor would we recommend coal-oil, camphene, or any illuminating compound of that kind, for these are known to have been injurious to the trees.

But lard-oil, sweet-oil, or any other liquid oil or fat than those excepted. Neither would we recommend applying the oil during cold winter weather, for the reason that it would be apt to congeal, and not penetrate sufficiently the places intended to be reached by its applications. Moreover, during winter there are nothing but eggs under the dry shells of the females of the previous season. But in the warm spring, and just before the leaf and blossom buds have expanded, we would consider the most proper time; because the oil would then remain liquid and gradually pene-

trate every portion of the surface, loosen the scales and kill the young lice, if any should have been hatched out. Should warm weather prevail in early spring, a soft piece of "bacon-skin" (*spheck-schw art*) with a thick layer of fat attached, would answer the purpose. After the oil has been on the trees for a week or ten days, it might be advisable to syringe the trees with an alkalious solution. This in conjunction with the oil would form a saponaceous compound, especially if succeeded by a warm sun, and subsequent rains would wash the whole off, and the bark-lice along with it.

Of course, it would be difficult, if not absolutely impracticable, to apply this remedy to large standard apple or pear trees, for on such trees the lice do not infest very injuriously the rough bark of the trunk, but the smooth and more tender barked branches; and therefore, they might not be conveniently accessible; but on low, or even pretty large dwarfs—such for instance as could be approached by a step ladder—we think it quite feasible and profitable.

A soft paint-brush we would consider the proper implement to apply it, and with this it might be applied, by a little care, even after the buds have bursted open, but we would recommend an earlier period; because it would not benefit and might injure the young leaves and flower buds; moreover, there are usually many of these lice congregated around and on the buds, as the most tender places, and affording them the most nourishment. But even if the bark-lice are successfully removed, through neglect they may appear subsequently again, therefore, the only safety is in constant vigilance.

AN OPEN WINTER.

The present winter thus far (February 1st) has been a rather remarkable one, but by no means a *unique* one, even within our own recollection. It can almost be said, we have had no snow. The slight snow that fell about the middle of January did not lie on the ground six hours, even in the open fields and forests, and could hardly be dignified with the name of a snow fall, when compared with those that gave character to the winters of Lancaster county in times that have passed. There were a few cold days, and some ice made; but the thickest was scarcely four inches—nothing in comparison with the twenty inch ice of last winter. The very coldest temperature was eight degrees *above* zero, whilst last winter it was fourteen *below*, before the first of February. The ice crop, which a few years ago was generally regarded in the light of a luxury, that only the few could afford to indulge in, has come to be almost a necessity with a very large proportion of our population; and hence its success or failure is a matter which creates considerable anxiety. Ice cream, iced tea, iced coffee, and various other iced summer drinks, as well as general refrigerating purposes, for the preservation and conveyance of meats, butter, fish and fruits, are now so extensively used that they are passing out of the category of luxuries, and taking rank as necessities.

It is on record that the winter of 1775 and 1776, the first year of our national existence, was very similar to the present winter, and as it then was favorable to the initiation of the new era, so it is favorable now, in preparing to celebrate the centennial of that era.

The Dandelion bloomed in January of the present year, occasional bees and wasps were abroad, and every day the busy little English sparrows thronged the streets of Lancaster. On the 28th ult., the thermometer rose to 65° and continued at that point until nightfall; no frost at all in the ground, and the roads in an exceedingly muddy condition.

The winter of 1846 and 1847 was very similar to the present one. The first day of January, 1847, was even warmer and sunnier than the 28th of January, 1876—bees, bugs, beetles, and butterflies were abroad, and as active as they usually are in April and May. Lieut. Cochran, who fell at Resaca de la Palma, the second day of the first battle in the Mexican war, was buried at Columbia with appropriate honors on that day; the "Lancaster Fencibles," under command of Capt. Duchman, forming part of the escort, and the day was bright and genial as any in spring.

What effect such a winter as the present will have upon the wheat and grass crops, it is impossible yet to tell. It is supposed that thus far they have not been injured, if they have not been greatly benefited. The winter has been characterized by copious penetrating rains, and the earth has been thoroughly saturated, and thus far the grain is in a growing condition. Long continued cold, dry winds, with heavy freezing weather in February and March, may be injurious.

PECULIAR EFFECTS OF WINTER HEAT.

Although at this writing the weather is exceedingly cold and stormy, (February 3) yet on the 28th and 29th of January, it was unusually warm, (thermometer about 70) and as a consequence the vegetable world made great strides forward. The leaf and flower buds of many trees were so much swollen that they seemed ready to burst forth into leaf and bloom, whilst some shrubbery was still more advanced. Branches of the *Spirea* were brought to the meeting of the Linnean Society, with the leaves fully half expanded, and the same was reported of *Lilacs* and *Roses* in some city localities, and the *Snow-drops* pushed up through the earth and seemed ready to bloom; while the *Dandelions* in the open fields, expanded their golden flowers in their usual vernal profusion. The grain and grass also put on their garb of luxuriant green. Not only the vegetation, but also the insect world manifested the effects of the unusually mild temperature. Bees and wasps sallied forth on their honey hunting missions, and regaled themselves on sweetmeats, wherever they could gain access to groceries and confectioneries through the open doors or windows. Darkling beetles—*Harpalidæ*—and Grasshoppers—*Locustadæ*—also ventured out on the sunny sides of fences, rocks and earthy mounds, seemingly content with a temporary bath under the rays of sol. Here and there a lonely and half-frightened specimen of *Pieris rapæ*, or "White cabbage Butterfly," would pursue his solitary flight; but this is not extraordinary for this insect; because last winter one was captured in this city, during a short interval of mild weather in February, although there was six inches of snow on the ground at the time, and many people were engaged in gathering their crop of ice.

Not a particle of frost was in the earth on the 28th and 29th of January, and had not been for some days previous. Several species of moths of the *Noctuidæ* and *Tortricidæ* families were abroad in the evening in houses, gaining access through the open doors. One particular species of the former family has the size and general markings of Prof. Riley's *Agrotis scandens*, except that it is very much darker in color. Indeed, unless somebody takes up this family as a specialty, makes a life-study of them, and describes and illustrates them carefully, we shall remain in the dark as to their species. Twenty years ago we gathered about twenty-five specimens of "Cut-worms," that had been depredating in a "cabbage-patch." They differed very much in size but more in color, being from a light greenish-grey to nearly a black—a greenish-black. We placed them in a box with earth, and every evening gave them a quantity of cabbage plants; and, in due time developed about fifteen moths, and these differed as much as the worms did, in size, marking and intensity of color; and there would not have been much difficulty in making six or eight species of them. When we submitted them to the only Entomolgists to whom we had access, they did not seem to know as much about them specifically, as we did ourself, but the inference was that they were all varieties of the same species.

But this is a digression. We are writing upon the effect this, thus far, remarkable winter, will have upon the flora and entomological fauna of the country, for at this writing (February 3,) we have a very "cold snap." We cannot desire it to continue so cold in order to kill off the noxious insects, because that might also involve vegetation.

THE "SNOWFLAKE" AND "EUREKA" POTATOES.

Messrs. B. K. Bliss & Sons having last spring offered $500 in premiums to growers of the largest quantity of potatoes of the varieties known as "Snowflake" and "Eureka," from one pound of seed, the committee on the first of January awarded the premiums as follows, there being six for each variety, ranging from $100 to $10:

SNOWFLAKE: P. C. Wood, Esther, Ill., 1417 pounds; J. L. Perkins, Little Sioux, Iowa, 1301 pounds; Fred'k H. Seiler, Verona, Essex co., N. J., 1125 pounds; J. I. Salter, St. Cloud, Minn., 1090½ pounds; Alfred Rose, Penn Yan, N. Y., 1089½ pounds; Henry V. Rose, Penn Yan, N. Y., 1069½.

EUREKA: J. L. Perkins, Little Sioux, Iowa, 1666½ pounds; P. C. Wood, Esther, Ill., 1403 pounds; Alfred Rose, Penn Yan, N. Y., 1149 pounds; Milton M. Rose, Penn Yan, N. Y., 1145 pounds; J. I. Salter, St. Cloud, Minn., 1087 pounds; Henry V. Rose, Penn Yan, N. Y., 1066½ pounds.

The committee in their report say that "when two years ago your committee awarded the first prize for the largest yield of extra Early Vermont potatoes from one pound of seed, to Mr. Salter, of Minnesota, for the then unprecedented yield of six hundred and seven (607) pounds, many considered the climax of productiveness reached, and not a few doubted that such a quantity had ever been grown from so small a quantity of seed. Yet so much has the general interest and ambition stimulated the cultivators of the soil, both here and in Europe, that in England nearly double that amount (1082 lbs.) has been grown from one pound, and in our own country no less a yield than nearly treble that obtained then, entitles now to a first premium, and nothing less than a thousand from one can win even the lowest premium. These marvelous results will naturally cause, with many, suspicions about the correctness and truth of their statements; yet no one who has carefully examined the reports and affidavits, and has read the many letters received from disinterested parties, all of which vouch for the reliability of the successful competitors, can doubt the veracity of their reports. We have given above the full address of every successful competitor, so that any one may satisfy himself about the standing of these gentlemen, and if any false statements should have been made, we would be glad to ascertain the fact, that such parties may be exposed and excluded from competing for premiums to be offered hereafter."

The soil on which Mr. Perkins produced his enormous yield is described as "a mixture of sand and clay, very rich in vegetable matter to the depth of *eighteen feet*, and underlying this is a gravelly subsoil. For three years the ground was used as a stock yard, the straw being left on the ground to rot and be burned." Another competitor describes his soil as "black loam, four feet deep, on the bank of a creek, and it has been used as a cattle yard for ten years." Another, as "vegetable mould and sandy loam, three feet deep, never cultivated before." Many describe their soil as "deep, very rich, the best potato soil in the State."

The fertilizers used comprise nearly every known manure, and the quantities applied are not less enormous than the crops raised with them. Most growers have made compounds of various materials, and some seem to have faith in complicated formulas, which they prepare with the accuracy of a physician's prescription. About the value of wood ashes, hen manure and plaster, however, there seems to be no doubt, and we find them used by a large majority. Sulphur has been used by many. This substance does not enter into the composition of the potato, and it would be interest-

ing to know if its application actually increases the yield. Have experiments to this effect been made?

The fact that single eyes and eyelets will, with good care, produce large crops, has been sufficiently proved. All the large yields are grown from very small sets. In some cases, single eyes were divided into ten pieces, and in one instance two hundred and forty (240) sets were made from one pound, nearly all of which grew well. The sets, with few exceptions, were planted singly, yet we find a product of nine hundred and seventy (970) pounds raised from fifty-two (52) hills, two sets to each, nearly nineteen (19) pounds per hill, and six hundred and seventy-seven (677) bushels per acre. Whether this large yield is due only to the very favorable soil they grew in—a rich black loam, formerly used as a hog yard—and the immense quantity of ashes applied in the the hills and as top-dressing—one peck to the hill—or to the two-set system, does not appear. The planting, in nearly all cases, was done between the 10th and 26th of May, and one-fourth of all competitors dropped the seed on the 10th of May, nearly a week earlier than in former years.

The data furnished the committee show that although the greatest yields from one pound grew from hills four feet apart, the largest crops per acre were raised at distances of three feet each way, and that as the distances between the hills are increased or decreased, the yield diminishes in regular proportion. In the first case, there remains wasted ground which is not reached by the roots of the plants, and in the latter, the roots are so crowded that they cannot obtain all the nourishment they are capable of consuming. The mode of planting and cultivating with a large number of the best cultivators, consists in crossing their fields with furrows six and more inches deep. The sets are dropped at the crossings and immediately covered with about two inches of soil or compost. The vines as they grow are hilled up gradually and frequently to a final height of twelve to eighteen inches. Then large, broad hills are made, using all the soil between the rows.

The general testimony of the competitors for the prizes is to the superior quality of the Snowflake as a cooking potato.

THE DAIRY INTERESTS.

Practical Hints about Making and Selecting Good Cheese.

The great majority of people do not feel as much interest in cheese as they do in butter, for the reason that they consume at least seven or eight times as many pounds of the latter as they do of the former. We have produced, this season just closed, not less than 600,000,000 pounds of butter for market, to say nothing of what is consumed by the producers that is never taken into account. This is fifteen pounds per capita, supposing the population to be only 40,000,000. Our exports of butter are hardly worth considering. We may safely say that we have produced as much more than the 600,000,000 pounds as we have and shall export of the butter crop. Of cheese we have produced not less than 200,000,000 pounds, or five pounds per capita; but of this we shall export not far from 120,000,000 pounds, leaving 80,000,000 pounds for home consumption, which is two pounds per capita. But if our people were better judges of cheese and were furnished a better article for home consumption, we doubt not they would be much greater cheese eaters. As it is, the great majority are supplied with a poor article—because they do not know how to select a good one, or because they prefer to buy the cheapest article regardless of quality—and come to the conclusion that they do not like cheese. We propose to give them a little clue to cheese-making, and a few hints how to select good cheese—which may be of some service to dealers, especially retailers—for though the quality of our cheese is superior, on the whole, to that of our butter, there is still a vast amount of poor cheese seen in market.

Milk every way healthy and free from taints and bad odors is essential to the manufacture of good cheese; but bad milk from sick cows, or from cows that have just calved, or from cows eating bad food, drinking bad water, or breathing foul air, is often made into cheese. Much of the soft and pasty cheese, or that which is porous and full of small holes, comes from this kind of milk. Milk shut up hot in a close can and carried to the factory in hot weather, makes this kind of cheese. If its character is concealed by skillful manipulation, so far as appearance is concerned, it never keeps well and soon takes on an offensive odor and bad flavor. Tainted rennets produce similar results; so will ferments introduced by uncleanliness in utensils and implements, and in the surroundings of the factory or private dairy room.

Though the private dairyman has the advantage of better control of his milk in all its stages, factory cheese, as a rule, is superior to private dairy cheese; and to the factory system, with its better methods of manufacture and the superior intelligence and skill of its operators, do we owe a complete revolution in the improvement of our cheese since 1869, and mainly since 1865. Many private dairymen have adopted factory methods, and produce as fine cheese as is found in market; but such private dairy cheese is the exception rather than the rule. Still, we do not mean to say that all factory cheese is good. Some of the worst in the market comes from badly conducted factories.

If curds are dipped too sweet and put to press, though the milk may be ever so good, the cheese will be soft and soon go to decay, unless kept at a temperature below 60 degrees after it is cured. It is soon ready for market, and if immediately consumed, answers very well. But it has not the body and fine flavor of cheeses made from curds that are kept longer in the vat and are more concentrated by the action of heat and acid. But dipping curds soft and sweet not only produces a rapidly-curing cheese that can soon be, and indeed must be, rushed upon the market, but gives a larger yield because of the retention of more moisture. This and the fact that the cheese needs to be cared for during less time, induces the manufacture of much soft cheese, especially on a falling market or in anticipation of a fall, and thus in the end augments our supply of poor cheese. Such cheese verifies the old adage, "soon ripe, soon rotten," and much of it ultimately appears on the counters of our cheap groceries and as low-priced cheese on our market stands.

Too much souring of the curd produces a dry, poor, crumbly cheese. Sour milk cheese generally has about the same character. The butter in such cheese decomposes and drips out with the whey. Skimmed cheese is hard, tough and poor tasting, and partly skimmed approaches this character. The practice of putting in more rennet and dipping the curds softer and sweeter does not disguise its character. Though it prevents dryness, it does not entirely get rid of the tough, leathery texture and the impoverished taste, nor does it remedy the indigestibility occasioned by the lack of butter. Adding other fats, as in the case of oleomargarine, does not restore the fine rich quality, nor give it the flavor of fine whole milk cheese. The artificial grease does not thoroughly incorporate with the caseine, and the cheese has a coarse-grained, crumbly, greasy and suspicious look. Rich cheese is not greasy, but homogeneous throughout, firm in texture, yet readily breaking down soft and mellow between the fingers at a summer temperature, and melting almost like butter in the mouth and leaving a pleasant, nutty flavor that is exceedingly relishable. It has no offensive or disagreeable odor, has no round holes in it, large or small, though there may be irregular openings because the curd was not quite pressed together. There is no sour taste or smell, no trace of whey, no moisture of an extraneous character; neither is it dry, or hard, or crumbly. New cheese not fully cured may have an agreeable acid taste, but such cheese is not fit to cut and should not be eaten. It is what buyers call "curdy" or under-ripe.

Sour cheese may be made in the curing room where the temperature is changeable and remains too low for several days before the cheese is cured, or after it is just made and placed in the curing room. So porous cheese may be made by too high a temperature and too rapid curing, but the holes in such a cheese are large and not seriously objectionable, unless too numerous. The flavor is liable to have been injured, but it may remain all right. Such cheeses generally settle down and have square edges and the smooth faces of good cheeses, but the buyer should criticise such pretty closely. By all means let the retailer shun the cheese that is full of fine holes, not much larger and sometimes smaller than pinheads. They are an unmistakable evidence of bad milk, either from diseased cows or tainted after milking and before it was made into cheese. Avoid all dry, tough and crumbly cheese. Avoid all cheese with rounded faces. Avoid all rank-tasting cheese as either a bad article originally, or as being good cheese far gone in decay. Avoid all sour-tasting cheese as made of sour milk, as soured on the ranges, or as bad milk disguised with acid. Avoid all cheese that is hard and unyielding to the touch on the one extreme, and all that is elastic and India-rubber like on the other—the first is soured and dried to death, and the other is skimmed to death. It is safe to avoid all low-priced cheese.

Fine cheese is always close-grained, cuts smooth, but has a slight, regular roughness of surface, yields to the pressure of the finger, breaks easily, but does not crumble, has a smooth, elastic rind, breaks down mellow and rich, but with no harsh feeling between the thumb and finger, dissolves readily in the mouth, but has no strong or rank flavor, and leaves a relishable taste. Most people like such cheese, but, seldom getting it, they fancy that cheese has for them no special relish. If only such cheese were thrown on the market, the home consumption would double within a year, and in a few years it would be tenfold what it is now. It is a great mistake to keep home consumers feeding on the inferior grades of cheese, and it is a greater mistake to manufacture oleomargarine, or in any way increase the amount of the inferior makes. The poor do not want them any more than the rich, and will buy other food before they will eat them at any price that will afford remuneration to the manufacturer. We are glad it is so. The best is none too good for any one; and it is about time that producers and manufacturers of all kinds got rid of the idea of palming off all their refuse stuff on the poor.—*T. D. Curtis, in the American Grocer.*

ARRIVAL OF BIRDS IN 1875.

Turdus migratorius, Feb. 3; large flocks seen Feb. 17—Robin.
Cyanurus cristatus, Feb. 11—Blue Jay.
Sialia sialis, Feb. 17—Blue Bird.
Sturnella magna, March 10—Meadow Lark.
Agelaius phœniceus, Mar. 17—Red-winged Blackbird.
Quiscalis versicolor, Mar. 18—Crow Blackbird.
Colaptes auratus, Mar. 18—Flicker.
Sayornis fuscus, Mar. 15—Pewee.
Turdus mustelenus, Mar. 17—Thrush.
Ægialitis vociferous, Mar. 19—Kill-Deer.
Antrostomus vociferous, May 2—Whip-po-Wil.
Chætura pelasgia, May 9—Chimney Swallow.
Hirundo horreorum, May 11—Barn Swallow.
Troglodytes ædon, May 1—House Wren.
Chordeiles popetue, May 4—Night Hawk.
Ectopistes migratoria, seen in large flocks Mar 31. and April 1—Pigeon.
Quiscalis veriscolor, flocking August 15.
Larva, of Potato-Beetle, first found June 1.—W. *H. Spera, Ephrata, Lancaster county, Pa.*

Mr. S. is an accurate and interesting observer, and although the above was primarily intended for the archives of the Linnæan Society, yet, as that society takes THE FARMER, we consider it more easily referred to by a place in its columns. We have also received an interesting paper from the same source, upon the periods of frondescence, florescence, fruitescence, and leaf fall of the leafing and blooming vegetation of the county, which we will find a place for hereafter.

FACTS OF NATURAL HISTORY. No. 8.

Baltimore Oriole.—(Icterus baltimore.)

"HOMES WITHOUT HANDS."

This bird, the nest of which will be recognized in our illustration, is in some localities, perhaps, better known under the names of "Golden Robin," "Hanging Bird," or "Hang-nest," than under the one above. By whatever name it may be called, it does not in the least detract from its skill, nor diminish its usefulness; for, in the long catalogue of American birds, it is questionable if a more active, industrious, and persevering "Insector" is to be found.

"Where apples, plums and peaches bloom,
And where they bloom profusely,
Brave *Icterus* will be found,"

and every time he captures an insect he will utter a short joyful chirp, which becomes so familiar to the ear that his presence is recognized and his success indicated, even when he himself may be invisible. Later in the season he manifests some partiality for ripe cherries, but under any circumstance he does not appropriate any more than what would be accorded as legitimate fees, toll, or perquisites, to any other being, for his benevolent labors during the blooming season; and yet, we have seen this bird mercilessly shot down when he was extracting his "toll," and every shot bringing down as many cherries as the bird would consume in a week; in which there is neither economy nor charity.

We have a nest of this bird now before us, which was found suspended from the branch of a willow-tree, a few days ago, in the southwestern part of this city, and kindly donated to the *Linnæan Society* by Mr. A. N. Breneman, jr. It is very compactly woven out of pieces of twine, linen and cotton threads, intertwined with a few horsehairs and narrow strips of calico, all being of the color of unbleached linen. It bears almost an exact likeness—or rather, our picture is an exact likeness of the nest before us—pear-shaped, and from the narrowed upper point where it is attached to the small willow twigs, to the bottom, outside, it is seven inches in length; the inside depth, from the bottom to where the bird's beak is seen, is four inches; and its outside circumference at the largest part is nearly twelve inches. Such a nest is not the work of a single day, or even a week, and it is a great marvel how a creature without hands could possibly put together a habitation so strongly and symmetrically, out of such material; and we regret that the birds will be under the necessity of building a new one next spring. Mr. B. had often noticed this nest when passing the willow-tree on which it was suspended; but when the leaves fell it became a target for the naughty boys of the neighborhood, and one day he found it lying upon the ground.

The bird which is the architect of this nest belongs to all of North America east of the high central plains, and is seven inches and a-half long; the wings three inches and three-quarters; "the color is black, with the rump, upper tail-coverts, lesser wing-coverts, the terminal portion of all but two tail feathers, and the breast and under parts, orange red; the edges of the quills and a band across the tips of the greater coverts, white. The colors of the female are much duller, the black of the head and back being replaced by brownish yellow." We have a specimen in our possession, stuffed and mounted by us forty-one years ago, and it retains to this day almost the freshness and brilliancy of color it had when first prepared. It belongs to the great ORDER of INSESSORES or "Perchers," and is the typical genus of the family ICTERIDÆ, or "Blackbird family." Generically allied to it are the "Orchard Oriole," (*Icterus spurius*) the "Hooded Oriole," (*Icterus cucullatus*) of the lower Rio Grande; "Audubon's Oriole," (*Icterus audubonii*) also of the Rio Grande; "Scott's Oriole," (*Icterus parisorum*) of Texas; "Wagler's Oriole," (*Icterus Waglerii*) of Mexico, and "Bullock's Oriole," (*Icterus Bullockii*) of Western North America. The "Troupial," (*Icterus vulgaris*) belongs to South America and the West Indies, and sometimes, by a rare accident, comes within the territory of the United States—a large species.

The Orioles lay from four to six eggs, of a bluish-white color, sprinkled with different shades of dark brown, and in our latitude they are one-brooded. From the activity and persevering industry of these birds in the early part of the season—especially our local species—they cannot but exert a beneficial influence upon vegetation, and more particularly on our fruit crops. Nor are they a shy bird where they are unmolested. We have had them visit our plum, peach and cherry trees not more than ten or fifteen feet from our kitchen door, and remain on them for an hour at a time, coming and going during the whole of the spring or summer day. Our species are birds of passage, arriving in Pennsylvania from the South about the beginning of May, and departing again about the end of August. It prefers willow, apple, walnut and tulip trees, in proximity to farm houses, for its nesting places. The "Baltimore Oriole" takes its specific name from Lord Baltimore; its colors, which are black and orange red, being the colors of the livery of that nobleman, formerly the proprietary of Maryland. The males do not acquire their plumage in perfection until

they are two or three years old—the first season they differ very little from the females, and hence sometimes they become confused. Although nearly all the species construct pensile nests, yet none of them exhibit the mechanical skill of the Baltimore species.

Their principal food consists of caterpillars, beetles, bugs and worms, especially beetles.

What the Baltimore Oriole employed to build its nest before civilization was introduced into this country is not very apparent—perhaps fibrous roots and mosses—but now it prefers twine, threads and shreds of woven fabric. They are very naughty, and sometimes skeins of silk or cotton carelessly exposed, linen or cotton yarn left out to bleach or dry, or strings of almost any kind are carried away, and they are often noticed persevering-ly tugging away at strings tied around objects, the ends of which are hanging loose.

The song of this bird is a peculiarly clear mellow whistle, repeated at short intervals, as he is busily engaged gleaning among the branches, and we never hear it without its recalling

"The light of other days."

According to a distinguished author, "a certain wild plaintiveness and *naivete* is in it, that is extremely interesting; something like a careless ploughboy whistling for his own amusement."

"High on yon poplar, clad in glossy sheen,
The orange black-capped Baltimore is seen;
The broad extended boughs still please him best;
Beneath their bending skirts he hangs his nest."

MENTAL CULTURE AMONG FARMERS.

It is obvious to every observing mind that a new era is dawning upon farming life—an era of intellectual culture and improvement. Heretofore, soil culture has engrossed most of the attention of the farmer. So that paying crops were raised, he cared for but little else. He was willing to do as others suggested about electing men to represent him in the State Legislature, or in Congress, or elsewhere. He thought everybody would do what was right, make such laws as were just and proper. He did not trouble himself much about what was done, simply following where others led. He did not study the questions that came up for consideration, or the laws that were passed. So he got along even tolerably well, he was satisfied.

Finally, however, he learned he was not getting along well at all. He found himself going backward instead of forward. Taxes so high he could not pay them. Stock and produce so low that it did not pay to raise them. Lands tumbling down in price, and no one to buy at even half of their former value. Money going out of the pockets of the many into the hands of the few. Millionaires increasing with alarming rapidity, and absorbing all the gains of the people. Giant monopolies, anaconda-like, crushing out the life of the people. The vast public domain given away to schemers and plunderers. Fraud, corruption, defalcation and public plunder taking the place of virtue, honesty and integrity in public affairs, and a general sapping and undermining of our republican institutions.

Such conduct is likely to bring the people to reflection. They are the rulers, though they have not been. The servants whom the people have elected to take care of their interests have usurped all power, and made laws to suit themselves. They have become greater than their masters. Through the cliques they control, they nominate and elect whomsoever they please. Farmers have kept in the background, and have seen what was going on, and have felt powerless to resist. Others, who have been active and glib of tongue, have had everything their own way.

But, presto! change. Farmers, six millions strong, have said such work must stop. But something more than saying must be done. There is work to do—hard work, earnest, protracted work. The conflict must be prepared for, for farmers have adroit, wily, persistent foes to meet, who will never give up the ship or surrender the spoils, if they can help it. Something more than numerical strength is required. Mental strength, broad culture, ability to meet their antagonists on the stump, in the convention, or caucus, or legislative hall, is required, or a general rout all along the line will ensue. This ability cannot be obtained by sighing for it, any more than good crops can be obtained by wishing for them. Culture is required in both cases, and the more generous the culture, the greater the reward.

We believe farmers appreciate this, and are preparing to assert and maintain their just rights. They are improving their leisure hours in reading. They subscribe for the best papers, meet in the grange and elsewhere, and talk over these matters, take a livelier interest in public schools and public affairs generally, and are in reality inaugurating a new era. It takes a long time to prepare for a revolution. It took our forefathers a long time to achieve their independence, and it may take the farmers a long time to break the shackles with which wily politicians and schemers have bound them. But let us pray for their success and deliverance. But each man must remember that he is an integral part of that great number to be reached, and that just as much devolves upon him as upon anybody else, and that he can't shirk the responsibility, let him try ever so hard.—*Colman's Rural World.*

SPIDERS.

S. S. RATHVON—*Dear Friend:* In reading an article of thine entitled "Peculiarities of Spiders," in the last number of THE FARMER, my attention was attracted by the following expression: "Spiders, properly speaking, are not insects, nor are they classed with them, but form a distinct class of their own, between the insects and the crustaceans."

Now, according to A. S. Packard, R. Leuckart, in 1848, proposed the idea that the Myriopods, Spiders, and six-footed insects formed orders, and not classes; and was afterwards supported by Agassiz and Dana. Also, in his Guide to the Study of Insects, in speaking of the Arachnida, Packard says: "The order shows its close relationship with the Dipterous insects, especially when compared with the wingless Chionea and Nycteribia, and its lowest forms (certain mites) bear a close resemblance to some of the lower Crustacea, as the young stages and embryonic development are remarkably similar. The typical forms of the order homologize too closely with the apterous insects to allow them to be separated as a distinct class.

"In some genera there is a decided line of demarcation between the head and the thorax, which is, however, very distinct during embryonic life, and we do not perceive that gradual transition from mouth-parts to swimming legs which obtains in the Crustacea. The order, however, has much lower, more degraded forms than the Myripods even, as the genus Demodex testifies, which may recall readily certain intestinal worms. This we would consider as but an example of what often occurs among all degraded forms, of a recurrence to the archetypal form of the articulate type, and not for this reason, as some authors have done, would we place the Arachnids of Latreille in a class by themselves, below the Myriopods; nor on recurring to the spiders alone, with their high organization and wonderful instincts, would we follow Professor Owen and others in placing them even above the true insects.

"We must look upon the spider as a hexapodous insect, degraded, wingless, and partially decephalized. A part of the elements, constituting the head in insects, have been, as it were, withheld from the head and detained in the thorax, which has thus an increase in one pair of limbs. On the other hand, the sensorial, or pre-oral region of the head, is wanting in two most important members, i. e., the compound eyes and the antennæ. Both Zaddach and Claparide state that there are no organs in the spiders homologous with the antennæ of insects. The simple fact that the homology of the organs generally is so close between the two groups shows that they must fall into the same class."

I herewith send his classification of the insects; also those of Agassiz and Dana. Here are certainly conflicting opinions. The inquiry comes to the mind of the reader, which one is right? Now, the only way to come to a just conclusion is to investigate their comparative anatomical characters and development; but as I cannot do that, I must seek for light from some other source. I therefore would like to hear from thee more fully on this subject through the columns of THE FARMER. Thine truly,

Walter S. Way, Lyle, Lan. co., Pa., 12 *mo.* 25, 1875.

The Articulates are divided into three classes, namely: Worms, Crustaceans and Insects.

The Insects into three Orders, as follows:

AGASSIZ—1849.	PACKARD—1863.	DANA—1864.
Hexapoda.	Hexapoda.	Hexapoda.
Sub-orders, 1—7.	Sub-orders, 1—7.	1.–Ctenopters.
Lepidoptera,	Hymenoptera,	Hymenoptera,
Diptera,	Lepidoptera,	Diptera,
Hemiptera,	Diptera,	Aphaniptera,
Hymenoptera,	Coleoptera,	Lepidoptera,
Orthoptera,	Hemiptera,	Homoptera,
Coleoptera,	Orthoptera,	Trichoptera,
Neuroptera.	Neuroptera.	Neuroptera.
		2.–Elytropters.
		Coleoptera,
		Hemiptera,
		Orthoptera.
		3.–Thysanures.
Arachnida.	Arachnida.	Arachnida.
Sub-orders, 1—2.	Sub-orders, 1—3.	Sub-orders, 1—3.
Aranæ,	Aranæina,	Araneoids,
Acari.	Pedipalpi,	Scorpionoids,
	Acarina.	Acaroids.
Myriopoda.	Myriopoda.	Myriopoda.

As a specialist, we have been in the habit of ruling the spiders out of the Class INSECTA for thirty years or more; simply because we were early so instructed, and had no entomological works that recognized them as insects. We are not ignorant of the positions these animals occupy in the classifications of Agassiz, Packard and Dana, nor of the forty or fifty other systems of classification which have come under our observation, or we have heard of during the period above named; but as the questions involved in classification were not then settled (and are not yet settled) and our time to devote to these studies was very limited, we long since concluded to let classifiers fight it out on their own line, whilst we would endeavor to find out something more about these subjects of the animal kingdom than their mere names, and the niches they occupy in the great temple of classification. We deem it of more practical importance to know something about the history and habits of animals, their peculiar characters, how and upon what they live, their transformations, and the periods and places of their "coming and going." At the same time we fully recognize systematic arrangement, and acknowledge ourselves under obligations to those whose ingenious labors have been devoted to the arduous and complicated work of classification; but in this, as in all other departments of human knowledge, we must be left in freedom to make our choice, so far as we understand the various systems proposed, their rationality, and the principles upon which they are founded. The true system of classification is perhaps involved in *Embryology*, but even that is not yet entirely satisfactory.

Those who run down the embryological scale to the protoplastic beginnings of organic life, will, of course, develop different systems of classifying the subjects they investigate, from those who only study external and fully developed forms. Embryology is an interesting and useful study, but no single lifetime can fathom it. Agassiz fairly wore himself out at it, and had not by any means reached the end. Much of it is yet involved in theories and speculations, therefore we can only wait patiently, and investigate and explore the material most conveniently at hand. There is not a single class, order, section, family, genus or species among the articulates, that has not numerous exceptions to the characters by which they are proposed to be distinguished. On these questions the learned in nature's realm by no means agree. Whether any group or division of the animal kingdom ought to be regarded as a *class* or an *order* is a matter we are willing to leave to systematists, and if the points at issue are decided in our lifetime, we may then adopt them.*

True, there is a sense in which *spiders* may be called *insects* without regard to scientific classification—just as lice, cockroaches and mice are called *vermin*, or as certain species of polyps or zoophlites are called *coral insects*. The greatest difficulty, perhaps, in ruling spiders out of the class of *insects*, is to find a popular name by which to designate them. The term ARACHNIDA is not popular, and perhaps will never become so, but if the term *insect* is to include all the *articulata* in the above classification, it would perhaps be equally difficult and unpopular when we extended it to the *myriopoda*, especially the larger centipedes which the common people in some localities call vermin or reptiles.

Although time may develop that spiders belong to the same class as insects, yet for all practical purposes we prefer to let them remain in a class of their own, whether it is properly above or below insects. It is very certain that works on Entomology, generally, do not recognize spiders as belonging to the same class as insects; nor do specialists, generally, regard them as such. Whether right or wrong, we have been so long accustomed to the *Quinarian* system of MACLEAY, adopted and followed by WESTWOOD in his very elaborate system of classification, that we now hesitate to make any change of our views, until doctors more nearly agree; and that, probably, will not be while *we* are on "this side of Jordan." The question involved seems to be, whether spiders should constitute a distinct CLASS, or only an ORDER in the class INSECTA. If our preference has been for the first, it is because we had the support of the most eminent authorities on the subject—authorities that occupied distinguished positions long before the names of Agassiz, Packard and Dana were known to science. *Their* systems are, however, not entirely new, especially as to their TRINAL order of classification. Kirby and Spence introduced a system in which *three* annulose classes are formed, namely, Crustacea, Arachnida and Insects; and, although they differed from that of all preceding and subsequent systematists, they still recognize the spiders as a distinct class, and insects as equally distinct. Linnæus, in his great DIVISION of Insects, included all articulated animals possessing articulated feet, but his chief disciple, Fabricius, separated them into several CLASSES.

Neither have systematists agreed as to what constitutes an ORDER, or in the names and numbers of the sub-orders and families, nor yet the genera included in these. The Linnæan order, *Coleoptera*, included also the crickets, cockroaches, grasshoppers, locusts, earwigs, camel-crickets, &c., &c., but these were subsequently eliminated and erected into the separate orders of *Orthoptera* and *Euplexoptera*. Although neither Agassiz, Packard nor Dana agree in the number of their sub-orders, nor in the precedence that one takes of another, still their systems may be the "beginning of the end," in classification; in the meantime, for all practical purposes, so far as relates to the habits of insects and their economic relations to the products of human labor, it is of very little consequence whether we distinguish them by classes or orders. If we have not time or ability to investigate the various systems proposed (for they are all merely *proposed* and none of them yet a finality,) we will have to adopt the system of some one who has made classification a life-long specialty, and, in any event, we will always be finding some one that will differ with us. Under these circumstances we must let our correspondent make his own choice, whilst we retain ours.

* CUVIER says, in so many words, that classes, orders, families and genera are abstractions, but that it is not so with species. (*Letters to Ifaff.*)

GEO. HENRY LEWIS says: "The *thing* species does not exist; the term express an *abstraction*, like virtue or whiteness. Nature creates only individuals."

For THE LANCASTER FARMER.

HUMMING BIRDS.

(*Family Trochilidæ.*)

The farmer has many friends among the feathered tribes whose efficient and gratuitous services he is always ready to acknowledge. The few marauders who levy slight contributions upon his choice fruits during a brief period, make him ample amends during the rest of the season. But for the Finches, Sparrows, and their numerous congeners, experience has taught him his daily toil would meet with but poor requital. From hour to hour, and from year to year, without stint or stay, the wonderful multiplication of noxious insects goes on. The artificial means for their destruction, that are available to him, are few in number and limited in their application. The lord of creation here encounters an enemy, whom, alone, he is unable to overcome, and he thankfully accepts the assistance of these humble allies, who, night and day, do stout battle in his behalf.

To the smallest and swiftest of all the birds that cleave their way through the air, the just meed of praise has not been awarded; this is not so much from his unwillingness to do so, but simply because his attention has seldom or never been directed to the good work they do for him all the summer through. The farmer and florist owe a debt of gratitude to the gaily attired Humming birds, which they have seldom acknowledged, and it is our present aim to set before them as clearly as we can, a history of these beautiful creatures, and urge their well earned claims to consideration.

The Humming birds belong to the Linnæan genus Trochilus, family Trochilidæ, order Incessores, tribe Tenuirostres. Having thus briefly stated their place in the great class of aves, we will, in the future, eschew technicalities as much as possible, and tell what we have to say about them in language which every reader can understand. Their name has been given to them because of the peculiar sound produced by the rapid vibration of their wings as they dart through the air, or are poised, seemingly motionless, before some favorite

flower, with their long, slender bills thrust into its bosom, extracting the nectar and minute insects to be found there. The name is apt and well deserved, differing in this particular from much of the far-fetched nomenclature of our modern ornithologists. The family is, in many respects, unique, is easily recognizable, and cannot, even by an amateur naturalist, be mistaken or confounded with any other; it is sharply distinguished from all others no less in general appearance than by its technical peculiarities.

No other group of birds approaches the Trochilidæ numerically in point of species. But few were known to Linnæus; our own Wilson was acquainted with but a single North American species; Audubon knew several more; Baird, in 1858, enumerated seven, while Coues, in his "Key," (1872), describes eleven. New species are discovered yearly. Here, in Pennsylvania, we have but one variety, the Ruby Throat (*T. Colubris*). About three hundred and twenty-five well recognized ones are now known. In the magnificent collection of Mr. Gould, whose splendid monograph on this numerous and brilliant family is much the completest ever published, more than three hundred species are represented. No other cabinet in the world, either public or private, approaches it in completeness. When we state that the total number of the birds of Europe, of every order and group, is only five hundred and three, of which about one hundred are also common to this country, some idea of the diversity of the Humming bird family may be formed, and it is not improbable that future discoveries may prove this diminutive group equal in number to the combined bird fauna of Europe.

There is an unusually wide variation in the size of the several species. This, however, was to be expected from their number. The largest of the family, (*T. Gigas*,) is nearly eight inches long, while the smallest, (*T. Minimus*,) measures only an inch and a quarter and weighs twenty grains, and when denuded of its feathers is less in size than some of our humble bees. Various others are two and two and a half inches in extent, while the general average is from three to five inches. The feet are very small, and the tarsi short, so they offer but little impediment to the bird, which spends so great a portion of its existence on the wing; the claws are long and exceedingly sharp, and are used by some species to suspend themselves during sleep, after the manner of various parrots. In the size and conformation of their bills, Humming birds present most surprising variations. In general, they are long, slender, and of equal thickness throughout; some are comparatively short, others long and straight; some have a downward curve, and some are recurved like the bill of the avoset, being the only examples known among land birds with such a shaped bill. These numerous modifications seem specially adapted to probe and search flowers of every shape, and what renders this inference a positive certainty is, that certain groups affect those kinds of flowers with tubular entrances most in conformity with the shape of their bills. In some cases the bill is so enormously developed as to exceed in length the entire body of the bird.

The tongue of the Humming bird, like that of Woodpeckers, and other insectiverous birds, is retractile, and capable of being protuded a considerable distance beyond the bill. It is composed of two muscular tubes united the greater part of their length, and terminating in two sharp points, which are slightly widened near the tips and fimbriated; the tubes are of very singular structure; each consists of a lamina rolled together, but not so closely as to bring the edges into contact; a slit runs along the outer side to some distance beyond the junction of the tubes; a pin inserted into this fissure is easily moved along its length. This tubular bifid tongue is supposed to act like a pump, and honey is drawn from flowers through it by some kind of suction. The tongue tips are covered with a glutinous secretion, and admirably adapted to abstract minute insects from the flowers they frequent, and through their retractability, the living prey is at once transferred to the œsophagus.

All birds, whether large or small, subserve some wise purpose in the economy of nature. To what a great extent is the human family indebted to them for food? But while many do not directly contribute to human sustenance, they yet aid him in keeping within wisely ordained limits the excess in animal and vegetable life. The services of the Hummers in this work are not so much noticed in our northern clime, where they are comparatively few, as in those tropical regions where insect life is so abundant, and where these winged jewels of the air contribute so largely in keeping the almost microscopic, as well as larger insects hordes within reasonable bounds.

There has, from time to time, been much discussion among naturalists as to the food of these birds. From their constantly observed habit of hovering about flowers and probing their inmost recesses with their slender bills, it was once believed honey was their only food; but when later ornithologists proved by dissection that their stomachs were filled with countless minute insects, then the nectar theory was well nigh abandoned, and the opposite extreme reached. Later and more careful investigations have proved both theories to be incorrect; the truth lies midway between the two. While the honey that is contained in most flowers, and especially in those most frequented by Humming birds, is an important object in their search, the myriads of insects, sometimes so small as to escape the eye, are equally so; insects, too, are partial to sweets, and are, in consequence, drawn to flowers where they may be obtained; here our diminutive friends seek them, and in satisfying their own wants, relieve the plants from the noxious hordes that infest them.

The forests of the West India islands and tropical South America, are covered with an endless variety of parasitic and other plants that are the chosen homes of uncounted numbers of the insect world; treé-ferns, the wild plantain, begonias, bromelias, numberless orchidæa and many other phanerogamous forms of vegetable life are to be seen in endless profusion; amid the nectared calyx of their bell and trumped shaped flowers, swarms of the more minute Diptera and Lepidoptera sip honey and find a grateful shade, and these afford the Humming birds their most delicious repast. It has been aptly said the home of these birds is also the home of the insects. But they do not always take insects in that way; every careful observer must often have had his attention drawn to our own splendidly adorned visitor on warm summer mornings, as he darted like a sunbeam at a bunch of minute flies in mid air, and, while seemingly motionless, regaled himself to his heart's content, and then took his departure as hurriedly as he came.

Darwin, in his "Voyage of a Naturalist," (and, by the way, much the best book he ever wrote) speaks of meeting a well-known species on Chiloe island; he says "at the time of the year I refer to, there were few flowers, hence I was quite sure they did not live on honey; and on opening the stomach and upper intestine, I could, with the aid of a lens, plainly distinguish in a yellow fluid, morsels of the wings of the diptera. It is evident these birds search for minute insects in their winter quarters under the thick foliage. I opened the stomachs of several specimens which were shot in different parts of the continent, and in all, remains of insects were so numerous as often to present a black comminuted mass as in the stomach of a creeper." An eminent English ornithologist has said that a Humming bird will eat its own weight of insects daily.

We have as yet said nothing concerning one of the most distinguishing features of this remarkable family of birds—the gorgeously colored plumage with which they are clothed. All the other feathered tribes must pale their ineffectual fires in the presence of these resplendent ærial gems. The gaudy plumage of the lories and macaws yields to the brilliant sheen of these veritable things of beauty. As they are the smallest, so are they also the most beautiful of all the feathered denizens of the earth. The colors of the emerald, the ruby, the sapphire, the topaz and the amethyst are all reflected from the variegated splendor of their dress. The changeableness in the hues of the humming birds is very remarkable; this is supposed to be "due to the peculiar organization of the feathers and the manner in which the luminous rays are reflected on falling upon them; each feather when minutely inspected, shows myriads of facets so disposed as to present many angles to the incidence of light, which will be diversely reflected according to the position of the feather; thus emerald may change to a velvety black, crimson to blue, a vivid fire color to a rich green, and so on through innumerable ever-changing shades and colors."

It has been mooted whether these bright colors are permanent or peculiar to the season of courtship only. Cabinets containing hundreds of specimens, and nearly all of rich and vivid hues, prove the former, although we may reasonably conclude the colors are intensified during the nuptial season. Such is the case with many other birds whose wondrous changes in dress before and after the amatory period are well known. Where, however, a group of birds breed through the entire year, as Humming birds do in Guiana and Brazil, we may always expect to find them in their resplendent garb, and individuals are rarely met in what might be considered an undress suit.

During the period of nidification, temporary adornments in the shape of crests, tufts, ruffs and gorgets are bestowed on many species of these already gaudy birds; language fails utterly to describe the almost ideal beauty of these nuptial decorations; nothing in the entire range of animated nature can vie with them in brilliancy. Nor does a cabinet collection of specimens convey an adequate idea of their prismatic radiance while alive; when dead they lose much of the metallic lustre that belongs to the living birds. And what, it may be asked, is the design and purpose of all this temporary splendor? Science stands mute and humble when confronted with this question. Doubtless it is conferred for some wise purpose, but of its true intent we are hopelessly ignorant, just as we are of many other peculiarities found among the feathered creation.

The wings are so much curved in their exterior outline as to be almost sabre or sickle-shaped in some varieties, and generally exceed the tail in length. The outer primary quill is invariably the longest; the shafts are remarkably strong and elastic, and frequently show an extraordinary delvelopment at their base. The lamina of the quills are narrow, but so compact that when in use they present a surface to the air so close and rigid as to produce the humming sound by which they are known, and affording in this particular a striking contrast to nocturnal birds, such as owls, the webs of whose feathers are so soft and loose as to create no distinguishable sound as they swoop upon their unspecting prey.

As might be supposed from their dexterity on the wing and great powers of flight, the tails as well as the wings are well developed and powerful; they show a wonderful diversity in shape, size and other particulars; in many species thy are considerably longer than the body and highly ornamented; in another it is composed of only six feathers, a remarkable anomaly in the history of the bird family, no other being known with so small a number nor is this an accidental variation—it is found to be constant. Generally speaking, the male and female differ widely in their plumage and are sometimes mistaken for different species; in other cases the sexes are clothed so nearly alike, that dissection alone can determine the difference between them.

The nests of Humming birds are beautiful examples of bird architecture; they vary almost as widely as the plumage of the birds them-

selves; in size they are both large and small, being adapted to the requirements of the particular species; the materials that enter into their composition are nearly the same through the entire family; these are generally cotton, thistle-down, spiders' webs, hair, root tendrils, moss and lichens. The nest of the Ruby Throated humming bird, which is the species common in our gardens, may be considered as representative of the entire group; we have always found it attached to the upper side of a horizontal limb or twig, although Wilson states having found it on a moss-covered stump or some strong stalk or weed; the nest is about an inch high and slightly less in diameter, the upper margin being slightly overhanging; some species build dome-shaped nests, others conical ones, while some again are cup-shaped and of extremely elaborate construction, although this latter feature is not common to them all. In most cases the nests resemble in color the limbs to which they are attached so much as to be taken for a knot or excrescence of the same. The nests are never more than twelve or fifteen feet from the ground, and often much less.

In these beautifully elaborate nests, two pure white eggs of nearly oval form, are deposited; these are rather large in proportion to the size of the bird; those of our own species measure five-eighths of an inch in length and three-eighths in breadth. The eggs are not laid at regular intervals, sometimes six or eight days elapse between the laying of the first and second egg; the chick in the one is often far advanced before the other is laid, and this fact has given rise to the belief that some varieties lay but a single egg, their nest having been found with only one egg, and that one in a partially brooded condition.—*Frank R. Diffenderffer, Lancaster, Pa.*

[CONCLUSION IN NEXT NUMBER.]

For The Lancaster Farmer.

LANCASTER COUNTY AS A GRAND APPLE ORCHARD.

I lived in Duchess county, New York State, and it was, and still is called the "Garden county of the State." It is richly decorated with wealthy rural estates—highly embellished. The farmers mostly own their farms, and are descendants of Holland and Germany. Their farming is skillful and successful; it is clean; no wild bushes are seen along the fences. They grow great quantities of tree fruits; especially apples. The Esopus Spitzenburg is grown most plentifully. It is produced in great perfection and commands a high price in New York city. Rich and poor have their barrels of cider for winter use. Farmers owning their lands are wealthy and happy, through their industry.

I lived in Lancaster county, Pennsylvania, which is also well named the "Garden county of the State." The farmers are skillful and industrious; their farming is clean, no waste strips at the fences. The culture of *tobacco* instead of *tree fruits*, is an evil; it takes all off the lands without giving any return; that will ruin the lands. It is an immediate gain, but a severe loss in the end. The apple "Carthouse" was the favorite while I lived there. I have traveled much over six States, and nowhere could I find a better soil, climate and lay of lands than Lancaster county for the culture of tree fruits. Yet they are not so much grown as they should be. They would enhance the value of farms if sold, or if divided among offspring after the death of the parents. Oh! Lancaster county, make thyself the apple orchard of the nation.—*Old Cultivator, Philadelphia, Feb. 2, 1876.*

The Grangers: We print in this issue the annual address of Mr. Jas. G. McSparran, Master of Fulton Grange of the Patrons of Husbandry, which contains much that will interest, not only Grangers, but the general reader. Mr. McSparran is one of the most active and intelligent members of the order in this county, and thoroughly understands the aims and policy of the organization.

For The Lancaster Farmer.

A FEW NOTES AND REMARKS ON NEW FRUITS AND VEGETABLES.

To the Editor of The Lancaster Farmer: Of the many varieties of apples, it would be superfluous even to give the names of all that have recently made their advent among pomologists. Still, a few worthy of notice may be named. The "All Summer," of Casper Hiller, is really a most valuable apple for the dessert—as a mild and pleasant eating apple during its season. The "Mellinger" is highly spoken of by Charles Downing, and as both these are Lancaster county seedlings, they deserve to be more extensively planted. The "Pearl," of Chester county, and the "Creek," of York county, are both worthy of being better known.

Of pears, the "Souvenir de Congress," though a foreign fruit, is highly recommended by those who have it in bearing. "Pratt's No. 22," Hon. M. P. Wilder tells us, is worthy of being placed at the head of the list. Then the "Hosen Shenk" and "Neff" pears are not excelled by any from foreign parts; and being "to the Manor born," should be more extensively planted, instead of untried foreign varieties.

Plums are so uncertain, owing chiefly to the depredations of the curculio, that it is discouraging to plant trees of the prunes and gages, so that we should turn our attention more to native varieties, such as the "Wild Goose" and "Miner" plums. These, though not equal to the finer kinds, are yet very valuable, as both are certainly of very good quality, either for market or home use. Evidently the curculio does not cause these to drop the fruit, probably owing to a difficulty of puncturing the tough and smooth skin. As these varieties generally bear good crops of very beautiful yellow plums, with red checks, they are both valuable. For several years agents have been selling some other variety of plum trees for Wild Goose, thus creating an impression that Wild Goose are as liable to the attacks of the little "turk" as any others, which is not true, in fact.

Of peaches we are getting so many new—very early and very late ones—that the peach season will be extended to over four months. Amsden June, Early Alexander, several of River's of England, and a new one of H. M. Engle's, all said to be earlier than Hale's Early. Then comes Salway and S. Miller's Steatly, prolonging the peach season into November.

Of cherries, the "Liets" is highly spoken of; the "Black Republican," of Oregon; River's "Early Amber," and the "Weeping Bigarreau," from Canada, are all well worthy of a trial.

Grapes are also "too numerous to mention." The many crosses between native and foreign, of Rogers', Underhill's, Dr. Wylie's and others, are certainly a great improvement in quality over our former native varieties, and, in most localities, are as hardy and healthy as any. Unfortunately, there is a prejudice with some persons, that foreign varieties crossed on our natives causes the seedlings to be more tender, as also more liable to disease. I have not found them so, as most of those I have tesetd (over thirty varieties) are as hardy and healthy, indeed, more so, than our old Catawba and Isabella. There are now several persons that we know of who are experimenting in the crossing, or hybridizing natives on natives; and from what has already been accomplished in this direction, if all said is true, we may soon have grapes superior to any "we ever dreamed of." A Mr. Folsom, of Attica, New York, raised a seedling from Isabella, named it "Eureka," meaning I have found it. From this he again raised a number of seedlings, some of them very early, and others of such remarkable keeping qualities that some good judges supposed them to be just plucked from the vines, while the fact was, they were of the previous season's growth, and simply kept in a flour barrel in the cellar alongside of a barrel of potatoes—the potatoes freezing and rotting, and the grapes remaining in good eating condition for twelve months. Through cold of winter and heat of summer, these seedlings, it is said, are far superior to the parent Isabella. At exhibitions, his grapes took premiums over all others. Another gentleman in southwestern Missouri is collecting and raising seedlings of the wild Æstevalis or Summer grape, and claims that he already has several that are superior wine grapes, and some as table grapes; and that this species is free from rot and mildew, so injurious to others. And, again, there is an ex-editor in New Jersey who Mr. Fuller says "has been experimenting in raising seedlings, and in a half jocular, *fair warning* to the professionals, like Mr. Ricketts, Husmann, Campbell, Miller, and Caywood, that they may look to their laurels, as the ex-editor is certainly on their tracks, and with a good chance of coming out ahead on pure native grapes." From another source we hear that he has already seventeen white and six black grapes. His own statement is, "that nothing in the United States can compare with these grapes;" (!) but will not part with a bud until he has grown a hundred plants of each variety, when he will offer them for sale." Thus the "coming grape" will be along probably before a second Centennial year comes round.

As to strawberries, "Star of the West," "Triumph of Cumberland," and "Colonel Cheney," are said to excel any that have heretofore been grown. There are also several new raspberries and blackberries.

Of vegetables, the *Tong Qua*, or Chinese cucumber, is quite a novelty, weighing ten pounds and over, said to be eaten in China while small. The Bismarck cucumber, and the singular Russian cucumbers, are also new. The salad plant from Japan, growing into a bush three feet high, and very fragrant; the blossoms are cut off and salted, and thus form an agreeable condiment. The "*String melon*," also from Japan, said to be excellent while young. Another is a squash, from Japan, of which, as yet, we know nothing.

I might mention other fruits and vegetables, but this article is already longer then I intended.—*J. B. Garber, Columbia, Pa., Jan. 31, 1876.*

For The Lancaster Farmer.

MAKE HOT-BEDS.

When this gets to the readers it will be time to make hot-beds to raise early cabbages, tomatoes and egg plants to plant out in June. Every industrious farmer wishes to make and raise all his requisites at home, and every one may have his own hot-bed, to raise tender plants from seeds, for his garden, at a small cost. Almost every carpenter can make the frame and sashes, and have them glazed, all ready for use. Make the frame 30 inches deep behind and 24 inches in front, the sides sloping and of the size for the sash. A frame of two sash will raise all plants needed. The sash may be five or six feet long, with four rows of glass; the panes seven by nine inches. Four rows of seven inches, with half inch between on laths, and the outer frame three inches broad, will make the sashes three feet broad; a strip of two inches fastened upon the cross-tie will make the frame six feet two inches broad, and the length of the sash. A lath, an inch thick, should be nailed upon the upper edges of the sides, to be two inches above the edges, to keep the sash in their place. The sash slide upon the cross-tie, in the middle of the frame and the outer edges of the frame. Set the frame in a sunny and sheltered spot, half sunk and half banked up with soil and sodded over. Put horse dung in eighteen inches deep, place the sash on close, and cover them over night with straw mats or wooden covers. When the manure gets very hot shake it loosely up, then press it lightly down, so as to slope from front to back. The frames should be set sloping towards the sun, and to face the south or southeast. Put soil, finely broken, six inches thick, all over the dung in the frames. Put the sash close on and cover over night. In forty-eight hours the soil will be heated. Dress it finely with hoe and rake;

then make shallow drills from front to back, with the finger or a small stick, six inches apart; sow the seeds in them, then cover with soil and smooth the surface with a firm pressure of the spade. Sow the egg plant seeds in the middle, as they need the greatest heat. In two days after sowing, young plants of cabbages and tomatoes will be through the ground. It may be ten days before the egg plants are up. The sash should be raised behind every day; put in a stick to keep the sash up, say one or two inches on good days, and on very cold and windy days the sash may be closed all day, unless there is much steam in the bed, if that be the case raise the sash an inch to let the steam escape and fresh air get in, but shut close early in afternoons of very cold days. Cover over night while the cold weather lasts. Pick out all weeds and the good plants will grow the better. When the soil gets dry water it through the sprinkler of a garden watering-pot. Make the water luke warm, and apply it about 10 o'clock in the morning; then fit the sash close on for an hour, to raise a steam from the watering, to fall upon the plants like dew. Give more air as the days grow longer and weather gets warmer.—*W. E., Phila'a, Feb.* 1, 1876.

For The Lancaster Farmer.

CORN CULTURE.

Mr. Editor:—I noticed an article from J. B. G. in the January number of The Farmer under the caption—"Is a change of seed necessary?" As I have made corn farming a specialty all my life, I am convinced more fully than ever, especially during the last four or five years, that corn is the most profitable crop that farmers can raise. I would like to know more about Mr. Cooper's experience, believing as he does, that "in-and-in breeding" will not deteriorate grain; but that from the same old stock, which at first produces only one ear or "nubbin," two or three or even four ears may be produced from a single stalk. Does he mean to say that from seventy-five to one hundred bushels to the acre is not a crop, and instead thereof three or four times that quantity can be raised at the present time? I raised ninety bushels to the acre in 1870, when two ears to a stalk were an exception, selecting my seed when cribbing, insisting that it must be done. In 1874 my seed was damaged and I made my selections from the crib, and my yield that year was ninety bushels of shelled corn per acre, in a field of eighteen acres. I began to make my selections for 1875 when cribbing it, and when I came to examine it, behold, the mice had "milled" it to such an extent as to render it worthless. I again resorted to the crib, and my yield that year (1875) was eighty-seven and a half bushels per acre, in a field of nineteen acres—two best crops, in succession, I ever raised. I planted one grain every twelve or fifteen inches apart, and had only one ear to a stalk, and not very large at that. Simply increasing the number of ears to the stalk and not the number of bushels to the acre, would be no improvement, in my opinion, as we in Lancaster county consider the fodder worth a good deal for feed and the offal for manure.

Mr. J. B. G., please give us facts more fully of Mr. Cooper's experience, and oblige our Lancaster county farmers.—*J. B., Rothsville, Lancaster county, Pa.*

P. S.—What kind of fertilizers does he use and how does he apply them? When does he plow his corn land? How does he plant his corn? and how many bushels does he raise per acre? The answers of these questions would be a great help.—*J. B.*

The Fruit Growers' Society: The interesting abstract report of the annual meeting of the Pennsylvania Fruit Growers' Society, which we print in this issue of The Farmer, is copied from the columns of that excellent weekly newspaper, *The Bucks County Intelligencer*. It is the first horticultural gun of the Centennial year, and has a decidedly healthy ring.

For The Lancaster Farmer.

TESTING FERTILIZERS AND THEIR CONTINUED ACTION.

Experiments Made at the Experimental Farm, West Grove, Chester County, Penn'a.

In 1872, plots containing one-eighth acre were laid out and the following fertilizers applied at the rate of $10 worth per acre, for the wheat crop.

The fertilizers were sown broadcast and harrowed in, except where otherwise stated. Wheat sown September 17th, 1872. The results on succeeding crops up to this time are noted:

	Bus. of Wheat per acre in 1873.	Lbs. of Hay per acre in 1874.	Bus. of Corn per acre in 1875; 72 lbs. ears per bus.
1. Bone and ashes composted, -	30.46	5,552	93.61
2. Acidulated South Carolina rock,	34.22	5,600	93.04
3 Kainit, - - - - - -	29.54	4,000	87.16
4. Prof. Ville's "wheat food," -	33.28	4,960	91.08
5. No fertilizer, - - - - -	25.20	3,920	81.64
6. Ground bone, sown broadcast and harrowed in, - - -	29.38	5,648	98.24
7. Ground bone, one-half as above, one-half drilled in with the wheat, - - - - - -	31.44	5,728	97.56
8. Ground bone, all drilled in with the wheat, - - - -	33.36	5,680	98.64

In the above comparison it may be seen that the Acidulated South Carolina rock gave an increase of 9 2-60 bushels of wheat per acre, over the unmanured plot, in 1873; also an increase of 1,680 pounds of hay in 1874, and in 1875 an increase of 11 12-72 bushels of corn.

Now, valuing the wheat at $1.30 per bushel and the hay at $15 per ton, and the corn at 50 cents per bushel, and we have an aggregate increase in the value of products, in three years, amounting to $29.92, from one application of $10 worth of Acidulated South Carolina rock.

Note.—The Acidulated Rock cost $30 per ton, and analyzed—7 per cent. soluble phosphorous acid; 5.84 per cent. insoluble phosphorous acid.

The ground bone cost $41, and analyzed—

Bone phosphate of lime, 45.78, P_2O_5, 20.97 per cent.

Nitrogen, ... 3.28 per cent.

The bone and ashes compost, was 1 ton of bone and 50 bushels of ashes, thoroughly mixed.

The Kainite cost $25 per ton, and contained potassium, 14 per cent.; sulphate of potassa, 28 per cent. —*John I. Carter, Experimental Farm, West Grove, Chester co., Pa.*

For The Lancaster Farmer.

RURAL LIFE.

Rural life without gardening would be monotonous. Even with the affluence of agricultural wealth there would be an irksome sameness, unless relieved with some ornamental embellishments to the grounds around our dwelling houses. Even a shade tree at the humble cot, by the wayside, takes off its baldness in summer; and one or two dwarf, hardy evergreens near to it, and a geranium in its window, gives it the air of cheerfulness and contentment. In winter we would expect more about the *farm house*. Two or three stately evergreen trees, with a few hardy, evergreen shrubs, make the place an object of mark upon the winter landscape. The trees, for summer shade, may be cherry, chestnut, pear and apple, in bearing. They are beautiful in bloom and handsome in fruit, and unite the useful and the beautiful. A piece of lawn in front, decorated with a few flowers in summer, and plants in the windows in winter, makes all cheerful.

About the cottages and mansions of the wealthy we should expect to see a well-kept lawn, embellished with ornamental trees and shrubs; the deciduous for blossoms and fragrance in summer, and lovely evergreens to enliven the whole in winter. The grounds may be small or large; if well decorated they are admirable to look at. Even the *Cemetery*, on South Queen street, Lancaster city, with its lovely evergreens, shine beautifully in the distance towards the west, especially during winter.—*Horticol, Philadelphia, Feb.* 4, 1876.

For The Lancaster Farmer.

THE ADVANCING PROGRESS OF OUR HUSBANDRY.

The advancing progress of our husbandry may be considered by the vast extent of surface we cultivate, and the immense quantities of our product which are exported annually. It is husbandry which opens the gateway of the world and tames all nature down to its will. *Botany, Chemistry* and *Entomology* are its lamps of light. *Mineralogy* soon follows; then all the various species of industry come on in their times. The various lines of rapid transit and the telegraph push their ways forward to carry off all the surplus products and news, and bring back a return of other commodities. When the numerous specimens of the products of husbandry are exhibited at the Centennial Exposition they will bewilder even the most learned and skillful of our husbandmen. When our money gets scarce husbandry makes it plenty by the prices of its exported products; in short, husbandry is the grand panacea for all worldly ills.

It was easy to raise good crops upon the fresh virgin soils of the new lands, but now it requires high skill and industry to raise good crops upon the lands which have been impoverished by long and constant cropping. By the better knowledge of manures and concentrated fertilizers, and the improved hand and horse implements and machinery, the crops are raised with less cost. *That is progress.* See also the improved species of livo stocks and their produce.

To bring the subject near to ourselves; there has been introduced many new species of grains; of wheat, oats, and new varieties of corn, potatoes and turnips, and the more general cultivation of turnips for dairy cattle and sheep. Cabbages and onions are now extensively laid in for ship stores; and individual husbandmen grow scores of acres of them. The *Millet* and *Alsike clover* are grown to help the yield of pasturage and hay. Our vineyards have vastly increased; all our tree-fruits have been improved; and the culture of berries is immense, lasting the whole year. The subsoil ploughing has doubled many farms; and, of late, the steam-plow, subsoil lifter and clod breaker have been brought into satisfactory use for tillage.

Horticultural progress is no less manifest. Go where we may we see the country ornamented with improved parks and well cultivated gardens. The great increase of new species of trees, shrubs and flowers makes it easy to embellish new grounds. There are also many new species of culinary vegetables and the skill to grow them. *Architecture*, too, the accompanying handmaid of Horticulture, has greatly improved.—*Walter Elder, Philadelphia, Jan.* 31, 1876.

THE PATRONS OF HUSBANDRY.

Annual Address of Master James G. McSparran, of Fulton Grange, No. 66.

Another year has passed. The annual installation of officers in our grange has taken place again. You have thought proper to re-elect me Master. I cannot but express my warmest thanks to you for this expression of your confidence and esteem. As you all well know, I did not seek the position, but, on the other hand, while I protested against re-election, be assured my objections to it did not arise from any abatement of interest in or unwillingness to labor in the cause we love—in the cause we have espoused as the farmer's hope. Let us take a retrospective view of the past year. What is our condition now as a grange, compared with what it was a year ago? In numbers we have increased, and can we not with truthfulness say we have made progress in knowledge also? Do we not comprehend to a fuller extent the great, and at the same time noble, aims of our organization? And while we more fully realize the magnitude of the work, do we not more fully appreciate the high and holy desire to elevate the tiller of the soil to the position which he is by right entitled to? If we have thus been educating ourselves, if our minds have been thus impressed with the principles of our order, then, indeed, have we made progress, and cannot but enter upon the duties of the new year with a more earnest devotion to our cause, and a stronger determination to use individual effort to promote it. What are the aims of our organization? What benefits can we hope to derive from our con-

nection with it? I answer many, about all of which, however, are embraced under the three heads—pecuniary, social and intellectual.

Let us consider these briefly as they are presented to us. Is it not true that for almost every article we buy (whether for domestic use, or stock, implements or fertilizers for our farms,) we are obliged to pay numerous commissions in addition to the original cost? This is an undisputed fact; even our opponents frankly admit it. Is it not true again that crops are often produced and sold by us for a figure which does not compensate for labor and expenses? Is it not true that we who by right hold the bread that feeds the world have no voice as to the price that bread shall command? Other trades, other vocations, can and do (which is their right) fix a price on their labor, but we, abject slaves that we are, must be satisfied with what others are willing to give, regardless of what it cost us. Can any position be more degrading? Can a stronger incentive be presented to urge us to prompt, vigorous, yet, at the same time, honorable action to ameliorate our condition, and place our calling where it deserves to stand among other vocations? But some will claim we are undertaking too much. How can we expect to alter these systems which have been operating against us for ages? How can we expect to change these channels through which business has been flowing? The work is a great one, we must admit, and that Patron who has entered the field expecting to reap *all* the pecuniary benefits which will be derived from our organization immediately, has never considered the matter to its depth; has not considered that for generations past the fetters have been made more and more secure, and cannot be broken without determined, concentrated effort on our part. But, truth is mighty and will prevail. We demand justice, and nothing more. We wage no war (to use the sentiment of our State Master) on any legitimate business. When our principles and aims are better understood much of the opposition against us will cease.

Our strength is known; let us but concentrate it. Prove by our zeal that we realize our position; ever remembering that great as the work may be the result will fully justify it. Important and highly beneficial as our order will ever prove in a pecuniary point, the social feature is equally important. There is no denying the fact that sociability is not sufficiently cultivated among families of our calling. Difference of opinion in religious and political matters, together with other less potent reasons, have the effect of alienating us from each other. No surer method can be established to cultivate this social disposition and to break down this barrier, than to assemble together for the promotion of objects in which we have a common interest. I am glad to be able to say that some of my warmest friends differ with me politically, and although my own convictions in that direction are decided, I have the highest respect for those who honestly entertain opinions antagonistic to my own. But important as the pecuniary and social features are, the great, the weighty benefit to be derived is the training of the mind. The cultivation of the mind is *the* important work. We cannot overestimate this. Individuals in every community (perhaps we have some in our midst) will tell you how much that they have regretted (or did not possess) early opportunities of improving their minds. Each Grange, properly conducted, must be an excellent school. Each meeting can be made interesting as well as instructive. Is there any necessity for this intellectual training? may be asked. Most undoubtedly there is. When it is in the reach of every one, every mind should be capable of performing the duties of an intelligent citizen. How many of us would be willing to preside over a large public meeting or take part in it? How many of us would be capable of doing so properly? Would not the most of us experience considerable embarrassment to preside over even a township meeting? Why is this? Not because the Almighty has not endowed us, but because we have never had the practical training; our talents have never been cultivated. And among our sisters, how many of them can take the pen in hand and write an essay, which, through well worded sentences and enlarged ideas, reflects the sentiments of a cultivated mind? Many will argue that these acquirements are not essential among farmers. Just there is the mistake. The time is past for such reasoning. From this time forth the farmer and his wife will be expected to stand where any other can, where intelligence is taken as the test. The Almighty has given us talents, and we have no right to bury them, but duty compels us to develop them. On this point I have a few pointed words to say to members of our Grange, and I hope the shoe will be put on wherever it fits. We have quite a number of members who have sons and daughters not with us. Certainly such have not considered the advantages of the Grange as a school for mental training. Allow me to say they should be here; here, to assist in the great work we have in hand. We need their strength and influence. But especially should they be here, that they themselves may reap the benefits of such an organization. Young minds have a stronger taste for acquirements, and are more susceptible of improvement than older ones; and certainly it is our duty to encourage and foster the desire. And while it will lighten life's burdens to them, it will instill into their minds a higher respect for the calling in which we are engaged. In conclusion, let us work with a will. Let us have no laggards, but impelled by a sense of justice to ourselves and posterity, let us assist in building this grand structure, and in the not far distant future the anniversary of our order will be hailed with delight by all who believe in the supremacy of justice and right.

THE FRUIT-GROWERS'S OCIETY.

Annual Meeting in Doylestown--Interesting Sessions--Valuable Essays and Discussions--All About Fruit Growing and General Horticulture.

The convention of the Fruit-Growers' Society of Pennsylvania was held in Lenape Hall, in Doylestown, this week, beginning at 2 o'clock on Wednesday, January 19. The attendance on the first day was not over one hundred persons, a majority of whom were from this county. A table for the reception of specimens of fruit was placed in the front of the hall, and by the time the proceedings began it was well covered with apples of various kinds, and a few pears, most of them from Bucks county growers. Quite a number of these had been brought for the purpose of obtaining the correct name. At 2 o'clock the President, Edwin Satterthwait, of Jenkintown, and the Secretary, E. B. Engle, of Marietta, Pa., took their places. The minutes of last year's meeting, held at York, were read. H. T. Darlington, on the part of the committee representing the local societies and clubs, briefly welcomed the visitors to Doylestown. Mr. Satterthwait responded, saying that the members of the society had come here as learners themselves, and that the object of holding the meetings in different places was to acquire fresh knowledge from the people. The Treasurer's report was read, showing the receipts of the past year, including a balance over, to have been $310.87, and that the present amount in his hands is $261.69. The Society then proceeded to general business.

General Reports and Letters.

H. M. Engle, of Marietta, read the report of the General Fruit Committee for the past year. He referred to the difficulty of preparing a satisfactory report for the whole State, in the absence of local interest. The apple crop of 1875 was short, and of inferior quality, much of which was caused by the injury done by the codling moth. The present prospect for large fruit crops is not flattering. This is the opinion of many prominent growers. In some sections the borer is very destructive. In a few localities there are particular varieties which bear freely every year, or every alternate year, but are little known elsewhere. The pear crop was better, fewer varieties are grown, and public opinion is more generally agreed as to their merits. Reference was also made to the peach and plum crops. The Richland is considered about the best variety of the plum grown in the State. The Mazzard cherry is generally free from insect enemies, and if it were better cared for it would be quite profitable. Reports on grapes were meagre, compared with their importance. It is the most productive and profitable of fruits. The Concord is still the grape for the million. The Martha is hardy and productive, and objectionable to some for its sweetness. It has sold fifty per cent. higher than the Concord in market. The hybrid varieties may be indefinitely multiplied, and many good kinds thus obtained. Isabella and Catawba are mostly discarded. Blackberries are neglected in consequence of the abundance of wild fruit. The Lawton is largely superseded by the Kittatiny. Wilson's Early is being abandoned because of its poor quality. An insect enemy, which attacks the roots and stalks, has appeared in some quarters. Raspberries are grown mostly near the cities. The black caps are perfectly hardy, and many of the red ones. The Herstine is the most popular. As to strawberries, the Wilson still leads in the popular estimation, and the kind that is to supersede it has not yet been discovered. There are many other good kinds, which do not quite fill the bill. Currants and gooseberries, unless well mulched, are seldom remunerative, and crops have been moderate. If the fruit committee were better organized, and its scope enlarged, its investigations might be made very valuable. It is desirable that every county in the State be represented, so that a complete report of 1876 may be obtained.

A proposition to alter the by-laws of the Society, brought over from the last meeting, was read by the secretary. One was that the Society should also give attention to general and ornamental horticulture. Mr. Meehan explained the reasons for the proposed changes, which was also provided for in the change of name to the "General Horticultural Society of Pennsylvania." The title was framed in this manner to avoid confusion with the Philadelphia Horticultural Society. H. M. Engle moved to postpone the subject for the present, which was carried. A recess of ten minutes was then taken to enable persons to become members.

The President stated that a number of letters had been received from prominent fruit-growers who were not able to attend, and some of them would be read. One was from William Parry, of Cinnaminson, N. J., who referred to the value of the Beatrice, as an early peach—also the Louise and the Rivers, which have been lately introduced. Thomas Meehan said that Mr. Parry had been a very active member of the Society, but was now interested in his own State Society. He moved that he be made an honorary member, which was carried. One from Rev. E. P. Roe, of Cornwall, N. Y., expressed much regret for his inability to attend. He thinks he has a new gooseberry and a new raspberry of value. One from Mr. Huidekoper, of Meadville, had reference to grape culture, in which he is a proficient. He trims vines in October, taking off most of the laterals. The first of November all vines are taken down and covered. They are doubled up and covered with light-colored earth, which does not thaw so easily. Early in spring they are uncovered, and the result is a large crop of fruit. The Delaware rendered the best yield last season—better than Concord. Sulphur is sprinkled on the ground to prevent mildew. In grape-houses the glass should be whitewashed, to moderate the heat. Wood ashes are very beneficial. Old varieties give better satisfaction on the whole than novelties. Mr. Meehan spoke favorably of the processes employed by Mr. Huidekoper in his graperies. The roots of the vines, outside of the houses, were thickly covered with leaves. H. M. Engle also approved very much of Mr. H.'s system of grape-growing. Mr. Sprout, of Lycoming county, said he had practised covering the earth about grape-vines with much success. One year he covered the ground with the crushed stalks of sorghum and had the heaviest crop he ever grew. Forest leaves are the best mulch for strawberries he has ever tried. W. P. Magill said that for several years past he had mulched his vineyard with green grass cut from his lawn, with excellent effect. Mr. Satterthwait said that there was nothing to be compared with leaves for keeping out frost. They are the best protection for celery that he has ever met with.

H. M. Engle, chairman of the general fruit committee, proposed the reading of some of the reports received, which was done by the secretary. The report from Franklin county said that more attention is given to fruit-growing now; the soil and climate are very favorable; the culture of flowering plants is steadily increasing. From Lancaster county the report, written by J. B. Garber, was not favorable, peaches, plums and cherries having been injured by severe cold. Old apple trees have died from its effects, and young ones greatly injured. Pears have ripened better than apples; cherries yield five years in six; peaches three years in five; plums are no go, because of the curculio. Of grapes, most of the new kinds have succeeded pretty well, but some are ruined by mildew. The statement in regard to the effects of the cold in "sickening" apple trees was questioned by several persons. Mr. Sprout said that in Lycoming county peach trees have suffered in that manner. H. M. Engle thought that the wood growth was weakened by severe cold. It is the sudden and extreme change, probably, that does the injury. Mr. Pannebaker said that it is the white frost that kills the trees and buds. Where the elevation and the winds prevent the frost, the trees are not hurt. E. Satterthwait said that the moisture of the air had much to do with it. Mr. Sprout related a case of an orchard on the south side of a hill, from which he never had a bushel of peaches. The wood grew late, was full of sap, and was injured in consequence. On a northern exposure he had excellent results. No trees in the valleys have done any good. Mr. Magill said that there was a difference in the hardiness of varieties. Mr. Meehan told a humorous story to illustrate the different opinions expressed on this point, to the effect that all the reasons given might be nearly right, but none altogether so. This discussion was continued at considerable length.

Address by the President, &c.

On Wednesday evening several papers of interest were read before the Association. President Satterthwait produced an essay, which embodied a number of useful suggestions regarding the conduct of the present session of the Association. He requested brevity in the remarks of the members upon the various matters under discussion, and a close adherence to the subject before the meeting. He referred to the increase of fruit-growing in the United States; compared it with that of other countries which helped to supply our markets; said that fruit must always be cheap, but the business would still be remunerative if properly carried on; spoke of the cheap fruits of Delaware; of the general dullness of this and all other trades; of good and bad years noticeable in fruit-growing; and referred lastly to the display that should be made by the promologists of the country at the Centennial.

Mr. Meehan, of Germantown, responded to the last suggestion, saying that it would be impossible for this or any other society to act as a body, but that very much could be done by individual efforts in that direction; and he recommended co-operation with the American Association, in an informal manner, in making a creditable exhibition at the proper time.

An essay on the interests of the Society at the Centennial, by S. B. Heiges, of York, was read. Its main

feature was to co-operate with the Pennsylvania Horticultural Society in the matter by the appointment of a joint committee, the duty of which would be to make the necessary arrangements with the Centennial authorities.

Mr. Sprout, of Lycoming county, favored this suggestion, on the ground that it would form a nucleus about which all the societies of the country might gather. He exhibited the photograph of an apparatus designed to preserve perishable fruits when on exhibition, consisting of a case having a glass front, and surrounded by ice.

George B. Thomas, of West Chester, said that all the space in this department at the Centennial had been taken; that nothing could be done by the Society as a body.

Mr. Meehan offered a resolution to co-operate with the American Association, which will meet on the 14th of next September, probably in Horticultural Hall, Philadelphia, and after a short session will adjourn to the Centennial. His resolution was adopted.

Josiah Hoopes on Yards and Lawns.

An essay was read from Josiah Hoopes, of West Chester, who was not present, entitled, "Our Yards, and How to take Care of Them." The paper was concise, and to the point. What is needed is a more natural and less artificial plan than is commonly observed. Rules applicable in all cases cannot be laid down, although general principles may be. Every place has an individuality of its own, which must be understood in order to secure the best results. For lawns few walks were recommended, and these should not be laid out carelessly. Every curve and bend should have a reason. Poorly kept walks are worse than none at all. Ground gypsum was recommended as a good dressing for grass, to be used annually. The hand-mower will kill the weeds, thicken the turf, and by leaving the short grass where it falls, the soil is actually improved. In making walks there should be stones employed for foundation, up to within three inches of the surface. On that the gravel is placed, the middle of the walk being raised two inches above the edges. Mixed flowers in beds are in bad taste on a well-kept lawn. Position of beds, the arrangement of fountains and rockeries, and the selection of trees were mentioned. In front of a bay window, or in the bend of a drive or walk, is a suitable place for a flower bed; fountains ought to be plain in construction; a rockery should not show marks of a hammer or defaced portions of the stones used in its construction. Avoid large trees on small lawns, except for shade; avoid mathematical precision; avoid scattered flowering shrubs. The training in of the branches of trees while young will greatly improve their appearance in after years. Evergreens properly cared for will add greatly to the beauty of any lawn or yard. And after once getting a place in order, care is constantly required to keep it so. The essay of Mr. Hoopes was full of useful and practical information. This subject has been a specialty with him for years, and he has published a book on the evergreens.

Mr. Meehan put in a plea in this connection for the straight box-wood borders and straight walks of the old-fashioned flower gardens.

H. T. Darlington, of Doylestown, asked what common people were to do when the high priests disagreed. Mr. Hoopes recommended curves, and Mr. Meehan straight lines.

Mr. Meehan explained himself, and eluded the trap by endorsing the curves for the lawns and the straight lines in the small gardens.

John I. Carter, of the Experimental Farm at West Grove, spoke of the beauty of the climbing vines about the buildings, and of their cheapness and ease of growth.

H. T. Darlington spoke of the forest trees—of their inimitable characteristics—and mentioned those about the West Grove Experimental Farm.

Management of Orchards.

John I. Carter read an essay on "Orchards and their Management." He said orchards would pay for more attention than they generally receive. If the supply of fruit is increased beyond the present consumption, the demand will also increase in proportion. The varieties of fruit recommended were as follows: Apples—Maiden's Blush, Smokehouse and Smith's Cider. Pears—Bartlett, Lawrence and Seckel. Cherries—Governor Wood and Early Richmond. Judicious manuring and good cultivation are necessary, which are not to be discontinued after bearing begins. Plenty of mineral fertilizers were recommended. South Carolina rock was mentioned as adapted to the purpose. A wash made of muriate of potash, cow manure, sulphur and copperas was recommended to be used after pruning.

Mr. Purman, of Clinton county, asked for practical remarks on the management and care of orchards. He has one hundred acres of young trees, and desires to have the most intelligent manner of caring for them, and at the same time securing the most economical method that will produce the result.

To answer this request the President called upon Watson P. Magill, of Bucks county. Mr Magill first said that from nothing you can obtain nothing. An orchard of young fruit ought to increase in value at the rate of $1 per tree per annum. In order to do this something must of course be given to the land. If Mr. Purman has 100 acres of orchard, at the rate of 45 trees to the acre, he must expend some time and labor to realize an increased value per year of $4,500. If he is not prepared to properly cultivate 100 acres, he had better try 50, or even 10. Hoed crops were advised for the first six or eight years—potatoes being mentioned as well suited to the purpose. Three or four hundred pounds of phosphate to the acre should be used. The crops would assist in paying for this cultivation of the trees. After that time the orchard should go into grass, and be mown once or twice a year. If the grass is removed manure should be returned. Stock ought to be carefully excluded. After the grass is under the trees, the fallen leaves make an excellent mulch.

Mr. Sprout, of Lycoming, said that his practice has been to use plenty of potash about his trees, in the form of wood ashes; also copperas water, applied at intervals of two weeks, to remedy fireblight.

John Eastburn, of Bucks, recommended plowing under clover in orchards; also buckwheat. He objects to the practice of planting either rye, oats, or wheat, and does not believe in plowing under sowed corn. He believes in perpetual cultivation of apple trees. Last year he marketed twenty-eight hundred bushels.

W. P. Magill referred to the orchard of Joshua Fell, near Doylestown, whose trees in the autumn resemble pyramids of fruit. They sell at from ten to thirteen dollars per tree. The orchard is twelve years old. The grass in the orchard resembles a well-kept lawn. Mr. Magill favored low trimming.

Mr. Gardner, a fruit-tree trimmer of Bucks county, explained his general plan of pruning. He allows three branches to form the pillars upon which to build the head of the tree. He aims at the production of short trunks and large tops, and secures, thereby, he states, rapid and vigorous growth.

Mr. Magill stated that the best time to prune orchards is from the middle of May to first of July. For a wash or coating he thought a solution of gum shellac in alcohol would be found satisfactory.

President Satterthwait said that low trimming was doubtless the best; that the leaf should be as near the root as possible.

Mr. Lint, of York, spoke of spring and fall pruning; he would cultivate an orchard for six or eight years, and then put it down in grass; and he preferred potatoes as a crop rather than corn for the young orchard.

A committee to examine the fruit on exhibition and to report next day was appointed. It was as follows: Thomas M. Harvey and John I. Carter, of West Grove, Chester county, and S. W. Noble, of Jenkintown.

Election of Officers--The Centennial.

The proceedings of Thursday began with the selection of officers for the ensuing year. A committee of three, consisting of John I. Carter, Thomas M. Harvey and Alfred Sheller, was appointed by the chair to present nominations for the offices to be filled at the afternoon session. The committee to audit the treasurer's account reported that they had found everything correct. The subject of changing the name of the society to the "General Horticultural Society of Pennsylvania," brought over from last year, was taken up. Thomas Meehan gave several practical reasons why the change was not desirable. H. M. Engle and Samuel W. Noble expressed the same views. The matter was then postponed until next year. John I. Carter offered a resolution looking toward a display of our fruits at the Centennial. It was proposed that the Secretary correspond with the different county agricultural societies, asking their aid in making such collection and display. He briefly advocated such action. Mr. Meehan said that he could not see any practicable way of reaching this object. It would cost a good deal of money to make a State exhibition of fruit, and he did not see where it would come from. This Society could not interfere with the regular action of the Centennial Commission. H. T. Darlington said that it was very doubtful if the Society could act except in an auxiliary capacity. Thomas M. Harvey thought the difficulty would not be very great, and that the cost would not be much if the packages were prepaid. The subject was then postponed until evening.

More About Apple Orchards.

Resuming the subject of the treatment of orchards, Thomas M. Harvey said that more light was wanted on the proper time of pruning. At one time he had pruned certain trees at intervals of two weeks during the year, to learn the effect. John I. Carter said that the limbs cut off in the first two months of the year, and in June, had healed most perfectly. The result was favorable to winter pruning, but all had healed without injury. Mr. Lint, of York county, said that his experience was in favor of pruning when the buds began to swell. They heal over sooner then than at any other time. Mr. Satterthwait said that he had always been warned against pruning at that time—that there was a great confusion of ideas. Thomas M. Harvey said that all agreed that we should avoid pruning while the sap is running, which often causes much injury. Mr. Meehan said that as a general rule a wound made in summer will heal more rapidly, but in practice he prefers winter pruning. It is not well to remove branches while covered with leaves. H. M. Engle said that pruning was only a choice of two evils. If orchards were managed correctly very little pruning would be needed. If the tree can be trained right when young, it will never be required to cut off large branches. Prune as little as possible. Pinch off surplus buds or shoots when young, and we will have no need to discuss this troublesome question. W. P. Magill said that he agreed with Mr. Meehan as to the time of pruning. Wounds heal over more quickly if done in summer, but in practice the winter is generally found more convenient. E. Satterthwait took the same view. A. R. Sprout, of Lycoming, said that a great deal depends on the condition of the cellular tissue; if it is full of sap when cut it is sure to bleed. But after the leaves come out trees may be pruned with safety.

Hybridization of Fruits.

Thomas Meehan discussed the subject of the hybridization of fruits by design. We are apt to think we are not progressing at all, but on looking back we see how much has been gained. People may ask of what use are these things—we might as well ask the use of a new-born babe—we have to wait and see the value of new-born thoughts. There are a great many scientific facts which seem to be of no particular use, but are afterward found very valuable. Science grows continually, and in course of time we can see how much has been gained. The hybridization of fruits is a subject of this class. It was found out long ago that more and better fruit could be had by mixing the pollen of blossoms. Knowledge on this point has grown very slowly. It is not probable that the process is attended by immediate effects on fruit. Corn and squashes seem to be exceptions, but there is probably a natural affinity in them. Like does not always produce like; no two trees of the same kind are exactly alike; fruit and nuts from seeds are not alike; there is an inherent natural law of change which is always going on. The results of cross-fertilization are not always uniform—sometimes there are no characteristics of the female plant, but often there is a perfect blending of the two. Sometimes there are no traces of the male parent in the offspring. In experiments in crossing Japan lilies this had been almost always the case. Remarkable success has followed the mixing of varieties of grapes, especially in what are known as the Rogers' hybrids. But it is doubtful whether they are as good as some natural crosses, producing new seedlings. The best kinds are the result of natural evolution. In experiments with pears but few good kinds have been raised. In brief, cross-fertilization, so far as it has yet been worked up by artificial means, has been of little practical value to fruit growers. It is better to wait upon the processes of nature. H. M. Engle said that he had had sufficient success in this direction to encourage him. He instanced experiments with strawberries, in some of which he had made satisfactory crosses. He had made efforts to cross the peach and the apricot, but they resulted in a seedling peach, ten or twelve days earlier than Hale's. He had been much interested with his experiments. We do not yet know the laws by which the operations of nature are governed. Thomas M. Harvey made some remarks on the hybridization of the wheat plant. Mr. Burton said that he had been engaged in hybridizing plants with considerable success and satisfaction. Mr. Meehan said that it was no object to get new varieties of fruit; we have enough varieties, but we wish to make them better. Florists want new varieties of plants, for that is better for their business. By crossing we may improve the character of our fruits, by modifying or removing objectionable qualities. H. M. Engle described the results of about 200 crosses with strawberries, in nearly all of which the qualities of both parents were apparent. He hoped that the future would develop more satisfactory results.

Best Varieties of Apples.

Samuel W. Noble, of Jenkintown, read a paper on the cultivation of the apple. He said that proper care will always compensate the grower of apples. It begins with planting the trees. Make the holes large; nearly fill them with good earth; be careful to fill the interstices of the roots with fine earth. The soil need not be raised above the level. The trees may be watered when planted in the spring, and mulched during the first summer. If planted in the fall they need only be banked up. Orchards should be kept cultivated, whether cropped or not. The borer is sometimes destructive. Where this exists, the larva should be carefully sought out and destroyed. The insect works under the bark, out of sight. The holes near the root show where the insect came out, not where it went in. The moth or bug makes its appearance in June, or later, and the eggs are then deposited and hatched. Boring into the wood, the worm remains there for some months or a year. The best remedy is to prevent the deposit of eggs at the base of the trees by earthing up or covering with some other protection. The worms can usually be killed with a small wire, and when this is done the tree will mostly recover without much damage. Driving nails into trees, boring holes and filling them

with sulphur, &c., are useless. Lime and soapsuds may do some good, but prevention is the only sure method. The borer sometimes remains in the tree two or three seasons, going deeper into the solid wood. As to varieties of apples, S. W. Noble stated that much depended upon a proper selection. They must be suited to the climate and the soil. Downing deseribes over eighteen hundred varieties. We only need to know the best of these for our purposes. There is no certain guide but experience. An apple natural to any locality, where it succeeds, is likely to be generally adopted. In this region that variety is the Smith's Cider. The Cornell Fancy, the Townsend, and the Princely, do well here. The Jackson, originated at Quakertown, is valuable. The Blush, the Hayes, and the Fallawater, also do well here. The Jefferis, the Hagloe, the Benoni, and the Krauser, are good kinds. What are winter apples north are fall apples here, and not suited for general planting. The French Pippin is valued about Quakertown. He thought it better to plant a few varieties of known merit than many kinds of doubtful qualities. The Baldwin does not meet expectations here, because it ripens too soon and will not keep. It cannot be recommended as a fall apple. W. P. Magill said he had thirty or forty Baldwin trees, from York State, which had done well of late years.

The President suggested the consideration of varieties of apples in their order. For early ones he liked the Prince's Harvest and the Red Astrachan, which were very salable in market. They get ripe just when people want apples. The Red Astrachan is not very productive. Apples that come in later are of little use to sell. Mr. Linn said that the Red Benoni ripens early and gradually, and is valuable for market. S. W. Noble spoke of the good qualities of the Jefferis, a late summer apple. J. Hibberd Bartram, of Chester, valued the Jefferis very much. He has a tree of the Primate, which is vigorous, and the fruit is number one. The apples have to be taken off before fully ripe, as they will rot at the core. A member said the Benoni was considered the best in Lancaster county. Mr. Pannebaker, of Mifflin county, recommended the Early Harvest, which sell earlier and better than Red Astrachan, and suit the home market better. Mr. Satterthwait praised the Cornell Fancy, which originated in Bucks county. Mr. Bartram said that his most profitable apple was Summer Hagloe—large and handsome. John S. Williams also spoke in favor of this variety, and thought it better than the Benoni. H. M. Engle spoke of an apple grown in Lancaster called the "All Summer," which ripens early and is of excellent quality. The Red Astrachan was not very satisfactory there. The Knowles Early was favorably spoken of by S. W. Noble, J. H. Bartram and H. T. Darlington, and E. Satterthwaite said that one of the best for home use was the Early Joe. S. W. Noble recommended the Early Strawberry as a market fruit, as it bears carriage well. A. R. Sprout said that there was a decided difference between the Early Harvest and Sour Bough. Mr. Cooper said that there was much confusion in Lancaster as to the identity of these kinds. E. Satterthwait said that the Early Harvest always grows yellow and cracks when entirely ripe. In regard to fall apples, the Cornell Fancy was favorably spoken of. W. P. Magill thought the Townsend, which ripens at the same time, rather preferable. They come in peach time, when the market is not so good. People cannot grow to advantage all the good apples that ripen at that time. He would have a few trees for home use. The Maiden's Blush is one of the very best for market, as it may be picked early and sold after peaches are gone. A member spoke highly of the Smokehouse, which was both excellent and profitable. E. Satterthwait said that its weak point was rotting on the tree. Mr. Pannebaker said it was one of the best apples grown in Mifflin county. H. M. Engle said that it was the best selling apple in its season in Lancaster county. Its keeping qualities appear to be good; the fruit dealers have plenty of them yet on hand. E. Satterthwait said this was another proof that varieties do best in the localities where they originate. Mr. Engle agreed as to the general rule in this respect, but there are exceptions. Mr. Sheller said that in Union county the Smokehouse is highly prized and keeps well. In Maine they have been grown with success as winter apples. W. P. Magill said with him it is an annual bearer, but the fruit is injured by worms. They do not rot much, but have to be marketed in October. John Eastburn, in regard to the Cider apple, said that many of his trees have borne every year. The reason, he thought, was that he had taken the best possible care of his orchard. The crops were not excessively large, but moderate, and they kept on in that way. S. W. Noble spoke a good word for the old Fall Pippin, but it is about exhausted here. Moses Brinton, of Lancaster, was an admirer of the Fallawater, as one of the best autumn fruits. J. H. Bartram said it was one of the first apples in Chester county. It generally bears well. Thomas M. Harvey remarked that the tree is subject to borers and short-lived. Mr. Purman wanted to know what kinds he ought to plant in his orchard in Clinton county—the best half-dozen for winter. Mr. Noble said the Baldwin and R. I. Greening would no doubt be satisfactory in that region. Mr. Lint advised him to find out what sorts are now doing best in that county, and plant accordingly. The Wagner was spoken of with approval. Thomas M. Harvey said that in Bucks county we must not overlook the cider. He regarded it as of poor quality, but it is productive and sells well. You can eat on and on at it and never be surfeited, as it is so weak and watery. John Eastburn related the origin of the Smith's Cider. It was about 85 years ago. The original tree grew in a hedge row near Pineville, on the property now occupied by Jacob S. Livezey, in Buckingham, and he knew the tree very well. A man went there for a graft, but it was nearly dead. Other trees were then grafted, and the variety soon spread all over the county. The original owner took the variety to New York, but it did not succeed well there.

Destroying the Bark Louse.

Mr. Meehan changed the subject by inquiring how to destroy the bark louse. He had tried several preparations without much effect. H. M. Engle and E. Satterthwait had expressed the same trouble with nursery trees. The early summer is the only time when they can be destroyed by caustic applications. Thomas M. Harvey said that placing pieces of whale oil soap in the tops of the trees, where the dissolved matter would run over them, had been found effectual. J. H. Bartram had cleared trees of bark lice with strong common soap, applied in the water. Mr. Sprout related an experiment with a preparation, made of copperas, blue vitriol, saltpetre, common soap and salt, which was placed in a bag in the fork of the tree. It had proved successful, and his trees are now in fine order. Be careful you don't use too much blue vitriol. Take 2 lbs. copperas, ¾ lb. blue vitriol, ¼ lb. saltpetre, 4 lbs. hard soap, 4 lbs. common salt. It will kill all the insects. Weekly, applied with a brush, will also do the business. J. Q. Atkinson, of Montgomery, had faith in the efficacy of whitewash. Mr. Cooper said that S. S. Rathvon recommended whale or fish oil.* Mr. Pannebaker cleared the lice out with Babbitt's potash, mixed with a little turpentine. J. Q. Atkinson said that the exclusion of the air at the time of hatching was the object desired, and whitewash will do that as well as anything. John Eastburn's experience was in favor of scouring the trees off with soap and sand applied with a cloth.

Election of Officers.

On meeting on Thursday afternoon the hall was quite well filled. The committee on nominations submitted the following list: President, Edwin Satterthwait; Vice-Presidents, Samuel W. Noble, Henry M. Engle, Tobias Martin; Recording Secretary, Edward B. Engle; Corresponding Secretary, Wm. P. Brinton; Treasurer, Geo. B. Thomas. The Secretary was directed to cast a ballot bearing these names, and they were declared elected. Fixing the place of the next annual meeting was then taken up. Moses Brinton proposed that it be held at Lancaster. This motion was agreed to by a vote of the members.

The Codling Moth.

The discussion of the cultivation of the apple was resumed. Mr. Noble was called upon to tell about the codling moth, "the worst enemy of the apple." This insect attacks the fruit, not the tree. The eggs are laid on the calyx of the young fruit, the hatched grub penetrates it, and toward maturity works its way out. It often finds refuge in the rough bark of the tree. The best preventive known is to keep them from harboring in the bark. Mr. Sprout described a new instrument for defeating the moths brought to his notice. It consists of a rubber band some two inches wide, formed in such a way as to flare out like the sides of a tin pan. They cost from 15 to 50 cents each. Mr. Meehan said that something was wanted to clip the wings of the moths. H. M. Engle said we ought to know more about the habits of the moth before we can fight it well. Nothing can stop the first brood that he knows of. The old moth flies to the trees; it does not crawl up. This brood is often small, and not very destructive. But the eggs laid on the fruit are hatched; the worms, when they emerge from the apples, drop to the ground or on the branches, and take refuge under the bark to form their cocoons. Now is the time to destroy them and keep down their numbers. He did not know whether the rubber ring shown by Mr. Sprout would work or not. Mr. Meehan said that the simple plan of putting hay-bands on the stems of the trees is better than anything else. It costs but little, and the bands and insects can be burned up together. Mr. Satterthwait said that if the rough bark is kept scraped off there will be little shelter afforded, and most of the worms can be caught under old shingles placed around the trunks. All the fallen fruit should be picked up and fed to hogs. In that way his apple crop has been greatly improved. Mr. Sprout thought we did not give the insects sufficient credit for their intelligence. They have sense enough to know how to take care of themselves. Dr. Dickie stated that since he had kept fowls in his orchard the codling moth had been much diminished.

*On this subject, see an article entitled, "*What Kind of Oil?*" on page 18 of this number of* The Farmer.

Pears and their Culture.

The President, in reply to a question, said that the most profitable pear, coming earlier than the Bartlett, is Manning's Elizabeth. It is very productive, and ripens in August. Mr. Meehan remarked upon the great number of failures in pear trees, especially dwarfs. In the vicinity of Germantown a man planted fifty thousand dwarfs a few years ago, but he has not overstocked the market. Most of them are dead. Old and large trees seem healthy, especially the old Catharine pears about Philadelphia. What is the reason why younger trees are not so? Mr. Carter said that he recently saw four thousand dwarf trees, planted two years, in perfect health. That was in Maryland. Thomas M. Harvey asked whether many of the failures were not in foreign varieties. Even the Bartlett is not certain yet. Probably most of the foreign kinds will not last long here. It would be better to plant the Lawrence, Seckel, and other native sorts. E. Satterthwait said that was his experience. The Duchess is his most healthy pear, while the Lawrence cracks badly. Mr. Meehan said that the Catharine is one of the oldest of pears. George B. Thomas—the Duchess, near West Chester, is of no value. It does well in Union county, said Mr. Sheller. E. Satterthwait always plants Duchess on quince. W. P. Magill mentioned a remedy for slugs on the leaves. He uses fresh slaked lime. It was entirely effectual, in two applications. An orchared, which was not treated thus, made no growth at all. Road dust or ashes will do as well, said George B. Thomas. To dust a large orchard is a pretty big job. It should be done in the morning. H. M. Engle said that the lime acts at once on the soft substance of the slugs, and can be better put on with a tin duster. Several spoke in behalf of the healthiness of the Lawrence. J. H. Bartram thought that barn-yard manure was beneficial to pear trees, and very large ones often grow close to yards. Moses Brinton's idea was the reverse of this; his trees had suffered fire-blight where it had been applied. E. Satterthwait had suffered much loss from fire-blight the last four or five years, but he thought it was due to dry weather. Barn-yard manure has done his trees no harm, but he does not habitually manure. Mr. Meehan agreed with this. He never saw a case of fire-blight about Germantown, where manure is freely used. Manuring on the surface is the only way for orchard trees. Mr. Carter had great faith in mineral fertilizers, especially for pears. The South Carolina phosphatic rock is an excellent thing for them, and fruit growers ought to try it.

Fruit Trees from the North.

Watson P. Magill said that Northern and Eastern trees are not satisfactory in this part of Pennsylvania. The loss to Bucks county alone from planting these fruit trees has been estimated at $1,000,000. To offset this we have a few new varieties. John I. Carter said that at the Oxford fair last fall a man exhibited a great number of Southern apples, which were of much promise. They would mostly be long keepers. Southern varieties made very late winter apples. Thomas Meehan agreed with this; it is not quite correct that our own kinds always do best. He instanced the Jucunda and Triumph de Gand strawberries as examples of great success with foreign varieties; the Bartlett pear is another case; the Red Astrachan apple comes from Russia; our best cherries come from abroad. A Southern fruit brought north is often valuable, and the reverse. E. Satterthwait took substantially the same view. It matters not where a variety originates, if it is only good. Moses Brinton said that apple trees from the North were not satisfactory, but there may be advantage in bringing Southern apples North.

Preservation of Fruit by Ice.

Eastburn Reeder gave a short description of the fruit-house of Nathan Hellings, near Bristol—built with thick stone walls, and a body of ice 14 feet deep in the upper story. A temperature of 32° is maintained all through, and the apples are perfectly fresh and plump after several months. Dampness is prevented by an arrangement of screens, which carried off condensed moisture. Mr. Hellings claims a patent for his process. E. Satterthwait said that ventilation is very important, and that there is probably a secret in that respect. W. M. Large said that a friend of his had to pay a royalty to Mr. Hellings to use his process. H. M. Engle wanted to know if there was a way by which individual growers may keep their fruit. It has been done on a large scale, why not on a smaller one? He had himself an ice-house arranged so that a room is kept cold for milk and fruit, which has succeeded pretty well. The moisture is the chief drawback. There may be a substance placed inside to absorb the dampness. E. Reeder said that he saw nothing of the kind at Bristol; if the temperature is kept at 32° there will be little or no moisture. He had constructed a milk-house cooled by ice in another room; in winter he keeps fruit in it with good results—some apples until August. It is much better than a cellar, but was not built for a fruit-house.

Cultivation of the Cherry.

John I. Carter said that the rearing of the cherry is uncertain in many places. It will not grow to any

size, but weakens and dies. He thought Gov. Wood the best kind. Mr. Satterthwait thought it not a good market variety. Mr. Engle had poor success in rearing it; the Early Richmond was much more reliable. Thomas M. Harvey had raised trees to sell some years ago, and people living along streams would not buy bigarreaus and hearts—they took mazzards and dukes. Mr. Engle said that York is the leading county for cherries; they seem to grow with ease and without care. Mr. Sprout had tried many kinds, without success. He now grafts cultivated varieties high up on the native stocks. The old pie cherry is a main dependence. The black knot appears sometimes on morello and sour cherries. The grafting ought to be done very early. Mr. Carter thinks the disease of the pie cherries is disappearing, and most of his trees are clear of knot. Mr. Meehan said that there was a great improvement in the health of the cherry. The knot is caused by a fungus growing in the wood. The success of the cherry depends much on the stocks chosen—the pie cherry does best on the mazzard or common wild stock. On the mahaleb stock they never reach any size. He had known some profitable trees of the Early Richmond grafted on mazzards. E. Satterthwait said that the black knot came on gradually a few years ago, and has swept all over the country. He thought the Yellow Spanish the finest of all cherries; it is large, firm and handsome. He thought it much better than Gov. Wood. J. H. Bartram had met with success with the English Morello, and found them profitable. He has now 900 trees, and they will bring twice as much as pie cherries. H. M. Engle enumerated Gov. Wood, Rockport Bigarreau and Kirtland's Mary as much alike. The one most called for is the Black Tartarian, which is the favorite in York county. There are complaints that the tree is unhealthy. Another popular cherry is the Russian, the largest black cherry he has ever seen. He does not know where it comes from. Is a little later than the Black Tartarian.

Peach Culture.

Watson P. Magill was called on to to tell what he knew about peaches and their diseases. His impression is that the "yellows" are due to severe cold; that often the trees are affected before they are set in the orchard. They are in a soft, immature condition the year after budding, and very susceptible of injury. They get black at the heart, which is fatal to them. A temperature of five to fifteen degrees below zero will cause this result. When the buds of the trees have been killed, it is a poor season to plant a peach orchard. He thinks the disease contagious in an orchard. He has never known a tree with the yellow to be worth anything afterwards, and such trees should be immediately removed. The disease progressed gradually over his orchard, beginning on the north. Last winter was steadily cold, without great extremes, and the trees did not suffer much. But last spring was not a good one to plant trees. If the trees are buried over winter in the ground, before planting, they will be protected. We cannot compete here successfully with the growers in Delaware or Maryland, but must plant kinds which come into market when theirs are gone and there is a good demand. He would plant nothing earlier than Oldmixon; after that Rareripes, Late Crawfords, Smocks, and Salaways, if they prove to be good here. Late peaches are the only profitable ones in this section. Thomas M. Harvey agreed as to the contagious nature of the "yellows." He thinks it is spread by the wind carrying the pollen from one to another. In warmer countries the "yellows" do not exist; and the disease is not known in forcing-houses. E. Satterthwait said that Mr. Magill had the right theory. He said, in regard to the Salway, that he planted the trees three years ago, and the fruit last season was very fine. Picked carefully and sent to market they were sold readily at one dollar a half peck, when baskets could be bought at twenty-five cents. Thomas M. Harvey said that the Susquehanna peach, so highly praised, is worthless. Mr. Engle had seen good crops from it, and sells remarkably well, but he would plant only a few trees. Reeve's favorite he considered a better peach and a surer bearer. It sells higher than the average. J. S. Williams said it was a fine peach but a shy bearer. As to Troth's Early, Mr. Magill had planted it considerably, but it came into competition with Southern peaches in the market and was not profitable. It is a pretty sure bearer. The Mountain Rose will supplant it in most cases. H. M. Engle spoke highly of the Salway. It is a few days later than the Smock, and resembles it in habit. It is of better quality than the Smock, and will grow where the latter succeeds. J. H. Bartram called attention to a disease attacking the trees, causing them to decay and break in the fork or crotch. The bark appears to decay there. Mr. Magill had not been much troubled by borers: he keeps the earth banked around the roots. The insect is different from the apple borer. Mr. Pannebaker said he had a peach ripening about the tenth of October—a very fine fruit, of which he does not find the name in any of the books. Engle suggested that he must have bought them of a tree agent! The practice in peach districts is to keep the land under cultivation.

The afternoon session closed with a brief discussion of plums and their enemies. Thomas Meehan spoke disparagingly of the Wild Goose plum, which he compared to a persimmon. No one should grow it instead of the cultivated kinds. Methods of destroying curculio were discussed, but nothing new in this direction was elicited.

Miscellaneous Topics.

On Thursday evening, as the Society would disperse after that session, Mr. Meehan offered a resolution tendering the thanks of the Society to the Doylestown and Solebury Farmers' Clubs, and the two county Agricultural Societies for the accommodation and attention afforded in Doylestown. His resolution was unanimously adopted. It was announced that an essay was produced by Mr. Stauffer, of Lancaster, to be read before the Society, but owing to its length, it was necessarily deferred. It was ordered to be published in the annual report. The committee appointed to examine the specimens of fruits displayed before the Society reported the following exhibitors: A. H. Barber, D. W. McNair, Casper Hiller & Son, H. M. Engle, Calvin Cooper, W. P. Magill, A. S. Sheller, J. W. & H. S. Paxson, John Eastburn, A. R. Sprout, Robert Ivins, John I. Carter and N. H. Burroughs. Many specimens had been brought for the purpose of having them named.

Strawberries.

The first subject of discussion for the evening was "Strawberries—the best varieties and modes of culture." John I. Carter thought perhaps the best was the Charles Downing. There are some fifteen or twenty at the Experimental Farm. Mr. Sprout, who thought he had had some experience in the matter, favored Wilson's Albany and Triumph de Grand, mixed. Mr. Thomas thought the Charles Downing the best they could raise at West Chester. As to treatment, Mr. Meehan said the sun was the cause of damage in the winter, and that a light covering only was necessary. He described the plan of training runners into pots, etc. Mr. Bartram, of Chester, liked Wilson's Albany best; he had tried a number of other varieties. He would plant in the spring only. President Satterthwait said no regular growers in this part of the country would think of planting in the fall; that the practice of doing so had done much to injure the popularity of the strawberry. He plants in rows, 2½ feet apart, and works with a cultivator all summer, and allows all the runners to take root that are able to do so. In the fall he covers with straw manure, and is not afraid of using too much. By the next season this straw is washed entirely clean, and serves to keep the berries out of the sand. Not an inch of ground is left without this covering. Of course it is expensive, and weeds have to be kept out; but on the whole it pays. He never mows the tops off. Mr. Sprout at one time experimented on one-eighth of an acre of ground. Immediately after picking he cut the tops off close to the soil. Next year the product from that piece of ground was 1,000 quarts, which he sold readily at 20 cents. Mr. Pennybaker, of Mifflin, had also obtained highly satisfactory results in the same way. Mr. Sprout keeps a bed from three to five years. President Satterthwait plants a new bed every season, and favors particularly the Jucunda.

Raspberries and Blackberries.

Raspberries have become somewhat unpopular with fruit-growers on account of the limited demand for them in the market. The black varieties are not worth more than half as much as the red in the Philadelphia market. The most popular varieties at present are the Herstine and Philadelphia. Mr. Pannebaker said that in his town (Mifflin) the black commanded a better price than the red berries.

Currants and Gooseberries.

These small fruits require little trouble to produce. The kinds of gooseberries most favorably mentioned by the Society were Smith's Improved Downing, Chester, and Mountain Seedling. Grafting was suggested. Most members do not practice trimming either currant or gooseberry bushes. To prevent mildew it was recommended to keep the roots cool by mulching or placing stones about the bushes.

Grapes.

Popular favor ran toward the Concord, Hartford, Christina, Martha and Ives Seedling. Mr. Thomas would except the Hartford. Rich soil is necessary for the perfection of the grape. Methods of training were given.

Evergreens.

Pines were recommended for the most windy situations, including White, Austrian, and Scotch. The spruces come next. They are not able to withstand the wind. Norway and Hemlock spruces are most popular. Still more tender are the firs, and are only graceful and beautiful when perfect. Mr. Thomas described a number of evergreens and ornamental shrubs.

Roses.

These flowers are now propagated in endless varieties, and hundreds of new ones are annually produced. The teas, bourbons and dallies, however, especially the olden varieties, still retain their deserved rank and place in well-kept gardens. A large number of very excellent kinds of roses were mentioned, as well as numerous flowers and ornamental shrubs for the yard and lawn. Before the adjournment of the Society, a committee of ten was appointed to confer with Burnett Landreth in respect to representation at the Centennial, and the committee was empowered to act for the Society. A resolution was also adopted unanimously favoring a legal enactment to prevent horses and cattle from running at large.

OUR PARIS LETTER.

Correspondence of The Lancaster Farmer.

Paris, January 25, 1876.

French farmers have much reason to complain on two essential points—the great increase of expenses, and a diminution, rather than an augmentation, of the produce of the soil. Putting aside the rich proprietor and the really-working small farmer, there remain the rich peasant and the citizen agriculturist. The rich peasant, if he has not commenced to make his fortune, will assuredly add to it, for his indefatigable activity, simple tastes and frugal habits induce order and enable him to tide over a bad year without drawing on his capital. He never, on becoming wealthy, abandons his career, and although acute in judgment and observation, his principal defect is the absence of a professional education. The citizen agriculturist generally adopts the *métairie* system—sharing the profits with the tenants. He has a greater taste for refinement and social enjoyments than the rich peasant, and despite a scientific acquaintance with farming, does not succeed better. He loves the principal city or the capital, is frequently embarrassed to make the two ends meet, and his grand ambition is to make his sons lawyers. These two cultivators represent the average types of their class, and live on, as well as by, the produce of their farms. Now the mean price of living for each member of a family was, in 1810, 15 sous per day; in 1855, 20; and in 1875, 27 sous per day. There has been no sensible increase in firing, but in lighting, the augmentation has been 50 per cent. since 1840. The wages of farm and household servants have risen by 25 and 33 per cent. since 1870, or 200 per cent. as compared with 1840. It will soon be profitable for Australia and the States to send "aids" to France; even machinery cannot altogether replace manual labor. The adoption of fermented instead of cooked food for cattle feeding is not only making much way in France, but also in Germany; perhaps the chief cause of the change is to be found in the fuel economized. It was a Bohemian agriculturist—M. Andre—who in 1830 first tried the plan; in 1836 Dr. Schneitzer, of Saxony, exposed its advantages; since, M. Moel, Professor of Agriculture in this city, has become the most prominent advocate of fermented food. Instead of chopped straw he employs colza pods, in alternate layers with sliced turnips and beet—the mass being all trodden in a barrel having a capacity of 330 gallons; each layer is well sprinkled with water containing bruised oil or colza cake and a little salt; the mass is left to ferment for seventy-two hours, and is then given to the animals for their noon feed.

The climate being equal, continental farmers are divided into two camps, respecting the cultivation of maize for fodder—green and pressed, and clover, beet, etc. Maize requires good manuring, and when so treated succeeds well on freshly reclaimed heathland; clover, by its dead roots, enriches the soil. In a dry summer beet is not so certain a crop as maize, and opinion is divided as to their comparative yield. M. d'Esterno announces that he can profitably feed hogs on preserved maize until within the three months requisite to fatten them, when, of course, they must receive farinaceous food. The forage must not be given in a raw state, but cooked, and chopped in lengths of one or two inches. The pig likes as a rule to be spared mastication as much as possible. In some parts of France cooked grass, nettles, thistles, etc., are given to pigs, with one part of potatoes. Beet is dear, costing *fr.*13 per ton, while preserved chopped maize is one-half less. M. d'Esterno purchased two pigs on the 27th of September last, for *fr.*172, and sold them, fattened, the 12th of November following, for *fr.*235; difference, *fr.*63, from which has to be deducted their keep, valued at *fr.*11—thus leaving a net profit of *fr.*52 for 44 days' feeding. For the first twenty-two days he gave them for ration 27 pounds of cooked maize fodder, 1¼ pounds of mill refuse, and one-half a pound of potatoes; the remaining twenty-two days they were fed on 37 pounds of maize, 9 pounds of potatoes and 1¾ pounds of buckwheat, daily.

M. Thenard draws attention to the natural fertility of soils. There are forests where manure is never distributed, and yet since centuries ago they show no diminution in richness, although the timber be regularly felled and sold every thirty years. This timber carries off nitrogen. The vineyard of Clos Vougeat, celebrated since nearly one thousand years ago, receives not more than quarter of a ton of manure per acre annually, yet it yields nearly four times that weight of fruit, in addition to the shoots pruned for firewood; the soil shows no falling away in fertility. M. Truchot finds the mountain pasture lands of Auvergne, which are never manured, to be richer in nitrogen than the arable soils of Limagne, which

are regularly enriched. In these cases, from whence comes the supply of nitrogen? M. Deherain explains the matter thus: All the soils in question are rich in humus, the accumulation of years, and this carbonaceous matter, in decomposing, absorbs the oxygen of the air that has penetrated into the soil—as is the case in an ordinary manure heap—and the nitrogen thus liberated unites with the hydrogen disengaged from the decaying organic matter, and forms ammonia. Perhaps the explanation is as good as our present state of science can afford.

Certain meadows in Sleswig-Holstein are remarkable for producing singular results in cattle, as compared with other pasture lands in the vicinity. The animals, though in excellent health, remain diminutive, displaying at the same time a predisposition to fatten rapidly; the cereals cultivated have a tendency to be laid, and the grain is not rich in flour. An analysis was made of the soil, and of the grain and hay produced, and showed a deficiency of lime, magnesia, potash and phosphoric acid. The inadequacy, especially, of lime and magnesia in the soil, and consequently in the pasturage, did not furnish the necessary ingredients to build the skeleton, thus arresting the growth of the animals, and provoking their premature fattening.

M. Georges Ville is well-known for his advocacy of mineral manures, as being in themselves sufficient to maintain the fertility of the soil. The crop draws from the land certain salts, and to return these by a mineral manure, is all, in M. Ville's opinion, that is required. Thus farm yard manure, and consequently the rearing of cattle, are something like superfluous ends. M. Ville has just published a work wherein he lays down, that the formation of animal and vegetable substances is subjected to the same laws. All this is neither very new nor very accurate. More important still, the consequences to be deduced, do not seem to be of any practical importance. We may differ about the best and cheapest manner for "feeding" crops, but the food for animals cannot be affected by any abstract law.

At Lozere, in the mountainous district of the Cevennes, straw is very scarce and the animals repose on layers of earth, their feeding troughs being movable, so as to be raised as the heap of earth increases. It is suggested that this plan be given up in favor of the Swiss method, where the cattle also have no bedding, the liquid and solid excrements being run into tanks, from whence, after fermentation, it is distributed by piping or barrels, over the meadows. In the north of Holland, the urine of the cow-shed is gathered in small boats, and when these are full, are towed along the canals, to discharge their contents on the adjoining pasturages. In the district of Lozere sheep are reared for their milk; the Pyrenean breed is excellent in this respect, the ewe yielding after nourishing her lamb, from 50 to 100 quarts of milk, which produces from 10 to 30 pounds of cheese, and even excellent butter. The cheese is known as Roquefort—the French Stilton, and is of world-wide notoriety—the total annual produce being estimated at 3,000 tons. The whey is given to pigs, which reject it at first, in consequence of its putridity; afterwards they take to it and become fat. The vexed question of horse-breeding in that mountainous district is much studied; farmers prefer crossing native races with Arab, instead of English blood; the result producing animals better able to withstand severe work.

Spalt, in Bavaria, is the classic home of hop culture on the continent; these hop plantations have the appearance of veritable forests; the trenches separating the rows of plants are very wide; the soil is tilled to the depth of three feet, and the plantations are ever on inclined ground, the ridges being perpendicular to the slope; the soil can thus be more easily freshened; in the bottom of the trenches, at distances of fifteen feet, are holes a spade's blade in depth, acting as so many wells for the rain water. The hasty kind of hop is preferred, being more productive than the slow variety. Each knoll contains three plants, and the poles are 24 feet in length, the stem being tied to them at mid-height by reeds. Wire is not employed as a substitute for poles. Hops thus reared are neither of good quality nor remarkable in quantity. A kind of fork-knife combs the pole, the cones being separated from the stems ulteriorly. Rapidity is essential in the harvesting. Milch cows relish the leaves, and the stems are either given green or dried, and cut into lengths of one or two inches; they are never burned.

Wool imported from Australia and South America is largely mixed with vegetable *debris*, which is no small drawback to its industrial employment. Various processes have been tried to separate this vegetable from the animal matter by chemical means. Messrs. Barral and Salevat, after a series of experiments with sixty different substances, find acid and other solutions effective in destroying the woody part of the vegetable substance, provided the wool after steeping be well dried, and then placed for a time in a stove at a certain temperature.

The discussion on the subject of the formation of sugar in beet continues to be warm, but is very far from having a satisfactory conclusion. The great authority, Claude Bernard, is of opinion the sugar is formed by the root. Messrs. Duchartre and Viollette believe it takes place by the leaves, owing to the conversion of the starch in the leaves into saccharine matter, the root being merely the depot for the sugar thus formed to nourish the seed-stem the following year, just as the tubercle of the potato has a store of starch to feed its shoots of the succeeding season.

There is still nothing new to record respecting the phylloxera; the vine bug has become a greater object of interested study. Some experimenters state, one dose of sulphuret of carbon is not sufficient, and all seem to agree to prohibit the importation of vine stocks from affected to healthy vineyards.

OUR LOCAL ORGANIZATIONS.

Our Farmers in Council—"Economy vs. Hard Times"—Shall we Eat Pork?—The Question of Planting Forest Trees, &c.

The February meeting of the Lancaster County Agricultural and Horticultural Society was held on Monday afternoon, February 7, at two o'clock, in the Athenæum room. Present: Messrs. Calvin Cooper, Henry M. Engle, Alex. Harris, Casper Hiller, Martin Brubaker, Levi W. Groff, John B. Erb, Milton B. Eshleman, Levi Pownall, Dr. P. W. Hiestand, Jacob Bollinger, Israel L. Landis, Levi S. Reist, S. S. Rathvon, Abraham Kaufman, Abraham Bollinger, J. Stauffer, Martin S. Fry, Abraham Hostetter, Mr. Landis, Mr. Cooper, Simon A. Hershey, Peter S. Reist, Johnson Miller, D. G. Swartz, Henry Myers, Henry Erb, John Miller, John M. Stehman, E. S. Hoover, and John Gross.

Calvin Cooper, the President, occupied the chair, and after the reading and adoption of minutes, Mr. McComsey arose and remarked that, although he could not remain, as he was serving as a juror, he had come here hurriedly to manifest by his presence his continued interest in the society, and his willingness to contribute what he was able to the interest of its meetings, and expressed the belief that the Society, if properly maintained, would prove beneficial to its members, socially, mentally and materially, for by the discussion of appropriate questions of interest to agriculturalists, we gain little by little, step by step, in the progress of the science of agriculture and horticulture, as in other sciences, through darkness to light.

The President, after thanking Mr. McComsey for the expression of his interest and good-will, excused him.

J. Fred. Landis, of East Lampeter, Peter C. Hiller, of Conestoga, and Levi Pownall, of Christiana, were elected members.

THE REPORTS ON THE CROPS.

were now read, as follows:

Wheat: Israel Landis, Manheim, reported the future wheat crop to be in as promising a condition as it generally is at this date, and it indicates that a favorable season may produce a full average crop. The rye is about the same as wheat. No summer wheat is ever sown; winter barley none; grass at this early date is pretty well set and not much damaged in the young fields, of last summer's seeding; many second crop fields are thinly set, but a favorable season may bring a fair crop.

Tobacco: A large portion of the crop (which was a good one for this year) is sold, and at a wide range in the prices. There is perhaps no particular way to give the average price. There may be some sold above and below the prices of 12 and 3 and 6 and 27, or from 3 to 6 for fillers, and 12 to 27 for wrappers.

Corn: There is, perhaps, more corn damaged this year in the crib than for many years past. The crop was a full one, and the weather was not favorable for it after husking.

Oats was a good crop, but was not well secured on account of the wet season; the result is dark color.

Stock of hay on hand is short; farmers are generally economical, and save it by using fodder.

Fruit: We prefer not stating the condition, but think the season so far was favorable, though we have made no particular investigation.

Messrs. Cooper, East Lampeter, and Erb, Strasburg, reported similar conditions of the crops in their districts.

Johnson Miller, Warwick, said we have been favored with a snow of five or six inches in depth, which is a good covering both for wheat and grass fields, as both these crops have suffered somewhat from the continued process of freezing and thawing of the ground during the last two months. The weather was very mild this winter until a few days ago; so much so, that fruit trees have nearly, if not quite, pushed buds; in case they have, I have no doubt but that they might suffer from such cold snaps as that of Saturday morning—two degrees below zero The last year's corn crop is considerably damaged from the warm and damp weather we have had, and many farmers are compelled to remove to save what is in good condition yet. Corn growing in a wet season like last fall was not matured when housed, and then the damp weather has caused it to get very mouldy; and I have reason to say that there will be more damaged and mouldy corn when farmers shell than was ever known. It is a matter of importance that farmers should be very careful this spring about seed corn, or the next year's crop might be more seriously affected by not coming up after planting—the result of poor seed corn. I throw out this hint in season, so that I, and all other farmers, may take the lesson in time, to prevent what might result in a very thinly set and poor crop of corn during the Centennial year.

Some one might say, we want to be sure of a good crop of corn this coming summer; that is not the intention of the above suggestion; if we do our part, Providence will do the rest. At no point does the success of a good crop of corn depend more than in the seed we plant. If the first planting does not come to perfection, and your stalks will be regularly set, your crop is spoiled with the best of weather that we have ever enjoyed; there is more danger in this, this year, than ever, and our farmers will do well to examine their seed corn carefully before planting. Now is the time to make plans and get ready for spring work. The farmer who always waits till he wants to go to work, to make up his mind as to how he is going to manage this, and how he is going to do this, will find himself often in confusion, and good management of farm operations will be entirely unknown to him. Farmers will be required to economize with fodder, on account of the short hay crop last summer; better commence in time to cut fodder, as there is no telling of an early spring and early pasture; according to ground hog signs, we will have a late spring, and consequently will be required to feed long in the stable. Let us all have our farms and stock in such condition as to correspond with the Centennial year of improvements, and to do this, we all have our hands full, and each member will best know his own calling for the progress of agriculture.

H. M. Engle was rather inclined in the main to agree with the reports of the members, just read, but he did not think the danger to the fruit crop was past—particularly in the matter of peaches.

MISCELLANEOUS BUSINESS.

Milton B. Eshleman, from the committee appointed to prepare a petition to the Legislature in behalf of insectiverous birds, submitted a prepared document, which was signed by those present.

President Cooper stated that he had attended the recent session of the Fruit Growers' Society at Doylestown, and that a committee of ten members had been appointed to confer with the managers of the Centennial Exhibition, in order to have representatives in the Horticultural Department of that great show. He feared our Society could not secure a representation at the Centennial.

On motion, the Secretary was authorized to write to the Superintendent of the Centennial Horticultural Department, for printed instructions to exhibitors.

The retiring Treasurer, Dr. P. W. Hiestand, made his report, showing a balance of $99.53 in the treasury.

An auditing committee of three members—Casper Hiller being chairman—was appointed, and their report agreed with that of the treasurer.

The unanimous thanks of the society were tendered Dr. Hiestand for his faithful services as treasurer.

The secretary, on motion of I. L. Landis, was instructed to look up the matter of a committee which had been appointed some years ago to secure donations of books—any person giving $10 worth to be considered a life member of the society.

Milton B. Eshleman, esq., read the following essay on

ECONOMY VS. HARD TIMES.

Mr. President and fellow-farmers: Economy is a subject that is distasteful to most persons, and many will shut their eyes square in its face; but it forces itself upon our attention at the present time, and well it is for that man who heeds its demands before they are forced too heavily upon him. These times of low prices on all farm produce, of small profits on all merchandise, of shrinkage in value of all manufactured goods and machinery, of low wages, and to a very distressing extent of want of employment—I say these *hard times* necessitate almost every man—I believe it is safe to say four out of every five—to practice economy in the living expenses of his family. Several years of prosperous times, assisted by the pride of life and the whims of the fashion market, have little by little drawn us into such an extravagant and expensive manner of living, that it will yet cause the bankruptcy of many and the death of some men before they will be able to get their family expenses down to the level of their incomes. All our necessary expenses can be embraced in three classes, viz.: Houses to live in, clothing to protect our bodies, and food to sustain life. If we did not require houses, clothes and food, we would have no need of money, and consequently would not be necessitated to work; so the more nearly we can bring our requirements to that state, the less funds we will need, and the less work we will be required to do. You will be surprised, I know, each of you, when you consider carefully this matter, and note how the wants of each of the three classes of expenses have been enlarged, increased and added to, until it has become necessary for a society man to spend all the money he can get by his labor or business, often working day and night. In his very dreams he is tempted to obtain money by de-

frauding some one else, and you will yet find out how few of us there are who can resist it when a good opportunity offers. Now, my friends and neighbors, these things ought not so to be. The fourth commandment says: "Six days shalt thou labor;" but I do not believe that it ever was the intention of the Divine Maker of all, that man should work so hard or make such long days as most of us do now, and are forced to do in order to meet the imaginary wants of the family. I cannot forbear, at this point, to name some of the extravagances that I consider worse than useful: For instance, grand weddings, expensive funerals, costly monuments, splendid equipages, four changes of fashions a year, silver sets and dessert after every meal. There are some so blessed with this world's goods that they can support this style without any inconvenience to themselves or injury to others. With them I have nothing to do; but with those who allow themselves to be drawn on to follow the fashions of others, instead of being independent enough to lay out a pattern for themselves, as suits their circumstances. Each man ought to know better than any one else what his circumstances are, how much income he has, and where it comes from, and if he does not live within it he alone is to blame. Many persons have, during the last few years, been able to follow fashions that they never will be again. Many have hitherto supported style that they will soon have to drop, for I assure you the hard times are not yet over, nor will they be for many months to come. Centennial or no Centennial, hard money or soft, inflation or contraction, has nothing to do with it; but each one of us must bring about easy times for ourselves, which will be as soon as we begin to regulate our family expenses by our reduced income, and not a moment sooner. I have a theory about the cause of the hard times that I have never seen in print, and the more I consider it the more I am convinced it is correct. During the war, and for eight years after, every person seemed to prosper, because there were many men ready to put their money into manufacturing establishments, and while they flourished there was a good demand for all kinds of mechanics, and for material of every kind, that kept the furnaces and all iron works in full blast, and the saw mills all running. They in turn kept up the demand for coal; the mines were all working, and every man in the country who wished, had employment at good wages, and could feed and clothe his family well, and that made business good for every retail dealer and merchant, and through them for the miller, the manufacturer, the coal miner. All these together made a good home consumption demand for the products of the farm, and maintained a price that paid the farmer for his labor. All went on swimmingly, and every one who practiced economy was able to lay up something for a rainy day. But there came a day when one of the shrewd manufacturers discovered that his business was being overdone, and that he had too many machines on hand, and in order to get his money out of them, he must put down the price, and either stop his works or reduce his expenses by paying out less in wages. The other manufacturers were not slow in finding out what he had done and were forced to do the same in order to keep their old customers: so this lowering of values soon spread to every manufactured article. From that you can easily trace the progress of the downfall, and the cause of the universal cry of *hard times*. Wages reduced, restricted the expenditures of every family; articles that sold readily before, now went slow, and the overstock of manufactured goods, instead of passing off at the same rate as before, remains on hand. The factories running on half time with only half the number of hands, still made enough to keep the warehouses full, and consequently there is no prospect of an advance in price. The low wages so decreased the demand for luxuries, and even substantial food, that the evil finally reached the door of the farmer—and who can tell where it will end, and when the dull time will be over. I admit I cannot see it, for every man who has his money invested in any kind of manufactures will try to make his living out of it, and in order to do that he must run it with the least possible outlay, and leave all extra hands out of employment. A good demand for articles of clothing, luxuries of life, and even breadstuffs, can never be until every man is employed. For this reason I say that I believe the worst has not come yet; that wages will be lower, and all kinds of produce will be lower, and we will have to learn to live on half of what we have been using; and the sooner we get to that state the better for us, and for the whole country. I close by recommending Ben Franklin's patent recipe for making money plenty in every man's pocket, viz.: "Spend every day one cent less than thy clear gain."

Mr. STAUFFER, commenting on the essay, spoke of a nobleman who had 100 men employed at landscape gardening. Every day an old man was observed sitting on a fence, watching the workmen. The nobleman, whose curiosity had been aroused questioned the old man, who informed him that he was a weaver, living in a cottage near by. He made it a rule to work eight hours, sleep eight hours, and take eight hours for recreation in every twenty-four hours. He found no better recreation than watching the care and labor bestowed by this nobleman and his men in beautifying the landscape!

D. G. SWARTZ esq., approved the general sentiment of the essay, but he did not believe that mere economy would cover the entire ground as a remedy for "hard times." That is not good philosophy. The nation has been injured by over-prosperity and over-confidence. The moment Jay Cooke failed, the people saw the necessity for retrenchment. But we must have confidence in each other. As long as people feel that this is not the time to buy homes, or make other investments, there can be no recovery from the general stagnation. He believed we had nearly reached the bottom. The fact that provisions, produce, and all kinds of manufactured goods are nearly as low in prices as they can be, argues well for the future. He predicted higher prices and greater general prosperity for us as individuals and as a nation, in the near future, than has ever been known before. The fact that we now mine $100,000,000 in gold and silver, annually, is very encouraging.

MARTIN S. FRY attributed our local hard times to the failure of the wheat crop last year, as well as its failure three or four years ago. His theory, however, as to the cause of the general depression, was that it resulted from a low tariff on imports. He spoke at considerble length.

LEVI S. REIST ascribed the general depression to over-trading, and cited the rise and fall of prices in many noted years—from 1815 to 1827; the price of Pennsylvania State bonds in 1842, (then quoted at 34) and the reaction which followed the California gold fever of 1848. He argued that the history of the country will show a "crash" every 15 or 20 years. A panic ensues, every article of produce and merchandise gets as low in price as it *can* get, and then comes a rise and prosperous times.

Mr. ESHLEMAN had not contemplated such men as Mr. Swartz when he wrote his essay. It was intended particularly as a hint to the masses—the poor people.

The discussion was concluded by Peter S. Reist, who agreed with the essayist that economy in small things was a sure preventive of "hard times," and illustrated by citing a case that had fallen under his own observation.

On motion of Johnson Miller, the unanimous thanks of the Society were tendered to the essayist.

ABOUT PLANTING FOREST TREES.

The question, Is it profitable to convert land worth $100 per acre into forests? was now discussed.

Mr. JOHN B. ERB, who had proposed it, opened the question, giving as his opinion that it would pay the Government to cultivate forests, but it would not pay an individual or a company of individuals.

ISRAEL L. LANDIS thought there should be some legislation on the subject, and alluded to Kansas and her young forests, brought into existence by proper legislation.

Messrs. PETER S. REIST, Jacob Stauffer and H. M. Engle discussed the subject at some length, all of them recognizing the importance of planting forests, and all agreeing that there should be some legislation on the subject.

The next question for discussion—

"IS SWINE FLESH A PROPER FOOD FOR MAN?"

was proposed and opened by Peter S. Reist, who took the negative side of it. He quoted liberally from learned physicians in support of his view, and also cited passages from the Scripture in support of the same—notably from the Old Testament, viz.: 11th chapter of Leviticus, and 65th and 66th chapters of Isaiah.

Mr. ERB was glad to have the Scripture quoted, but thought we were not bound by the Mosaic laws; he quoted the New Testatement to show that anything in the shape of food could be properly partaken of by man in moderation.

The question was further discussed by Messrs. Jacob Stauffer and Ephraim Hoover, who thought pork proper food if well cooked and moderately eaten.

The further discussion of the question was postponed until next meeting.

JACOB HELINE was elected janitor, at $1 per meeting.

A committee, consisting of Messrs. A. F. Hostetter, Alexander Harris and Ephraim Hoover, was, on motion of Mr. Hostetter, appointed to confer with the Linnæan Society, and offer to share the expenses of keeping up the room with them.

WALKING HORSES VS. TROTTING.

MILTON B. ESHLEMAN offered the following preamble and resolutions, which were adopted:

WHEREAS, The tendency of the times is to improve the running capacities of the horse, to the disparagement of the walking; and whereas, in every business sense the walking gait is by far the most important; therefore it is

Resolved, That it is the sense of this Society that it would be conducive to the good of the country if the Pennsylvania State Agricultural Society would offer several premiums for the fastest walking horses at its annual fairs—not requiring the presence of the horse on the grounds more than the day of trial.

Resolved, That we request said Society to offer such premiums at its next exhibition, to be held in this city, and that we as individual members will exert ourselves to get up a lively contest.

Resolved, That the Secretary shall forward a copy of this preamble and resolutions to the office of the Pennsylvania State Society at Harrisburg.

CASPER HILLER now called attention to a very superior fruit raised in this county, known as the Krauser apple.

CHAIRMAN COOPER exhibited three fine varieties of apples grown in this county, and which he desired the Society to name. On motion, one was named "Gontner's Fancy," and the other the "Manor Beauty"—both having been raised by Mr. Gontner, of Manor. The third apple, also originated in Manor, was named "The Ritter."

JOHNSON MILLER offered the following, which was adopted:

THE STATE AGRICULTURAL REPORTS.

WHEREAS, The proceedings of the Agricultural and Horticultural Society, with the essays and papers read at each meeting, have become a matter of interest to the general reader; and whereas, the 10th volume of the Pennsylvania State Agricultural Society, together with the report of the Pennsylvania Fruit Growers' Society, and the essays and papers contained therein, is a work which interests every farmer and fruit grower; and whereas, the members of the Lancaster County Agricultural and Horticultural Society express the sentiments of the agricultural people of this county; therefore

Resolved, That our Senators and Representatives in the Legislature, now in session at Harrisburg, are requested to encourage such appropriation of this valuable agricultural report from time to time.

Resolved, That we regard these two societies as the representative bodies of the agricultural and horticultural interests of Pennsylvania, and all feel a common interest in their proceedings as beneficial to our agriculturalists and horticulturalists.

Resolved, That our Corresponding Secretary be requested to forward a copy of the above resolutions to each of our Senators and Representatives at Harrisburg.

A large variety of apples was exhibited by Levi S. Reist, and two bottles of wine by John B. Erb. After testing the good things, Society adjourned.

GENERAL MISCELLANY.

Shade Trees.

For a list of trees to set along the borders of a street in a city or village, or along the highways in a country, we would rank the first the sugar of rock maple (*Acer saccharinum*). It is a noble looking tree when fully grown, and makes a dense shade, so acceptable in a hot day to man or beast. The only objection to its being popular for this purpose is its slow growth. Most people are impatient to have on the start a tree that will grow up, like Jonah's gourd, in a single night; and will discard this for some quick growing kind—like the poplars or cottonwood, for instance—forgetting that, while these quick growing trees, like some fast people, grow, flourish, and have their day, the hard maple continues to grow and rear its stately head and stand as a monument to the memory of him who, in his wisdom, transplants it.

Next to the maple we would place the white elm (*Ulmus Americana*). This is sometimes called the weeping elm, and is really a beautiful tree, and perhaps more universally used for street purposes in the Northern States than any other single variety. We need not here give a description of this magnificent tree, as our readers are all undoubtedly acquainted with its habits and growth. A row of trees, alternately maple and elm, have a very pleasing effect. Next in order comes the white ash (*Fraxinus Americanus*). This tree is not as large in its growth as the two former, but excels them in the rapidity of its growth, and makes an excellent shade tree; its main and only objection being its habit of dropping its leaves in ealy fall. The linden, or more commonly known basswood (*Tilia Americana*), makes a beautiful shade tree; but its tendency to sucker or sprout makes it objectionable to many. Yet many advise its culture, on account of its beautiful foliage and fragrant blossoms.

Thoughts for March.

The farmers are now burnishing their armor; they can hear, as it were, the sounds of approaching activity, and are making ready to play their part in the great industrial strife in which the tillers of the soil are shortly to be engaged. On the farmer every other interest mainly depends; his toil sets all arts in action; without it other interests would of necessity flag and die. The sound of the anvil would no longer be heard, the shuttle and the spindle would be still, commerce would be suspended, and man himself revert to the savage state, dependent on the chase and the spontaneous products of nature for his daily food. How all-important, how ennobling, then, is the mission of the farmer! When will American husbandmen be duly impressed by that fact, and so train their sons to be mentally qualified to fill their high destiny? They are the owners of the soil, their interest is paramount to all others, they are the majority in number, and the legitimate candidates for high honor; it is they

who should fill the posts of dignity and trust, frame and administer the laws, and represent the nation abroad. But to accomplish all this, self-reliance, conscious ability, and conscious worth must co-exist—these are not the work of a moment, nor the simple union of material forces. No combination alone can achieve permanent success. The only *patron* the farmer needs is himself alone—educated and trained to fill his high destiny.

Large Poultry Yard.

The following account of the largest poultry yard in New York is given in the *Fancier's Journal:*

It is at Greene, Chenango county, N. Y., and is kept by Mr. A. B. Robeson. He has 6,000 ducks, 4,000 turkeys, and 1,200 hens. They consume daily sixty bushels of corn, two barrels of meal, two barrels of potatoes, and a quantity of charcoal. The meal, potatoes and charcoal are boiled together, and form a pudding which is fed warm. He has commenced to kill them off, and employs fifteen hands to pick, two to kill, and one to carry away and pack on racks until frozen, then they are ready to pack for shipping. He also employs two men to cook the feed and feed them. He has twelve buildings for his fowls, from one to two hundred feet long, fourteen feet wide, and seven feet under the eaves, with a door in each end of them.

Mr. Robeson bought most of his ducks in the West, and had them shipped in crates—three dozen in a crate. He also has an egg-house, 35 by 50 feet, and four stories high. The outside is eighteen inches thick, and built of cut stone, laid in mortar, boarded up on the inside and filled in between the outside and inside wall with sawdust, it taking 3,000 bushels. Mr. Robeson claims that he can keep eggs any length of time in this building. He also keeps the poultry that he is now dressing until next May or June, which he sells for eighteen to twenty-five cents per pound, and it cannot be told from fresh dressed poultry. He gets ten cents per pound for turkey's feathers, twelve for hen's and sixty-five for duck's. He says there is money in poultry, and he thinks he can make out of his 6,000 ducks enough to pay for his egg house, which cost $7,000. He intends to keep a great many more next season, and has agents out all over the country buying up poultry and eggs.

The State Agriculturists.

At the quarterly meeting of the executive committee of the State Agricultural Society, the following was adopted:

Resolved, That this executive committee recommend to the incoming representatives of the Pennsylvania State Agricultural Society the propriety of omitting the annual exhibition of 1876, for the reason that the common desire of the citizens of Pennsylvania is to contribute to the success of the commemoration during the year of the completion of the first century of our republic as a nation.

The following officers of the State Society were elected:

President—George Scott.

Vice-Presidents—James A. M'Crea, Geo. Blight, A. L. Kennedy, William S. Bissell, A. D. Levering, David H. Branson, Wm. H. Holstein, Tobias Barto, S. S. Spencer, Daniel H. Neiman, Joseph P. Connor, Ira Tripp, Lyman Nutting, John A. Smull, James E. Carmalt, J. B. Potter, S. Baker, John S. Miller, Daniel O. Gehr, L. A. Mackey, George Rhey, John Murdoch, jr., Alex. Speer, Joshua Wright, J. B. Lawson, J. D. Kirkpatrick, John W. Hammond.

Additional members executive committee—A. Wilhelm, Abner Rutherford, J. S. Keller, Benjamin G. Peters, R. S. Allen.

Ex-Presidents, Members of the Board—Frederick Watts, D. Taggart, Jacob S. Haldeman, Thomas P. Knox, A. Boyd Hamilton, Amos E. Kapp, John C. Morris, J. R. Eby.

Corresponding Secretary—Elbridge M'Conkey.

Chemist and Geologist—S. S. Haldeman.

Assistant Chemist and Geologist—Hugh Hamilton.

Librarian—William H. Egle.

The Pestilential East Wind.

I believe it is an admitted fact that an easterly wind is more deleterious to man, beast, and vegetation, than a westerly wind. I have observed that if an east wind should come while the cherry and raspberry were in bloom, they are sure to be mostly blasted. I have noticed, too, that all kinds of stock require more attention during an eastern wind or storm than in one from the west. Man, as a general rule, feels more dull, stupid, and inactive during an east wind. We read in the Bible of the pestilential east wind; so we infer that during the patriarchal days, in Asia, it was observed to be the more deleterious. The question has often been asked, Why is this so? Philosophers, who reason from cause to effect, have searched for a cause. I will give my phylosophy for it, and those who peruse it may take it for what it is worth.

The planet revolving from west to east, and a west wind going the same direction, the surface air, a portion at least, is thrown off into space—consequently the higher and purer atmosphere is pressed down to the surface; hence we do not get all of the poisonous miasma in the air during a westerly wind. My idea may become more clear by stating a fact that many have observed. By pouring water on a grindstone and turning it rapidly, a portion of the water is thrown from the surface. Just so with a western wind; it brings into requisition the centrifugal force, a tendency to fly from the surface, while with an east wind the reverse is true; the centripetal force is brought to bear. Hence an east wind coming against the planet is constantly clinging to the surface; therefore we are subjected to all the impure air, &c.

I have here briefly given what seems to me the true cause for the more injurious effects of an east wind, and I shall adhere to this, unless some one can give something which appears still more philosophical.—*A. Allen Noe, Lancaster, January* 1, 1876.

Influence of Food on the Mind.

Good food, a variety and enough to satisfy the demands of the stomach for the time, exercises a prodigious influence on mental operations. A hungry man has no wide range of thought, neither has a glutton. Those are extremes which endanger the physical well-being of the body. Just enough to relish contributes immensely toward that condition of mind essential for the exercise of reason and judgment. When food is imperfectly digested, or not at all, the vital processes are diminished in force, which is shown in direct debility and an enfeebled state of the brain.

Great brain workers are generally great eaters. The blood requires frequent meals from which to elaborate something essential to its full contribution of those elements that sustain the most wonderful organ ever brought under the eye of a naturalist in the conduction of its mysterious functions. Stranger still, the brain quickly uses up the quickened influences conveyed to it in the blood; and if more is not soon supplied, the deficiency is indicated by nervous disturbances and abnormal derangements which food alone can re-establish.

A regular, systematical served diet, of a mixed character, embracing both animal and vegetable materials, proportioned agreeably to the taste of an individual, secures the highest condition of mind for carrying on those studies in literature, science or art, characteristic of the best types of civilized man. Neither savages, barbarians, mendicants in search of a dinner, nor gourmands write books or contribute to the moral progress of mankind.

Hurtful Reading.

A bad book, magazine, or newspaper, is as dangerous to your child as a vicious companion, and will as surely corrupt his morals and lead him away from the paths of safety. Every parent should set this thought clearly before his mind, and ponder it well. Look to what your children read, and especially what kind of papers get into their hands, for there are now published scores of weekly papers with attractive and sensuous illustrations, that are as hurtful to young and innocent souls as poison to a healthful body.

Many of these papers have attained a large circulation, and are sowing broadcast the seeds of vice and crime. Trenching on the very borders of indecency, they corrupt the morals, taint the imagination, and allure the weak and unguarded from the path of innocence. The danger of young persons from this cause was never so great as at this time; and every father and mother should be on guard against an enemy that is sure to meet their child.

Look to it, then, that your children are kept free as possible from this taint. Never bring to your house a paper or periodical that is not strictly pure, and watch carefully lest any such get into the hands of your growing-up boys.

Celery.

The habitual use of celery is more beneficial to us than is commonly supposed. A writer who is familiar with its virtues, says: "I have known many men, and women too, who from various causes had become so much affected by nervousness that when they stretched out their hands they shook like aspen leaves on windy days, and by a moderate daily use of the blanched foot-stalks of celery as a salad, they became as strong and steady in limb as other people. I have known others so nervous that the least annoyance put them in a state of agitation, and they were in constant perplexity and fear, who were also effectually cured by a moderately daily use of blanched celery as a salad at meal time. I have known others cured of palpitation of the heart. Everybody engaged in labor weakening to the nerves should use celery daily in the season, and onions in its stead when not in season."

Corn Starch Cake.

This is a simple and digestible cake, easily and quickly made, and generally liked. Rub well together one cup of butter and two cups of sugar. Add the whites of six eggs beaten to a froth. Stir in one cup of sweet milk, two cups of flour, in which have been thoroughly mixed two teaspoonfuls of baking powder, or two of cream of tartar and one of soda, and flavor with one teaspoonful of extract of bitter almonds (or other flavor desired). Lastly, stir in one cup of corn starch, which acts both as food and shortening. Immediately bake in a moderately quick oven.

What it will do.—If a mechanic or clerk saves only 2¾ cents per day, from the time he is twenty-one until he is threescore and ten, the aggregate, with interest, will amount to $2,900; and a daily saving of 27½ cents reaches the important sum of $29,000. A sixpence saved daily will provide a fund of $7,000—sufficient to purchase a good farm. There are few employees who cannot save daily, by abstaining from the use of cigars, tobacco, liquor, etc., twice or ten times the amount of the six cent piece. Every person should provide for old age, and the man in business who can lay by a dollar a day will eventually find himself possessed of $100,000.

LITERARY AND PERSONAL.

The Pocket Guide for the Centennial Visitor, compiled by John W. Frazer, and published for gratuitous circulation by John B. Ellison & Sons, 723 and 725 Market street, Philadelphia, is a 12mo. pamphlet of 72 pages, and contains fifty-five finely executed illustrations—most of which are full page—of the buildings, ground plans, scenery and surroundings of Fairmount Park, and the bridges, avenues, &c., in, and leading thereto.

Briggs & Brother's Quarterly Illustrated Floral Work for January appears in a more compact form and less ornamental than heretofore, for the reason that they are preparing to recognize our Centennial year by an elaborate work which shall be substantially bound, and will contain exhaustive treatises upon the care and culture of all the plants, flowers, bulbs, &c., that are of practical service in this country. It will be a standard work, fit for the parlor or library, and will be sent as a premium to their customers. Their lithograph of "The Great Tomato Race," is one of the finest things of the kind ever published. In rivalry to produce the best tomatoes, Briggs & Brothers seem to be ahead.

The Semi-Tropical for January comes to us from the sunny land of orange groves in an entirely new dress, with a beautiful and appropriate design for the cover. The paper and typography throughout are first-class, equal to the best of the northern magazines. It is devoted to Southern Agriculture, Horticulture and Immigration; Literature, Science, Art and Home Interests. Now that Florida is attracting so much attention from northern people, the *Semi-Tropical* forms an admirable channel of communication of just such information as they ought to have. We look upon such creditable literary enterprises as the very best evidence of the coming reconstruction of the South on a solid basis. It is well edited by Harrison Reed, assisted by an able corps of contributors, and is published by Chas. W. Blew, Jacksonville, Florida, at $3 a year.

The Sanitarian: The February number of this admirable exponent of sanitary science comes to our table heavily freighted with good things. The leading paper is on the "Effect of Loss of Consciousness upon the Memory of Preceding Events," by Prof. F. H. Hamilton, M. D. Articles from able pens on the "Perils of Massing of Population in Cities," "The Health of New York," "Pulmonary Consumption in Cities," "Infant Diet," "A City of Health," "Sewer Gas Poisoning," "Education in the United States," etc., help to make up an unusually rich table of contents. This journal was recently incorporated with the *Medico-Legal Journal*, and is published by Messrs. McDivitt, Campbell & Co., the eminent law and medical book publishers, Dr. Bell still remaining in the editorial charge. $3 a year. Everybody interested in sanitary affairs should be a subscriber.

Notes on the Yucca Borer: This is a beautifully printed pamphlet, containing notes on the Yucca Borer, (*Megathymus Yucca*) by Prof. Charles V. Riley, M.A., Ph.D., which were furnished by him for the Transactions of the Academy of Sciences, of St. Louis, (Vol. iii, January, 1876). The subject is an interesting one, from both a scientific and practical point of view, because the Yuccas—Aloes or allied to them—with their spined or threaded fleshy leaves, are becoming every year more popular as ornamental garden and conservatory plants; and no doubt those having sickly or stunted plants, would be surprised to find a borer excavating the stems and roots, almost their entire length, which, when it attains its full size, is nearly four inches long, almost as large as the common tobacco worm—and an inch and a half in circumference. We fully endorse the quotation from Westwood, namely, that "He who, by a minute analysis of any animal, enables to solve any dubious point connected therewith, does more for the elucidation of this much abused natural system than the greatest and most ingenious theorist who has yet taken the subject in hand," and we know no one who has more fully succeeded in undertakings of this kind, than Prof. Riley.

OUR FENCE CORNERS

A country editor, in his financial article, says—"Money is close, but not close enough to reach."

"Now is the time to get up clubs," remarked an editor the other day as he was attacked by a dog.

AN Iowa editor recently announced that a certain patron of his was "thieving, as usual." It was written thriving.

A METHODIST minister being recently asked if he had moved to his new appointment, said, "Yes, but it was a disappointment."

A YOUNG lady being asked by a rich bachelor, "If not yourself, who would you rather be?" replied, sweetly and modestly, "Yours truly."

"WILL you please insert this obituary notice?" asked an old gentleman of a country editor. "I make bold to ask, because I know the deceased has a great many friends about here who'd be glad to hear of his death."

In a recently published gazetteer is the following erratum: "For 'Dutchman' read 'Dr. Adams.'" This is almost equal to the well known erratum in a country paper, "For 'alum water' read 'alma mater.'"

JUST before marrying an old man for his money, a Louisville girl called her father aside, and, throwing herself on his neck, exclaimed, amid smiles and tears: "Oh, father! Your poor, miserable daughter will have a new bonnet every week."

CHINESE version of "the little busy bee:"

How belly small chin-chin sting bug
Im-im-plove ebly sixty minnit all tho time.
Go, pickee up sting-bug juice all day,
All kin' places 'loun flowels jest got busted.

The country storekeeper said: "Here, my friend, those balls of butter I bought of you last week all proved to be just three ounces short of a pound." And the farmer innocently answered: "Well, I don't see how that could be, for I used one of your 'pound bars' of soap for a weight."

A SOUTH Boston lady was recently interrogated by a Benedict as to why she did not get married. She replied: "I prefer to be an old maid." He said he did not believe it, as he felt sure she envied his wife. "Oh, no! that would be breaking the commandment—thou shalt not covet thy neighbor's ass."

RECENTLY, as a negro was painting his house on Watson street, and was nearly the top of a long ladder, his wife came out and called to him to come down. Just at the moment a rung broke and the man came down on his head, jumped up and said: "Well, honey, go on wid your remarks."

OBITUARY of the Cincinnati fighting jackass, by G. Washington Childs, A. M.:

A honess from Lybia's desert waste,
With ratthng heels he boldly dared to paste.
She scratched him and the scratches mortified:
In seventeen weeks the little jackass died.
Gone to meet Sergeant Bates.

AN EXCHANGE gives a catalogue of Nevada's contributions to the Centennial, which will consist of "a white fox, a black eagle, a blue mule, a thousand-pound lump of brimstone, and a baby that doesn't like candy." If the other States of the Union will do but half as well, the exhibition will be well worth going several miles to see.

DR. ALLEN, of Philadelphia, was preaching one day in Tennessee to the freedmen, when an old colored brother came to him after the sermon and said: "I like to hear you preach, for I understand your preaching." "I am very glad of it," replied the doctor. "Yes," he said, "I understand you jes as well as if you were a nigger." Dr. Allen acknowledged the compliment.

MR. COX, in his capital articles on Congressional humor, in *Harper's Magazine*, omits the best things which have been said while he has been a Representative, his modesty preventing his repeating his own *bon mots*. One of these was when the headers off when the roll was called were Messrs Oaks Ames of Massachusetts, and Archer of Maryland. The ayes and noes were called on a railroad land grab bill, and Archer, in his indignant haste to vote no, first responded to the name of Ames, and then to his own. This duplicate "No!" was greeted with a shout of laughter, and as it subsided, Cox sprang to his feet—struck a stage attitude—and exclaimed in a mournful tone: "Insatiate Archer! would not one suffice?" —"*Perley*" *in Boston Journal.*

A WRITER in the *Educational Monthly* says that if a thin section of coal be macerated in a solution of saleratus, and afterwards washed and submitted to the action of nitric acid, to remove mineral impurities, the microscope will show that it is made up of vegetable cells. They usually show no sign of structure, but occasionally fragments of old logs have been found. The change from wood to coal, in some instances, is not complete, as woody fibre has been detected by the iodine test.

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THE LANCASTER FARMER

DEVOTED TO AGRICULTURE, HORTICULTURE, DOMESTIC ECONOMY AND MISCELLANY.

"THE FARMER IS THE FOUNDER OF CIVILIZATION."—WEBSTER

Prof. S. S. RATHVON, Editor. LANCASTER, MARCH 15, 1876. PEARSOL & GEIST, Publishers.

"THE LITTLE BUSY BEE."

Organization of a Bee-keepers' Society—A New Interest to Be Protected and Cultivated.—Interesting Discussion, &c.

The first meeting of the Lancaster County Bee-Keepers' Society was held in this city on Monday, March 13th. An organization was effected by electing Peter S. Reist, of Manheim, President; J. F. Hershey, of Mount Joy, Vice-President; and A. B. Herr, of West Hempfield, Secretary.

The following members were present: H. B. Nissley, D. H. Lintner, John Huber, Elias Hershey, John Kepperling, A. H. Shock, J. F. Hershey, Peter S. Reist, S. G. Garber, Joel Fisher, A. B. Herr, and Leonard Flickenstein. The above gentlemen represented 1,300 hives.

The first subject discussed was, "Will Bee-keeping pay?"

J. F. Hershey thought it did. He realized 100 per cent. out of the money he had invested in bees. During the past few years he had sold over $600 worth of honey and queen bees.

Peter S. Reist believed that if bee-keeping was understood thoroughly it would pay better than most any other kind of business. If only 50 per cent. on the amount invested would be made, it would be paying well.

Messrs. S. G. Garber, Elias Hershey and Leonard Flickenstein also spoke in favor of bee raising, and said they were well paid for the interest taken in the matter.

"Which is the best, the Italian or the Black bee?" was the next question.

Elias Hershey favored the Italian Bee on account of its swarming and honey-making qualities.

J. F. Hershey preferred the Italian Bee on account of its protecting the hives from moth. Crossed bees were the best for making honey.

Leonard Flickenstein had a colony of black bees that made more honey than the Italian, but he preferred the latter on account of their many other good qualities.

The next question was, "Do Bees Injure Fruit?"

J. F. Hershey said the bees are blamed for injuring grapes. They never touch a grape unless it is already partly destroyed by a wasp or other insect. He had as high as fifty swarms in his orchard at a time and never noticed any diminution or destruction of his apples. His clover crop was benefited very much by the presence of the bees.

D. H. Lintner had often heard of bees destroying grapes, but after a series of experiments he found that it was not so.

Peter S. Reist was of the opinion that bees were a great benefit to flowers, as they carried the pollen of one flower to that of the other. The bee bread which they carry with them is also beneficial to the flowers.

"How long can a brood remain exposed without being covered by the bees and still be used for queen raising?" was the next question introduced.

Leonard Flickenstein had a piece of comb lying exposed to a damp, chilly air for twenty-four hours, from which he raised a prolific queen. He did not know whether the comb contained any eggs or not.

J. F. Hershey knew of combs with egg being shipped by mail and kept for five days, from which young queens were hatched. If a brood is over five days old a queen cannot be raised. Some have been raised, but they are not perfect.

The question, "What is the reason that a queen's sting is curved and a worker bee's sting is straight, and yet hatched from the same kind of an egg?" was believed to have been made so by nature, in order to attack its rivals.

"Why is a Fertile Worker Produced and How?"

D. H. Lintner believed it was produced to take the place of a queen. It lays eggs the same as a queen, sometimes as high as three to a cell, but they are perfectly worthless. They would not hatch, and if a queen would be placed in the same hive with them they would kill it. The only way to save the queens, in this respect, is to banish the fertile workers or transfer them to another hive. He could not tell how a fertile worker was produced.

J. F. Hershey said the fertile workers produced nothing but drones.

The last question brought before the Society was, "Which is the Better Plan, Natural or Artificial Swarming?"

J. F. Hershey preferred the artificial way. When a natural hive swarms it generally takes seventeen days before the hive is got in good working condition. In the artificial way, a queen can be placed in the hive at once and thus save all this time. You can swarm three times by the artificial way where you can swarm twice in the natural way. When swarming in the artificial way, the bees should have as much honey in the hive as when they go into winter quarters.

Peter S. Reist was of the opinion that natural swarming was the best if you had a prolific queen in the proper place. Artificial swarming should be thoroughly understood before it is attempted. Thousands of bees are killed annually by this neglect. If it were not for artificial swarming he would not have near so many bees as he has now.

Leonard Flickenstein and Jacob Keperling also favored artificial swarming, and cited several experiments which they had undertaken. They both believed that a week or ten days were gained by artificial swarming.

The chair appointed J. F. Hershey, A. B. Herr and Leonard Flickenstein as a committee to prepare practical questions for discussion for the next meeting, which will be held at Kauffman's Black Horse Hotel, this city, on the second Monday in May.

A general invitation is extended to all persons interested in bee culture to be present at the next meeting.

CONTENTS OF THIS NUMBER.

OUR FENCE CORNERS

"GO WORK UPON A FARM."

Will S. Hays, the eminent Southern song writer and composer, has published a song entitled, "Go and Learn a Trade." Just at this time, with factories and shops closing up, and mechanics begging for bread in some sections of the country, it seems to me that such a song is quite out of place. In view of this fact, I beg to offer your readers the following agricultural song:

The song I sing to you to-day
Is not to learn a trade;
For I am sad the truth to say—
That song aside is laid.
The mills are running on half time,
The shops give forth no noise,
And it is hard to find a dime
Among the 'prentice boys.

CHORUS.—The song that I shall sing to you
Your troubled hearts will calm;
If you have nothing else to do—
"Go work upon a farm."

The stores are filled with idle clerks,
Because the times are dull;
And he his duty plainly shirks—
When shops and mills are full—
Who seeks to learn a trade, or tend
The counter of a store,
In hopes the future yet will send
A fortune to his door.

CHORUS.—Ah, vain are all such hopes as these,
That surely end in harm!
Don't seek to sit 'neath shady trees—
"Go work upon a farm."

Oh! why should men in cities pine,
Or idly stay in town?
Why loaf about and crossly whine,
That "things are upside down?"
Can this bring bread to wife and child,
And make the future bright?
Can this turn the weather mild,
Or furnish heat and light?

CHORUS.—Such men should listen to my song,
And in it find a charm;
It tells them how to get along—
"Go work upon a farm."

Let no man starve for want of bread—
The product of the soil—
For all can still be amply fed,
Who will but share the toil—
The honest, manly toil that brings
The harvest season round,
When the glad farmer gayly sings,
Because of fruitful ground.

CHORUS.—This, then, shall be the song we sing,
The whole world to alarm,
And loudly let the chorus ring—
"Go work upon a farm."

—*Sidney Herbert, in the Semi-Tropical.*

A FRENCHMAN who has lived in America for some years, says: "When they build a railroad, the first thing they do is to break ground. This is done with great ceremony. Then they break the stockholders. This is done without ceremony."

A YOUNG minister, somewhat distinguished for self-conceit, having failed disastrously before a crowded audience, was thus addressed by an aged brother: "If you had gone into that pulpit, feeling as you now do on coming out of that pulpit, you would have felt, on coming out of that pulpit, as you did when you went up into that pulpit."

PREPARING IN TIME.—Profiting by the lesson taught by the great fire at Boston, a man living near Springfield, Mass., has made up his mind that he won't be burned alive. Once every week he gives the alarm of fire at midnight, at which his wife and children instantly arise and dress. He takes out a window sash, puts a rope round his wife, and lowers her to the ground, and then throws into her arms one child at a time. He next puts his furniture into the street, and removes it to a place of safety. The whole time occupied is less than fifteen minutes, and he hopes to do it in ten. He broke the arm of his second eldest child the first time, and his wife says the piano is rather out of tune in consequence of its numerous and hurried removals, but otherwise he is quite satisfied with the excellence of his plans.

ONE OF BROWNLOW'S YARNS.—Parson Brownlow tells a good story of an old Presbyterian bachelor preacher, known almost as a woman-hater until he was nearly fifty years old, when he married and settled somewhere among the mountains of North Carolina. The Parson says: "Our bachelor friend was preaching on the sinner's excuses. 'I have bought a piece of ground, and wish to go and see it,' said one. 'Here is want of inclination to attend to divine things,' said the preacher. Another said, 'I have bought five yoke of oxen, and must needs go and prove them.' This seems a case of necessity. A third said, 'I have married a wife, and therefore I cannot come.' 'Here is a case of natural impossibility, from which we may infer,' continued our bachelor preacher, 'that one woman will pull a man further from the Lord than ten steers.'"

The Lancaster Farmer.

Prof. S. S. RATHVON, Editor. LANCASTER, PA., MARCH, 1876. Vol. VIII. No. 3.

TO OUR CONTRIBUTORS.

We would respectfully beg leave to return our sincere thanks to the contributors to THE FARMER who have so promptly and so continuously sustained us during the past year, and who are doing the same good work for us in the present. We would cheerfully pay the postage on their contributions, if the law did not demand pre-payment before they can leave the offices where they are mailed, and we have often thought that some exceptions in the postage laws should have been made favorable to the dissemination of knowledge by such means; for, it is asking a good deal of a contributor to solicit the results of his labor and research as a gratuity, and then require him to buy his own pens, ink, paper, and envelopes, and also to pay his own postage. It would perhaps be a loss to the Department to grant such a privilege promiscuously, because such mail matter might not be lifted out of the office, but where it was intended for a responsible public journal, it would not fail to be lifted and paid for.

The present mail system is imperatively literal in its operation, no favors to any one save the naked letter of the law, and it operates in a rigid manner, perhaps not fully comprehended by all correspondents and contributors. For instance, if a manuscript is mailed requiring 12 cents postage thereon, and only 11 cents are attached to it in stamps, the 11 cents mean *nothing*, and it is immediately sent to the Dead Letter Office at Washington, and cannot be gotten out of it without paying 24 cents for it, and an additional three cents for the order. A case in point is now before us. Prior to the 19th of February a letter to us, containing contributions to THE FARMER, was mailed from Philadelphia. We cannot tell how long prior to that date it was, for the date on the outside is illegible, and inside it was without date; but on the 19th it received the stamp of the "Dead Letter" Office at Washington. We were informed of the fact on the 26th and requested to send 12 cents in postage stamps, and prepay our order for it, making 15 cents. On Monday, the 28th, we received it, about one half of its face covered with stamps, and post-marks, and cancellations, and one on its back, as if it had passed through a foreign "circumlocution office." It was a double letter and required six cents postage, but was enclosed in a two cent envelope instead, which, under the law, of course meant nothing. Of course, anybody might make a mistake of this kind—we have often made it—but as we have all our envelopes impressed with our own business device, our gentlemanly officials here always return them to us to have them properly stamped, without sending them to the Dead Letter Office, although we do not think they are under any obligations to do so. In this case we valued the contributions at far above the amount of postage we paid, but sometimes we receive letters in the same round about expensive manner, asking us to do things that cost us considerable labor or expense, and can only answer them by paying return postage.

What we wish to suggest is this: that our contributors and correspondents should always be sure to pay the full amount of postage—any thing short of that, no matter how small, *counts as nothing*. Also that they should have printed on the envelopes their business, name, and address; so that when they have failed to affix the right amount of postage, the letter may be returned to them again, although we are not sure that all postmasters would respect it, for in a large office and in a large city the writer might be too far away to receive any attention. But those who keep their private box, it would be little trouble to throw it in with their other mail matter. We have another suggestion in this connection to make: when a correspondent asks for information that cannot be given through the columns of THE FARMER, he should enclose either a three-cent stamp, or a postal card. These little items, so insignificant in themselves when singly considered, amount to quite a "plum" during the course of a year. Answering a question or a request, in which the asker alone is interested, is surely worth what the answer costs, whether it is in the affirmative or the negative.

We know that our readers, contributors and correspondents all mean to do what is fair and just, but it is human to forget, or even to neglect, and therefore we have deemed this admonition might do some good in quarters outside of the pale of our own immediate household.

ARTICHOKES.

We use this term in the plural, because, although not all our readers may be aware of it, yet there are two very widely distinct plants that bear the name of *artichoke*—not only distinct in species, but also in genera and family, one belonging to the family CYANARE, and the other to the family COMPOSITE. The most familiar subject to the people of this country is what they call in England the

Jerusalem Artichoke,

(*Helianthus tuberosus,*)

a small sun-flower, bearing nutritious tubers, for which it is cultivated. It is a hardy perennial of Brazil, and was first carried to England in the year 1617, where it soon became exceedingly popular as an esculent, being thought much superior to the potato. Loudon says that the name Jerusalem is a corruption of the Italian word for sun-flower—*girasole*. Its name of artichoke is probably derived from a resemblance in the taste of its roots to the "bottoms" of the true artichoke. The stalks are large, and frequently attain the height of ten feet. The roots are produced in great quantity, the crops sometimes exceeding two thousand bushels per acre. During the past few years they have been much extolled for agricultural purposes; and, indeed, they would seem better suited for the farmer than for the kitchen garden.

CULTURE.—The Jerusalem artichoke is not very particular in regard to soil or situation; it is, however, best pleased with a light and moist soil, having a free exposure. It requires little attention, and is so much inclined to perpetuate itself that it may even become a nuisance in small gardens. It is propagated in the same manner as the potato, by sets of the large-sized tubers. Plant them in March or April, according to the forwardness of the season, in drills three feet apart, and at distances of twelve or fifteen inches in the drill; cover the sets about three inches deep. Keep the soil light, and draw a little around the stems for their support. Be exceedingly careful to guard against the intrusion of weeds. The tubers can be taken up as wanted for use during the months of September and October, but in November they are to be raised for preservation through the winter, in sand or earth. The smallest piece left in the ground proves troublesome by vegetating in the following spring. The crop, however, may remain where grown, as it does not suffer from the frost.

USE.—In an agricultural point of view, this plant deserves a high position. It is exceedingly hardy, bearing exposure to the severe weather of winter without injury: it can be grown on poor soil, without the addition of much manure; it requires little attention, and is distinguished by great productiveness. The stalks make very good fodder, if cut before the flowers have fully opened; while the tubers are thought particularly valuable for cows, sheep and stock pigs. When prepared plain for the table, the roots are rather a second-rate dish. After having been boiled soft or tender, they are to be peeled, and then stewed with wine and butter. By many persons they are then considered nutritious and possessed of a good flavor. (*Schenck's Gardener's Text-Book.*)

The most common use made of these tubers in Lancaster county is in the form of pickles, of which we have eaten some excellent ones; and for this purpose they are dressed in several styles, after the manner of walnuts, citrons, cauliflowers or cucumbers. They are said, also, to make an excellent salad when thinly sliced down and properly seasoned.

European Artichoke.

(*Cynara hortensis et scolymus.*)

This artichoke is a perennial from the south of Europe, which was cultivated in England as early as the year 1580. It is naturally a marine plant, and has gradually been improved by domestication. The botanical name, according to Columella, is derived from the Latin word *cinera*, because the ancients were accustomed to apply ashes to the land in which the plant was grown. It resembles a gigantic thistle, and its flower-heads, before blooming, have somewhat the appearance of a small pine-apple, at which time they are highly prized on European tables, particularly by the French. There are two varieties, viz.: the *Oval Green* (*Cynara scalymus*) and the *Red or Globe* (*C. hortensis*). The latter has a purple head, and is generally most esteemed, but the first has the advantage of greater hardihood and productiveness.

CULTURE.—The artichoke is propagated by seeds, or by suckers from old roots. It flourishes best in soil which is deep, light and rich; dry in winter, but somewhat moist in the summer season. The situation should be open, and free from the influence of trees.

When you wish to raise seedlings, you may sow as soon as the frost leaves the ground in spring. One ounce of seed will produce about six hundred plants. Sow in drills one foot apart and two inches deep. When the stems are an inch high they may be thinned out to distances of ten inches in the drill. Keep the ground light, and free from weeds, by the occasional use of the hoe. At the approach of cold weather protect the bed by covering with litter, and in the following spring remove the plants to their permanent location, in the manner directed below for suckers.

The suckers are afforded by the old roots early in spring. They are fit for transplanting when eight or ten inches in height. After the ground for the bed has been selected, it should be spaded deeply, and manured with good rotten dung, sea-weed, salt, or anything of a saline character. Slip the young shoots from the parent root, and reject all that are tough and woody. The loose outside leaves ought to be pulled off so that the heart can be seen. If the shoots have been for some time exposed to the air, they are much benefited by being placed in water for three or four hours before planting. They may then be set out by the dibble in rows three by four feet apart, with about half their length below the surface. They ought to be watered every evening until they become finally established, and subsequently during times of drought; by this means the size and succulency of the edible parts will be much increased.

The only cultivation needful during spring and summer, is to keep the soil clean and mellow, as well as to apply water in dry weather. Under such treatment, a few heads for use may be expected between August and Novem-

ber, although in subsequent years the maturity of the crop will commence much earlier in the season. The head is permitted to grow until the scales spread, and the flower seems about to open. The stem must then be cut off close to the ground, so as to encourage a new growth of suckers before winter.

Although apparently possessing a hardy constitution, this vegetable is very sensitive to the frost, requiring winter protection in the northern States. In all severe weather, the plants ought to be sheltered by a larger layer of leaves, branches, or coarse litter. When spring opens, all danger of hard frost being passed, and the young buds having fairly started, the litter is to be removed, and the beds leveled, and the ground thoroughly dug.

An artichoke bed seldom continues in perfection for a longer time than six years; after that period the flower heads become gradually smaller and less succulent.

For seed, select some of the best heads, and permit them to flower. To prevent water settling in the expanded calyx, the stake must be bent over, by being tied to a small stalk. The seed will be ripe in the fall. Gather it when dry, and store it in a cool, dry apartment. Its vegetative power may be depended on for at least three years.

Use.—As a vegetable, the artichoke is wholesome, but, probably, not very nourishing. It is used in various ways. In Italy, the young tender heads are eaten as a salad, with oil, salt and pepper. The edible parts are the receptacle of the flower, called the "bottom," and the fleshy substance on the bottom of the calyx scales. In England, the whole head is usually boiled plain, and the scales are pulled off at the table, one or two at a time, dipped in butter and pepper, and stripped of their fleshy part with the teeth. The stalks are eaten in France and Germany, after having been boiled and pickled. The flowers have the property of rennet in curdling milk, and the juice of the leaves and stalks when prepared with bismuth, imparts a permanent gold color to wool, and, when mixed with an equal quantity of white wine, is said to have been successful in the cure of the dropsy.

To boil.—Scrape the artichokes and put them in boiling water, with an allowance of a tablespoonful of salt to every two dozen heads. In about two hours time they will become quite tender, when they may be taken from the fire and seasoned with butter and salt.

To pickle.—Soak the artichokes in salt and water for several days. Drain them and afterwards rub off all the outside skin. To one gallon of vinegar, add one tablespoonful of alum, and a teacupful of salt, and turn over the artichokes when it is scalding hot. After remaining a week, it should be drawn off, scalded and then returned, the process being repeated at intervals of six or seven days, until the heads appear to be thoroughly pickled, when they will be ready for use.—*Schenck's Gardener's Text Book.*

We are not aware that this vegetable has received any special attention by the gardeners of this country, if any at all, or even that it is worthy of cultivation. Our object in transcribing its history, mode of cultivation and use, is more to inform the readers of THE FARMER of the *fact* of its existence, and wherein it differs from the vegetable so widely known in this country under the name of "THE artichoke."

QUERIES AND ANSWERS.

MR. J. P., *Christiana, Lancaster county, Pa.*—The large, white, footless, and black-headed grubs, which you exhibited at the March meeting of the Horticultural Society, are very probably the *larvæ* of the "Broad-necked Prionus," (*Prionus laticolis*). You say you took them out of an old apple log that had been lying four or five years, and was going into decay, and ask whether they prefer dead to living wood, and if the former, whether old logs might not be a protection to living trees, as an attraction to these insects. We hardly know how to answer that question, because if all that has been reported on the subject be true, they infest both dead and living wood. We have taken them (or allied species) out of Lombardy poplar, cherry and oak, that were in partial decay; and many years ago we suggested that they probably were the cause of the death and decay of the Lombardy poplars over all this region of country; hardly any now remain—all destroyed. But that is not the worst, for in the west, and elsewhere, they are *known* to infest the roots of the living grape, apple and pear, and from their great size—two and a half inches long—and their three years larva life, if they should become numerous, it is very evident that they would be a most formidable enemy to the fruit-grower, particularly because they work concealed, or under ground, and therefore difficult to approach with a remedy. They also infest the Osage orange, and are said to even attack cornstalks; but this latter is questionable, because they would not have time to mature therein, unless they passed to or from some other substance. The beetle that develops from this larva, is a large black, or deep brown insect, the females of which are fully three inches long, but the males are much less. They belong to the family PRIONIDA in the great group or section of Longhorned beetles (LONGICORNIA). There are several species of them, and also others allied to them; therefore without breeding them, it cannot *positively* be stated, to which species they belong; but the probabilities are favorable to the species we have named.

Will Mr. P. send us in April or May half a dozen specimens of the largest he can find, together with some of the decayed wood. The beetle appears in June and July, and ought to be killed wherever it is found. It is attracted at night by a bright light, and in this way we have captured a dozen in a single evening.

THE CENTURY WEATHER REPORT.

THE past winter having been sufficiently remarkable for its mildness to employ the pens of the "weatherwise" nearly over the whole country, many of whom claimed that there was nothing like it within the recollection of the "oldest inhabitant; we therefore copy the following, which goes to show that although the *oldest inhabitant* may fail in memory, there is still a record extant that is independent of and anterior to his pretensions in meteorological lore. At best, we are but very short-memoried mortals. We are apt to regard the immediately pending condition of things as the hardest, the dullest, the hottest, the coldest, the mildest, the wettest, the dryest, the briskest or the wickedest that has ever before been experienced. If, however, we only turn over a few pages of the past, we will find that not only history, but also the meteorological phenomena of the world "repeat themselves," and that the like had been seen and felt before.

"The remarkably mild weather of the past month has sadly puzzled the wiseacres who had predicted an extraordinary cold winter, commencing early in November. And even the "oldest inhabitants" have set their wits to work trying to account for the backwardness of the season. As a consequence, items are published in newspapers of all sections furnishing parallels to the seemingly unparalleled mildness. Another interesting fact has been recalled in this connection, to wit, that the first month of this centennial winter closely resembles that of 1776. The newspapers of that day speak of the extraordinary weather. It was even said that the lack of the usual ice in Boston harbor prevented Washington from crossing his forces and attempting a surprise of the city, and the Americans were enabled to continually send forth vessels from all parts of the harbor to the West Indies for munitions of war. The mild weather also allowed Gen. Schuyler, in the first days of January, to dispatch his well-planned little expedition up the Mohawk valley to surprise the highlanders under Johnson. On the contrary, the news that year from England indicated an intensely cold winter. The weather records of Philadelphia disclose many facts worthy of note in this connection. In comparing the mean temperature of the past month with that of each January of the last century it is found that in but seven instances was the temperature as high as in the month just closed. Last Friday the thermometer reached 70°, a point which, during the whole century, was only equalled in the years 1790 and 1870, and was not exceeded at either period. The day therefore may be regarded as a remarkable one. The mean temperature, however, for the past month does not reach the mean temperature attained in either of the years alluded to, but still the weather for the month was unusually mild. According to the records of the Pennsylvania Hospital, the mean temperature for the last month was 38°, the minimum falling to only 17° above zero. This was 6° above the average for January, and during the entire century that point was equaled only in this section in the years 1802, '23, '43, '58, '63, '70. In 1790 the mean temperature was 44°, the mildest January on record. Fogs prevailed in the morning, but the hot sun soon dispersed them. At that time the mercury often ran up to 70° in the shade at mid-day. In Pierce's report of the weather, it is stated that boys were seen swimming in the Delaware and Schuylkill rivers. This unusual weather was continued up to February 7. In 1802 the trees and shrubbery were blossoming in January, and in 1828 the Delaware was as free from ice as in June. The first month of 1870 was the warmest January on record after that of 1790. While in nearly all these cases the winter has been remarkably mild, there have been instances noted when the winter did not really commence until February, and continued far into the spring season, at one time up to June. Even during those winters when little or no snow fell, the summer following the unusual season was generally reported to be an exceedingly fine one. So it will be seen that the clerk of the weather is such an eccentric genius as to defy the laws of precedent, refusing to do the bidding of those fogies who claim to know by the color of a goose's breast bone under what conditions he shall present himself in this section."—*Philadelphia Times of 3d inst.*

THE interesting paper on "The Potato's Enemies" on the 36th page of this issue, which originally appeared in the *West Chester Local News*, was sent to us some weeks ago by Mr. John I. Carter, of the "Experimental Farm" at West Grove, Pa., for insertion in THE FARMER, if advisable, but it came to hand too late for our January number, and we had laid it away too carefully to find it in time for our February number. It is, however, one of those things that will not spoil, if used before the first of April or May, and therefore we give it a place in our present number. Although occasional tubers of the potato may be found every autumn, when they are raised, with cavities gnawed into them, yet we do not think the depredations of either of the insects named (if they are correctly named) has yet amounted to a serious infestation in this region of Pennsylvania. Dr. Hunt is probably on the right track, and in addition to the works to which he has referred, we would call the attention of potato growers to the investigations made by the Agricultural Department at Washington City, which are published and illustrated in the reports of 1872, 1873 and 1874, a condensation of which was published in THE LANCASTER FARMER of February, 1875. It is probable, however, that the wounded portions of the tubers may furnish a prolific seat for the development of the *fungoid* disease, but it is certain that it exists independent of such conditions.

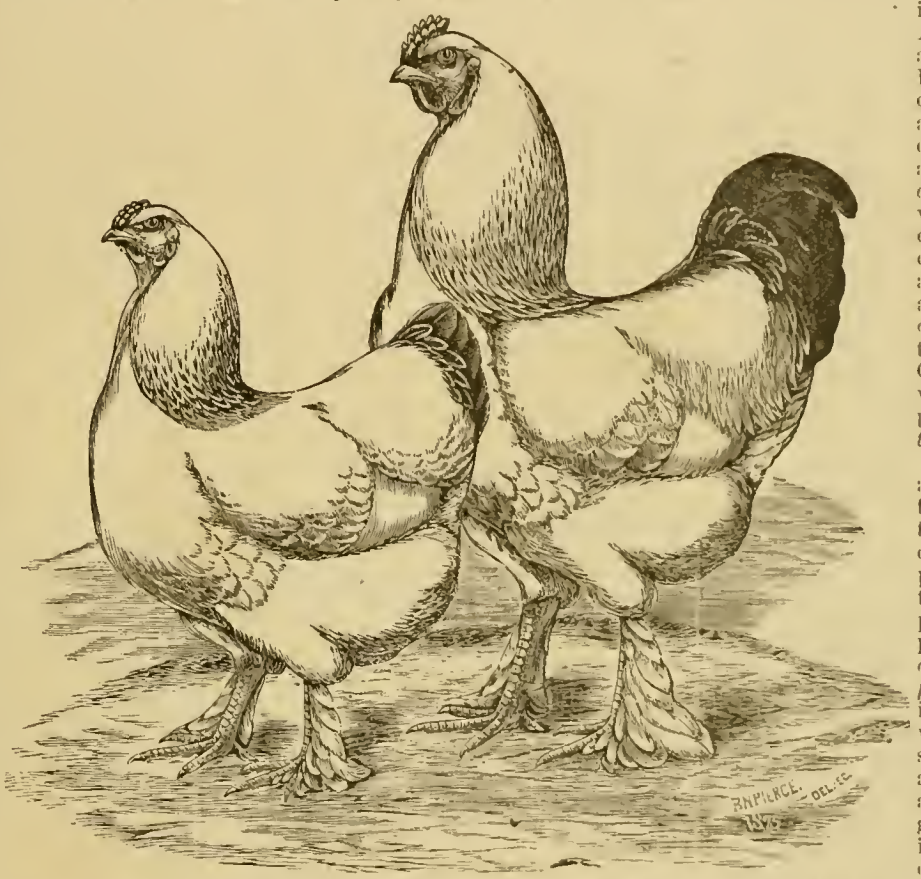
Now that the season for practical operations on the farm is opening, every tiller of the soil, whether he owns one acre or one hundred, should subscribe for THE LANCASTER FARMER, if he is not already a subscriber. It will prove a good investment.

LIGHT BRAHMAS.

Light Brahmas are probably the most popular of all fowls. Lately there has been much discussion in poultry circles as to the origin of this celebrated variety, but as a repetition of this could be of no interest to our readers, we will confine our remarks to the merits of this breed.

Certain it is, that whatever their origin, they are now a well-established breed, widely disseminated and universally esteemed—although as there is no fowl adapted to all situations, to all tastes, so there are men who loathe, as it were, what they choose to call the clumsy, stupid ways of the Brahma fowl.

They are readily confined, and especially adapt themselves to narrower quarters. A fence four feet high will easily keep them within bounds. They are lazy, care not to forage much, are readily handled, of a tame, quiet disposition, and hence are especially suited to small city yards. They can be bred in exceedingly small lots, if the young chickens are allowed a considerable range when attaining their growth. They must be well fed when young, or they will grow up small and stunted—thus solely unprofitable. If a farmer intends to breed Brahmas he must expect to feed more grain than is required by the common fowls or smaller breeds of thoroughbreds. But what is the result? The Brahma will take on twice as much flesh, and hence is really the more profitable. They are good for broilers when from two to three months old, and are just the thing for early spring markets. When full grown they will thrive satisfactorily on the same amount of food that is necessary to keep Leghorns or other small breeds in confinement, for, although twice the size, there is little muscular action, and hence scarcely any waste, while, on the other hand, the Leghorns are very active. But if both are allowed free range, the Leghorns will almost entirely seek their own food, while the Brahmas will dust themselves and idle the whole day, waiting for their meals. A cross of the Brahma and Leghorns makes an excellent farmers' fowl—both flesh and the supply of eggs being thus improved.



The necessity of proper care of Brahmas cannot be too strongly urged upon the would-be breeder. The best of stock will degenerate and become worthless as mongrels if allowed to shift for themselves. Brahmas are good layers, and give an especially abundant supply in winter, when most needed. They are inveterate sitters; when this propensity manifests itself the hen should be immediately penned up, for the longer it is delayed the greater will be the difficulty in preventing it. The perches for fowls should be broad, slightly curved, and not too high from the ground. Especial care should be taken as to this point, for there is no more fruitful source of badly shaped, deformed fowls than improper roosts. A very common fault with Light Brahmas is a tendency to become "leggy." Now it does not pay to produce long-legged shanghais. The days of Burnham's fowls, that "could eat off of the top of a flour-barrel and all that was in in it," are past. Now good taste and sound judgment are prevailing. The heat of the *furore* is past, and the fowl uniting the greatest economies of form, size, shape and eggs rules the day. Size is a point that must not be underrated. The whole country is flooded with miserable, dwarfed specimens, poorly feathered, that are styled Light Brahmas, and vended as such. It is easy to produce a small, well-marked bird, but only the best and most carefully bred strains will produce birds perfect in feather and colossal in size. We do not advocate over-feeding, but size in the *blood;* and this alone WILL TELL in the offspring.

Again, in our extensive correspondence we occasionally have calls for "white Brahmas." Now such are only degenerated specimens, and in no consideration to be tolerated. Let us stick to the Light and Dark Brahmas as the only genuine varieties, and here we will find sufficient employment for the exercise of untiring patience, skill and zeal in the improvement and perfection of the American Brahma. Our cut represents birds belonging to Mr. Miner, of Illinois.—*W. Atlee Burpee, Philadelphia, Pa.*

ANCIENT GARDENING.

Philip Miller says: "We have likewise many of the famous gardens of the ancients elegantly described by the poets and historians as the pensile ones of *Semiramis*, those magnificent ones of King *Solomon*, the *Hesperian*, with those of *Adonis* and *Alcinous*, the latter of which, described by *Homer*, and beautifully translated into *English* by Mr. *Pope*, I shall take the liberty to transcribe."

"Close to the gates a spacious garden lies,
From storms defended and inclement skies;
Four acres was the allotted space of ground,
Fene'd with a green enclosure all around;
Tall thriving trees confess'd the fruitful mould,
The red'ning *apple* ripens here to gold;
Here the blue *fig* with luscious juice o'erflows,
With deeper red the full *pomegranate* glows.
The branch here bends beneath the weighty *pear*,
The verdant *olives* flourish round the year,
The balmy spirit of the western gale,
Eternal breathes on fruits untaught to fail;
Each dropping *pear* a following *pear* supplies,
On *apples apples, figs* on *figs* arise;
The same mild season gives the blooms to blow,
The buds to harden and the fruits to grow.
Here order'd *vines* in equal ranks appear,
With all th' united labors of the year.
Some to unload the fertile branches run,
Some dry the black'ning clusters in the sun;
Others to tread the liquid harvest join,
The groaning presses foam with floods of *wine*.
Here are the *vines* in early flow'r descry'd,
Here *grapes* discolored on the sunny side,
And these in autumn's richest purple dy'd.
Beds of various *herbs* forever green,
In beauteous order terminate the scene.
Two plenteous *fountains* the prospect crown'd;
This thro' the *gardens* leads its stream around,
Visits each plant, and waters all the ground;
While *that* in pipes beneath the *palace* flows,
And thence its current on the town bestows;
To various use their various streams they bring,
The *people* one, and one supplies the king."

Sir William Temple says, "that this description contains all the justest rules and provisions which can go toward composing the best gardens. Its extent was four acres, which, in those times of simplicity, was looked upon as a large one, even for a *prince*. It was inclosed all round for defence, and, for convenience joined close to the gates of the *palace*. This is from the *preface* of Philip Miller's "Gardener's Dictionary," a quaint old royal quarto volume of about one thousand pages, dedicated to SIR HANS SLOANE, *Bart*, and published in *London* some time previous to the year 1750 or 1752, as the latter is the year in which Sir Hans Sloane died. Miller died in 1771.

The foregoing is, however, not a description of an actual garden in *Sloane's, Miller's*, or *Temples'* times, but a far prior date—a garden in the times of HOMER. Authors, however, do not agree as to *when* or *where* Homer was born; seven cities claiming that honor, and at as many different epochs, in which there is a difference of *four hundred years*. The greatest weight of testimony, however, seems to be to the effect, that he was blind, and was born at Smyrna, an Ionian city on the coast of Asia Minor, about one thousand years before the Christian era, according to which this description applies to a garden of *three thousand years* ago.

From this we may be able to form some idea of the antiquity of horticulture and systematic gardening, and also what improvement has been made thereon. "The dropping pear a following pear supplies," might indicate that *oranges* or *lemons*, and not *pears* are meant, that being about the manner in which that ripening fruit succeeds each other. Four acres would be considered a very respectable fruit garden for a private family, even at the present day, and taking Lancaster county as an example, there are, perhaps, more below that size than above it. *Fast* as the present age is, we find that, after all, we are traveling but slowly down the course of time, and that many *new* things have their archetypes in things of *old*.

The Slaughter of Birds for their Plumage.

Mr. Alfred Newton writes a striking protest to the *Times* against the wholesale slaughter of birds for the sake of ornamental feathers. He quotes the proceedings of a single sale of feathers to show that to supply that sale alone 9,700 herons (or egrets) must have been destroyed. All these feathers are said to have come from India last autumn. Mr. Newton observes that no country could supply 10,000 herons in a single breeding season without nearly rooting out the stock. Moreover, 15,000 Humming birds and upward were included in the sale, of which 740 were of a single kind. As far as we know, none of these birds really diminish the stock of food available for man, so that in destroying them for mere show we empty the world absolutely of a certain portion of its beauty and happiness—while the beauty is certainly by no means made up in the ornamentation of feminine toilets which is thus procured. In this age of fine moralities, does no one really bestow a thought on the morality of such reckless spoliation of life as this?—*London Spectator*.

THE POTATO'S ENEMIES.

An Essay read before the West Grove Experimental Farm Club, by Dr. Michener, in answer to a referred question.

You ask, Is it the *white grub*, or larvæ of the *May Beetle* (*Lachmostura fricu*,) or that of the *False May Beetle* (*Ligyrus relictus*,) which often do much damage to the potato tubers? And what preventive can be suggested for its spoliations?

In answer, it may be the one or the other. It may be both; or it may not be either of them. Of this I am unable to affirm until the terms of the indictment shall be settled. For we must remember that the potato is liable to various injuries and from various enemies; and that there are other parties beside *May bugs* which possess a Hibernio-American fondness for the potato. Let us then determine the exact offense for which these culprits stand indicted. If I comprehend the charge, it is not the ordinary eating of the tubers, but a mischievous nibbling of small holes over the surface, from an eighth to a quarter of an inch deep, with a black, ragged surface; and thus rendering them both unsightly and of little worth.

The offense must be admitted, but I fear that the offenders have not been sufficiently identified to warrant the conviction of these grubs. Moreover, strong suspicion rests upon other parties. I allude to the *wire worm* (*Melonotus incertus*,) and to an undetermined fungus. It is fitting that you should inquire a little concerning all of these claims to villainy.

First. Of the *cock-chafers*, or the true and false *May beetles*. These, in the larvæ state, are well known to be underground vegetarians, and their ample, rotund forms show that they are generous feeders. They are, moreover, to be found in those soils wherein the potato delights to grow. I presume that they are too much like ourselves to be willing to starve in the midst of plenty, without making an appropriation of a part of the crop to their own use. This they no doubt do; but they do it boldly, and as of their right to do it. There is no thievish pilfering, nibbling a little here and a little there. They go right into the job, and can often be found at their work neatly ensconced in the excavations which they have eaten in the tubers. But I am utterly unable to co-ordinate these larvæ with the injury of the potato specified in the indictment, and therefore must refer the question back to the Moot Court for your further investigation.

Second. Of the *wire worm*, or larvæ of the *click-beetle*. Here I must reproduce the testimony of our esteemed fellow member, W. R. Shelmire, and the comments of the excellent editors of the *American Entomologist* (see Vol. II, p. 62.) But without having the advantage of a cross-examination of the witness, I fear that I may not fully comprehend and duly appreciate his testimony. As I understand him, he charges the *wire worm* with injuries which the indictment does not exactly cover; viz: that it eats its way, and enters right into the tuber, where it not only finds an ample supply of sweet, palatable food, but that it becomes domiciled therein during the winter, ready to be returned to the soil at the planting season, to renew its annual round of pleasure and of destruction; for you must know that both the *white grubs* and the *wire worms* continue several years in the larval state. I infer this to be the tenor of the bill which our witness has filed, from the editorial remarks above referred to, and from which I will read:

"W. R. Shelmire, Tough Kenamon, Pa.—The elongate, cylindrical, horny, mahogany-colored worms, nearly an inch long, that bored up so badly your crop of Mercer potatoes, are a very common species of *wire worm*. This particular kind produces a *click beetle* (*Melonotus incertus*.) There are a few that devour living vegetable matter, and are great pests to the farmer. We have known them to destroy the young corn plants to a grievous extent, gnawing laterally into the stem, just under the surface of the ground.

"Your neighbor is right in saying that if you plant these worm-eaten potatoes they will produce wormy potatoes; that is, if you plant potatoes with the *wire worm* in them, for these *wire worms* live several years in the larvæ state, and having six good legs of their own, they would readily migrate from the infected potato sets to the growing potatoes. You must not suppose, however, that *wire worms* can breed *wire worms*, for it is not until after the larvæ has developed into the *click beetle* that it becomes capable of propagating its species. There are, no doubt, plenty of them remaining in your late potato ground. Sowing six bushels of salt to the acre, is said by one of the best farmers in England—Alderman Mechi—to destroy all the *wire worms* in the salted ground. We know of no mode but hand-picking to destroy the *wire worms* in your potatoes so that they can be used for seed."

This enemy of the potato, from his small size, and of a color simulating that of the soil he inhabits, is far less conspicuous than the *May beetle* larvæ, and may be more easily overlooked; but he does not appear to have the habit of nibbling on the surface, as the bill charges. He bolts right in just as his and our Creator designed that he should do, and, as I have said, authoritatively appropriates the whole tuber to the double purpose of affording an abundant supply of choice food and a comfortable domicile for the long and dreary winter season, with a coach-and-six to carry him back to the field on the return of spring.

Here, as in the previous case, whatever or however great his offense may be, I think that you must exonerate him from the specific injury mentioned in the bill.

Third. The last culprit that I shall arraign before you is the *Fungus*, alias whatever you may please to call him, for he has thus far withheld his name. He stands accused of the very mischief we have been considering. The evidence may all be circumstantial, but this is a necessity of the case, for, as the law is, no jury can receive strictly positive testimony in any case. I must, therefore crave your attention to the following views:

When potatoes are eaten by larvæ, as in the preceding cases, and the injury is recent, we find the flesh of the tuber fresh, white, smooth, and inclining to heal or skin over, as we observe it do when cut with a knife; yet who has ever seen such an appearance in the disease before us? I have not; no, never. I have sought for it again and again, but without success. On the contrary, whenever and wherever I have seen the injury which we are considering, from the smallest speck up to the more extensive destruction of the organic tissue, the appearance has constantly been the same. Its features denote its parentage. Its dark complexion, its sunken visage, its ragged dress, its erratic habit, all indicate a pernicious disease, reminding one of those gangrenous and destructive ulcers so often seen in crowded and ill-ventilated hospitals, and similar places, from the action of morbific spores, which empoison their atmosphere. Indeed, the aspect is similar, the parallel so complete, as to strongly suggest a consimilar origin.

It appears to be admitted that if we plant diseased tubers we may expect to grow diseased potatoes, even where there are no wire worms present. Such as men sow, such shall they reap. If the disease were a mere bite, I would ask how could that bite be propagated, and, if so, how can we expect to raise whole potatoes when we only plant pieces? To me it seems that there is a specific diseased action produced in the tuber by whatever cause, which is capable of producing the same kind of action in the new potato, either through the tissues of the plant or through the soil.

Again, it has been pretty fully ascertained that there is something left remaining in the soil where diseased roots have been grown that is capable of affecting healthy potatoes planted therein the following year in a similar manner.

I once planted selected potatoes in the same ground for four successive years. The number of diseased tubers rapidly increased from year to year, until the last year half the crop was destroyed.

An intelligent and observant friend of mine planted a few rows of potatoes across his lot. They proved to be a good deal injured. The next year he planted the same ground, with a corresponding strip alongside, which had been cultivated in some other sort of crop the preceding year. The result was, the crop in the old potato ground was almost worthless, while that in the contiguous portion was only slightly affected. All the conditions of soil, culture, manure and seed were similar.

We know that insect depredators do often manifest wonderful discriminating powers in the selection of their food. But the *Fungi*, which constitute a still more predaceous class, are in a much greater ratio selective in the choice of their food, as well as in the places for their nidification. They are, indeed, so numerous and so discriminating that almost every plant appears to have some specific fungoid growth peculiar to itself.

The thing under discussion may yet prove itself to be a *Fungus peculiar to the potato, and not to be found anywhere else.*

The ultimate appeal must probably be made to the higher powers of the microscope to determine the essential nature of this obscure and mysterious affection.

So long as the cause and nature of the mischief is unknown, so long its prophylactic and remedial treatment will be empirical and unsatisfactory. But let us not despair. Whatever hypothesis we may adopt, it ought to suggest something as worthy of trial.

From what has been already said it may be of the utmost importance to plant none but the most perfect and clear tubers, and to avoid replanting the old potato grounds.

It may also be prudent not to plant those varieties which have been found most obnoxious to the disease.

If the germs inhere in, and are liable to be planted with, the potato, and I think that is the correct view, it would seem to suggest the use of some means for disinfection of the seed before planting.

For this purpose I would recommend the trial of a solution of carbolic acid in water, of such strength as the tubers will bear without injury. The proper strength can only be ascertained by careful trials. Thus: Take carbolic acid—an ounce; water—a gallon; mix when ready to plant; immerse the setts in the solution for five minutes; then remove and rinse the acid off before planting.

As the *Fungi* are mostly found in connection with diseased, or dead and decomposing organic substances, from which they may sometimes pass over to healthy, living organisms, it may be a question worthy of your consideration: How far the fertilizers used, may have aided in the production of the disease? To what extent was it known before their introduction? And how far has it been increased under this use? The complexity of the subject, and the extent of the traverse must be my apology for the prolixity of my answer.

SUPPLEMENTARY.

Wearisome as this extended report may be, the end is not yet. After it was written, it occurred to me to send a specimen of the diseased potato to my excellent friend Dr. Gibbons Hunt, one of the most profound observers and expert microscopists in Philadelphia, for his examination; remarking at the time, "That the mycelium, and stroma of the fungus could better, and perhaps only, be observed in the earlier, and growing state of the plant."

I will now read you his report:

PHILADELPHIA, 12th mo. 17, 1875.

DR. MICHENER—*My Respected Friend:* Thy note of the 15th inst., and also the potato, came duly to me. I have felt an interest in the subject of the diseases of the potato, and therefore have taken some pains to examine the afflicted tuber thee sent me. A superficial or external examination of the diseased spots, under a lens, magnifying from thirty to fifty diameters, reveals but little that is intelligible. A number of dark, opaque pellets, which I interpret to be the alimentary exuvia of some larva, readily came into view. I consider them to be of that character, because, when put into water, under a microscope, and submitted to pressure, they easily disinte-

grate, and present a behavior unlike that of any organized reproductive body.

Not remaining satisfied, however, with so superficial an examination, I placed a well marked portion of the potato, which was defective, in my section machine, and sliced off several extremely thin sections, extending entirely across a spot, and embracing, also, a wide margin of apparently sound potato. These thin slices, I now tinted slightly with a solution of logwood, then I soaked them in glycerine. This treatment caused all the air to come out of the shrivelled cells; made all the parts very transparent; and the color was just sufficient to render the most delicate morphological elements optically visible.

Now, these prepared sections, under a power giving a linear amplification of 200, revealed clearly enough the character of the disease. The cells adjacent to the excavated spots are all shrunken, broken, and collapsed; and this alteration of *form* in the cells, extends to a considerable distance into the potato. Not only is the change in the form of the cells, but an equal destruction has taken place in the cell *contents*. In healthy potatoes, the cells are filled with normal starch grains, which a little iodine, or the use of polarized light, will distinguish from all other organic products. Now, a wide zone of cells, surrounding the diseased spot, presents all the cells *without* starch, or, when a few starch grains are left remaining, their structure is greatly altered, and the surface, naturally even and polished, is uneven and granular. It would not be possible for an insect to reach the starch cells so far from the diseased spot. At a still greater distance into the potato, the cells and their contents are quite natural.

Under this amplification, the potato cells are very large, and many of them, near the points of disease, were crowded with bead-like rows of cells of undoubted fungoid character; and many threads of separate mycelial filaments (of course dead) I could trace among the cells, and still adhering to their transparent walls.

I could not detect any object, in the present dried state of the parasite, any representative body which I could call a spore, unless the terminal cell in the beaded rows were such a body. I did observe, however, in very many otherwise empty cells, large, dark colored, oval or round, cells, translucent, and having one, or more, distinct nuclei, in them. Perhaps these bodies are the oogonia, or resting spores, or winter spores of the fungus.

I have little doubt that the disease is caused by the *Peronospora infestans*, an old enemy of all the solanaceæ. Some very interesting papers on this subject have appeared recently in the publications of the *Royal Horticultural Society*, the *Gardener's Chronicle* for July 10, 1875, and *Monthly Microscopical Journal* for September of this year; by Berkely, Worthington, G. Smith, and others. In the last journal, figures of the *oogonia* are given, and they bear a resemblance to the bodies to be seen in the potato thee sent me. I cannot, however, speak certainly, in regard to the identity of this fungus, because it is not now in a living condition, and more time would be necessary for the study. These few imperfect observations are all I can send thee at present. If opportunity and material should offer, in the coming season, I will more carefully examine the subject. Very respectfully, *I. G. Hunt, M.D.*, 12 *North Tenth street, Philadelphia.*

For The Lancaster Farmer

BAY WINDOWS FOR WINTER FLOWERS.

Bay windows are now very fashionable, and are admirably suited for growing handsome pot plants in winter. A stage, with shelves, may be made in the form of the inside of the window, and set upon castors. In the daytime it may be pushed close to the glass for light, and if nights are very cold the stage may be drawn into the parlor, and turned with the plants inward. Gas then should not be much burned in the parlor, as it is injurious to the plants. When there is a party, and the parlor is lighted for a few hours only, it will not injure the plants. The stage, then, with the plants facing inwards, will look very ornamental, and the perfumes of the fragrant plants will scent the atmosphere of the parlor. Many choice plants will flourish in bay windows which would die in parlors with square windows. During day time they may be shut out from the parlor air by light doors; then fresh air can be admitted by moveable panes in the windows. When bay windows are on the north side of houses, they will be best for growing palms, ferns, periwinkle, ivy, etc. Nearly all the fancy plants, set in vases, rustic stands, ferneries, hanging baskets, etc., may thrive in northern bay windows; so they should be decorated with such plants and ornaments.—Eden.

For The Lancaster Farmer.

HUMMING BIRDS.

(Family Trochilidæ.)

(concluded.)

Considerable discrepancy prevails among authors as to the period required to hatch the eggs. Audubon gives it as ten days in the case of the Ruby Throat; others vary the time from twelve to sixteen days: the fact is, the time varies with the size of the birds, being longer in the largest species and shorter in the smaller ones. Audubon also says the young are ready to fly in a week. This is an error, we think, on the part of our great ornithologist. They are born blind and naked, and although they grow rapidly, double the time allowed them by our author is required before they leave the nest. Here again, no doubt, the time varies with the size of the bird. The young ones are fed after the manner of pigeons and canaries, by thrusting their needle-like bills into the mouths of the parent birds, and thus receiving the contents of their crops. The process of incubation is carried on both by the male and female.

Two broods are commonly produced in a season by our beautiful Pennsylvania species, which arrives here about the middle of April and leaves us near the close of September. In the West Indies and South America, however, three and four families are raised in a year. There the period of nidification runs through the whole twelve months. Mr. Gosse informs us that in Jamaica he found their nests with young ones during every month of the year, but they were more plentiful during the month of June than at any other time. Other authors mention January to be the favorite period for incubation in tropical South America. While hatching, the female sits very closely, and will permit the near approach of a person if made quietly; indeed, sometimes she will almost allow herself to be taken ere she quits the nest; even when building, she permits a watcher to remain within a few feet of the scene of her operations without exhibiting any distrust or alarm. If, however, much molested while incubating, or even after the chicks are out of the eggs, she sometimes removes them to another place. In this, Humming birds are not peculiar, as a number of other birds are known to do likewise under similar circumstances. Two Humming birds' nests are rarely found in the same vicinity. Their incubation is never enlivened by the presence of strangers. They exhibit much exclusiveness in this particular. Neither are they gregarious in a general sense. They never congregate in social groups; they are sometimes seen together in large numbers, in the tropics, around the flowers of some favorite tree, but even then only in search of food; each individual comes singly and departs alone.

In laying only two eggs, the Hummers form an exception to the almost universal law that obtains among feral birds, that the number of eggs is in proportion to the size of the birds that lay them. In the larger tribes, we almost invariably find the eggs to be few, while they are much more numerous in the smaller ones. A little reflection will let us into this secret of nature. If the natural increase of raptorial birds was as great as that of the smaller tribes which constitute their principal prey, that nice equilibrium which obtains in nature would be destroyed, and the rapacious kinds literally swarm, while the rest would gradually diminish in numbers, and perhaps ultimately become extinct. Humming birds, from their minute size, their extraordinary rapidity of wing, and their indomitable courage, are exempt from most of the dangers that continually menace the sparrows and finches. Therefore, while they lay only two eggs, they are far more abundant in America than the wren is in Europe, although the latter lays from twelve to twenty eggs.

If the natural enemies of the Humming birds are few, there is yet one whose ravages of late years have far exceeded all the rest combined. Man has begun his career of devastation amid their ranks, and at the beck of the Moloch of Fashion, countless thousands are now yearly destroyed to decorate female headgear. Since the first part of this article was written, at a sale of ornamental birds and feathers held in London last month, no less than fifteen thousand of these beautiful creatures were sold; seven hundred and forty belonged to a single species. This is, perhaps, not a tenth part of the number wantonly destroyed every year. Has the world been made wiser or better or more humane because of this unrestricted slaughter? Has not, on the contrary, so much beauty and happiness been taken out of it, and will the most slavish votary of fashion pretend that the lifeless bird fastened on her wearing apparel, can confer on any one a tithe of the pleasure that would be felt at seeing it disporting in unrestrained happiness in its native wilds, full of life and beauty and joy?

In the matter of geographical distribution, the Trochilidæ present some striking peculiarities. Swallows and Falcons are common to all countries on the globe. Australia alone has no Woodpeckers; Magpies range the world over in temperate latitudes, but the Humming birds, the most numerous family in the world, are confined to this continent and its adjacent islands, and the large majority of the species to the torrid zone. Comparatively few migrate beyond the warmer latitudes; this is not very wonderful, but it is very surprising that such as do leave the tropic heats, penetrate to the regions of snow and ice. Our own variety, the Ruby-throat, has been found as far north as the 61st degree of latitude, while another species (*T. Forficatus*) has a range southward of 2,500 miles and is often seen flitting through the snow storms of Terra del Fuego, as blithely as in the warm, dry climate of Peru. Von Tschudi, as quoted by Humboldt in his "Aspects of Nature," saw them on the Andes at an elevation of 14,600 feet, while Bourcier found them breeding on the rocky sides of Chimborazo, at a height of 16,000 feet, while sheltering himself from a violent snow storm. In view of these facts, and many similar ones we might mention, we have some difficulty in reconciling with them Wilson's statement, when he tells us they are extremely susceptible to cold, and of which theory he gives us a supposed case in his very charming and valuable work.

If, however, a wide migration characterizes a few species only, and of which we have just given instances, the well-defined and extraordinary localization that marks so many of the family is almost anomalous among the aves. Although gifted with such rare powers of wing, the habitat of some is exceedingly circumscribed; a mountain, a valley, a wood, a marsh, an island, and even the crater of an extinct volcano oft-times has a special resident-species, even though these districts may be only a few miles in area; this seems all the more incomprehensible to us when we reflect how widely migratory others are. That the major part of this numerous tribe should be found within the tropics, we can easily understand, because there their food, both animal and vegetable, is most abundant and constant, but this rigorous local distribution within the tropics themselves, is hard to understand. It is unknown whether migrations of the few extra-tropical species are performed during the night or in the daytime; from their inconsiderable size this question will prove very difficult of verification; neither do we know whether these journeys are made separately or in company; perhaps the former, as they have never been observed to manifest gregarious habits, even when the time for their departure has come.

All attempts to keep these birds in a state of confinement for any considerable period have hitherto failed. A few months, at most, are all these delicate creatures are able to bear; interesting experiments, bearing on this question, have been tried by Wilson and others. In a single instance were two young ones taken to Europe under favorable circumstances, but they died soon after reaching there. Even the non-migratory species refuse to thrive under such a life in their native regions. Sugar and honey are the principal

articles of food given them when caged, and on this exclusive diet they linger through two or three months, but then they become emaciated and exhausted, droop and die. Sweet, liquid food alone is not sufficient to sustain them; the lack of insect food, to which they are accustomed in a state of nature, invariably brings on the final catastrophe. This fact is the best proof, if, indeed, proof were needed, to show how largely insectiverous they are. Some species bear their brief confinement more patiently than others; they seem reconciled from the first to the change of circumstances, and make few efforts to escape; others, again, vainly beat against their prison walls until they become exhausted, and in this way often kill themselves; a few manifest a sullen disposition and mope and die ere many days. Mr. Gosse, to whose accurate and long continued observations we owe much of our knowledge concerning these winged sprites, states that when turned loose in a large room, they spend much time in insect catching; they dart from their perch, then the snap of their bills indicates a capture, when they again resume their accustomed place of rest; on an average, three were captured each minute, although more would have been had they been more abundant.

Nature is wise in the distribution of her gifts. To the thrush, the mocking-bird and the nightingale she has given the sweet charm of melody, but a homely garb. On the Humming-birds—those tiny sprites—she has conferred the rainbow hues of beauty, but has denied the entrancing gift of song. Their usual utterance is a faint twitter or an unmusical chirp, uttered chiefly while on the wing; oftener, however, they are mute. Several species are said to trill forth an indifferent song, but this statement requires further investigation.

The Trochilidæ seem gifted with an average amount of intelligence. The curiosity they often manifest indicates this. If struck at while on the wing, or if their capture is attempted with a net, they will frequently turn and hover about the enemy, peer into his face and dart around the net, evincing much interest and curiosity. Human approaches to their nests also awaken a like inquisitiveness.

Their sense of sight seems strongly developed. The fact that the insects which they capture on the wing are often almost microscopic proves this; indeed, all their actions, whether flying or sitting, are confirmatory of it. So, too, we may say of their sense of taste. When we consider how much of their sustenance is drawn from the deep-tubed flowers, with their bifid tongue, and where their sight avails them nothing, and they are wholly dependent upon their sense of touch and taste, we cannot avoid the conclusion that their tongue is an extremely delicate and sensitive organ.

It would, perhaps, be trenching too closely on the borderland of imagination to suppose, as some have done, that Humming-birds find pleasure in the mere odors of the flowers among which they spend so much of their lives. We are not persuaded that their æsthetical tastes are so highly developed; we believe their presence in those localities is attributable to a far more utilitarian object—the search for food. The sense of smell is very inferior in all birds. Audubon and Bachman's experiments proved conclusively that even the common vulture possessed it in a very limited degree, if at all, although its ways of life would indicate the contrary, and general opinion has credited him with highly sensitive olfactories.

With the exception of a single species, the food of the Hummers, whether nectar or insects, is taken on the wing. Bullock relates that *T. Gigas* sometimes alights on the flower from which it is feeding. When searching for food they often give themselves a brief rest; they perch upon some slight twig, either of tree or shrub, and carefully preen their plumage, seldom moving from the spot where they first sat down. It has been denied that their food is ever taken near the ground, but this is incorrect; we have seen it skimming the surface of small, shallow ponds, catching the small insect tribes that frequent them.

Although their usual flight is not very elevated, they occasionally dart upward on rapid wing to a height of perhaps four or five hundred feet, when the sight can no longer follow them. They seldom alight on the ground, so rarely, indeed, that some ornithologists contend Swifts and Humming birds are the only birds that never do so. A well known authority asserts that he shot it while at rest in that position, and we see no reason to distrust his statement, as his opportunities for studying their habits in their native wilds have never been surpassed.

Both in confinement and in their natural state, they often select a particular spot on which to sleep or rest, and generally continue to frequent it for these purposes, and are driven from it with much reluctance; fly-catchers also manifest strong predilections for certain limbs and twigs, frequenting them from day to day, and using them as places from whence to make their sallies, and returning to them when their momentary raids are over.

They are among the most pugnacious of all birds. When two males meet at a favorite flower bush, a desperate battle is almost certain to ensue, and is well worth seeing. The celerity of their movements during these encounters almost baffles the keenest vision. They seem to take pleasure in molesting other birds without having received provocation. They care little how large their antagonist may be, but unhesitatingly attack birds ten times larger than themselves. They also delight in teasing the larger humble bees, but when these become infuriated in their turn, as they sometimes do, and turn upon their annoying adversaries, the Humming birds beat a hasty and inglorious retreat. In sleeping, their heads are drawn back and buried among the dorsal feathers. They clasp the perch very firmly, for their claws are unusually sharp and strong.

In the tropics, they pay frequent visits to the extended webs of spiders, in search of the small entangled flies to be found there. This habit has given rise to the belief that a bird-catching race of spiders made sad havoc with these living sunbeams, but later and truer knowledge has long since exploded this theory. No spider known spins a web that can hold for a moment even the tiniest Humming-bird. Even Linnæus held this belief.

The Sun Birds (*Cinnyridæ*) of Asia and Africa seem to represent, in some degree, on the eastern continent, the Humming birds of America, both in size and brilliant plumage, but yet the generic differences are broad and marked; they are also insectiverous, but apart from these general points of resemblance there is no affinity whatever between them.

From the impossibility of keeping these beautiful, fairy-like creatures in confinement, nothing is definitely known concerning the duration of their lives; we are aware, however, that in most, if not all the species, the males attain their perfect plumage only in the second and third years, which fact, in an analogical point of view, leads us to believe they are not so short-lived as their size and apparent delicacy would indicate.

We advise our readers who feel an interest in this family of birds, to watch the arrival of our usual spring visitant; he will surely be here in April, unless the weather should be unusually inclement; he will even ignore cold toes and slight snow storms rather than not be here on time; he will also come in such numbers as to afford every reader of THE FARMER ample opportunities to verify all we have said about him, and perhaps other and hitherto unknown facts also. By carefully observing his arrival at and departure from the flower garden, the locality of this self-taught architect's summer residence may be easily discovered. Any attention that you give to his ways of life and general economy, will be amply rewarded in a large return of pleasant and useful knowledge, and a more profound reverence for the great Author of all things, who, through such apparently insignificant means, has rendered efficient aid to the husbandman in his "struggle for existence," and conferred upon us all the happy privilege of gratifying, in unstinted measure, our heaven-born sense of the beautiful.—*F. R. Diffenderffer, Lancaster, Pa.*

For THE LANCASTER FARMER.

APPLES AND THEIR VARIETIES.

Apples have been, generally, keeping remarkably well the present fall and winter. I have kept, even late summer and fall apples, up to this date, February 7th, 1876. They should be kept in a temperature of thirty-five to forty degrees above the freezing point, and in a dry place. We have many new varieties which are foreign to our soil and climate, and which will not do as well as some of our own old varieties—varieties that are to some extent discarded, perhaps, only because they are *old*. I have asked a nurseryman for the old "Pennsylvania Red-streak," but he said he had none to sell—left them all run out—yet it is this day, in my locality, one of our best varieties. I have some of them at this writing. The tree is a fast grower and an early bearer. It also bears *every year* and is one of the apples for profit. The "Pound Apple" is equally good, and needs no commendation from me. The "Krauser" is a native apple of Bucks county—rather a fast grower and early bearer, in alternate seasons; a good sized tree will produce from fifteen to twenty bushels, or more, every other year; a very good apple, white, and juicy inside. The "York Imperial" is a new apple, from York county, Pa. It is, probably, a seedling of the "Pennock," being of the same shape but not so large, and a brighter red in color; also a fast grower, an early bearer, and a good keeping apple; a little rough grained. The "House-Apple," an old Lancaster county variety, is now rarely seen, if it has not become entirely extinct as a variety of general culture. There is, however, *one* tree so near my premises that you can throw an apple from it on my land. It had twenty-two bushels of perfect apples on it last season, and I had some on exhibition at the February meeting of the Society. They will keep until spring, yet it is an apple that is almost forgotten. I will mention some of the new varieties which I commenced to plant some years ago: The Baldwin, Hubbertson Nonsuch, Griest's Winter, Smith's Cider, Russet, Domini, Green Sweeting, Talmon's Sweet, Twenty-Ounce, King of Tompkins, Cambridge, Wagner, Black Gilly-flower, Northern Spy, Munson's Sweet, Monmouth Pippin, and Berks County Cider. I graft Russet on the Hubbertson Nonsuch; it is a strong grower and a good bearer; a large dark red apple, very ornamental on the tree, but not a good keeper with me. Berks County Cider is a good sized red apple, a good grower, and a young bearer; it keeps well up to the present time, and is worthy of cultivation in Lancaster county. The Baldwin is a fast grower, and it bears well, but is liable to drop its fruit prematurely.

A Chester county orchardist had intended to graft some of his trees over again, but limed heavily under them, and that brought them to perfection—a thing worth knowing. The Northern Spy is a fast grower, but its foliage is late in the spring, and it comes late into bearing. I have trees fourteen years out of the nursery which have just lately commenced to bloom. They generally will bear when they bloom the first time. A friend of mine had a tree which bore very little until it was sixteen years old. It is now about twenty, and last year it produced seven barrels of fruit, that brought him four dollars a barrel. The Domini is a new variety and worthy of general cultivation, and so are Smith's Cider, and the Twenty Ounce Pippin. The King of Tompkins County is not doing well with me. I grafted them over, on planting them in the orchard. It will do well to plant one Red Astrachan, and one "All-summer." I almost forgot to put in a good word for the "Smoke-house." I also wanted a few Smoke-house trees from a nurseryman, but he had none for

sale, while our trees are bearing regularly in my locality, and we sold the crop last season, very readily at from $1.50 to $2.00 per bushel. In conclusion I would say be not discouraged, we may soon come back again to the old-time apple years in Lancaster county. Indeed, it is the opinion of good authorities, that with proper culture, our county may eventually become the "Apple-Garden" of Pennsylvania. —*L. S. Reist, Warwick, February*, 1876.

[God grant it may, even if *we* should not live to see the day. If apples become abundant, and cheap enough for the poor to purchase and consume, it will be perfectly agreeable to us. It is not desirable that they should become too cheap for farmers to cultivate them, but cheap enough for the poor, by a proper system of economy, to make a larger culinary use of them than they can afford at the present prices. When we commenced housekeeping—forty-two years ago—we had the finest apples delivered at our door for twenty cents a bushel. There was no complaint *then* that it "did not pay" to raise them. Although they, perhaps, never will be sold at that price again, yet they should be cheaper than now.—Ed.]

For The Lancaster Farmer

HOME THAT IS HOME.

The sound of the word home is calculated to fill the mind with pleasant thoughts and the heart with a desire to soon enjoy its sweet comforts—and doubtless it does to a great majority of the people. But there are some to whom it gives quite different sensations and prompts them to remain away as long as possible, and even allow themselves to be burthensome to their friends, rather than spend an evening under their own roof. The love of home varies in different individuals, from this degree of absolute hatred to those who are just as well satisfied at home as away, and from that to those who cannot be persuaded to leave its sacred influence unless business compels them. The reason of this is obvious: because some homes are so much more comfortable, more pleasant, more cheerful, in short, more homelike; and if each one would investigate and discover the reason that his home does not have that great attraction for him; next, find out whose fault it is, and then take proper measures to remove the evil, we as a community, a people and a nation would be much farther advanced on the road towards a higher standard of excellence in morality, intelligence and manhood. The cause of these unattractive homes may be from the neglect of the husband and father to provide the home with those things necessary to make it attractive; for instance, family newspapers, periodicals appertaining to his business, interesting books and innocent games; or it may be from the over-tidiness of the housekeeper, who demands such a degree of circumspection from the inmates that it becomes more like a prison than a home; and when that feeling overtakes a man it don't take him long to find some more congenial quarters. There are some who are such natural born ladies and gentlemen that they feel no restraint in being on their best behavior all the time, but it is not above one in a hundred, while the ninety and nine long for the place where they can throw off restraint, to be their natural selves, to do just as they please, to be free and easy; and home is the natural and proper place to do it. That man who spends his hours off duty with his family, who assists in entertaining his boys, and instilling into them a love for home above every other place, does a good work, and one that he will be paid for in feelings of comfort and just pride when he sees them grown to be husbands and fathers, following the example which he had given them. There is no doubt that the lack of love of home so general in men in the city, and even in the country, is to a great degree the effect of the pattern set by their fathers, and it will require a determined effort on the part of the present generation to counteract this influence, and raise up our boys to inherit different feelings; but we will find our reward in their thanks, in after years, for the pains we took to make home pleasant to them. It is clearly a duty that every man owes to his children, and could it but be brought about that every man would spend his evenings at home, and keep and entertain his boys there, we cannot realize the difference there would be in the state of the public morals a generation hence. The hospitals, the almshouses and the prisons would show the effects of it in a great degree.

As every natural parent feels a desire that his sons shall turn out to be good citizens, and feeling so sensibly the great need of reform in the matter of influence on the minds of the young, and in hopes that some one may be awakened to a sense of the importance of the subject, is the excuse for venturing to give a few hints as to the way it might be done. The writer was one of a family of five boys and a sister, whose parents made it a special point not only to have us all at home in the evenings, but to provide entertainment for us; and to our last days we will never cease to bless them for it. Because those principles being engrafted into our natures, renders it comparatively easy for us to perform the same duties now. The evenings were spent in innocent games, interesting books, reading by turn aloud, spelling matches, working out enigmas, and other puzzles, etc., but the best of all the amusements was debating; the father would be judge, and the six of us would pick sides, and taking up some simple subject of every-day experience, each one would be obliged to make some remarks on it, and we would often get quite warmed up with the importance of our points, which to our childish intellects seemed overpowering. It is true, a large family has an advantage over a small one in these home amusements, but if two or three small families would join together and meet alternately at their houses, it would answer the same purpose, and the parents would at all times know where their children were. We know that there are some very stately mansions, most beautifully situated and handsomely furnished, yet those who call them home respect them only for their looks and money value, and the true feelings of love for them and their associations are never felt; while in the most lowly and dilapidated cabins we often find the occupants enjoying that sweet comfort in each others' company, and of being shut off from the troubles of the outside world, that brings them nearer to heaven than any other place on earth. This was the feeling that prompted the author of that beautiful hymn, "Heaven is my Home." —M. B. E.

For The Lancaster Farmer.

DIFFERENT MODES OF PRUNING.

It is high time now to get all pruning done at once. Different species of plants require different modes of pruning. Of fruit trees, apple, pear, apricot, plum and quince, bear fruit upon the old wood; so does cherry, gooseberry and currants. Peach bears fruit upon the new shoots of last year's growth—so does cherry often; and so do raspberry, blackberry, grape vines, &c. So they have to be differently pruned to produce plenty of fruit. Of deciduous blooming shrubs, spiræas, tartarean honeysuckles, forsythia, wiegelia, mock orange and many others, produce their flowers upon the sides of the shoots. Lilacs, privet, snowball trees, mountain ash trees, Rhus, &c., bear their blooms mostly upon the tops of the shoots. Their tops should be left until the blooming is over, then shorten if needed; but if too many suckers are at their roots, cut them out. The species that bloom from the sides of the shoots have the points of the shoots cut off an inch or a foot, as needed, to keep the bushes in good shape. Althea blooms from the shoots of the present year's growth. Honeysuckles bloom from last year's shoots. Wisteria blooms from the old branches. Evergreen trees and shrubs should not be pruned until all frosts are over in spring or in the latter half of August.—*Horticola.*

For The Lancaster Farmer.

THE DAIRY. No. 2.

In the January number of The Farmer I promised a continuation of "The Dairy," but the destruction of my barn, with all my cattle, (Jan. 25th, 1876,) has, to some extent, cooled my ardor for writing. Having emerged from the smoke, and converted what was left of my stock into a compost pile, (a rather expensive one, too,) has brought about a change of base from prospective animal to prospective vegetable productions. Being thus run off the track, the tendency would seem to point toward big beets and pumpkins, instead of fine stock and good butter. Now, as certain vegetable crops are essential to the best results of the dairy, our starting point may be regained, although it be by a circuitous route. With a little whistling to keep off despondency, the question again recurs on the different breeds of cattle. But it may be asked, is there more than one breed, and if so, what are they? A breed is the result of selecting and mating animals with the object of producing a certain fixed and uniform character in the progeny. This being judiciously followed for a succession of generations, the product eventually becomes a fixed type, with scarcely any variations. Hence we see Devons, Shorthorns, Jerseys, Ayrshires, Dutch and others, some of which show at least great uniformity of color, form and other characteristics.

A race is the offspring of one common stock, which, in the general acceptance of the term, is distinguished from breed. In establishing the various breeds, breeders had other objects in view besides external appearances. The Shorthorns are still the most popular breed, (at least in this country,) and it is also evident that they have been bred with less unity of purpose than other breeds, from the fact that they not only vary more in external appearances, but also in their beef and milking qualities. For beef, this breed stands unrivaled; but as milkers, the term will not apply. While there are individual cows, and even some herds that will compare favorably as milkers with any others, there are at the same time not a few of the finest animals that will not yield sufficient milk when fresh to develop their own offspring. This breed has no doubt been multiplied with as much design as any other, but evidently for different purposes. While the intelligent dairyman made his selection, and mated his animals with a view to his business, the stockraiser had his eye on beef only. At the same time, others made efforts to combine both these qualities in the same animal; hence the utility of this breed is already divided, although the pedigrees indicate uniformity. This division evidently will become fixed and permanent by and by.

The cattle of the Channel Islands, formerly introduced as Alderneys, subsequently became classed as Jerseys and Guernseys, named after the islands of which they are natives. Although similar in character, milk and butter qualities, they may and should be noted as different breeds. They present a remarkable contrast to the Shorthorns. While the latter would not be considered genuine without large size, round, full and plump, the same appendages to the Jersey would rule her out as not being thoroughbred. Small frame, light bones, sharp points from head to tail, characterize the true Jersey cow. Fawn seems to be the prevailing color, but not uniformly so.

Importations of stock upon this island have long since been prohibited, consequently a purer breed can hardly be found. These have been bred, not so much for the production of milk as for the quality of cream and excellence of butter, their beef qualities having been almost entirely ignored. It is therefore claimed that this breed will produce a larger amount of butter, and of better quality from a given amount of feed than any other except the Guernsey, which is somewhat larger, a little more plump, and not so uniform in general contour as the Jersey, but is, at the same time, preferred by some dairymen. One thing is especially claimed for the Island cattle, *i. e.*,

while they may not yield so much butter when fresh as some others, it is more regular, and they continue in milk for a longer period between calving, which will more than make up the difference.

The Ayrshires, which have been more recently introduced, have gained quite a reputation as milkers. Considering size and build of the animal, the yield and quality of milk and butter places this breed very favorably before the public.

The Dutch or Holstein cattle are also of modern introduction in this country, and have already many admirers. They are of large size, and their uniformity of appearance is evidence of being a fixed type. As milkers, they have probably no superiors in reference to quantity, but it is rather deficient in richness.

The Devon dates back probably as far as any known breed, and yet they have not become so generally disseminated as some other breeds. As milkers they have no special reputation, but a healthier breed is nowhere to be found. As workers they have no rival, unless it be the Holstein, which also stands pre-eminent in that line. Whatever the merits of the latter breeds may be, an objectionable feature is their large horns, which disfigures them in the estimation of the growing sentiment, which is inclined to breed still less horns, and may we not hope that these unnecessary and dangerous appendages may be bred out altogether.

The Herefords have strong advocates, but very few have been introduced into this section of country, and they are but little known here.

The common stock throughout the country, if it will bear the title of a breed, is certainly a conglomerate one, as it embraces all the shades, colors, forms and sizes imaginable, as well as some of the best and poorest milkers that can be found anywhere.

The question consequently arises, what breed of cattle is most profitable to the farmer? This being a mooted question, it is hardly expected to be settled by scribbling over a few pages of foolscap. It is more likely that it never will be settled, as farmers seem to agree to disagree upon this as upon many other questions. The selection of animals for profit depends very much upon the purpose for which they are wanted, whether for beef, milk, cheese, butter or show, or all these qualities combined. If the latter, then posterity may celebrate at least another centennial before the object will be realized. That the different breeds possess different merits, and may be, or are already, to a great extent, classified as such, need not be questioned; but as each breed has advocates claiming its superiority over all others, there are many who would sell out their own and buy other stock, or improve it by crossing, were it not for the confusion of reports from breeders.

In summing up these reports, the result indicates that the largest amount of milk and butter productions from single animals of the various breeds, native or common not excepted, does not materially vary. It is therefore of primary importance to make a judicious selection of stock adapted to the object in view, whether it be milk, cream, cheese or butter, for among the various breeds no one need go far amiss if he keep his eyes open and exercises proper judgment.—*H. M. E., Marietta, Pa., Mar.* 4, 1876.

For The Lancaster Farmer.

SELECTION OF SEED CORN.

In the February number, J. B. (whoever that may be) takes me to task to give him further information as to how friend Cooper managed to improve his crops by a judicious selection of seed from his own farm. I rarely think it worth while to reply to anonymous correspondents. However, in this instance a few remarks may be advisable.

As J. B. has got off the track of my former article, I shall reply as I think most suitable. Evidently his object in noticing my communication was to inform the readers of The Farmer that he grows large crops of corn—eighty to ninety bushels on an average per acre.

He desires to be informed of "Cooper's plan of growing corn in New Jersey—what kind of fertilizers he used, how he planted his corn," &c., and says "the answers would be a great help." Cooper's statements were published some forty or more years ago, either in the *American Farmer*, of Baltimore, or in the *Farmers' Cabinet*, of Philadelphia. I have these publications of that time, but do not care to hunt up the article at present.

In my former article, I gave the *facts* and the *result* of how Cooper improved his crops by selecting his seed from crops on his own farm, showing that crops would not deteriorate, but improve, and that there was no advantage gained by procuring seed of the same variety from a distance, and the chances were by changing seed the result most likely would be a fresh crop of weeds. But, as J. B. says, "he selects his seed corn from his own crib," and yet raises eighty-seven to ninety bushels shelled corn on an acre, I should think any reasonable farmer ought to be satisfied; yet J. B. wishes to know the *minutiæ* of Cooper's management, as he thinks "it would be a great help." Does he suppose by getting this "great help" he could then grow four or five hundred bushels per acre? Such wonderful progress no doubt would stimulate the whole farming fraternity, and by this "great help" such enormous crops would be produced that it could not be used up, unless, as in some of the western states, it would have to be used for fuel.—*J. B. Garber, Columbia, Pa., February* 28, 1876.

For The Lancaster Farmer.

POTATO CULTURE.

My meagre knowledge about potato culture may scarcely be entitled to a corner in your journal; yet if in my feeble remarks but a simple hint or idea may be given for the benefit of another, my efforts will be more than repaid; but if, through my simplicity, others with larger knowledge take courage to detail their experience, they will disseminate a good that will return a rich reward. Are there any who feel that if potatoes need looking after, "give me the hoe; I have not cultivated with the pen? I feel more so. That we have cultivated with the hoe, gives, however, the very substance for the pen; if such of us give but our mite to each others' experience, it cannot otherwise but result to the interest of all.

Having nothing to boast of enormous yields of 40-oz. potatoes, I would merely say I grew the Early Rose potato since it was first introduced, investing a dollar for one pound. These were cut to single eyes, planting them in a loamy soil of medium fertility, in hills 2x2 feet, enriched with a half-peck of finely broken up barn-yard manure to each hill. The yield was seventy-two pounds. Upon the introduction of the Snowflake potato, two years ago, I obtained one tuber weighing one-third of a pound. This was divided in halves, laying the pieces cut-side down on pure sand, and covered with rich soil two inches deep. After the sprouts were out a few inches the pieces were taken up, the sprouts carefully slipped off, returning the pieces to their former situation. The slips were potted singly in 3-inch pots, and kept shaded and well watered until fully established. After growing in the pots to the height of three to five inches they were transplanted in hills, same as described for the Early Rose. This process was repeated three times with the pieces.

The season being excessively dry, the last planting did very little. The yield was 55 pounds. On these occasions my neighbors thought me quite successful; yet I well knew, that with better fertilized hills, and with more favorable conditions, much better results could be obtained. But how immensely were my ideas short of what was actualiy achieved last season by several growers of Snowflake, using one pound of seed cut to single eyes! P. C. Wood, Esther, Ill., raised 1,417 pounds; J. L. Perkins, Little Sioux, Iowa, 1,304 lbs.; Frederick H. Seller, Verona, Essex county, N. J., 1,125 lbs. A number of others had results nearly as great. Enormous as these products may appear, yet each party had reasons to conclude that still greater yields can be reached. One party gathered 56 pounds from two hills; had all his hills yielded similar results, his product would have been a little over forty-one barrels from one pound of potatoes.

To gain these results, soil of great depth and highest fertility was selected, to which was added very liberal applications of wood ashes, hen manure and plaster, both in hill and as surface dressing. These facts are referred to merely to show what has really been accomplished by giving plants plenty of proper food.

Leaving these lofty attainments, we will return to those who are most successful in general field culture. It is needless to go into details as to the condition of soil. All will admit that well-drained soil of high fertility is the basis on which to build a good crop, but how to build may be a question answered more diversely. The ground deeply plowed and thoroughly cultivated, the mode of planting adopted by very successful cultivators is to cross-furrow six or eight inches deep, three feet apart, and drop a set at each intersection, covering with about two inches of soil. As the vines grow, cultivation begins by hilling up, which is continued as the plants advance, in some instances to eighteen inches high, making large, broad hills. By giving the hills this distance apart, the roots have plenty of room to ramify and find abundant food without stinting their neighbors. Here the question may be asked, would it not be an especial advantage, at least now that we have to entertain the Colorado potato bug as a guest, to use every means to bring our potato vines to the highest degree of vigor; so that if our unwelcome visitor gets at least a luncheon before the vines are seasoned with the specific remedy (Paris Green) the plants may suffer less immediate damage, and be in good condition to outgrow it—thus perfecting a more bountiful crop, and well repaying all extra feeding.

Descending still lower, or to my own level, I will say a few words more about my own experience. From practical tests, I have found that seed grown in widely separated localities yields better and produces finer potatoes than that grown on the same place; hence it is a profitable investment to obtain a change of seed. Growing mostly for early marketing, the system spoken of above was not practiced by myself; as the crop was taken up before fully grown, so much space was unnecessary. I have rather practiced close planting, drawing furrows two feet apart and dropping sets of two and three eyes every nine inches. In the season of 1875, in the face of an excessive drouth in early summer, I had a fine yield of Early Rose and Snowflake, by drawing furrows eight inches deep, through which a narrow cultivator with long, sharp teeth was run, pulverizing the soil six inches deeper, on which was sprinkled a dressing of broken up stable manure, the sets being dropped on and covered with about two inches of soil. As the vines grew they were ridged up. Much advantage is gained in earliness by putting the seed potatoes, spread in a single layer, in a moderately warm light place two or three weeks in advance of planting time, to develop the eyes. To use means to get potatoes to mature early is not only an advantage for early marketing, but a great gain by shortening the time of the bug war. To the same end, varieties with compact vines are desirable.

As to varieties, it may be presumed that those of which I have spoken are my favorites. The Early Rose needs no praise; it has become a standard variety. The Snowflake is as yet a new comer, but it needs no further recommendation than its own high merits in all that pertains to a first-class potato, to disseminate it with express speed to every corner of the land.—*D. K. H., Lancaster, Feb.* 26, 1876.

For The Lancaster Farmer.

THE NEGLECTED HOLLYHOCK.

Some forty years ago, on a visit to an uncle in Rapho township, I was delighted with the showy display of numerous hollyhocks, of various colors, that adorned the yard. Their towering height and majestic, stately appearance attracted my attention. I thought them grand, beautiful—alas, now deemed a common, vulgar plant, that no one deems worthy of cultivation; and they are now rarely met with, yet we have few flowers that contribute more to the embellishment of large gardens or yards than the hollyhock, whose noble stems appear like so many banners garnished with roses of every variety of color, from the palest blush to the deepest carmine, and from a faint white, through every shade of yellow, to the richest orange, from which the color is carried to a dark chestnut; others are dyed of a reddish purple, deepening to black. These give gaiety to the shrubbery till a late season of the year, throwing out a succession of flowers till the arrival of frost. For my part, I cannot see why this showy, stately plant should not be planted along every hedge-row around our fields, or around our homesteads in the country. Besides, to those who keep bees, it affords a supply of sweets later in the season, and of which they are remarkably fond. H. Smith says, truly:

"From the nectaries of hollyhocks
The humble bee, e'n till he faints, will sip."

This is true of our hive bee, as well as the "humble bee." It belongs to the family Malvaceæ, as the cotton plant does, and it has been ascertained that good strong cloth may be made from the fibrous bark of its flower stalks. It may have been forgotten that in 1821 two hundred and eighty acres of land near Flint, in Wales, were planted with the common hollyhock for this manufacture, in the process of which it was discovered that the leaves of this plant yield a fine blue dye, equal in beauty and permanence to the best indigo. The *Althæa rosea*, or common hollyhock, originally came from China. They are easily raised from seed, and will grow in any common garden. The *Althæa officinalis* has been extensively used under the name of Marsh-mallows, and, like the Okra, abounds in a bland mucilage. (*Abelmoschus esculentus.*) The flowers of the *A. rosea* are used in Greece for the same purposes as those of the marsh-mallows. The Okra, also known as *Hibiscus esculentus*, is coming into commercial value as a paper plant, heretofore used to thicken soups, by its mucilaginous quality. The pods are gathered green and pickled like capers. The seeds may be boiled like barley, and the mucilaginous matter they contain is both demulcent and emollient. They have also been recommended, when roasted, as a substitute for coffee. A patent has now been taken out in France for making paper from the fibre, and for this purpose it is to be introduced into Algeria. The fibre is prepared solely by mechanical means in a current of water, without any bleaching agent, and the pulp, washed and bleached, makes a strong, handsome paper called "banda paper." Our common hollyhock will answer just as well; the fibres make clothing—hence equal to rags any time.

I would thus call attention to this stately and much-neglected plant, the goodly, towering, showy hollyhock, to beautify the homestead and the fence rows, regale the honey bee, and gladden the hearts of children, if you do not want to make cloth or paper, and cultivate it for profit. We are very apt to forget the old and familiar in later introductions, "sighing for something new." This love of novelty rules us—new customs, new gauds. Although, did we but know it, they too frequently are fashioned after the things that were. I will conclude by quoting Mrs. Hemans:

"Fill with forgetfulness, fill high! yet stay—
'Tis from the past we shadow forth the land
Where smiles, long lost, again shall light our way.
Though the past haunt me as a spirit, yet I
Ask not to forget!"—The Hollyhock.

—*J. Stauffer.*

For The Lancaster Farmer.

"WHAT KIND OF OIL?"

In an article in the February number of The Farmer, with the above title, the editor thinks that linseed oil would not do very well, because it would close the pores. I am not certain that closing up the pores of a tree hurts it in any manner whatever, and in case it would do so, neatsfoot oil as effectually closes them as linseed oil. For my part I would not be afraid to use the latter, and would much prefer it, as it dries in a short time, closing up the insects so effectually that they can never emerge alive from their air-tight prison; and, besides, the trees are not so unpleasant to work at afterwards, as would be the case should an oil be used that will not dry.

As a corroboration, I was informed a few years ago by a gentleman, at Millersburg, (L. E. Bowman, I think,) that he had a dwarf pear tree, that became badly infested with "scale insects" and ceased growing. He applied linseed oil, and in a short time the insects were all dead and the tree became very thrifty. He said he was told that it would kill his tree, as it would close up the pores, but it certainly had no such effect in his case.—*A. B. K., Safe Harbor, Lancaster county, Pa., Feb.* 25, 1876.

[Practical experience must take precedence of untried, or merely theoretical suggestion. We *thought* that linseed oil might leave a sort of varnish deposit on the young infested branches of trees, that would be detrimental to their subsequent development; but if it does not, all the better; it gives us another safe remedy for the scale insect or bark-louse; and with thanks to our contributor we place it on record, for the benefit of our readers.

We are not *sure*, however, that the closing of the pores in the branches of trees would not be as hurtful to their growth as the closing of the pores of the leaves and fruit, would be hurtful to *their* development. Still, as the deposit on the bark, after the oil had dried, would likely be a very thin one, and the subsequent rapid growth of the tree (there being no more lice to deplete it,) would likely crack the surface of such a deposit into fissures, sufficient to allow it to perform its usual functions, there would be very little harm done in the end.

In reply to A. B. K.'s *post scriptum*, we assure him that his contributions will always be "welcome" to our columns, even if they come oftener than "now and then," and most especially on the subjects he has named, whatever motive may be "at the bottom." We have nothing whatever to do with motives in such a case. If a man can impart information on farming and gardening his contributions will be acceptable at all times, whether his motives are selfish or benevolent. "Self-improvement," however, is not a very evil kind of selfishness; indeed it would have been better for human society if this kind of selfishness had more largely prevailed everywhere, and it would be better now.—Ed.]

For The Lancaster Farmer.

TRANSPLANTING TREES.

One important fact in regard to transplanting trees was brought out in the discussion on orchard culture, at the last meeting of the Pennsylvania Fruit Growers' Society, held at Doylestown.

The lower limbs should not be cut off when taken from the nursery and planted in the orchard. The reason given was, the leaves are the lungs of the tree, and the nearer you can get the foliage to the roots in the earlier stages of its growth the better. If too far removed after transplanting, the sap in circulating is not returned in sufficient quantity to make the roots keep pace in growth with the top, and this was the cause of the trouble in keeping the trees in an upright position. Our nurserymen are partly to blame; they trim to make the trees more easily baled, and we generally finish the job by trimming as high as we wish the trunk of the future tree, instead of letting them grow till the roots are firmly established.—*L. P., Christiana, Lan. co., Pa., Feb.* 28, 1876.

For The Lancaster Farmer.

HOW TO RAISE OATS CHEAPLY.

For several years past there has been much complaining among the farmers of Lancaster county that the oat crop does not pay for the trouble of producing it. It therefore seems desirable, since it cannot well be dispensed with, either on account of the succession or because it is desirable as feed for horses, that it be raised as cheaply as possible.

Let the corn stubbles be broken down early in the spring or winter, when the ground is frozen hard, by dragging over them a pole six or eight inches in diameter, and long enough to reach across six or more rows. Fasten a horse to each end of the pole, and have a driver for each horse; drive the horses along the rows, letting the pole drag over those between them at an angle of about 30 degrees with the direction of the rows. If once going over does not break off the stubbles sufficiently, go over them again in the opposite direction, when it will be done quite as well as with the hoe, and in very much less time.

The usual way of preparing the ground is to plow it, but the writer and many others have proven beyond doubt that more oats can be raised by stirring it with a cultivator, and with a great saving of work.

The successive freezings and thawings during the winter make the surface of the ground in much better condition for starting the young oats plants than the more compact soil under would be if turned up by the plow; besides, the ground does not have to be worked so early, and consequently has more time to dry, so that it does not become so cloddy as when plowed.

The objection usually made to cultivating in oats is, that the ground is harder to plow for the fall crop; but my experience with a clay soil is quite the reverse, even in dry summers. Most farmers plow shallow for oats, for the reason that more grain can be raised by doing so. If the plowing is done when the ground is very wet, as is usually the case, the soil in the bottom of the furrow must necessarily be packed down, both by the pressure of the plow and by the horse that walks in the furrow; then, if the ground is dry when it is plowed for wheat, it is almost impossible to get the plow to run deeper than it did in the spring, and if it does it will turn up cloddy. While, if the ground is cultivated in the spring, and then not until it is well dried, the plow will go as deep as is desired in the fall, and the soil will pulverize nicely.

Another reason why cultivating is preferable to plowing, is that nearly all the weed seeds near the surface are germinated and destroyed by the cultivation of the corn during the previous summer, so that but few are left to grow among the oats. If the ground is ploughed, all the seeds that had collected on sod before it was ploughed for corn are turned to the surface, and having lain but one year, will grow. This difference was particularly noticeable last summer, when *ploughed* oats fields were unusually full of weeds.

If the oats is sowed broadcast, the corn rows serve as a guide in sowing, so that furrows or poles are unnecessary. The seeds falling upon the smooth surface of the ground are evenly distributed, whereas, if the ground is ploughed, they are liable to collect in the depressions between the furrows and grow unevenly. If the oats is planted with a drill, the ground should be cultivated for drilling.

The two-horse corn cultivator, now extensively used in this county, is the best investment for cultivating oats grounds, because it can be passed on both sides of the rows of stubbles in the same way as when working the corn, without turning up the corn roots; besides, it stirs the soil deeper and more thoroughly than the old A cultivator. It cannot be successfully used in "crossing," however, even when the corn is "checked," because it will choke with the roots. It is better to cross the ground with an ordinary spike harrow; this will tear up very few roots; and when the ground is rolled it will be quite as smooth as when ploughed.

Most farmers make a great deal of unnecessary work in harvesting, especially when the oats is "short," by attempting to tie it into sheaves. Much grain is also lost in tieing. It can be taken up more expeditiously and with less waste with a barley fork, by "bunching" it, if in swaths, or if cut with a machine, by taking up the bunches as they lie. No inconvenience results from this mode of gathering, either in handling in the barn or in threshing. Another advantage in it is that it packs so closely in the mow that rats and mice cannot get through it and destroy the grain.

For The Lancaster Farmer.

RURAL IMPROVEMENTS.

Those who intend to make rural improvements should mature their plans before beginning the work. If they are undecided or at a loss how they shall improve their grounds, and what species of trees and shrubs they will embellish them with, they should get a gardener of skill to visit the grounds and give a plan and list of trees and shrubs to decorate it, that will often save expenses and disappointments. The lists of trees and shrubs should be sent to nurserymen a month before needed, and they will the more likely be delivered when needed to plant. A number of rapid growing evergreen and deciduous trees should be set out to make an early show, and all to be of stately sizes. In purchasing lands for lasting homes, or for summer retreats, see that running waters are near or upon the lands, to introduce water by plumbing for all purposes. Small streams of water running through the grounds can often be made highly ornamental and attractive by making ponds, dams and waterfalls; fill some with hardy fish and have others for fancy ducks, geese and swans to sail upon, and clothe the grounds around them with trees and shrubs. *Ornamental waterworks* were highly prized by the ancients. Isaiah says to Judah "Ye shall be as a garden that hath no water."—*Walter Elder.*

OUR PARIS LETTER.

Correspondence of The Lancaster Farmer.

Paris, March 7, 1876.

FAILURE OF THE BEET CROP IN FRANCE.

The beet crop has been almost a failure this year in France, and from a variety of causes, some of which are of general interest. The low price of beet sugar and alcohol, coupled with a heavy taxation, has led to many commercial disasters. Several distilleries have closed, and sugar factories have been reduced to work only half time. The beet itself has only been of a secondary quality, and of less than average yield; the warm and humid weather deteriorated the tissues of the roots, diminishing the return of sugar. Large heaps of beet were abandoned to rot, and very fair roots were declined by the manufacturers at the bankrupt price of *fr.* 5 per ton. This is the more unfortunate as a great quantity of beet had been cultivated last season, and the quality proving bad, the expense of extracting the sugar became, as is ever the case, increased. The recent frosts achieved what the opposite extreme of temperature spared. Closed factories react on the rearing and fattening of cattle by reducing the supply of pulp. But other influences have been at work: the seed germinated badly, the manures acted capriciously, and the plant resumed a new vegetation at a period when growth ought naturally to have stopped. Since some time these matters have been the subject of study and experiment, and M. Vilmorin makes known the results of his investigations respecting the germination of beet seed. Struck by the irregularity in its germination, he found that the closer the seed was to the mineral fertilizers—nitrate of soda especially—the more slowly it germinated, and in some instances did not do so at all. There was as much as a month's difference between the germination of seed sown on the unmanured and the manured soil. It would seem that these manures, intended to furnish nitrogen to beet in its after stages, are injurious pending the period of germination. M. Vilmorin also found that wheat was similarly affected as beet when the seed was in contact with nitrate of soda and sulphate of ammonia. Further, not only was germination retarded at a period when its activity was most to be desired, but the salts in question promoted an energetic growth of the beet in early autumn, when such development ought to be avoided.

ABOUT FERTILIZERS AND CULTIVATION.

In the north of France it has been found that the earlier the beet is sown the more certain will be the results—the 20th of April is better than the 20th of May—also, the greater the distance between the plants the heavier will be the yield—an advantage, however, only to be sought after when the roots are intended for feeding purposes. The mineral manure most in favor with farmers, and the least so with the manufacturers, is nitrate of soda; its price is relatively moderate, its assimilation easy, and its effects consequently immediate. But it ought to be ever employed judiciously, and notably with the phosphates and the salts of potash and lime. Farm-yard manure being nitrogenous, demands that nitrates be associated with it sparingly. The phosphates have been found excellent in promoting germination, but phosphates cannot correct the bad effects of nitrate of soda; were it thus, guano might be employed without fear. The complaints against the use of nitrate of soda for beet are the consequence of the abuse of that fertilizer, which banefully affects the extraction of sugar, and reduces the fertility of the soil, owing to farmers relying on its stimulating properties exclusively; it is an error to supply a plant with one kind of aliment exclusively. It ought to be remembered that fertilizers require to be rotated as well as crops, and their action well studied, since some act on the foliage, some on the bulb, and science has not settled as to whether the sugar be formed by the roots or by the leaves.

PRACTICAL LECTURES ON FARM ANIMALS.

In Belgium much success has attended the delivery of public lectures on farm animals, how to breed, how to rear, and how to care for them. The lecturers are practical veterinary surgeons, and are well supplied with models and diagrams to illustrate their views. Hitherto all the lecturing has been limited to soils, manures and plants—excellent in their place, especially when practically treated. To ascertain the number of head of cattle of an average of 8 cwts. that a farm ought to support, French agriculturists generally estimate that an animal consumes in a year 11 cwts. of hay for every 1 cwt. of its weight. Thus 22 tons of hay ought to support during a year 2 tons of live stock, equal to five animals of 8 cwt. each. Two hundred-weights of nutritive hay being taken as the standard of nutrition, are found to be equal to 8½ stone of oats and 16 of potatoes. It should be borne in mind that the richness of food varies with the soil, and its feeding value will vary with the temperament and the digestive powers of the animal.

THE HORSES OF HUNGARY.

Since centuries ago the great plains of Hungary have been celebrated for their production of horses, which comprise races at once sober and accustomed to privations and climatic changes, but which not the less produce animals with iron constitutions; the pasturage is bad, green fodder is difficult to obtain, and necessity compels dependence on straw and the stems of maize. It is not to be wondered that the Austrian government is solicitous about the amelioration of horses. It is not uncommon to find a pair of horses getting over a distance of sixteen miles to meet a train, and, without being baited, return by the same road in two hours. There are two and a quarter millions of horses in Hungary, or 140 for each 1,000 inhabitants; and there are several races of them also, in addition, adapted to mountainous districts, sandy plains or alluvial flats. The national breeding studs, of which the chief is at Mezohegyes, recognize these distinctions; and as the State studs are only intended to supply the absence of good stallions among private individuals, their object is to make themselves as soon as possible unnecessary. There are 1,800 stallions in the four studs, serving 63,000 mares annually in 525 different districts. The charge for covering varies from *fr.* 2½ to *fr.* 37, but the services of a stallion of pure English blood cost as much as *fr.* 1,000. The stud at Mezohegyes is a half military establishment, or rather colony, consisting of 36,000 acres, and chiefly devoted to the culture of grain and forage crops; it possesses 2,400 horses, representing nine different races. The foal at its birth is marked by a red-hot iron on the sides, to recognize its race and its sire. Its food is not excessive: one pound of bruised oats, when three weeks old, and double that at three months, when separated from the mother, and as far as four years old, five pounds daily in summer and double that ration during winter. But then the pasturage is excellent. Mildness is the basis of the breaking in of the colts, and by patience and address man dominates them. They are never beaten, and approach the grooms without mistrust or hostility. For each act of submission they are rewarded with a caress or a morsel of sugar or a cake, and to conquer their timidity or efface their fear they are surrounded with trained animals. Possessing thus no vices, they can transmit none.

HOSPITALS FOR HORSES, CATTLE AND PIGS.

The monster farm in question is provided with hospitals for horses, cattle and pigs, and clinical lectures take place twice a day, which are attended by the veterinary pupils from Pesth, who acquire a practical knowledge thus of their profession. Bulls are also bred here to ameliorate the native races, for the climate is too trying—torrid days, succeeded by polar nights—to think of crossing. Milk not entering into the calculations of Magyar farming, milch cattle are not in request; besides, such an amelioration would affect, as experience has shown, the value of oxen for labor, and they are only secondary in point of importance to horses. If the training of horses be effected on the gentle system, that for oxen is the reverse. In winter cattle receive but straw, chaff and maize stems; those employed at work have hay. The annual yield of milk is not more than 900 quarts; 2 cwts. of hay are found to produce 23 quarts of milk, representing 3¼ pounds of butter. The oxen are never yoked until four years old, and after six months' apprenticeship are capable of nine years' work. When aged 13 or 14 years they are sent to the large towns to be fattened at the distilleries; some of the latter fatten 1,500 head of oxen at a time. A yoke of oxen will plow an acre 14 inches deep in a day, and in addition to being as rapid as a dray horse, have feet as sure as a Spanish mule.

MISCELLANEOUS.

Dr. de Martiu draws attention to the success which has attended his employment of chopped vine prunings for the evening feed for his cattle. At first they refused it, but afterwards took to it. In the Department of the Aude these vine shoots are employed, when bruised, as litter.

An infusion of tomato leaves has been found excellent to clear plants of bugs—the phylloxera always excepted. The annual report of the official commission on the experiments conducted under its direction during 1875, in the affected districts, on the various plans for destroying the vine-bug, concludes that no remedy has yet been found; that the best powder is too costly in application, and but partial in efficacy; that the old bark ought to be removed from the stems; the eggs destroyed in winter, and recourse had to American stocks.

Dr. Uloth's experiments go to show that grains of wheat placed between two blocks of ice and kept in a cellar with a temperature at freezing point will germinate and develope rootlets. He continued the same experiment with mustard and grass seeds, as well as wheat. He placed some in a hollow piece of ice, and others in common earth; both were deposited in an ice house and covered with a thick block of ice. They all equally germinated, no difference being perceptible save that the mustard and grass seeds germinated best. M. Tisserand states that he obtains most butter and of a superior quality, the more the cream is churned at a temperature approaching the freezing point.

LANCASTER COUNTY FARMERS IN COUNCIL.

Proceedings of the Agricultural and Horticultural Society—Discussion on Fruit Trees, Hungarian Grass, Etc.

The regular monthly meeting of the Lancaster County Agricultural and Horticultural Society was held in the rooms of the Athenæum, on Monday, the 6th inst. The meeting was called to order at two o'clock by the President, Calvin Cooper. The following members were present: Calvin Cooper, Milton Eshleman, Levi W. Groff, Simon P. Eby, Abraham Summy, Casper Hiller, E. B. Engle, Henry M. Engle, Peter Reist, Mr. Hershey, Levi Pownall, John Huber, Johnson Miller, Martin D. Kendig, John Reist, Simon Hershey, Reuben Weaver, Israel G. Erb, Martin S. Fry, C. L. Hunsecker, J. Stauffer, S. S. Rathvon, James Buckwalter, Wm. McComsey, John Miller, John M. Stehman, Wm. P. Brinton, Henry Erb, Jacob K. Witmer, Dr. E. A. Hertz, John Grossman, E. S. Hoover, John H. Brackbill.

The regular secretary not being present, Milton B. Eshleman was elected secretary *pro tem.*, and on motion, the reading of the minutes of the February meeting was dispensed with.

Lewis C. Lyte, of East Lampeter; Henry Kauffman, of Lancaster township; and Cyrus Neff and F. G. Melliuger, of Manor, were elected members of the society.

Reports of Crops Being Next in Order,

Mr. Kendig, of Manor, said that the prospects for the coming wheat crop are very favorable, notwithstanding the alternate freezing and thawing of the ground during the past winter. Rye, about the same; for the last two or three years this crop did remarkably well, which induced farmers to sow more largely than usual. Grass fields of last season's sowing are very thin, a large portion of the seed never coming up on account of the drouth. Old fields promise better. Corn in the crib is very much damaged. Sound seed scarce. Tobacco crop very good; better in quality than it has been for a number of years. A good portion is sold at prices ranging from 12 to 25 cents per pound for wrappers, and 3 to 5 for fillers.

The Library and Finances.

Mr. Eby, of the Library Committee, said that several books were lately contributed to the society, among them some from our fellow-member, Mr. Landis. As he was instructed at the last meeting to fix a price on all books received, he felt, after due consideration, that he was unable to do this unless two additional members were appointed on the committee, mainly for the purpose of consultation.

A motion was made that two additional members

be added to the committee. It was carried, and the chair appointed Messrs. Rathvon and Stauffer.

Two bills, one of $5.44 for chairs, and another of $10.75 for a sign for the society, were read and ordered to be paid.

The following essay was then read by C. L. HUNSECKER:

A Few Hints to Farmers.

"How blest the farmer's single life!
How pure the joy it yields!
Far from the world's tempestuous strife,
Free 'mid the scented fields."

The healthful enjoyment of life in the cultivation of the soil is, perhaps, not exceeded by any other industry. It is, besides, a pursuit that escapes from the many temptations, vices and crimes to which man is exposed in the crowded city. The farmer's life is simple; it is a trade that commends itself, because no country can maintain a large and prosperous population without skillful agriculture, however rich and productive the soil may naturally be. The great cities of the world, with their immense populations, health, manufactures, and commerce, would perish if the farmers failed to supply them with food.

Agriculture in every civilized country, exerts a powerful influence in the production of wealth, commerce and manufactures. It is the great and transcendent interest, employing more capital, more persons, and sustaining more than all other interests combined.

The supposed population of the world is 1,000,000,000 of men, who are dependent for their very existence upon the productions of the earth; 200,000,000 of men probably expend their daily toil in pursuits connected with operations of agriculture, the parent and precursor and most important of all arts; and nine-tenths of the fixed capital, perhaps, of civilized nations is embarked in this one great pursuit.

It is the great and permanent industry of our country; manufactures, mining and commerce are dependent upon it. Believing this to be indisputable, our agricultural friends having done so much towards the development of the country, cannot be justly accused of aiming to look up other matters than farming, which have a near or remote bearing upon their interests. Hence it follows that the farmers of our country, who produce three-fourths in value of the exports from this country, and furnish a large amount of the tonnage on the canals and railroads, and much of the passenger travel, have a deep interest in the question of the price of freight and fare. Canals and railroads were constructed for the public convenience—for the conveyance of articles to and from market, and revenue a subordinate object. But it has become manifest of late years that quite too many of these thoroughfares have been converted, by watering stock, and charging excessive rates of freight, etc., into dangerous monopolies, against which intelligent farmers protest as an innovation injurious to the industry and property of our common country.

What a man earns by thought, study and care is as much his own as what he obtains by his hands, is true as regards the exclusive manufacture and sale of a valuable patent right. But when these rights, as has been frequently the case, get into the hands of merciless speculators, and become burdensome to the public, like Jethro Wood's iron plough, and the sewing-machine, the protests of the Graugers against the oppression of the patent laws to Congress were highly proper. The telegraph, indeed, arrested the attention of Congress, and a committee reports against the great injury and injustice of the telegraph monopoly, and recommends that it is the duty of the government to provide an economical and impartial system of telegraphy.

It is an important fact in the history of Pennsylvania, that for many years, up to 1866, the pecuniary means for the construction of internal improvements in the State were obtained to a great extent by taxation upon real estate, and principally from the agricultural inhabitants. Pennsylvania has still a public debt. Would it not be good policy to reduce this debt to the amount of funds available in the coffers of the Sinking Fund?

During the last year the United States exported fifty-four of every hundred bushels of the wheat imported by Great Britain. Our farmers follow no idle theories, but, like the teamster in Esop, put their own shoulders to the wheel and manfully pull the car of commerce along.

It is said that if we cultivate man, the improvement of the vegetable and animal kingdoms will surely follow. All history confirms this. The best educated and most enlightened agricultural countries have in all ages outstripped in the race of progress their less cultivated neighbors. England, France, and Eastern Pennsylvania confirm this. In skillful rotation the land is enriched by the application of proper manure. If you go to Kent, in England, there will be found a soil that has been enriched by cultivation for almost two thousand years. Incessant labor and judicious management will improve a farm in producing better crops. Talk of worn out farms in Lancaster county. If there are such they have not been tilled by the Amish, the Mennonites, the Dunkers, or the Methodists. They know better than to exhaust farms; they enrich them by their industry.

Agricultural chemistry is the science which investigates the properties of the different kinds of soil, and discovers and applies the proper fertilizers. Indeed, numerous discoveries in agriculture have been made by observant farmers, independent of a knowledge of chemistry, but a more thorough knowledge of the nature of the soil, which chemistry explains, is of the greatest practical benefit, and should be heard by every farmer. When the first cargo of guano was introduced into this country it met with the prejudice anthracite coal had to contend with. No one knew anything in regard to its intrinsic value, and consequently every person set it down as a humbug. The farmer, near Philadelphia, that purchased the first lot, and had the courage to use it, *distributed it upon several acres of grass in such quantity as to entirely kill the crop.* He immediately called upon the unfortunate seller and threatened to prosecute him for obtaining money under false pretences.

The knowledge and proper application of the different manures is of very great practical importance; and chemists, such as Leibig, Draper, Johnston, and others, have analyzed soils and plants; entomologists have discovered the nature of destructive insects, and ornithologists the auxiliaries in their destruction. Some plants have a local habitation and a place, which is probably owing to the nature of the soil. A soil entirely deficient of lime will not produce wheat. The earth is full of seeds, which, if thrown in a favorable position and exposed to the air, will spring up and produce flowers of surpassing beauty and richness. Every flour and blade of grass rejoices when the rain falls upon it. This is one of the elements of farming, and the others are a good soil and a favorable climate; and husbandmen who know that upon their industry and skill the crops depend, will give the culture which is due to their acres; hoe every weed, dress the soil, and harvest shall repay their toil.

Southey says that an animal is of more consequence than a plant, because it has life; and another author thinks that the meanest insect is a collection of wonders. True, we have the microscope and the telescope; one leads us to see a world in every atom, and the other a system for every star in the firmament.

The people of Flanders, in Europe, erected a statue in honor of the man who introduced into their country the cultivation of the potato, and everywhere the man who by his knowledge and skill can produce two spears of grass where only one grew before, is considered a benefactor. What shall we say of the men in our country who have imported blooded stock, and thus improved the noble horse, the Durham ox, the Alderney cow, the Merino sheep and the Chester pig? These men are entitled to the lasting gratitude of the American people, and a statue would not add to their greatness, but their disinterested efforts entitle them to a monument in commemoration of the event.

The rapid disappearance of our forests has of late years excited a great deal of discussion. The many uses to which timber is applied makes it important, and the cause of the anxiety manifested in regard to it is deserving of serious thought. But there are still millions of acres, thick set with wood, in the broad expause of our country and Canada; and if lumber should hereafter become scarce and dear, science will develop other building material to take its place, as stone-coal has taken that of wood. There are men living in Ohio and Indiana, who have a weary life in clearing off the large trees that encumber their acres. Still, as the Atlantic seaboard has been pretty well stripped of its forests, there are localities probably in every State of the Union that would pay better if devoted to tree-raising, than the cultivation of grain.

Science will develop employment and means of subsistence as fast as population can grow, in all time to come, and it is idle to fret over imaginary evils. Our country could sustain a population of a thousand millions of souls, and would not be as densely populated as several European Kingdoms. In Pennsylvania, one of the old States, not one-half of the land is under cultivation, and much of the unbroken ground is still covered with the primitive forests.

The Italians have a proverb to this effect, "that he who has not seen Naples has seen nothing." This will be exemplified in America "that he who does not visit Philadelphia during this Centennial year, and look upon the magnificent display on the Centennial grounds, need not pride himself in after years that he has seen anything worth seeing." There all interests will be represented, and agriculture will have a large share.

The complaint is that in the distribution of office in our country the agricultural interest has been greatly neglected. There is some show of reason for this complaint. In the State Convention to amend the Constitution of Pennsylvania, a few years ago, of the one hundred and thirty-three members comprising that body, ninety-five were of the legal profession, and the balance of thirty-eight had a respectable sprinkling of M.D.'s and D.D.'s, iron men and merchants. The same proportion of lawyers, doctors, merchants, iron masters and manufacturers, and other departments of industry, independent of agricultural pursuits, have controlled the legislation of our country, almost exclusively, for many years. Probably three-fourths of the votes that are cast at every important election are thrown by citizens engaged at farming. Why is it that the agricultural interest is thus ignored? Why, it is owing to the indifference of leaving the management of primary meetings, conventions, &c., to persons who have no sympathy with, or interest in the cultivation of the soil. If the evils complained of are to be corrected, farmers must show their hand and arrest the evil by supporting men for office who are in sympathy with their interests.

"Man shall not live by bread alone. So is it true of nations, that riches and aggrandizement are means and not objects of government; and that States thrive and flourish not only on merely physical elements, but in proportion that law, order, peace, justice and liberty are maintained in the Commonwealths of Nations."

Forest Trees and Rain Fall.

MR. ERY thought the planting of forest trees a subject of great importance, and cited several instances in which the attention of foreigners was attracted to this country. He held that when the forests are cleared away the streams dry up. To support this, he referred to the Potomac river, and said that since the forest trees which skirt its banks are being cut down there is a great falling off as regards the volume of the stream. The same falling off is noticed in the Danube river, and the Austrian government has become so alarmed that they have appointed a committee to investigate the cause. He felt confident that that committee would report that it was caused by the destruction of the forest trees. He then referred to the Tucquan creek, which runs through the lower end of this county. Some ten years ago, when he used to fish for trout there, it was a very rapid stream, and was supplied at frequent intervals by a great many small tributaries. On all sides it was surrounded by a dense woods, the same belonging to the parties who own the Martic and Colemanville forges. A short time ago he visited this locality and found that the mouth of the stream was greatly diminished in size. He traced the course of the stream to its source, and was greatly astonished to find, that where he used to catch ten inch trout, the farmers had to dam up the stream in order to collect enough of water for their cattle. On every hand he noticed that all the old trees had disappeared, having been cut down by the owners of the forges as fuel for their furnaces. He then spoke at considerable length in regard to the preservation of our woodlands, not only as a preserver of our streams, but that we might have plenty of timber for our own use and those of coming generations. He thought that there was good doctrine in the essay on this subject, and said that if the Grangers would only pay a little attention to this great want, they would accomplish something in the mission to which they seemed to be called.

MR. ENGLE called the attention of the chair to the strangers present, Messrs. Carter and Harvey, of the Farmers' Club of West Grove, who he thought would like to say something on this subject. The chair then invited the gentlemen to give their views on the matter.

MR. CARTER did not think he could add any remarks to what had already been said, as the ground had been pretty well gone over. He thought the subject of growing trees for increasing timber was a very important one. The best tree he knew of for planting was the yellow locust, which was the most valuable, as it would stand more than any other tree, although it was somewhat subject to the attack of the borer. He had no time to enter into any discussion just now, as he had to leave on the three o'clock train for home. He closed his remarks by referring to the influence of evaporation, some streams having an underground current while others evaporated by the sun.

MR. HARVEY would like to speak, but was unable to do so, as the hour had arrived when he would have to leave. He believed in the position taken by his friend Carter.

A vote of thanks was then tendered the gentlemen, and the subject of forest trees was then continued.

MR. MCCOMSEY said that during a visit to a town in the State of Ohio, he had learned from a creditable source that the stream which flowed by the town had, within a period of seventy years, decreased to less than half its former size. He himself had noticed a marked decrease in the size of the stream during the eighteen or twenty years which intervened between his visits to the place. A canal had formerly been built at great expense, along its banks, but had long since been abandoned for want of sufficient water. Ohio, seventy years ago, was almost one unbroken forest, whereas it is now, to a great extent, cleared of timber, and the diminution of this, and other streams, was attributed to that fact.

It seemed to be an almost undisputed fact that as a country is stripped of its timber, the rainfall and streams proportionately decrease. This being so, may not our now fertile land at some future period, if not guarded against, become, through these causes, a barren desert? There was another subject to which Mr. McComsey was pleased to hear the essayist refer—agricultural chemistry. Perfect agriculture, as has been said, is the true foundation of all trade and industry, as well as the foundation of the riches of States. But a rational system of agriculture cannot be formed without the application of scientific principles, for such a system must be based on an exact

acquaintance with the means of nutrition of vegetables, and with the influence of soils and actions of manure upon them.

This knowledge we must seek from chemistry, which teaches the mode of investigating the composition and studying the characters of the different substances from which plants derive their nourishment. He thought the time had come when every intelligent farmer should acquaint himself with at least the elements of chemistry.

Mr. Stauffer related an incident of his boyhood. In the neighborhood of Chiques there was a spring in a field which was at that time a perfect swamp. Near it was a hill on which were a great many hickorynut trees. In time they were all cut down, and now that which was a swamp is a nice field, perfectly dry. The spring is also almost dry, and so great has been the change that he could hardly recognize it when he visited the spot a short time ago. This great change occurred within the past forty years. The Chiques creek is one-third less now than it was then. As regards rainfall, he said it is always greater where there was timber, instancing the lower end of the county, where it is one-third greater than it is in any other part of the county.

Mr. Eshleman knew of a place where there was a swamp, and the only way it was drained was through a pipe which was laid down for that purpose. This was a decided improvement in respect to the drainage, but before the pipe was laid the water was carried off somehow—either by evaporation or an under ground current. He felt sure that the water of our springs and wells come from the mountains. He had studied this question and could see no other reason. It must come from a higher place. Water must seek its level. The more it is sheltered by trees, the less it is evaporated, and hence it has a longer time to sink into the ground, and thus feed our springs and wells and nourish the land.

Mr. Eby said that he had read that since trees were planted along the Suez canal, rain had fallen, a circumstance that never happened before.

Mr. Summy would like to know why Donegal is called "Dry Donegal," when it is a well wooded district. If the existence of trees produces rainfall, why does it not do it in this particular case?

Mr. Stauffer said that the current of atmosphere had something to do with it, in support of which he cited a few instances.

Mr. Eby said that after a long, dry season, when a heavy shower came up, it was generally followed by others.

Mr. Engle said that the eastern part of the county is noted for having greater rainfalls than the western. He noticed that near his place is a mountain gorge, and when it rained you could not see across the river. In fact, the rain was so heavy you could not see the mountain, while one mile above this point no rain could be seen falling at all. He believed that the mountain range had something to do with it. The circumstance, he said, was not at all a common one.

There being no further discussion, a vote of thanks was tendered Mr. Hunsecker for his essay, and the subject of Hungarian grass was next introduced.

The Merits of Hungarian Grass.

Mr. Pownall said his only experience in raising the grass was that wheat could not be grown so well after the grass had been sown. He had grown it for the last six years, and was well satisfied with the result. He would not let a season pass by without putting in some of the grass. It only takes sixty days to mature for a good hay crop. It can be sowed any time between the planting of corn and July. The only trouble with most farmers who raise it is that they let it get too ripe. When this is the case it is too hard to feed, because it is more like straw than hay. It cannot be cut too early. If cut at the proper time it is a valuable feed. As regards his wheat, it never failed when sown after it, although that appears to be the general complaint against it. He believed that nine-tenths of the grass sown in this county was allowed to get too ripe, and, as a matter of course, it does not give satisfaction. When it is cut at the proper time it will not exhaust the soil, but if let go to seed it exhausts the soil very much. He sowed from one to three pecks to the acre. If the seed is good a half bushel is ample.

Mr. Grossman always found good crops follow where he had sown Hungarian grass, but for all this he would rather have good timothy than any other kind of grass.

Mr. Brackbill said that in his neighborhood there was not much of the grass sown. He was not in favor of it, and believed it would soon die out. The increased demand for Hungarian grass he thought was caused by the drought. It was first introduced in the west, and now almost every farmer in that part of the county sows two, three and four acres of this grass to fall back on. He did not think it was good to feed too much of it to horses, as it affects their eyes. In some instances in the west, where it was fed extensively to horses, it affected their eyes so much they became blind. He did not think farmers could afford to sow this grass, as it was so exhausting on the soil. For his part he preferred good grass and clover. In the lower end of this county it is grown to a large extent. Instead of Hungarian grass he urged the planting of King Philip corn. This corn brings forth a good fodder, and it is just as well, if not better, for feed than this grass.

Mr. Kendig had no experience in the growing of this grass, but he has two or three neighbors who speak very highly of it. One of them says he prefers to plant it in June and cut it when it blossoms, and that he prefers it to good timothy hay. This neighbor of his intends to sow ten acres this year. Before sowing, the earth should be well warmed up. He was shown a sample of last year's grass this morning, and it was good, fine and sweet scented. Does not see any exhausting qualities in the land when wheat is sown after it. If any crop exhausts a soil, then you must resort to manure.

As the president, Mr. Cooper, wished to make a few remarks, Mr. Engle was called to the chair.

Mr. Cooper said he had made inquiry in his neighborhood in regard to this grass and found that a considerable interest was taken in the matter. One of his neighbors, Mr. John Beiler, was a warm admirer of it. This gentleman had been experimenting with the grass for several years. Last year he cut ten four horse loads of the grass, from a four acre field. He sows one bushel to the acre, and puts it in the ground generally after corn. When he intends to sow wheat after it he sows less than one bushel of the grass to the acre. It is raised with less care than any other kind of grass, and when fed to cattle it puts them in better condition. Wheat follows where it was planted as well as oats. This was one gentleman's experience. He would now refer to the experience of another gentleman—Mr. Benjamin Beiler, of the same neighborhood. Last year he received six four horse loads of the grass off a two acre field. This grass was cut on a Monday and left lie until Saturday before it was removed to the mow. For all this, it was nice and soft, and the horses were very fond of it. He recommended the selecting of grass with black heads for sowing, as it was the best. Some of the heads are white. These he did not think were so good. In this county the seed is very much mixed. Mr. Cooper said that he himself had received four one horse loads from less than half an acre. From it he fed two horses all winter, and there was enough still on hand to feed until April. He had also fed it in the green state. If cut green, it is very hard to cure. He said that some of his Amish friends did not think their wheat thrived as well when sown after it, but he thought it would grow just as well. He would sow all the land he had to spare in Hungarian grass. He prepared the ground the same as for planting corn, and harrows the ground the same as for oats.

Mr. Kendig said that his friend rolls his ground first, then scatters the grass seed over it, and harrows the same as for oats.

Mr. Hertz said that twelve or fifteen years ago his brother from the west sent a peck of the seed to his father. The seed was sown and the grass let go to seed. It was then mowed and threshed. The grass was more like straw, and the cattle would not touch it. The seed could not be sold, as the grass was considered worthless. Two years ago he sowed some of the seed in a strip of ground where oats were in the year before. The ground was well ploughed and the grass produced so bountifully that he let it go into seed. From this crop he produced six bushels of seed. He put wheat in the same place and found a great difference. The wheat was very imperfect. The next time he experimented in Hungarian grass, he would cut it before it became ripe. He found that his soil was injured more by the Hungarian grass than any other crop he ever raised in his short experience of farming. There may possibly be a difference in the soil. His was limestone.

Mr. Pownall said that when the grass was fed to cows it gave a rich color to the milk and butter. The experience of all his neighbors was that it was hard on the soil.

Mr. Brackbill said the farmers in the lower end grow it for the money that is in the seed. They get eighty cents a bushel for it. He spoke at considerable length against the sowing of this grass.

Mr. Reist gave his experience. He had noticed no difference in the soil after the grass was sown, but, after hearing the discussion on the subject, he thought it would be better to plant corn.

Mr. Groff was a strong advocate of Hungarian grass. After giving his experience, which appeared to be about the same as the others who favored the grass, he said that he had twelve acres out last year and that he received $1.50 a bushel for all the seed he had to spare.

The discussion was carried on for some time, but no new points were elicited further than it was regarded as a mere "foxtail" by Mr. Brinton. It was only a fall grass and was entirely worthless.

Miscellaneous.

Mr. Kendig moved that a committee of three be appointed by the chair to report the best variety of apple trees for planting—the committee to make their report at the next meeting.

The chair appointed Messrs. M. D. Kendig, H. M. Engle and Casper Hiller as the committee.

Mr. Reist moved that hereafter only practical questions on agriculture and horticulture be discussed. The motion received the approval of the Society.

Four apple tree borers, found in the trunk of a dead tree on the premises of Mr. Pownall, were presented to the members by Prof. Rathvon. They were shown to be the larvæ of the long horned beetle, several of which the professor had with him. An article explaining their nature appears in another column of The Farmer.

A small bag of Russian grass was distributed among the members by the President. It was sent to the Society by Mr. Benjamin Beiler, of Bird-in-Hand. The grass was said to resemble the Hungarian in some respects.

Two potatoes, known as "Bonnell's Beauty," were presented by Mr. Eshleman.

Grafts of "My Favorites," an apple raised by Mr. Grossman, were distributed among the members.

The subjects for discussion at the next meeting will be "Fruits," and "Our lawns and how to take care of them."

Adjourned.

THE EXPERIMENTAL FARM CLUB.

Interesting Essays and Reports of Practical Experiments.

At the last stated meeting of the Experimental Farm Club, held on the farm near West Grove, the proceeding were marked by unusual interest. Superintendent Carter read an essay on

Profits of Raising Corn in Chester County.

Many farmers do not appreciate the value of corn as a paying crop. I, therefore, wish to briefly call attention to a few facts and figures. Our crop of corn on the Farm this year was a good one, though not better than we have had some other seasons. Our main crop, I am confident, made over one hundred bushels to the acre—estimating 72 pounds of green corn to make 56 pounds of shelled corn. This field was a clover sod in good heart, and had 800 pounds of acidulated South Carolina Rock per acre on part, and part had 660 pounds of Philadelphia Bone.

We had some plots that were accurately measured and the corn carefully weighed, and these I can speak positively about. I shall therefore refer to them to prove what I have to state. Some of these plots made 98 bushel per acre, with no fertilizer since seeding wheat three years previous. This corn was drawn in and shelled, and the shelled corn weighed in the grain, when it was found that 72 pounds of ears made 56 pounds—making $50.96 per acre of corn. An acre made 264 sheaves of fodder, which sold in the field at four cents per sheaf, or $10.56—making for the whole crop on an acre $61.52. These prices were only such as any farmer could have realized this season, and the amount raised per acre has often been exceeded, and is certainly within the reach of any good farmer owning natural corn land.

The expense for labor, seed, &c., is not far from twelve dollars an acre. This, of course, is exclusive of fertilizers, which, if judiciously selected, will not only increase the corn but show for several years. We have no other field crop that will make as good showing, or can be raised and marketed with as little expense.

Our plan of planting corn is to sow a good phosphatic manure on the sod early, plow shallow—say four or five inches—cultivate well, drill corn in rows four feet apart, and stalks from sixteen to twenty-four inches apart in the row, according to the strength of the ground. It should be well worked and kept clean, but neither the plowing or planting should be very early. Plow the first of May and plant the second week.

Moses Brinton inquired the comparative values of South Carolina rock and bone. Mr. Linville had grown better corn with South Carolina rock than bone. J. P. Ambler had tried rock and bone and measured corn raised, and was of the opinion that neither of them had paid.

Howard Hoopes inquired the best means of destroying ants in corn. Mr. Linville said wood ashes mixed with common salt would usually be found effectual.

Eastburn Reeder, Secretary of the Solesbury Farmers' Club, of Bucks county, read an essay on

Dairy House Ventilation.

Mr. Reeder referred to the old plan of making butter in farm house cellars, where the temperature frequently reached seventy degrees in summer and would fall to forty degrees in winter; and the frequent plan of keeping the milk pans in the kitchen, exposed to the fumes of cooking, which contributed nothing to the sweetness of butter.

The essayist was of the opinion that milk should be kept at a uniform temperature of about sixty degrees, thinking it would secure as good a quality of butter in January as in June, or in other words, have June butter all the year round. Being about to erect a dairy house he had visited quite a number of prominent dairies, and carefully observed the arrangement of each and the results obtained, and thus gained much valuable information. His plan adopted was to build an ice house and milk house combined, divided by an eighteen inch stone wall, with a cooling chamber in it, with pipes arranged to admit the cold air into the milk room. He ventilated from the centre of the ceiling, to carry off the light gases that arose,

and by drain-pipes below the level of the floor, to carry off the foul matter that was heavier than the air. A house, twelve feet square and high, constructed on this plan, would be sufficient for a dairy of twelve cows, and could be so shelved as to answer for fifty cows. The ice house adjoining should be the same size. It required from five to fifteen bushels of ice per week to keep the milk room at proper temperature. He favored the use of shallow pans, with the milk exposed to the air, and that it should be cooled gradually to exude the animal heat and animal odor. He had been very successful by this process in obtaining a uniformly excellent quality of butter throughout the year.

Mr. Reeder was followed by an essay on the same subject by L. S. Hardin, of Kentucky, whose views were radically opposed to the theories just advanced. The following is an abstract of his remarks:

About four years ago I started a butter dairy near the city of Louisville, Kentucky; in a climate hot and humid, where animal substances decayed rapidly, and where insect and parasite life developed spontaneously and without limit. To spread the milk out in the usual manner, was to invite the enemy I was most anxious to avoid. To overcome my difficulties I began a series of experiments, beginning with shallow pans in the open air, and step by step I lowered the temperature and increased the depth of my milk, until I reached what is now called the Swedish plan of setting milk in water at 40 degrees, with cans 20 inches deep. I found I had passed the profitable point, and had to retrace my steps until I decided upon 49 degrees as the best temperature for raising the cream perfectly, and made my cans 8 inches in diameter, and 12 and 20 inches deep. My butter was now all I desired, but the use of ice in cooling water that was in immediate contact with the hot air, was too expensive. I soon discovered that it took less ice to cool a given cube of air than it did to cool the same cube of water. It was equally evident that it was a useless waste of ice to cool off a whole room full of air, and reasoning from these premises I concluded to confine my milk and air to the smallest possible space, in order to economize the use of ice. I then built a box with double sides and close fitting double door, putting a hood or trap over the waste water pipe so as to entirely exclude the surrounding atmosphere. As it is the nature of heated air to ascend, I placed the ice shelf in the top of the box to secure a uniform temperature. A space of one inch is left open on each side of the shelf to allow the air to pass around the ice. The drippings from the ice are utilized to the extent of four inches in the bottom of the box. The cans are made with a perforated rim on the bottom to allow the water to pass under them. The covers of the cans fit outside so as to shed the water, and prevent any of the drippings getting into the milk.

It is only after three years' satisfactory experience and trial tests, with the best butter makers in this country that I have concluded to introduce this as an improved method of butter making. In order to criticise my method with intelligence it is necessary to have before your minds all the points of excellence that are desirable in any system of butter making. To accomplish this I will submit to you a high and thorough standard, by which I am willing to have my method tested. The taste of the butter produced; the aroma; the uniformity in quality; the color; the grain or texture; the quantity produced; the keeping quality; cost of making; the labor in making; cost of utensils; cost of buildings; protection of the milk from accidents; amount of skill required to make a fine article of butter, and the practicability of my method.

I have made two careful experiments in churning sweet and sour cream. As both experiments turned out exactly alike one description will answer. I took fifty pounds of cream that was sweet and liquid, perfectly free from skins or lumps, stirred it thoroughly together, and while in motion dipped out one-half by weight and churned it immediately. Put sour milk in the other half and let it stand until thoroughly and sharply soured. Both batches churned at 63 degrees. Each of the four churnings came in twenty minutes. In each experiment the sweet cream produced five ounces the more butter. Every person who tested the samples while fresh pronounced the sweet cream butter the better. After keeping the samples several months I am of the opinion that the sample from the sweet cream keeps the better.

Milk as it comes from the cow is a pure and perfect food. With my method, I take it while in its pure condition and place it in an atmosphere so cold that decomposition is practically arrested, and hold it at this temperature until the cream has all arisen, about thirty-six hours. When I skim the cream it is liquid and sweet. The cream can, of course, be soured, if desired. As to the taste of butter made by my process, I have always received the top price of my market the year round.

Nine-tenths of the butter bought in market is judged by the sense of smell. If in the course of manufacture the light flavoring oils are exposed for a long time to the action of the atmosphere, they must in a measure disappear. By my process, evaporation is practically arrested, and if the milk has come from the cow in a pure and wholesome condition, the butter is certain to possess an exquisite aroma.

Setting milk in the dark does not seem to affect the butter one way or another. In making experiments, setting one-half the milk in the dark, and one-half in the light, after twenty-four hours, there was no difference in the color of the butter.

Too much heat is fatal to the grain of butter, and it requires a master spirit to preserve its fine waxy texture with milk set in the open air, and the thermometer indicating a tropical range of from 80 to 100 degrees.

In midsummer it required a fraction over nineteen pounds of milk to make a pound of butter with shallow pans, while a fraction over seventeen pounds was required in deep pans. When the milk and cream are allowed to sour together, as in shallow setting, and the souring process is still continued with the cream after it is taken off, there is great danger of a slight degree of decomposition taking place, which greatly injures the keeping quality of the butter. When the cream is taken off sweet and pure, and if churned while in this pure condition, the keeping quality of the butter is insured.

He showed at length that by his process the amount of skill and labor required was greatly reduced, and the cost of buildings and utensils largely decreased. He exhibited a model of his box and milk cans, the former of which he has patented.

Mr. Reeder maintained that if nothing was noticeable in the odor of the air of the milk room, that its effects could not be noticed in or tasted in the butter.

Mr. Hardin replied that it sowed the seeds of destruction in the milk which were developed in the butter.

Secretary Carter read an essay, written by Prof. J. Wilkinson, of Baltimore, who was unable to be present, favoring the ventilation of milk rooms as follows:

"We want the truth and the whole truth as far as we understand the science of butter making, and it is the height of folly for any one to attempt to promulgate any system, or branch of a system of this immense native industry, which cannot stand the test of dairy science, and the scrutiny of dairy chemists. I have previously advocated the importance of ventilation for dairy rooms, and opposed to cooling milk rapidly in the use of cold water instead of cool air, which latter plan I recommend.

"I claim that ventilation, by which I mean a change of air in the dairy room with sufficient rapidity to prevent the possibility of the gaseous emanations while it is cooling, known in common parlance as animal odors, being absorbed by other milk, already cool, with which it may come in contact and thus secure the maintenance of the purest condition of the air of the dairy possible, an essentiality claimed by every dairyman in the world, save one or two. The most reliable dairy chemists have established the fact that milk gives off vapor and odor, which are known in dairy science as volatile animal oil, that is mingled with natural milk, and which escapes slowly at blood heat, more rapidly as the temperature is raised, more slowly as it is lowered until it reaches 62 degrees, when it remains fixed or unvolatile in the milk and cream. At a little below 60 degrees it is condensed to a liquid oil. At the natural temperature of the milk, the gaseous odors are given off slowly, hence time is required to admit of its purifying itself. It may, however, be greatly facilitated by artificial heating, which, if the milk is to be suddenly cooled by a cold water bath, would greatly improve the keeping quality of the butter made from milk so cooled. But carefully conducted experiments in cooling the milk gradually, in cool, changing air, has proved that it is sufficiently purified to insure good preserving qualities and yet not impair its flavor.

"It may be contended that milk, as it comes from the cow, is in a state to adapt it well as human food, but let us not lose sight of the fact that when thus used those properties which so impair the preserving qualities of the milk and butter are the active ones in rendering such fresh milk diet, whether of man or beast, readily and rapidly fermentable and assimilable qualities, the direct opposite of which is the aim of the manufacture of butter to be preserved. It is a well known fact that milk that has been artificially heated up to 130 to 140 degrees will remain sweet longer kept at the same temperature, than milk not so heated. By cooling milk in close cans, in the use of ice, or cold water, we confine in it those agents of decay, that heat is known to set free, and the keeping quality of the milk thus suddenly cooled must be proportionately impaired.

"I am willing to stake my reputation as a dairy chemist and a dairy architect on the soundness of what I have stated. It may be denied but it cannot be proved by practical test to be untrue.

"I repeat, we want truth; I also repeat what intelligent, skillful dairy practice has everywhere, and at all times sustained, that the cream from milk that has been rapidly cooled in close vessels will not make butter of equal flavor and equal keeping qualities, that cream will from the same milk, slowly cooled in pure, partially dried and suitably cooled air changing air. I mean by suitably cooled at, the temperature of 60°F."

A vote of thanks of the club was extended to Messrs. Hardin and Reeder, for their presence and instruction.

Bee Keeping for Farmers.

Read before the Experimental Farmers' Club by Rev. Orr Lawson, Feb. 24th, 1876.

It is not to be expected that farmers will or can devote that time and attention to bee keeping necessary to become generally scientific apiarians. This must be left to men of leisure, whose tastes lead them that way, or to specialists, who make bee keeping their business.

But at the same time a wise husbanding of the resources of the farm seems to demand that each farmer should keep at least a few hives of bees. He may thus save a product of his fields which would otherwise be lost, and so add somewhat to the profit of the farm, or the comfort of his family. And this doubtless most farmers would do were they not deterred by the disheartening failures which have so often overtaken their enterprises of this sort. It will be the object of this paper to give, if possible, some hints by which mistakes leading to failure and loss may be avoided.

Here let us observe that bees, like everything else on the farm, require some care and attention. If left entirely to "take care of themselves" they will as certainly fail as a field of corn or a herd of cattle, and yet on the other hand a few hives require comparatively little attention, and can be cared for in fragments of time which otherwise would hardly be put to any profitable use. In addition to this, bees require *proper hives*. It is my opinion that more bees are lost from the use of hives of faulty construction than from all other causes combined. A hive to give the best results in *this climate*, and for wintering on their summer stands (and for this region that is, I think, the best plan) should be nearly cubical in form, having 1800 to 2000 cubic inches space in the main apartment; should be made of pine or some other soft wood not less than one inch in thickness—two inches would be better no doubt. Should be provided with moveable comb frames, after the simplest arrangement, and space above for honey boxes, the whole of the simplest possible construction, avoiding if possible all complicated arrangement of drawers, doors, moth traps, and the like. These only afford hiding places for moths, and embarrass the bee keeper in his operations.

The hives should be placed not too near each other, and not more than six or eight inches from the ground. They are thus less exposed to the wind, are much warmer in winter, and are much more easily reached by the bees as they come heavily laden from the fields. The hives should be located near where the family constantly pass. They will thus become accustomed to the presence of man, and ceasing to fear harm at his hands will cease to sting. This, with proper attention, will so "tame" them that, with care, all needful operations may be performed safely. Swarms from hives so treated rarely escape to the woods. They are no longer *wild bees*, but *domestic*, and look to man for shelter and care.

If possible the hives should be sheltered from the north winds by a fence; or better, by an evergreen hedge. They should be protected from the sun in midsummer and midwinter, but in the spring and fall the sun should shine full upon the hives.

Most bee keepers had best let them swarm naturally, because artificial swarming requires knowledge and skill which but few attain, not because it is difficult to acquire, but because study and observation are necessary to acquire them.

Native bees have done as well for me as Italian. Under the same treatment I have observed no difference; however, many bee keepers greatly prefer them, and my experience may be exceptional. I think their introduction will be of advantage in securing a cross with the natives.

Questions and Answers.

How long do bees live?

Working bees live not more than four months in summer, and not more than eight in winter. The queen lives three to four years.

How do you protect bees from the moth?

By so constructing hives as to afford no hiding place for moth, and by keeping the stacks always strong. Still we must not expect to escape loss sometimes.

How do you prevent swarming?

By giving them abundant space in which to work, remove honey boxes as soon as full and supply empty ones; thus they will swarm but little.

Mr. Hardin offered to furnish his dairy apparatus to the Club or any dairyman for trial, and if it did not do all he claimed for it, after a fair trial, he would take it away at his own expense. The club accepted his proposition, and the process will be tested at the Experimental Farm as soon as practicable.

Borrowed Plumes.—A naturalist in England computes from the catalogue of a "Feather Sale," that to supply the stock the death of 10,000 herons or egrets was required; and of Humming birds, 15,574, besides thousands of parrots, kingfishers and other birds of bright colors. The writer adds, that as the plumage of birds is developed in its fullest beauty at the breeding season, the vagaries of fashion may almost make some species extinct. The computations are based on a single catalogue, representing only one of many sales. Think of this, ladies, when you wear feathers.

DOMESTIC ECONOMY.

A Return to Economy.

This is an age of extravagance. Men are living beyond their means—expending beyond their income. Universal indebtedness prevails; individual indebtedness, town, city, county, State and national indebtedness. The honest, economical days of the new republic have been forgotten. We are all in trouble. Taxes are so high and burdensome as to be almost insupportable. The annual running expenses of the government, that were $60,000,000 in 1860, have run up to $240,000,000 in 1875—and this without including the interest on our national debt, or taking that into account at all. This expenditure must be lessened materially in some way. Something is wrong somewhere. The blame lays at somebody's door. Let us find it. It cannot be laid upon the farmer—for not a farmer is in Congress. There are about twenty-five so-called farmers in Congress, or have been—but they were men of wealth, and were not in sympathy with the toiling masses. Although by their numbers farmers are entitled to half the members of the House and Senate—they have not one in either to-day to speak for them. The politicians want all the places of honor and emolument, and they are pretty apt to get them. None of the wrongs or frauds that have been perpetrated in Congress can be charged to the farmer. The Credit Mobilier swindles, the salary grabs, the steals in the Indian department, the District of Columbia rings, the navy contracts, the railroad subsidies, the whisky rings, and all other similar transactions—are not traced to the door of the farmer.

An important question comes up, and that is, shall we ever be free from such disgraceful transactions, till farmers take a more active part in taking care of their interests? Is it not their duty to look out for themselves, to strive to have economy prevail, to lessen taxation that their burdens may be lessened? We have got to get back into the old rut, so far as administering the government is concerned; and farmers are untrue to themselves and their families, untrue to their interests—unless they take a leading part in this matter.

Look at the public buildings the people have to pay for. In Macoupin county, Ill., the toiling tax-payers have got to pay a million and a half of dollars for a county court house, when one could have been built for $25,000 that would have answered every purpose. A court house ring was formed, that imposed this heavy burden on the farmers there. The State House of Illinois will cost the tax-payers of that State over $3,000,000. Many other States are erecting nearly as expensive ones. The Custom House of St. Louis will cost at least five or six millions of dollars. And to get an appropriation through Congress, a ring must be formed with various sections of the country, with appropriations enough for each section to carry votes enough to put the whole thing through; and when an appropriation is wanted for one, twenty or thirty others must have it, too—and will not vote for the others unless they get a slice. And this is the way matters work.

Magnificent palaces are erected for paupers and criminals. The study seems to be, not how little shall we spend, but how much can we make it cost?

Is there no relief from such a pernicious system? We must each begin at home to put down extravagance, whether private or public. We must not be afraid to take a bold, strong stand against it, and, by positive and united action, we may get back to the honest and economical ways of our forefathers.—*Colman's R. W.*

Farmers' Sons and Daughters Must Work.

To the sons and daughters of many farmers this injunction is unnecessary. They do work. They take a lively interest in what is going on in the household and on the farm. They feel personally interested in the success of everything appertaining thereto. They are co-workers, and everything moves on harmoniously and in order. They are not drawbacks, hindrances, clogs, but active and efficient helpers.

But there are the sons and daughters of other farmers that feel above work. They are willing to see father and mother slave their lives away, to keep them in idleness. Great, strapping boys lie abed till the sun is high in the heavens, keeping back the housework, because they are too lazy to get up and eat with the other members of the family. When breakfast is eaten, the next thing in order is to get ready to go to town, where they spend their time loafing about grogshops and other bad places, returning perhaps late at night, unless hunger drives them home sooner. And one day is but the repetition of another. Such worthless boys make worthless men, without exception. And then there are the ruddy-cheeked, healthy girls. Late rising suits them much the best. Breakfast must be ready and on the table before they appear. They have nothing to do in preparing it. As soon as breakfast is over they apply themselves diligently till dinner time in reading some love-sick novel. They imbibe false ideas, and live in an unreal atmosphere. Their minds dwell upon fine dresses, parties, beaux, &c. They dress extravagantly, and are a heavy tax upon their hard-working parents. They help put nothing into the exchequer, but are very efficient in taking out all that thrift and industry puts in. And sometimes this don't end here. When such girls get married they are a millstone about their husband's necks. Everything is left to hired servants. Large bills at the store, at the dressmaker's, milliner's, &c., are incurred—and these must be paid in some way. Do not our readers know that we are describing, in many cases, real life? How can the husband and father prosper when he sees he has no sympathy or assistance from those whose lives are linked with his? How dark and gloomy such a life must be! There is not one cheering prospect for him. All his earnings are exhausted before they are realized, and perhaps ere long the farm is sacrificed to support so worthless a family.

It is true, parents are to blame for bringing up children this way. They have loved their children, and humored them, and when they have seen the error of their ways, it was too late. The habits of the children had been formed, and no amount of talking could change them. They had brought up idle children, who will make idle and worthless men and women. We have seen too many such instances.

So, parents, bring up your children to work. Impress them from their infancy that they must work. See that they have something to do. Throw responsibility upon them, and see that they properly discharge it. Let no amount of coaxing or whining, let no excuses whatever, if your children are healthy, deter you from bringing them up to work. If they won't work when they are children, they will not work when they are men and women, and will be a tax upon you while you live, and will be paupers before they die. We know we are speaking plainly and earnestly. But it is necessary, if we would save our children from a life of degradation. Labor is heaven's law.—*Colman's Rural World.*

How Butter is Tainted.

Winter and spring butter is often very much injured in flavor by allowing cows to eat the litter from horse stables. Cows are not unfrequently very fond of this litter, though it is impregnated with liquid manure from horses, and if allowed, they eat it greedily; and the effect is that their milk and butter will be tainted with the taste of this kind of food, in the same way that the flavor is injured by eating turnips, but to a more disagreeable degree. If litter is allowed to be eaten, it should only be given to cattle not to milk, and on no account should milch cows be allowed to consume other than the sweetest and purest food. Very nice butter makers are sometimes at a loss to account for stable taints in butter, especially when extraordinary precautions have been taken to have the milking done in the most perfect manner, and so on in all the processes of handling the milk until the butter is packed for market. Still the butter has a disagreeable taint, and the cause often comes from allowing the cows, when turned out to water and exercise, to feed about the horse stable, when they consume all the litter which, on account of its being soaked with liquid manure, is cast out of the stable. —*Rural New Yorker.*

Dried Potatoes.

A German journal, *Der Landwrith*, thus describes the manufacture of "dried potatoes" as conducted at Crasteru's works in Lubeck: The potatoes are peeled with the hand, and cut into disks by a machine. These are put in a basket, and this in a boiler, where the potatoes are nearly but not quite boiled. The disks are next put on wire frames in a dry oven, where they are dried quite hard. It is important to preserve the color of the potatoes, and to prevent them from turning grey, as they would, by the above process alone; the material, after slicing, is treated with cold water, to which has been added 1 per cent. of sulphuric acid, or 1 to 2 per cent. of muriatic acid. Then it is washed in pure water, and the drying proceeds. The perspiration obtained, which has lost none of his starch, is of a slightly citron-yellow tint, and transparent like gum. Boiled with water and a little salt, it is said to resume the natural color and fibrous structure of pototoes, and is not distinguishable in taste from newly-boiled potatoes.

Slovenly Women.

The editor of *Appleton's Journal* has no patience with women who are slovenly at home. "Many women have little idea of how greatly they shock the tastes and really endanger the affections of their husbands by their unseemly domestic apparel. There is not a man of sense and refined feeling anywhere who would not prefer some simple and chaste adornment for his wife in the morning to any extreme of splendor at the evening ball. Let a woman by all means dress brilliant on those occasions that render it proper; we have no desire to abridge her privileges nor baffle her instincts in this particular; but we claim that it is important for her, if she values her household serenity, that she should give equal heed to her customary domestic attire. The female who goes about the house untidily dressed has no right to the title of woman. She is without those marks and indications by which she can be classified.

Milk Transmits Infection.

The Sanitary Record (English) states that in Jarrow thirty-four cases of typhoid fever suddenly broke out in a limited district, in twenty different families, the cases being mostly confined to children. The houses, with two exceptions, were clean and well supplied with pure water. It was discovered that all the families received their milk from the same farm, which was at once visited. Six of the farmer's family were down with the fever. The water used in the dairy was from a well close to a cesspit, and evidently contaminated by soakage, as it became putrid in two days after drawing from the well. The dairy was also used as a washhouse, and the linen of the sick persons of the family were washed in it. The person who milked the cows was in constant attendance upon the sick. The nuisance was promptly detected by the health officer and immediately abated.

How to Use Corn Starch.

English Blanc Mange.—Four tablespoonfuls, or three ounces, of Corn Starch to one quart of milk, two eggs. Dissolve the corn starch in some of the milk. Put into the remainder of the milk four ounces of sugar, a little salt, a piece of lemon rind, or cinnamon stick, and heat to near boiling. Then add the mixed corn starch, and boil (stirring briskly) four minutes; take out the rind, and pour into a mould or cup, and keep until cold. When turned out, pour round it any kind of stewed or preserved fruits, or a sauce of milk and sugar.

Boiled Pudding.—Three tablespoonfuls of the corn starch to one quart of milk. Dissolve the corn starch in some of the milk, and mix with it *two or three eggs well beaten*, and a little salt. Heat the remainder of the milk to near boiling, add the above preparation, and boil four minutes, stirring it briskly. To be eaten warm, with a sauce.

Delmonico Pudding.—A quart of milk, three tablespoonfuls corn starch. Mix the starch with cold water, and stir into the boiling milk. Mix six tablespoonfuls of white sugar with the yolks of five eggs, and pour into the starch. Put into a pudding-dish, and bake. Beat the whites of five eggs with six tablespoonfuls of sugar, and flavor with vanilla; drop with a spoon on the pudding, and brown slightly in the oven.

Oswego Pudding.—One quart of milk, three tablespoonfuls of corn starch, four eggs. Beat the yolks, and mix them with a little of the milk and flour; sweeten and flavor with vanilla. Scald the milk, and add the other ingredients, boiling three minutes; pour into a dish, and set away to cool. Beat the whites with four teaspoonfuls of sugar. Cover the pudding with a layer of currant jelly, and spread the beaten whites over the whole.

Saratoga Pudding.—Mix four tablespoonfuls of corn starch in one quart cold milk. Stir until it boils. when cool, stir in two tablespoonfuls white sugar, six eggs, whites and yolks beaten separately. Put in a large pudding-dish, place in a pan of water, bake 1½ hours.

Sauce.—One cup of sugar, half cup butter, the yolks of two eggs, one glass wine. Rub sugar and butter to a cream, add eggs and half the wine. Put the dish in boiling water, stir ten minutes, add the rest of the wine, and serve.

Boiled Custard.—Two tablespoonfuls of corn starch to one quart of milk; mix the corn starch with a small quantity of the milk, and flavor it; beat up two eggs. Heat the remainder of the milk to near boiling, then add the mixed corn starch, the eggs, four tablespoonfuls of sugar, a little butter and salt. Boil it two minutes, stirring it briskly.

Ice Cream.—Omitting the butter and salt, the preparation for custard will make an excellent ice cream.

Household Helps.

Sore Throat.—Dr. Revillout states that lemon juice, used as a gargle, is an efficacious specific against diphtheria and similar throat troubles. He has successfully thus employed it for eighteen years.

Graham Cup Cake.—Unbolted wheat meal, two cupfuls; buttermilk, one cup; molasses, one-half cup; butter, quarter of a cup; eggs, two; soda, half a teaspoonful. Bake half an hour.

To Clean Furniture.—Take a large cotton rag well saturated with coal oil, rub each article of furniture with it until all the mud stains and dust have disappeared, then go over it with a dry cloth, rubbing each piece until it is perfectly dry. Clean once a week.

Yeast and Homemade Bread.—Boil one pound of good flour, a quarter of a pound of moist sugar, and half an ounce of salt, in two gallons of water, for an hour. When nearly cold, bottle and cork it closely. It will be fit for use in twenty-four hours, and one pint will make eighteen pounds of bread.

Potatoes are adapted to be eaten with lean meat—the starchy potatoes furnish the fattening and heating elements which lean meat lacks, while the lean meat supplies the bone and muscle-making elements not afforded by potato or fine flour bread. Fat meat affords heating and fattening elements, like potato, but in a form less easily digested by most persons.

SWEET MACARONI.—Break up a quarter of a pound of the best macaroni into small lengths, and boil it in two quarts of water with a large pinch of salt, until perfectly tender; drain away the water, add to the macaroni into the stewpan a cupful of milk and a quarter of a pound of sifted lump sugar, and keep shaking over the fire until the milk is absorbed; add any flavoring. Stewed fruit may be served with the macaroni.

RED PEPPER is said to have a very beneficial effect on domestic fowls and cage birds. The article sold in the drug stores is not always fresh, but every one can cultivate the plant easily. The variety commonly known by the name of "bird's pepper" is the best, and the plant itself is so pretty that it is an ornament for a flower stand. The seeds possess a stimulating and reviving property. One seed given daily to canary birds, if they seem drooping, will have an excellent effect.

A CELEBRATED German writer—Dr. Elsner—states that the water in which pared potatoes have been boiled is admirable for cleaning silver, no matter how much it has become blackened and tarnished; and especially spoons and forks that have been turned by use in eating eggs, may all be polished and made bright by washing them in this water, and afterward rubbing with a soft rag without any other application. The receipe is such a very simple one that every one of our readers may try it for himself.

STEWED APPLES AND RICE.—Peel good baking apples, take out the cores with a scoop so as not to injure the shape of the apples; put them in a deep baking-dish and pour over them a syrup made by boiling sugar in the proportion of one pound to a pint of water; put a little piece of shred lemon inside of each apple and let them bake very slowly until done, but not in the least broken. If the syrup is thin, boil it until it is thick enough; take out the lemon peel and put a little jam inside of each apple, and between them little heaps of well-boiled rice. This dish may be served either hot or cold.

RICE MUFFINS.—Half a pint of rice boiled and mashed very smooth. Soften this paste by slowly adding one cupful of milk, three eggs beaten separately, and as much flour as will make it the same consistence as pound-cake batter. Add salt, of course, and bake quickly in rings or small tins. When rice is properly cooked it makes a very nice addition to certain kinds of meats. The grains should be preserved whole, and not, as is nearly always done, cooked until they become an unsightly mass; after washing and picking over the grains, put them in a large tin dish or shallow pan, where they will not lie too closely, and, pouring on a little water, cover, and place on the stove or in the oven, where they will cook very slowly; the steam, being kept in the dish, causes the grains to swell, and cooks them without destroying the shape.

WINE MADE OF THE WILD GRAPE: Many a housekeeper feels the inconvenience of a protracted absence from home in summer, when she views her shortened allowance of stores in the way of preserves, pickles, and home-made wines. Yet even late in the fall she may find room for activity. The small wild grape, known to boys as the "bird grape," never attains its full sweetness until after the fall of frost, and makes an excellent wine for culinary purposes. Mash the grapes in a large bowl or tub with a mallet, and keep them in a warm place until there is some sign of fermentation setting in. Then strain the juice by dripping through a flannel bag or strong yet slightly porous cotton cloth. To three quarts of juice add one quart of water and three pounds of light brown sugar. If you put it away in a demijohn, select a warm, dry closet, and tie up the mouth closely with a piece of thin muslin. Do not cork up tight until the whole process is complete. It will be all the better if fermentation ensues speedily, but if the place of deposit is not warm enough, never mind; as soon as the first warm days of spring come, it will go on to ferment as though there had been no interruption to the process, and be none the worse for the delay. After all, it will make wine much sooner than if you waited even for blackberry season.

GENERAL MISCELLANY.

The Agricultural Horse.

Being at a meeting recently held at Ottawa, Ill., by a number of breeders of horses, says a correspondent, I was more strongly impressed than ever with the necessity of a different classification of horses at our fairs. It became very evident to my mind that there is a very great demand for one particular class of horses, which, in the present arrangement, has no show for a prize. And, strange to say, too, this class was, at our last State Fair, represented in the greatest numbers. We want three distinct classes, or in other words, we want the roadster, the draft, and the agricultural horse. This will cover the whole ground, except as to the different breeds of the respective classes. There are the same reasons for a ring for the different breeds of horses that there are in classes of cattle, swine, sheep, poultry, etc. In the showing at the fairs, if the committee happened to be composed of men prejudiced in favor of either of the many breeds, that breed undoubtedly gets the prize—not because he is the best animal, but because he happens to be of a breed in favor of which they are prejudiced. That we need the roadster horse all must admit, for light driving and saddle use. And it is equally as admissible that this is all the practical use we have for him. That there is a great amount of labor that can only be performed effectively with the heavy draft horse, is also a fixed fact. No one will contend that either can perform the labor of the other to any advantage. While these are facts that are not and cannot be disputed, it is equally as evident that there is a class of work that must be performed by the horse that cannot be done to any advantage with either the good roadster or the heavy draft horse. This is very suitably named, in the meeting referred to, the *agricultural horse*. This class is of more practical utility to the masses than all others combined; and in my judgment, instead of receiving the cold shoulder, should, if any partiality be shown, have the preference. This is the horse upon which all are dependent, and might fitly be compared to the laboring or producing class of men. The question often arises as to what constitutes the agricultural horse. It is a question easily answered, but a horse is hard to describe, owing chiefly to the difference of opinion as to what will fill the bill.

I would say that a horse for agricultural purposes should be selected solely for that purpose, without regard to light harness or heavy draft, further than pertains to agriculture. That some farmers do use their farm horses for buggy and saddle, and all more or less for heavy draft, is true. The agricultural horse can be used in all these capacities in cases of emergency, but seldom profitably. Consequently most farmers keep a cheap, light team to do light work. I shall not attempt to describe an agricultural horse in this article further than to say that about seventy of the eighty imported horses, and all of the grade Norman and Clydesdale, that were exhibited at our last State Fair, should come under that head, weighing, as they did, in high showing condition, from fourteen hundred to seventeen hundred pounds—but, reduced to working condition, would have weighed from twelve to sixteen hundred. That a large horse is most profitable for agricultural purposes is evident to every farmer. Successful farmers are scarce that would discard a horse weighing from fourteen hundred to sixteen hundred pounds, and select instead one of the same formation and at the same price that would only weigh from eleven hundred to thirteen hundred pounds.

Applying Manures.

By a series of experiments made some years ago in England, it was shown that barnyard manure benefited crops most the first season, when covered about two inches deep with soil. This result appears reasonable, but the question is, how can farmers place their manure in the ground at this depth? It is not practicable in any case, but they can approximate to it in some cases. When manure is ploughed under in the ordinary way, some of it is covered too deep to benefit the crop the same season, and it is made available if the land is ploughed the second year; some farmers plough their land, then spread on their manure and harrow it in, but much of it is left upon the surface, and is partially lost, and the ammonia that goes off in the atmosphere is the virtue of the manure itself.

It is strange that we should find intelligent farmers, at this late day in agricultural progress, who deny that barnyard manure can be injured by exposure to the air and sun; yet they do exist! A few years ago a farmer in Central New York wrote several articles for publication, in which he attempted to prove that when manure lies upon the surface of the land and dries up, its fertility is still in it, concentrated in the small crusts that remain!

Farmers, let me caution you against the folly of carting your manure upon your fields, and spreading them for a week or longer, before you plough them under. If this be done in the spring, with a warm sun, and high, drying winds, a large portion of them, or rather of the fertility, will pass off in the atmosphere. Don't be deceived in this manner while your olfactory nerves bear a pungent evidence of the truth of what I say. You cannot afford to work your farms on this wasting principle. Manure is money, and if one should see you scattering "greenbacks" over the field, on some windy day, the evidence of your insanity would be but a little more tangible than when you spread your manure, and leave them to evaporate in the sun and by the winds.

Small Fruit on the Farms.

To advise a farmer to grow small fruits for market, and at the same time carry on his farming operations, is something we do not do. But there are hundreds and thousands of farmers who have a natural taste for fruit-growing, and to whom farming has become a drudgery—especially that class who are not strong to whom a change is desirable and necessary. To these we would say, if you are living within three or four miles of a good home market, and cities not far away by rail or steamboat, a change to fruit growing will be both profitable and pleasant. The first thing to do is to rent out most of your land or let out on shares, reserving your home, and say ten or twenty acres of land for your fruit growing operations, and if you have a love for the business, and go at it systematically and energetically, you will make more money from ten acres of land than you have ever made from your farm, and that, too, with less real hard work.

Plant only of leading, well-tried sorts, that are hardy and productive, give them good cultivation and plenty of mulch, and you will reap a large reward; and, too, this kind of work makes less hard work for the women folks, and, besides, supplies the table with fruit daily throughout the year.

There are farmers who have no liking for growing fruit; but as a rule, these have sons who do not like farming. These are very anxious to keep their sons on a farm, away from the city. To such we say, let such a son have the use of a few acres to grow small fruits; and the longer he is engaged in it, the more he will like it, and consequently his attachments for home strengthens, and, too, by this the table is supplied with luxuries you would not dispense with after one season's experience. There are so many inland towns not supplied with fruit and vegetables that we advise the readers of this paper to take advantage of such openings.

Points of a Jersey.

Jersey cattle are steadily growing in favor at the west. Their especial value for milk and butter purposes are generally understood. The Royal Jersey Agricultural and Horticultural Society gives a valuable scale of points, which are everywhere recognized as the standard for Jersey cows and heifers. This breed is generally admitted to be the best cream and butter producing breed of cows in the world, and though there is still some discussion as to the proper color for Jerseys, that of itself is not a point of material importance. In England, just now, the fashionable color is a dundeer color, but it seems harder to determine which is and which is not the proper color. As will be observed, color is not included in the scale of Points given below:

1. Head—Small, fine and tapering.
2. Cheek—small.
3. Throat—clean.
4. Muzzle—fine, and encircled by light color.
5. Nostrils—high and open.
6. Horns—smooth, crumpled; not too thick at base, and tapering.
7. Ears—small and thin.
8. Ears—of a deep orange color within.
9. Eye—full and placid.
10. Neck—straight, fine, and placed lightly on shoulders.
11. Chest—broad and deep.
12. Barrel—hooped, broad and deep.
13. Well ribbed home, having but little space between the last rib and hip.
14. Back—straight from withers to the top of the hip.
15. Back—straight from the top of the hip to the setting of the tail.
16. Tail—fine.
17. Tail—hanging down to the hocks.
18. Hide—Thin and movable, but not too loose.
19. Hide—covered with fine, soft hair.
20. Hide—of good color.
21. Forelegs—short, straight and fine.
22. Forearm—swelling, and full above the knee.
23. Hindquarters—from the hock to the point of the rump, long and well filled up.
24. Hind legs—short and straight (below the hocks) and bones rather fine.
25. Hind legs—squarely placed; not too close together when viewed from behind.
26. Hind legs—not too loose in walking.
27. Hoofs—small.
28. Udder—full in form; *i. e.*, well in line with the belly.
29. Udder—well up behind.
30. Teats—largely and squarely placed, behind well apart.
31. Milk veins—very prominent.
32. Growth.
33. General appearance.
34. Condition.

Perfection, thirty-four points.

The Bee-Keeping Industry.

While it is very easy to write of the pleasures and profits of bee-keeping, amateurs especially must not expect to acquire great and immediate wealth from this source without a corresponding outlay of capital, and above all, experience. That "there's millions in it," is perfectly true, but it requires care, untiring industry and close study to be able to secure these millions.

There are probably 70,000 persons in this country who keep more or less bees, but if all the time and money expended were closely accounted for, we doubt if more than three-fourths of the number would find they realized a net profit of ten per cent. on their investment. There are some notable exceptions to this, it is true, but the men who secure the enormous pro-

fits are men who devote their time and attention strictly to the business, and do not expect the bees to take entire care of themselves, and then yield a profit. It is said that the income of J. S. Harbison, the great California honey magnate, derived from the sale of surplus honey, is more than $25,000 per annum, over and above all expenses. In the State of New York, Capt. Hetherington, of Cherry Valley, sold last year fifty-eight thousand pounds from his own apiaries. Adam Grim, of Jefferson, Wis., as much more. But perhaps a better idea will be conveyed by more general figures. The seventy thousand bee-keepers of this country own, on an average, a little more than twenty-eight hives apiece, or in round numbers, two millions in all. Twenty-two pounds of honey to the hive is considered a reasonable yield of surplus, worth twenty-five cents per pound, or $8,800,000 for the crop. The wax produced is estimated at twenty million pounds, worth at least $6,000,000, making the grand total revenue presented us by our industrious little friends, annually, $14,800,000. We annually export $1,200,000 worth of honey, and $700,000 of beeswax.

So much for what our honey crop is. That it may be increased almost indefinitely, we have no doubt, but it is a business which requires as much care to insure success, as is needed in any other business.

We would recommend to every farmer or gardener, to keep a few bees; but we would caution him that unless he will watch and study and care for them, they will prove a dead loss. Rightly cared for, they will make a very desirable addition to his income.—*Practical Farmer.*

A Large Poultry Yard.

The *Fanciers' Journal* gives this account of the largest poultry establishment in this country: "It is at Greene, Chenango county, N. Y., and is kept by Mr. A. B. Robeson. He has 6,000 ducks, 4,000 turkeys, and 1,200 hens. They consume daily sixty bushels of corn, two barrels of meal, two barrels of potatoes, and a quantity of charcoal. The meal, potatoes and charcoal are boiled together and form a pudding, which is fed warm. He has commenced to kill them off, and employs fifteen hands to pick, two to kill, and one to carry away and pack on racks until frozen. Then they are ready to pack for shipping. He also employs two men to cook the feed and feed them. He has twelve buildings for his fowls, from one to two hundred feet long, fourteen feet wide, and seven feet under the eaves, with a door in each end of them.

"Mr. Robeson bought most of his ducks in the west, and had them shipped in crates—three dozen in a crate. He also has an egg house, 35 by 50 feet, and four stories high. The outside is eighteen inches thick, and built of cut stone, laid in mortar, boarded up on the inside and filled in between the outside and inside wall with sawdust, it taking three thousand bushels. Mr. Robeson claims that he can keep eggs any length of time in this building. He also keeps the poultry that he is now dressing until next May or June, which he sells at eighteen to twenty-five cents per pound, and it cannot be told from fresh dressed poultry. He gets ten cents per pound for turkeys' feathers, twelve for hens', and sixty-five for ducks'. He says there is money in poultry, and he thinks he can make out of his 6,000 ducks enough to pay for his egg house, which cost $7,000. He intends to keep a great many more next season, and has agents all over the country buying up poultry and eggs.

How to Get Eggs in Winter.

The *American Agriculturist*, answering this question, says: "With a warm shelter and suitable food, pullets that begin to lay in the fall will continue to lay through the winter. It is mainly a question of feed. The staple feed is Indian corn, because it is the most plentiful and the most convenient. It furnishes plenty of fat, and keeps up the heat of the fowls, but is poor in albumen and the phosphates. They want a variety of grains and vegetables, and, to do their best, one feed daily of warm cooked meal and vegetables. Most farmers have milk, and if this can be added it will be all they need. Butchers' scrap cake is good, and may safely be kept in the poultry yard where the fowls can help themselves at pleasure. Boiled potatoes or turnips, mashed and mixed with Indian meal, make an excellent feed for laying hens. Fowls are particularly fond of cabbages and turnips at all stages of their growth, and eat them raw greedily every day, if they can get them. We have found so good results from feeding cabbages to laying hens, that we always lay in a large supply for winter. Refuse from the butchers, and offal from the fish market, also furnish good material for making eggs. These are accessible to most villagers, and can be had at small cost. A hen is only a machine for producing eggs. If you want the finished product you must put the raw material into the hopper. It should not be forgotten that there is a liberal grinding going on in the gizzard, and the laying bird should have free access to gravel with sharp grit, broken oyster and clam shells, which assist in reducing the grains and forming egg-shells. With the plentiful supply of egg-producing food hens will lay well in winter, when eggs bring the highest price."

Small Potatoes for Seed.

Says a correspondent: I have made an experiment the past season, the result of which, I think, explodes the theory that small potatoes for seed will only return a small crop of small potatoes. Cut seed planted under our burning July sun is sure to rot, while the use of whole potatoes involves considerable expense. A square of ground containing 2,500 square feet, from which a crop of cauliflower had recently been taken, was prepared and planted, July 12th, with white Peachblow culls. Few of them, if any, were larger than pigeon eggs. As is always the case here, some of them failed to grow, say five per cent. The plants began to show themselves early in August, at which time heavy rains set in and so continually saturated the soil that no working was possible until September 5th. Then a plow was run through the rows and a dressing out with a hoe was given them. Soon after the vines so covered the ground that further cultivation was impossible. The patch was harvested October 30th. The product was a fraction over twenty bushels of the finest potatoes ever grown in this section. With the exception of two and a half pecks of small potatoes, about the size of the seed sown, all are large. Fully one-half average one pound each in weight, and the remainder are of full marketable size and fine appearance. This yield was at the rate of 350 bushels per acre. A heavy coat of barnyard manure was applied to the previous crop, but no additional fertilizer was used.

Care of Lambs.

Sheep should be closely watched in order that the lambs may be taken proper care of and receive any necessary assistance immediately after birth. More lambs die when less than twelve hours old than at any other time, and if the farmer wishes to increase the number of his sheep, he must watch his flock very closely until the lambing season is past. Unless the new born lambs receive prompt attention there is danger that they will get chilled and live but a very short time. If the sheep have been well fed, and are kept in a warm place, almost every lamb can be saved, and without any great amount of trouble. A few minutes' attention at the right time may save the life of a lamb, which in a few months, and a small expense, can be made worth several dollars. At lambing time the sheep should be closely watched, and if any lambs are dropped which are unable to take care of themselves, they should be assisted. After they have sucked a few times they will generally get along very well. Not only should the sheep be looked to during the day, but also in the evening, as feeble lambs which are dropped at that time will not be likely to live until morning. It is certainly very poor policy to let a lamb die for want of the little care which would save its life.

Correctives in Feeding Poultry.

Two admirable correctives, for use in poultry feeding, may be found in charcoal and Cayenne pepper, judiciously provided and not given too often, to both young and old fowls. The best way to administer these condiments efficaciously, is to pulverize the charcoal to a powder and mix it with soft food. In this shape the birds eat it freely, and it is a grand purifier of the system. The Cayenne should be procured of the best quality (always the cheapest in the end), and a tablespoonful should be thoroughly mixed through a pail of water and given them to drink. This last method is an admirable preventive of gapes in chickens, and for older fowls it is found an excellent thing in cold or chilly weather.

Neither of these aids should be used oftener than every other day in the week, and only for a week or two at a time, any way to be effective, but if managed with discretion they are more valuable, as a common preventive to disease, and a corrector to the internal composition of domestic poultry, than all the medicines that can be given fowls after they once get sick. Both charcoal and Cayenne can thus be easily very used, and after a little while, it will be found that the chickens become fond of this change for their benefit.—*Fanciers' Journal.*

A Profitable Experiment.

A correspondent of *The Poultry Nation* having become thoroughly disgusted with the purchase of stale and spoiled eggs, resolved to keep hens enough to supply the family with fresh ones, and with this object in view he fenced off a small yard, 30x50 feet, and in one corner he built a coop 8x10 feet, and 8 feet high in front and 6 in the rear. It faced the south and east. One New Year's day, 1874, he went to the market and purchased eight hens and one rooster for $4.30. Taking them home and putting them in the coop with the run of the yard, he fed them all the wheat screenings they would eat and what water they wanted. They commenced to lay at once, and he kept a correct account of all the eggs, also the cost of feed. In January he got 31 eggs; February, 91; March, 129; April, 122; May, 98; June, 92; July, 46; August, 54; September, 19; October, 13; November, 20; December, 29; total number of eggs for the year, 744—62 dozen. He also raised 43 chickens. 62 dozen eggs, at 20 cents, $12.40; 43 chickens, at 50 cents, $21.50; 9 old fowls, $4.30; total $38.20. Feed for the year, $18.44; 9 old fowls, $4.30; total, $22.74. Profit, $15.46.

LITERARY NOTICES.

The London Garden, published by Wm. Robinson, London, is the most complete weekly epitome of horticulture and pomological facts published in either continent. Each issue now contains a full-page colored plate, executed in the highest style of the art. Price, $8.66, in gold.

W. A. Burpee's Cataloque of High-Class Land and Water Fowls.—A little 12 mo. illustrated pamphlet of 20 pages. It contains pictures of fifteen of the leading varieties of chickens, ducks and pigeons, and brief descriptions or notices of over forty varieties. In the matter of "Fancy Pigeons" we "outside barbarians" are able to form very meager opinions from the names alone. We may instance Pouters, Carriers, Barbs, Owls, Turbits, Jacobins, Archangels, Fantails, Bald-head Tumblers, Short-faced Tumblers, Inside Tumblers, Outside Tumblers, Booted Tumblers, Big-eye Tumblers, Black-crested Tumblers, Magpies, Swallows, Nuns, Moor-caps, Priests, Quakers, Trumpeters, Runts, Dutchies, Homing Antwerps, Short-faced Shows, and many others "too numerous to mention."

Of course, we are too verdant to appreciate the highest aims of "colombo-culture," but we presume there must be something useful in it. Things are not to be valued according to the appreciations of any one set of men, or we should have a very prosy and onesided world. *Variety* is the spice of the life of anything, and especially in gallinoeulture, columboculture, or any other kind of culture; and any one who desires to engage in them, to any extent, will do well to consult this little catalogue, and then call upon Mr. Burpee personally, without going any farther, or address him at Philadelphia.

Pacific Rural Press.—This is the title of a royal quarto journal, published by Dewey & Co., San Francisco, California, in the interest of agriculture, horticulture, and miscellaneous affairs. It has sixteen pages of four columns each, well filled with appropriate reading matter on a variety of subjects; and, like every other thing of that far-off region, it is gotten up on a large and most magnificent scale, as to quantity and quality. The embellishments are superb, from its ornamental head down to its last advertisement. On the first page is a fine illustration, the "New Grange Headquarters," a beautiful three-story building, built of brick and cut stone, in the highest architectural style of art, and very substantial. Although its columns are replete with choice literary and domestic matter, yet it devotes a large space to the interests of the *Patrons of Husbandry*, both statistical, local and historical—indeed the magnificent building it illustrates is covered with such signs as the "Grangers' Bank," "Farmers' Mutual Fire Insurance," "State Grange," "Granger's Business Association," "Grange Buildings," "Country E. Association," &c., &c., indicating that the Grange in the "Golden State," has attained a *status* that is *seen and felt*. We almost envy the public spirit that can produce such evidences of progress, and could heartily wish that the farmers of Lancaster county might be infused with a little of the enterprise that distinguishes the Pacific coast, in its institutions and its enterprises.

Lepidoptera, Rhopaloceres and Heteroceres.—Indigenous and exotic, with descriptions and colored illustrations, by Herman Strecker. Reading, Pa. 1876. Quarterly 50 cents per part. This is a quarto serial, commenced January, 1872, and is issued as above, and in plain English is simply an illustrated and descriptive history of butterflies and moths. It is published at such a low price, compared with other scientific works on the same subject, that every institution of science, literature and learning, ought to patronize it, if not every literary man, who pays any attention at all to the subject of natural history, and especially to that of entomology. The author and publisher of this work, is, in some respects, an extraordinary man. We have heard of him almost from his very boyhood, and have corresponded with him, but never have had the pleasure of a personal interview. *Lepidopterology* seems to have become a second nature to him, and he cannot forgo it, any more than a duck can water. His collection is enriched by 50,000 specimens of native and foreign butterflies and moths, and comparatively speaking he is still a *young* man. We have received part 13 of his work, issued in January last, and in our opinion it excels any that he previously issued, and they are all good, containing 18 colored figures and descriptions of that many species of the family Sphingidæ (Humming-Bird and Hawk Moths). Mr. Strecker makes all his drawings from nature, lithographs them himself, and colors them by his own hands. But this is not all; he writes out all his own descriptions, giving their bibliography, and sets up his own letter press. All that is done outside of his own manipulations is the printing. Under these circumstances the representations must be as accurate as the objects before him, or as nearly so as human skill can make them. He also occasionally finds time to step aside and note what is going on elsewhere in the world of entomological authorship, and to express opinions that are sometimes anything but complimentary to the "notions" of others, in which he exhibits originality, or independence at least.

OUR FENCE CORNERS.

THE WORLD'S FAIR, 1876.

Columbia, puzzled what she should display
Of time home-made on her Centennial day,
Asked Brother Jonathan; he scratched his head,
Whittled a while reflectively, and said,
"Your own invention and own making, too?
Why, any child could tell you what to do:
Show 'em your Civil Service, and explain
How all men's loss is everybody's gain;
Show your new patent to increase your rents
By paying quarters for collecting cents;
Show your short cut to cure financial ills,
By making paper collars current bills;
Show your new bleaching process, cheap and brief,
To wit: a jury chosen by the thief;
Show your State Legislatures; show your Rings;
And challenge Europe to produce such things
As high officials sitting half in sight
To share the plunder and to fix things right;
If that don't fetch her, why, you only need
To show your latest style in martyrs—Tweed:
She'll find it hard to hide her spiteful tears
At such advance in one poor hundred years."

—*James Russell Lowell, in the Nation.*

1776 AND 1876.—"Look at this picture, now at that." The following contrast (the first lines by Dr. Franklin) will be read with interest:

1776.

"Farmers at the plow,
Wife milking the cow,
Daughter spinning yarn,
Son thrashing in the barn,
All happy to a charm."

1876.

Farmer gone to a show,
Daughter at her piano,
Madame gayly dressed in satin,
All the boys learning latin,
With a mortgage on the farm.

LOOKING FORWARD.—One hundred years from now, have you ever thought of it? When you see the fading leaf, the opening bud, or the perfect blossom, did you ever think who will look upon the flowers that will bloom, the buds that will unfold, or the leaves that will fall and wither one hundred years from now! Or, when you have walked the streets, meeting the people that pass and repass like the wave of the ocean, did you ever think who will walk these streets an hundred years from now? Such thoughts are not pleasant, yet it is well to cherish them, that we may realize more fully the fleeting nature of earthly things. Yes, they are sad thoughts! yet the pulse will cease its beating, and decay must set its seal on the perishing of time and years. We know that each passing season bears with its many changes; but leaves are not all that fade, or the voice of music all that passes away.

A SOUTHAMPTON boy, twelve years old, told his brother that he wished to see his mother, who had been dead eight years; and that the end of the world would come in September. He then bequeathed his books to his brother, and took a dose of carbolic acid, which killed him instantly.

MARK TWAIN said, when he was proposed for Mayor for Hartford: "Well, all right. Who is the other fellow? Do you think the Common Council will elect me? And, by the way, which party do I belong to?"

A MAN in Weston (Missouri) fired in the dark at a man who was stealing his corn, and the next day the county sheriff was around with his arm in a sling.

A PENNSYLVANIA couple celebrated their wooden wedding last fall, and have been using no other fuel than clothes pins and potato-mashers ever since.

MR. CROW, a Nebraska lawyer, has just gained his first cause, and expects henceforth to carry on the business famously.—*Alta Californian.*

A YOUNG man who was recently married to a girl after proposing to her eighteen times, now wishes that he hadn't asked her but seventeen times.

AN old Indian who had witnessed the effect of whisky for many years, said a barrel labeled "whisky" contained a thousand songs and fifty fights.

A YOUNG lady, intending to paint her cheeks with rouge, put all the paint on her nose, and did not discover her error until requested to sign "the pledge!"

THE importation of kerosene into Great Britain is diminishing. The value imported last year was only £781,282, as against £1,002,541 in 1874.

IT is remarked that the men who tell the best stories generally, tell old ones.

THE best kind of school-tax—Syntax.—*New York Commercial Advertiser.*

AN Oregon girl kills deer and makes gloves of their skin.

To the man with a mother-in-law, all things are relative.

TREES

We call attention to our immense Stock (600 acres) of
Fruit Trees, Standard and Dwarf.
Small Fruits, Grapes, Currants, Raspberries, &c.
Ornamental Trees and Shrubs, deciduous and evergreen.
Roses a specialty—all the finest sorts.
Green and Hot House Plants, including best novelties Small parcels forwarded by mail when desired.
Prompt attention given to all orders and inquiries.
Descriptive and Illustrated priced Catalogues sent prepaid on receipt of stamps, as follows:
No. **1.** Fruits (new ed., with col'd plate) **15** cts.
No. **2.** Ornamental Trees, with col'd plate of Roses, **25**c.
No. **3.** Greenhouse, **Free.** No. **4.** Wholesale, **Free.**
No. **5. List** of **New Roses** for 1876, **Free.**
Nos. **1** and **2**—Neatly bound together, forming an interesting and valuable book for reference,
Address, **50** cts. by mail, post paid.

ELLWANGER & BARRY, Rochester, N. Y.
8-1-3m

GOOD SEEDS, GROWN WITH CARE, FROM Selected Stocks, always pay. Try mine. Catalogue free.
J. R. V. HAWKINS, Goshen, N. Y.

FARMERS, IMPROVE YOUR POULTRY STOCK!

EGGS FOR HATCHING

Of the following varieties, at prices to suit the times, viz.:

Dark Brahmas, Partridge Cochins, White Cochins, Plymouth Rocks, S. S. Hamburgs, Brown Leghorns, Amer. Dominiques and Houdans. Address,

8-3-2m] **HAYDN H. TSHUDY, Litiz, Pa.**

1776. 1876.

Centennial Medallions!

As MEMENTOES, SOUVENIRS,
and ORNAMENTS

FOR THE PEOPLE.

As LASTING ADVERTISEMENTS

FOR BUSINESS HOUSES.

MANUFACTURED OF ALBATA PLATE,
Equal in wear and color to solid

SILVER OR GOLD,

Presentiog beautiful DESIGNS IN RELIEF, commemorsting the one hundredth anniversary of our nation's birth. Size, 1⅝ inches in diameter. Send for circular.

Price for the Silver, 50 cents each.
" " Gold, 75 " "

Usual discount to the trade.

AGENTS WANTED.

Immense profits. Sells at sight. Extensive fields for enterprise. Will be sent to any part of the country by mail, postpaid, upon the receipt of price

U. S. Medallion Co., P. O. Box 5270, N. Y.

WIMBLEDON
Long Range Breech Loading
Practice Pistol & Targets.

SEVEN INCHES LONG.

Carries a ¼ inch ball with accuracy fifty feet, without powder or percussion. Brass barrel, hair trigger. For sale by dealers. By mail, free for 75 cents, with permanent ammunition for target practice indoors, and for sporting out of doors.

AGENTS WANTED.
A. A. GRAHAM, 67 Liberty Street, New York
8-3-6m

E. N. FRESHMAN & BROS.,
ADVERTISING AGENTS,
186 W. Fourth St., Cincinnati, O.,
Are authorized to contract for advertising in this paper.
Estimates furnished free. [tf] Send for Circular.

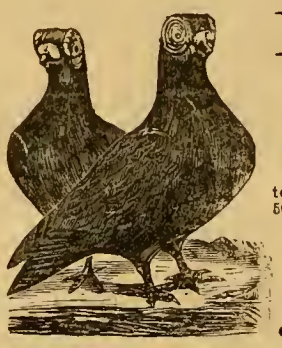
SPECIAL NOTICE TO FARMERS!

Improve Your Poultry!

THIS can be done at a comparatively small outlay by purchasing one or more sittings of eggs for hatching from choice thoroughbred and imported fowls. We keep a very select stock of the leading varieties of Poultry: Brahmas, Cochins, Leghorns, Houdans, Game, Hamburgs, Plymouth Rocks, Dorkings, etc. Mammoth Bronze, White, Blue and Black Turkeys, Toulouse, Embden and Hong Kong Geese, all breeds of Ducks, etc. We breed each variety on a separate farm—thus can guarantee purity. Descriptive Circular free.

Handsomely Illustrated Descriptive Priced Catalogue of Poultry, etc., 10 cts., Post-paid.

ALSO BREEDER AND SHIPPER OF AND DEALER IN



BLOODED CATTLE.

Southdown and Cotswold Sheep, Chester White, Berkshire, Yorkshire and Essex Swine, Sporting and Thoroughbred Dogs.

Descriptive Circular free! All stock boxed free, and safe arrival guaranteed. No inferior stock sold. Every farmer, and all interested in pigeons, should send 50 cents for a copy of our new illustrated treatise—

The Pigeon Loft: How to Furnish and Manage It.

EXTRA FINE SEED CORN—Sample, 6 cts.

Circulars free. **Correspondence Solicited**

ADDRESS, W. ATLEE BURPEE, Philadelphia, Pa.

$12 a day at Home. Agents wanted. Outfit and terms free. TRUE & CO., Augusta, Maine. [8-3-1y

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TREES FOR FRUIT And Ornament.

500 ACRES OF TREES

At Wholesale and Retail.

Pear, Apples, Cherries, Quinces.
Peaches, Plums and Small Fruits.
New and Rare Ornamental Trees and Shrubs.
Evergreens, large quantities, large variety, cheap.
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CLEMATIS JACKMANNI.—Hardy and Perpetual, blooms profusely until frozen up.
PERPETUAL WHITE CLEMATIS.—15 Sorts. We have over 70 varieties of Clematis, in many shades of color, from dark rich purple to pure white—strong plants, safely sent by mail.
ROSES. Moss. Tea, Climbing and Perpetual.
Small Packages sent safely by Mail and Express.
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T. C. MAXWELL & BROS., Geneva, N. Y.
[8-2-2m

SEED POTATOES!

$125

IN PREMIUMS

WILL be divided among the five successful competitors who shall produce the largest quantity from one pound of the Mahopac Seedling, subject to conditions named in my Catalogue.

MAHOPAC SEEDLING—the most productive of 150 varieties tested, quality fine, free from rot, per pound, $1; 3 pound to one address, $2—by mail prepaid, by express or freight, charges paid by the purchaser; 1 peck, $4; 1 bush., $15; 1 bbl., $30. Also Ruby, Alpha, Snowflake, and Eureka. For full description and price list see my Catalogue, containing the largest and **best** collection of **new** and **choice Seed Potatoes** ever offered. Prices low.

New and desirable Vegetable Seeds. Dreer's Improved Lima Bean, per packet, 20c.; Egyptian Turnip Beet, packet, 10c.; Henderson's Early Summer Cabbage, packet, 25c.; Early Wyman Cabbage, packet, 15c.; Earliest Dwarf Erfurt Cauliflower, packet, 50c.; Triumph Sweet Corn, packet, 10c.; Peerless Cucumber, 15c.; Hanson Lettuce, packet, 15c.; New Egyptian Sprouting Lettuce, packet, 25c.; Russian-American Water Melon, packet, 20c.; New Queen Onion, 10c.; McLean's Blue Peter Pea, packet, 15c.; Butman Squash, packet, 15c.; Conqueror Tomato, package, 15c.; Golden Trophy Tomato, packet, 10c.; Rose Mammoth Sweet Pepper, packet, 20c.; French Breakfast Raddish, packet, 5c.; Lane's Improved Imperial Sugar Beet, the best for feeding stock, ½ lb., 25c.; 1 lb., 90c.; 5 lbs.; $4.00; Early Red Globe Onion, early productive and handsome, ½ lb., 75c.; 1 lb., $2.50; 5 lbs., $11.00; Ex Early Red Onion, the earliest, very fine, ½ lb., 90c.; 1 lb., $3.00; 5 lbs., $14.00.

The above will be mailed at prices quoted.

For full description of the above, and all the **new** and **best** varieties of **strictly fine Garden Seeds,** carefully grown from selected stocks, see my Illustrated Catalogue, sent free to all applicants. Do not fail to see it.

J. R. V. HAWKINS,
GOSHEN, Orange Co., N. Y.

$5 to $20 per day at home. Samples worth $1 free. STINSON & CO., Portland, Maine.

SEED POTATOES sent to order as follows: *Eureka, Acme, Snowflake, and Brownell's Beauty,* 50c. per lb., $1.00 per 3 lbs., by mail; $1.10 per pk.; $1.75 per ½ bush. *Eureka and Snowflake,* $3.00 per bush.; $5.50 per bbl.; *Ice Cream, Early Vermont, Compton's Surprise, Carpenter's Seedling, and Excelsiors,* 40c. per lb., 80c. per 3 lbs., by mail; 60c. per pk., $1 per ½ bu., $1.85 per bu., and $3.25 per bbl., by express or freight as desired. None sent but genuine. Stock direct from the originators. Send no money in letters unless registered. Address LA FAYETTE CASSLER & CO, Box [illegible], Ohio. [8-3-1t

Name this paper when you write.

NEW POTATOES!

$250 IN PREMIUMS to Growers! Two New Varieties sent gratis, prepaid. Circular free to all applicants. D. A. COMPTON, Hawley, Pa. [2t

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AGENTS WANTED!

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Struck in solid Albata Plate, equal in appearance, wear and color to

SOLID SILVER OR GOLD,

Presenting a large variety of beautiful ***designs in relief.***

These Medallions are larger than a Silver Trade Dollar, being 1⅝ inches in diameter, handsomely put up, and sell readily at sight.

The most valuable Souvenirs and Mementoes ever issued.

A complete outfit of magnificent samples for agents, in velvet-lined Morocco case—including the Bust of

"GEORGE WASHINGTON," GRAND ENTRANCE INTERNATIONAL EXHIBITION, MEMORIAL HALL, (ART GALLERY) HORTICULTURAL HALL, MAIN BUILDING, and the grand representation of the SIGNING OF THE DECLARATION OF INDEPENDENCE,

(designed by Trumbull), in gilt, sent by mail on receipt of draft or Post Office order for $3.50, or will ship by express C. O. D. upon receipt of *express charges.* Agents' Circular and Price List and one sample sent upon receipt of 50 cents. Immense profits. Sells at sight. Extensive fields for enterprise. Address all communications

U. S. MEDALLION CO.,
P. O. Box 5270. **212 Broadway, N. Y.**

SEND 25c. to G. P. ROWELL & CO., New York, for Pamphlet of 100 pages, containing lists of 3,000 newspapers, and estimates showing cost of advertising.

$125.00 in CASH PRMIUMS.

For particulars see my Illustrated Catalogue for 1876, containing all the new and best varieties of fresh, true and reliable Garden Seeds, carefully grown from fine selected stocks, and the largest and best collection of Choice Seed Potatoes ever offered. Sent free to all applicants. Do not fail to see it.

J. R. V. HAWKINS,
GOSHEN, N. Y.

$1 a Year {To subscribers in the county.} SINGLE COPIES 10 CENTS. {To subscribers out of the county.} $1.25.

Prof. S. S. RATHVON, Editor. LANCASTER, APRIL 15, 1876. PEARSOL & GEIST, Publishers.

CONTENTS OF THIS NUMBER.

THE CENTENNIAL EXHIBITION.

Special Displays.

Just before going to press we received circulars from Director-General Goshorn and and Burnet Landreth, Chief of the Bureau of Agriculture, containing the following information relative to the great International Exhibition, which will open in Fairmount Park on the 10th of next month:

FRUITS AND VEGETABLES.

The Centennial Commission are erecting a special annex for the exhibition of fruits; the dimensions of the structure, situated on the east of the Agricultural Building, and connected with it by a covered way, are one hundred and eighty by two hundred feet, affording room for the display of eight thousand dishes of fruit at periods of special displays. Although the exhibition of pomological products will extend over the entire term of the Exhibition, affording most marked manifestation of the wide range of our soils and climates, still there will be certain periods especially designated for the display of particular fruits, which have especial seasons, under the influences that more immediately pertain to the States near to Pennsylvania, and which, from their proximity to the point of display, will afford the material for large and expressive exhibits.

The periods decided upon for these special displays are as follows, though any of the fruits enumerated will be received for exhibition either preceding or subsequent to these dates:

Pomological products, - -	May 16 to 24.
Strawberries, - - -	June 7 to 15.
Raspberries and Blackberries, -	July 3 to 8.
Southern pomological products,	July 18 to 22.
Melons, - - - - - -	Aug. 22 to 26.
Peaches, - - - - -	Sept. 4 to 9.
Northern pomological products,	Sept. 11 to 16.
Nuts, - - - - -	Oct. 23 to Nov. 1.

The Pomological annex will also be used for the exhibition of vegetables, continuously and at the stated dates of June 20 to 24 for early summer vegetables, Sept. 19 to 23 for autumn vegetables, and Oct. 2 to 7 for potatoes and feeding roots.

Tables and dishes for both fruits and vegetables will be furnished by the Commission free of charge, producers being simply requested to pay the charges for transportation.

You are respectfully requested to advance the display of fruits and vegetables as much as possible, both at terms of stated displays and at all intermediate dates.

DISPLAY OF FISH IN AQUARIA.

The Centennial Commission has provided thirty aquaria for the display of the fish of our rivers, lakes and seas. The fresh and salt water will be of about equal quantities, the aggregate approximating to fifteen thousand gallons. Full preparations have been made for thorough filteration and aeration, and, when necessary, for refrigeration. The expenses attendant upon the fish display will be assumed by the Centennial Commission, and it is expected that fish will be contributed by the various State Fish Commissions, by associations, and by individuals interested in fish culture. Parties so desiring may exhibit fish in tanks of their own contribution, the care of which will be gratuitously assumed by the Commission. In addition to the display of living fish will be exhibited the processes of hatching fish, and a full series of all the apparatus used in hatching and transporting roe and young fish.

Those who are in a condition to contribute rare fish to the display will receive all necessary information by addressing Burnet Landreth, Chief of Bureau of Agriculture.

Special Stated Displays.

In addition to the foregoing, there will be stated displays, under their respective dates, as follows:

AGRICULTURAL PRODUCTS.

Early Grass Butter and Cheese, -	June 13 to 17.
Honey, - - - - - - -	June 20 to 24.
Cereals, - - - - - - -	Sept. 25 to 30.
Autumn Butter and Cheese, -	Oct. 17 to 21.
Autumn Honey and Wax, -	Oct. 23 to Nov. 1.

FIELD TRIALS.

Mowing Machines, Tedders, and Hay Rakes, - - - - - -	June 15 to 30.
Reaping Machines, - - - -	July 5 to 15.

LIVE STOCK.

Horses, - - - - - - -	Sept. 1 to 14.
Dogs, - - - - - - -	Sept. 1 to 8.
Neat Cattle, - - - - -	Sept. 21 to Oct. 4.
Sheep, - - - - - - -	Oct. 10 to 18.
Swine, - - - - - - -	Oct. 10 to 18.
Poultry, - - - -	Oct. 27 to Nov. 6.

The above dates may be favorable for the assembling in Philadelphia of Societies and Associations interested in the specialties above enumerated. Applications for entry may be now made, on forms which will be supplied by the Chief of Bureau.

THE LANCASTER FARMER.

The Lancaster Farmer has now completed its seventh year—the last having been under the auspices of the undersigned as publishers. When we assumed the responsibility of the publication one year ago, it was with a determination to make such improvements during the year as would place the Farmers' Organ of this great agricultural county in the very front rank of publications of its class. That we have done so, our readers will bear cheerful testimony. But our work of improvement is only fairly begun. We propose to make the volume for the Centennial year still more interesting and valuable than its predecessor for 1875. In this, however, we need the co-operation of every friend of the enterprise. To make it a success, every one who now reads The Farmer should at once send us at least one new subscriber.

The contributions of our able editor, Prof. Rathvon, on subjects connected with the science of farming, and particularly that specialty of which he is so thoroughly a master—entomological science—some knowledge of which has become a necessity to the successful farmer, are alone worth much more than the price of this publication.

The Farmer will be published on the 15th of every month, printed on good paper with clear type, in convenient form for reading and binding, and mailed to subscribers on the following

TERMS:

To subscribers residing within the county—

One copy, one year, - - - - - -	$1.00
Six copies, one year, - - - - - -	5.00
Ten Copies, one year, - - - - - -	7.50

To subscribers outside of Lancaster county, including postage pre-paid by the publishers:

One copy, one year, - - - - - -	$1.25
Five copies, one year, - - - - - -	5.00

All subscriptions will commence with the January number unless otherwise ordered.

All communications intended for publication should be addressed to the Editor, and, to secure insertion, should be in his hands by the first of the month of publication.

All business letters, containing subscriptions and advertisements, should be addressed to the publishers.

OUR FENCE CORNERS

VICK ON POETRY.

James Vick, the great florist and seedsman, of Rochester, gets off some good things in his *Floral Guide*, and the following on correspondence, poetry and poets is one of his best. Its point will be better appreciated when we state that Vick is an old printer, although no longer "too poor to indulge in such luxuries as letter paper :"

OUR CORRESPONDENCE : We like to look over a basket of letters from correspondents in all parts of the world—from the missionary in India or Palestine, the merchant in China, and the wife of a California miner. It is a pleasure and not a task, and we can occasionally cull a useful fact, valuable to us and our readers. It is only the poetry that troubles us. In the first place, we are not much of a judge of poetry ; in the *second* place, we have no taste for common poetry, and what we get is *very* common. Once, in a fit of desperation, we thought we would publish one of the worst pieces we had on hand, just to show how we were afflicted, and to deter any one from sending us more poetry. Imagine our feelings, when, a few days after the issue of the number, we received a letter from a lady, stating that we might as well put our name to our poems, as we could not disguise our style.

We thought then we had done with poetry for ever. But we have relented. We have a poem now that is not common by any means. It came to us without name, except what is seen below, and that possibly is fictitious. It was composed by some editor, because it was written on printing paper, with a pencil, just as editors do, for they are generally too poor to indulge in such luxuries as letter paper. So we concluded to give it to our readers. It will be seen that the author possesses considerable historical knowledge :

MEDITATIONS IN A GARDEN.

BY CAUL I. FLOWER.

Of all the men within this wicked world (and, Goodness sakes, they're thick!)
There's none who knows a flowerier trick
Than Mister James (Rochester) Vick.

His parterres are with blooms so thick
That Babylon's gardens, built on brick,
Could never have looked one-half so slick
As Rochester Nurseries owned by Vick.

And that's the reason why the Dictionary we spelled, in times classic,
Says Nebuchadnezzar oft did lick
And kick
His men, and swear he'd send for Vick.

Those kings, you know, are terr-i-fic,
And oft with whips and cowhides flick
Their folks; and thrash with walking-stick
Their gardeners, 'cause they ain't like Vick.

When Adam said to Eve, "My chick!
The flowers in Eden are none too thick,"
She softly sighed in Hebraic,
"Dear Addy, let us send for Vick!"

And if they had, just in the nick
Of time—('tis best to do things quick.)
Poor Eve had had no need to pick
That apple, 'stead of flowers from Vick.

All this is gospel, sound as hickory. But as my muse is sick,
And time runs on with ceaseless tick
And click,
I think I'll send these lines to Vick.

A PATRON of a certain newspaper once said to the publisher : "Mr. Printer, how is it you never call on me for pay for your paper?" "Oh!" said the man of types, "we never ask a gentleman for money." "Indeed," replied the patron, "how do you manage to get along when they don't pay?" "Why," said the editor, "after a certain time we conclude that he is not a gentleman, and we ask him." "O!—ah!—yes!—I see! Mr. Editor please give me a receipt," and hands him the cash. "Make my name all right on your books."

Nursery Rhyme for the Chemical Child.

Sing a song of acids,
Base and alkali,
Four and twenty gases,
Baked into a pie ;
When the pie was opened,
Wonderful to say,
Oxygen and Nitrogen
Both flew away.

HORACE WALPOLE said this was the worst, that is, the best bull he ever read : "I hate that woman," said a gentleman, looking at a person who had been his nurse, "I hate her, for when I was a child she changed me at nurse. This was indeed a perplexing assertion ; but we have a similar instance recorded in the autobiography of an Irishman, who gravely informs us that he "ran away early in life from his father on discovering he was only his uncle."

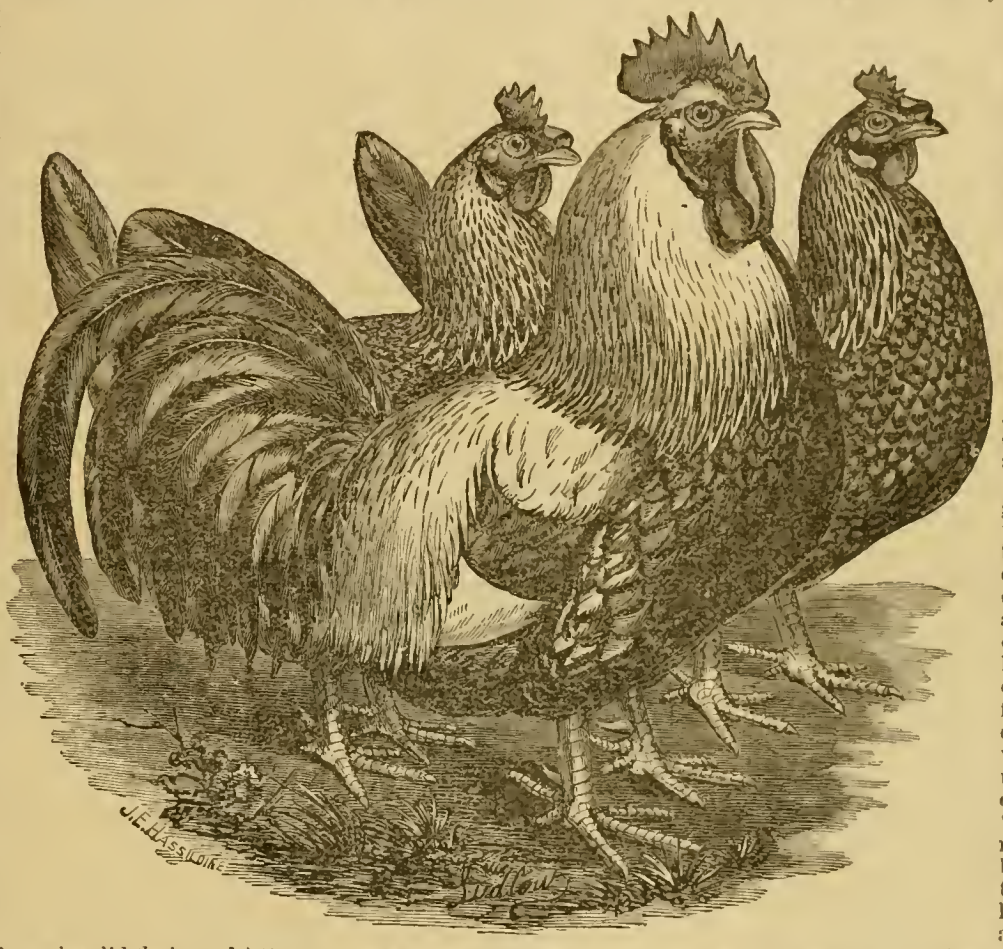
A MAN from Chicago, when asked by a Saratoga waiter what he would have for breakfast, replied, "Well, I rather guess I'll just flop my lip over a chicken."

The Lancaster Farmer.

Prof. S. S. RATHVON, Editor. LANCASTER, PA., APRIL, 1876. Vol. VIII. No. 4.

DORKINGS.

We give herewith a fine illustration of a first-class trio of Grey Dorkings. Dorkings are of three colorings or styles of markings—white, silver-grey and colored—as recognized in the American standard. But the standard is exceedingly loose in its notice of Colored Dorkings, making no markings, other than uniformity in the birds of one pen, requisite. One noticeable difference between White and Grey Dorkings is, that while the former must possess rose combs, square in front, firm and close-fitting, and evenly covered over with small points, terminating in a point behind, the latter are found both rose and single combed. Our cut represents a trio, all having single combs. It is hardly necessary to add, that for exhibition all the birds of one pen must be either rose or single-combed, and not one or two of each. White Dorkings are thought by some writers to be the older variety, as they formerly bred more universally true to the fifth toe. But the colored Dorkings are now well established in that particular. In general characteristics both white and colored fowls are the same—a good idea may be had from the accompanying illustration. The Dorking is pre-eminently an English fowl—a very old variety—and true to his nature, John Bull has, in this fowl, admirably catered to his tastes. For, as a table fowl, the Dorking is unsurpassed. This is their especial claim to the consideration of fanciers. They are indifferent, rather poor layers, but for the table they afford an extra portion of very fine meat, especially abundant in the parts most esteemed—the breast and wings. The Dorking is a heavy-bodied, well put-up fowl, long, broad back and close feathered. Thus what they lack in *apparent* size in comparison with Asiatics they make up in real, solid flesh, and of a quality very far ahead of either Brahmas or Cochins. We have sold birds of this breed to cross with Brahmas, and for such a purpose they are excellent, as they gain in hardiness, and perhaps somewhat in egg productiveness. Pure Dorkings will deteriorate if in-bred too closely. In our opinion no cross could be more profitable than one with the Leghorn, as thereby not only hardiness, but a very decided increase in the number of eggs would result.



It may, perhaps, be worthy of remark, that on no variety of fowl does the standard allow so many points for size—fifteen is the usual scale of one hundred.—*W. Atlee Burpee, Philadelphia, Pa.*

PRACTICAL MEN are steadily coming up to a due appreciation of THE FARMER as a valuable medium for transmitting the results of their experience.

DEW—ESPECIALLY HONEY-DEW.

It *is* not, and perhaps *cannot*, be clearly demonstrated that dew *falls* at all; and from the *fact* that dew is found as copiously on the undersides of the leaves of plants as on the uppersides, the conclusion reached is, that dew is an exhalation of moisture from the earth, and condenses near the earth, or at no very great distance from it; in short, that it does not "fall" from the clouds like rain. An inverted tub or box will often have as much dew under it as outside of it; and that is not all, for the lower side of the bottom thus inverted will also be covered with dew. Hoar-frost is nothing but the frozen exhalations of dew or moisture, and this covers the entire branches of trees and shrubbery, whether they are pendant, perpendicular, or horizontal, and this will be the case as well with branches lying on the ground, as with those on the trees; and flat stones, or pieces of board—unless too deeply imbedded in the earth—will often exhibit as much hoar-frost on the lower side as on the upper side. This seems to demonstrate that dew is an exhalation from the earth, or from the surface of vegetation, and that instead of "falling" it actually rises. This can be demonstrated by putting very cold water or ice in a bottle, a pitcher, or a tin can, on a warm day. The surrounding invisible vapor will become condensed in the form of dew, on the sides, the bottoms, and the tops of the containing vessels.

Honey-Dew.

The chief difficulty in reference to honey-dew has arisen from the attempts to reconcile the phenomena with a single cause. When we discover that there are different kinds of the substance generally called honey-dew, and that they are the effects of different causes, the difficulty will not seem so great, although the solution may not be satisfactory to all.

Honey-dew, from whatever source it may proceed is, by many writers on vegetable economy, regarded as a disease, and is placed in the category of *blight*, *smut*, *mildew*, *dropsy*, *gangrene*, *etiolation*, *suffocation*, and *consumption*. It is a sweet and clammy substance which exudes from, and coagulates on, the surface of the leaves of vegetables during hot weather, particularly on the leaves of the oak, and the beech. The leaves of the beech tree in particular, on the occurrence of an unfavorable wind become covered with a glutinous coating, similar in flavor to the fluid obtained from the trunk, and in every respect resembling the honey-dew of other plants. Last summer, on several occasions, we have had oak branches sent to us, the leaves of which were so thickly covered with this substance as to glue them together. It is well known that white oak and hickory trunks, when cut green and exposed to a hot sun for a time, will be covered with a honey-like saccharine substance, exuding from the pores of the wood at the ends, and this substance has the same taste as that which exudes from the leaves of those trees. Saccharine exudations are frequently found on the leaves of many plants, though not always distinguished by the name of honey-dew; which term only should be applied when the exudation is in such excess as to cause disease. If it is to be applied to all glutinous exudations whatever, then of course they must be all included under honey-dew, but they are not all saccharine, for the exudations from the buds, and young leaves of the "Silver Poplar," for instance, are resinous, and this is the same with *manna*, which exudes from the ash tree of Italy, as well as the "*Labdanum*," a gum resin, which is collected by beating the shrub that yields it, with leather thongs. It is also possible that these exudations may often occur without producing disease, for if it should happen to be washed off soon after its secretion, by heavy rains or heavy dews, the leaves would not suffer.

We have an orange tree which, on several occasions, became covered with honey-dew, and we discovered at the same time that it was seriously infested by the "orange scale insect," (*Coccus hesperidum*,) and since these have been all destroyed, we have not been troubled with honey-dew. But, there are species of *Aphis* which infest the tender branches of the apple, pear, cherry, plum, peach, roses, and indeed, nearly all kinds of vegetation, which deposit a saccharine substance on the leaves of the trees, shrubs and plants they infest, that usually goes by the name of honey-dew, and at one time, and by many persons, these insects were regarded as the chief, if not the *only* source of this substance. Whatever may be the origin of honey-dew, apart from that produced by *aphids*, nothing can shake

our belief that much, if not all, occurring on the leaves above named, is the secretions of *aphids*, or plant lice. We have seen them discharge it "a many a time and often" from the little tubular spines at the end—or near the end—of the upper side of the abdomen.

We do not, however, intend to insist, in this paper, that the spines aforesaid are the organs through which the saccharine fluid is ejected, because this has been disputed; and it has been alleged that the honey-dew is the natural excrementitious discharge of the *Aphid*, and that it is discharged from the usual anal orifice. Be that as it may, we have witnessed the discharge of honey-dew from aphids dozens of times, and have even caught it on small pieces of white paper held under them, and have also tasted its sweetness; and this, not of aphids only, but also of the orange *coccus*. Some vegetation yields proportionately more saccharine matter than others, and these species will supply the aphids with a larger proportion of honey-dew. The sap of what is called *succulent* vegetation, has a thinner and more aqueous constitution, and hence on such plants there will generally be less honey-dew than on those of the tree and shrub kind that contain more sugar. But there is another cause of the absence of this substance on some vegetation, and that cause is the presence of other honey eating insects, such as Bees, Wasps, Moths, Yellow-jackets, Hornets, Flies, but most especially of ants. These lap up the honey dew as fast as it is discharged by the Aphids, and it is even said, that when they do not discharge it rapidly enough to suit the demands of the ants, these little "Keepers" of the Aphids somehow stimuate a discharge of it by artificial means. From the fact that honey-dew is usually found on the upper surface of the leaves, it has been alleged that it falls down from far above, if not from the clouds. But when it is observed that the Aphids are usually on the underside of the leaves, or on the tender twigs and stems, and that they have the power of ejecting the dew a considerable distance from them, it will be readily perceived how it falls on the leaves below them. It is usually discharged in little globules which fall on the leaves in drops, and where the discharge is copious, these drops run into each other until the whole surface is sometimes covered with the liquid.

With these facts before us, we cannot assent to Mr. Noe's theory, although we are far from saying it is *impossible*, ; but, for the following reasons, we consider it very improbable. *Firstly*, if honey-dew is the condensation of the aroma or odor of flowers, how does it happen that this substance is usually present in greatest quantity long after the blooming and odoriferous season is over? Cherry trees, apple trees, plum trees, etc., most frequently only begin to show honey-dew after the young shoots have grown several inches, and when the fruit is already formed. *Secondly*, if honey-dew falls from a condensation of odor or aroma, how does it happen that it only falls upon the leaves of the trees and shrubs, and not on the grass and other vegetation aronnd them? *Thirdly*, if such, as has been suggested by Mr. N., is the cause of honey-dew, why is it that a beech, an oak or a willow may have abundance of it, and other contiguous trees and shrubbery be entirely free from it? and no fragrance or bloom of any kind be near them. It is true, that some trees during their flowering season secrete *nectar* so copiously that it sometimes runs from the flower-cups and falls on the leaves below them—such for instance as magnolias, dog-wood and the white poplar or tulip-tree; especially the last named. But this is not a condensation from a vapory condition, it is a liquid exudation or secretion. Some fragrant flowering plants—the white Peony, for instance—after the flower buds have become much swollen, secrete considerable quantities of a sweet mucus, and hence become infested by numbers of flies, ants, wasps and bees, to the great annoyance of anxious flower growers, and many other plants in the leaf and flower buds do the same, but this is an exudation. *Finally*, honey-dew—so-called—is either a normal or abnormal saccharine or resinous exudation from vegetation; or it is extracted, elaborated and discharged by insects, generally *Aphids* or *Cocci;* and either one or both of these causes may explain every case where it occurs, with reasonable satisfaction.

As touching the subject of condensation, from an abstract point of view we admit the bare *possibility* of Mr. N.'s theory; but at the same time we are constrained to place it in the category of *improbabilities*. Of course, the substance called honey-dew does not originate from *nothing*, and therefore must proceed from *something*. Scent, aroma, odor, perfume, fragrance, or whatever else we may call it, is a material substance, but one of the most imponderable of substances, and we opine it would be more difficult to condense it into as tangible a substance as honey-dew than it would be to condense carbon into a diamond. It is too refined, too ethereal, diffusive and volatile for condensation, without the aid of the most perfect and complicated machinery. It is said that when the bed chamber and drawers of the EMPRESS JOSEPHINE were ventilated forty years after she had occupied them, they were still as fragrant as they had been during her life time. No matter what the odor may be, it is still a highly refined material substance, and in theory may be resolved into its original form; but, if it may remain forty years etherealized in a confined apartment, the condensation of odor in the open air will hardly account for the presence of *honey-dew* or its *sweetness*.

WHERE DID THEY COME FROM?

No doubt this question often occurs to those who are possessed of reflective minds, and they would have given almost anything if they knew where "this, that, or t'other thing" originally came from.

Indeed, "Where did you come from?" naturally also involves the question, "Where are you going to?" because if we know precisely the origin, the latitude, and the native clime of a plant, we may also know where we would be justified in taking it to, with any prospect of success in its outdoor cultivation. No doubt the particular origin and the native country of many of our trees, shrubs and plants, are merely conjectural, but even that conjectural knowledge is more satisfactory than no knowledge at all. The qualifying, "it is said," is sometimes a great relief to us, and often assists us in "pointing" a paragraph, the responsibility of which we feel reluctant to assume. The following will illustrate the when and original whereabouts of a few subjects of the vegetable kingdom with which we may be familiar, but the origin and history of which we may not always be able to "lay our finger on" without some labor or expense.

The Travels of Plants.

Alexander brought rice from Persia to the Mediterranean, the Arabs carried it to Egypt, the Moors to Spain, the Spaniards to America. Lucullus brought the cherry tree (which takes its name from Cerasus, the city of Pontus, where he found it,) to Rome, as a trophy of his Mithridatic campaign; and 120 years later, or in A. D. 46, as Pliny tells us, it was carried to England. Cæsar is said to have given barley to both Germany and Britain. According to Strabo, wheat came originally from the banks of the Indus, but it had reached the Mediterranean before dawn of authentic history. Both barley and wheat came to the New World with its conquerors and colonists, and the maize which they found here soon went to Europe in exchange. It was known in England in less than fifty years after the discovery of America; it was introduced to the Mediterranean countries, by way of Spain, at the end of the sixteenth century, and the Venetians soon carried it to the Levant. Later it traveled up the Danube to Hungary, and gradually spread eastward to China. While it was thus invading the regions formerly devoted to rice, the latter, as we have said, was establishing itself in this country.

The sugar-cane, which, with its sweet product, was known to the Greeks and Romans only as a curiosity, seems to have been cultivated in India and China from the earliest times. Its introduction into Europe was one of the results of the crusades, and thence it was transplanted to Maderia, and early in the sixteenth century from that island to the West Indies. The original home of "King Cotton" was probably in Persia or India, though it is also mentioned in the early annals of Egypt, and had spread throughout Africa in very ancient times.

The potato was found in Peru and Chili by the first explorers of those countries, who soon carried it to Spain. It is said to have reached Burgundy in 1560, and Italy about the same time. It appears to have been brought from Virginia to Ireland by Hawkins, a slave trader, in 1565; and to England in 1585, by Drake, who presented some tubers to Gerard, who planted them in his garden in London, and described the plant in his *Herball;* and it was also introduced by Raleigh at about the same date. But it was slow to attract attention, and it was not till nearly a century later that it began to be much cultivated. In 1663 the Royal Society published rules for its culture, and from that time it rapidly gained favor. The Dutch carried it to the Cape of Good Hope in 1800, and thence it made its way to India.—*Journal of Chemistry.*

METEOROLOGY OF MARCH 1776—1876.

We have never made or recorded meteorological observations, simply for the reason that we have not had time and opportunity, since we have attached any importance to the subject. The following record of March 1876, and March a hundred years ago, illustrates in a rather remarkable degree the similarity of the two widely separated periods, and our readers can make the comparisons for themselves, as to details, in which they may be much more familiar than we are. We shall occasionally, during the Centennial year, endeavor to furnish our patrons with mental and intellectual food, of the "*old* and the *new*," just to show us how far and fast we are traveling, and what we have gathered on the way. Meteorology has assumed a mighty importance in this country, since the establishment of the "U. S. Signal Bureau," and the results are becoming every year more perfect, more satisfactory and wide-extended. Its results are now had in hand and are transmitted by telegraph and just here, we think, the "new" is just so far in advance of the "old." If every thing else that constitutes our stuff as a people was making the same progress it would stamp us as a progressive people.

Meteorological Diary, at Philadelphia, for March 1776.

Time 9 o'clock, A. M.

DAYS.	THERM.	WINDS.	WEATHER.
1	13	W.	Fair and windy.
2	25	W.	Fair.
3	36	S. W.	Foggy.
4	40	N. E.	Hazy.
5	47	S. W.	Misty.
6	47	W.	Flying clouds and windy.
7	40	S. W.	Cloudy. (Stormy prev. night.)
8	46	W.	Cloudy.
9	52	S. W.	Fair.
10	33	N. E.	Cloudy.
11	39	N. E.	Fair.
12	49	S. W.	Foggy.
13	35	N.	Fair.
14	40	N. W	Rain.
15	45	N. E.	Cloudy.
16	51	S. W.	Cloudy—rain in the night.
17	52	N. W.	Cloudy.
18	48	N. E.	Cloudy—rain in the night.
19	48	S. W.	Cloudy—rain preceding day.
20	41	W.	Fair.
21	32	N. W.	Fair and windy.
22	37	S. E.	Overcast.
23	39	W.	Fair—much rain previous day.
24	33	N. W.	Wind and flying clouds. Frost in the night.
25	32	N. W.	Overcast. Hard frost in the night.
26	38	N. W	Fair.
27	32	N. W.	Fair.
28	29	N. W	Fair.
29	36	S. W	Cloudy.
30	41	N. E.	Sleet.
31	37	N. W.	Cloudy—much rain the preceding day.

From Pennsylvania Magazine for April, 1776.

The average or mean temperature of the month of March, 1776, was 39⅛. There were eight days on which rains fell, but the quantity was not noted. Perhaps at that period no instrument was in use for that purpose. It may be interesting to some of our readers to compare 1876 and 1776, day for day, and then note the difference for themselves.

Meteorological Diary at Liberty Square, Lancaster County, Pa., for March, 1876.

DAYS.	THERMOMETER.			COURSE OF WINDS.		
	6 A. M.	2 P. M.	8 P. M.	6 A. M.	2 P. M.	8 P. M.
1	32	36	31	N.	S.	N. W.
2	22	26	32	N.	N. W.	N.
3	20	32	62	N.	N. W.	N.
4	28	26	44	W.	N.	S.
5	35	55	48	N.	S.	S.
6	38	69	56	S.	S.	S.
7	45	68	60	S.	S. W.	S.
8	50	47	38	S. W.	N.	N.
9	32	48	42	N.	N. E.	N.
10	43	51	42	N. E.	S.	S.
11	35	60	50	S. E.	S. E.	S.
12	35	48	52	S. E.	S. E.	S. E.
13	42	75	46	N. W.	N. W.	N.
14	30	25	35	N.	W.	N.
15	26	42	36	N. E.	N.	N.
16	34	36	43	S. E.	E.	S.
17	37	42	33	N.	S. W.	N.
18	27	26	19	N. W.	N.	N. W.
19	10	29	25	N.	N.	N.
20	22	32	35	S. E.	E.	E.
21	36	39	28	S. E.	N. W.	N. W.
22	25	40	32	W.	N. W.	W.
23	30	40	36	W.	W.	W.
24	30	42	36	W.	S.	S. E.
25	41	54	44	S.	N. by W.	N. W.
26	38	56	40	W.	W.	W.
27	36	43	40	W.	N. W.	N.
28	36	40	56	E.	E.	S.
29	42	40	35	W.	W.	W.
30	35	40	37	N. W.	N. W.	W.
13	35	46	38	N. W.	N. W.	S.

Observations made by Rachel S. Smith.

Average temperature for March, 1876—6 A. M., 33 5-10; 2 P. M., 43; 8 P. M., 36¾; the general average being about 38. Considering the different hours, when the temperature was recorded, there seems to be very little difference, in the average degrees, between March, 1876, and the same month in 1776. The mean temperature of a day, nor yet the mean direction of a wind, cannot be ascertained as correctly by a single observation made in the early part of it, as at different hours in it.

Hygrometrical Diary, at Philadelphia, for March, 1776.

DAYS.	HOURS.		HYGROM.	
	A. M.	P. M.	A. M.	P. M.
1	9	3	30	36
2	9	3	40	50
3	No observations made.			
4	9	3	50	60
5	9	3	100	100
6	9	3	80	85
7	9	3	90	80
8	9	3	50	61
9	9	3	80	86
10	No observation.			
11	9	3	40	55
12	9	3	80	86
13	9	3	90	86
14	9	3	95	90
15	9	3	70	80
16	9	3	101	111
17	No observation.			
18	9	3	80	86
19	9	3	70	80
20	9	3	70	80
21	9	3	80	75
22	9	3	30	41
23	9	3	44	47
24	No observation.			
25	9	3	86	90
26	9	3	100	110
27	9	3	75	85
28	9	3	50	65
29	9	3	80	75
30	9	3	70	80
31	No observation.			

From Pennsylvania Magazine for April, 1876.

Hygrometry differs somewhat from *Barometry*, and relates more to the moisture in the air than to its density or pressure, although both instruments may be used for a similar purpose. There were five days—Sundays—on which no observations were made, and hence we have omitted making average. The observations were all made at 9 A. M., before the true character of the day is determined, and do not give so fully the mean results.

Barometrical Diary, at Liberty Square, Lancaster County, Pa., for March, 1876.

C denotes *cloudy*; F, *fair*; R, *rain*.

	6 A. M.	2 P. M.	8 P. M.	IN. RAIN.
1	29.60 C	29.79 C	27.40 F	
2	.50 F	.62 F	.62 F	.17
3	.62 F	.62 F	.62 F	
4	.80 F	.74 F	.74 F	
5	.74 F	.72 F	.79 F	
6	.72 F	.76 F	.58 F	
7	.48 F	.35 F	.24 F	
8	27.00 C	.20 F	.50 F	.72
9	.25 C	.31 F	.36 F	
10	.40 F	.40 F	.40 F	
11	.70 C	.50 C	.54 C	
12	.40 C	.40 F	.19 C	.01
13	.34 F	.50 F	.60 F	.37
14	.61 F	.60 F	.62 F	
15	.70 F	.66 C	.63 F	
16	.50 R	.10 R	27.00 C	1.22
17	28.86 C	28.87 F	28.91 F	
18	27.07 F	29.06 C	29.25 F	
19	.60 F	.68 F	.60 F	
20	.78 F	.70 C	.29 C	
21	28.76 C	28.90 C	28.10 R	
22	29.30 F	29.50 F	29.44 F	
23	.50 C	.50 C	.50 F	
24	.50 F	.56 F	.46 C	
25	.40 S	29.00 C	28.88 R	2.16
26	29.00 F	.06 C	29.10 F	
27	.26 F	.30 F	.33 F	
28	.04 R	28.75 R	28.56 R	1.87
29	28.68 C	.90 F	29.00 F	
30	29.00 S	29.02 C	.13 F	
31	.30 F	.33 C	.70 F	

Observations made by Rachel S. Smith.

There were eight rains during the month, in which 8.37 inches fell, averaging 1.04⅝ inches at each rain fall, or .27 in. for each day in the month. *Barometry* has relation to the *pressure* or *density* of the atmosphere; and from the foregoing it will be seen that the *highest* figures were recorded at 2 o'clock, P. M., (2.979,) on the first day of the month.

SWALLOWS.

"*One swallow will not make a summer*," neither will a score of them sometimes, for we have seen the latest arrivals among them—the "House Martins," or "Purple Martins," (*Progne purpurea*)—sadly mistaken in their meterological calculations; we have seen the poor little fellows looking out of their boxes at the falling snow, only occasionally uttering a feeble *cher-ree-ee*, or a faint *rickey-dickey*, and seemingly wondering what it all meant; seeing

that the weather had been so beautiful and they had been so cheerful—even noisy—just the day previous. This, however, does not commonly occur; therefore, when the swallows make their advent, and especially the species above named, we may feel pretty certain that summer is near. And what innocent, cheerful, industrious and, withal, plucky little birds they are, too, and sometimes noisy to boot. From "early morn to dewy eve" they are on the wing, and in pursuit of their insect prey. The amount of this kind of food they daily consume we have no means at present to clearly estimate, but when we consider that, with the exception of one species, perhaps, they feed on nothing else, we may conclude that the quantity must be enormous. Their economical *status* is therefore unquestionable, although they may destroy a few bees occasionally, by way of a relish.

Six species belonging to the family HIRUNDINIDÆ, visit Lancaster county every spring, make their summer abode, breed, and rear their little families here, (some raising two broods,) and leave us again in early autumn; namely, the "Barn Swallow," *Hirundo horreorum*; the "Cliff Swallow," *H. lunifrons*; the "White-bellied Swallow," *H. bicolor*; the "Bank Swallow," *Cotyle riparia*; the "Rough-winged Swallow," *C. serripennis*, and the "Purple Martin," *Progne purpurea*. The "Chimney Swallow," *Chætura pelasgia*, is now placed in the family CYPSELIDÆ, or SWIFTS, but for all practical purposes it is as good a swallow as any among them. They take a great deal of their prey, if not all of it, "on the wing," but some of the species do not confine themselves to the softer, more delicate, and comparatively harmless insects, but also "bolt" May-beetles, Goldsmiths, June-bugs, and the larger and more rigid kind. (Wilson found six of these in the stomach of one Purple Martin.) Each female swallow produces from four to six young ones at a brood, and where she produces two broods it requires a vast number of insects to supply them with their needed aliment. The White-bellied swallow is, however, said to devour berries in the fall, just before it leaves us for the sunny South.

We remember distinctly the time yet when it was believed that swallows did not migrate southward at the approach of winter, but that they remained with us and hid in hollow trees, knot-holes, in the mud, or in some other similar place, but that idea, even among the illiterate or ignorant, receives now but little credit, if any are found simple enough to believe it at all.

We once occupied a house for five years that had been the resort of the Purple Martins for more than thirty years. They always appeared suddenly and about the fifteenth of May, and left just as suddenly about the first of September, never varying more than five or six days from these dates. They occupied boxes "under the eaves," and when the colony became too large they would build nests outside, or on top of the boxes. They were very early risers, often to the disturbance of our own morning repose, and although they also retired early, yet they would avail themselves of the very latest moment of twilight. We think they were about the busiest colony of living beings on the earth, that had come under our observation. They were constantly "on the go," except when it rained very hard. They appeared to be the veriest slaves to their own and their children's stomachs. Their coming in the spring was never heralded, and their departure in early autumn was without any previous warning. We retired on a spring evening *swallowless*, and we arose in the morning *swallowed*, and inversely this was the same in autumn.

We always felt sad at their departure, for it indicated that the summer had gone and that winter was approaching. But during their stay they were most industrious "insectors," sallying forth and returning to their young as much as twenty times within an hour, and every time freighted with an insect repast, for one or more of their offspring. On another occasion we occupied a house, an unused chimney in which had been a nesting place for the "chimney swallows" for many years. These usually made their appearance a little earlier than the Martins. On one occasion one of their nests fell down on a hearth near the foot of our bed, and was only separated from us by a paper screen. This nest was made of small sticks and twigs cemented together by a kind of gum, and lined inside with a few feathers. When it fell the young birds made a most distressing noise. We righted the nest on the hearth and put the naked young birds into it again, and the parents appreciating our services at once established confidential relations with us, and continued to feed them in that situation until they were fully fledged, when they left us without even saying "good-bye." But that little family of five chimney swallows was about the noisest "institution" we ever heard. They could "take down" the noisiest alarm clock that ever was made. We almost repented that we had given them domicile in our apartments. That little family devoured at least twelve breakfasts every morning before we got one, and if talking during the meal facilitates digestion, they were first-class physiologists.

Independent of the uses of swallows to the human family as insect scavengers—the value of which may be remotely incalculable—they have immediate commercial value in some eastern countries, the magnitude of which seems almost incredible. No doubt many of our readers may have heard of, or read of, the famous "Birds-nest soup," so popular among the higher classes of the Chinese. These nests are constructed by a small "cliff-swallow"—*Hirundo esculenta*—usually called, in commerce, "edible-birds-nests." There seem to be various opinions, or theories, in regard to the composition of these nests, but they are generally conceded to be largely composed—if not entirely—of a vegetable mucilage collected and secreted by these birds. Some have it that a delicate, translucent seaweed, is incorporated with the gum. Be that as it may, the nests are attached to over-hanging rocks, or in caverns along the seacoast of China and the eastern islands; and the whole trade is in the hands of the Chinese government, and that country is almost the sole consumer. There are various qualities of them, the best quality being worth its weight in silver. Before the birds have lined their nests, or laid their eggs, constitutes the finest and best quality. After they have laid their eggs therein they are reckoned *second* quality, and after they have hatched their broods in them they become *third* quality, but each of these qualities are subdivided into intermediate qualities. After these nests are collected and dried in the shade they are packed in boxes of about 130 pounds each, called a *picul*. The common price in the Canton market is, for the first quality, $3,500 a picul, something over $26.00 a pound. The second quality is worth $2,800 a picul, and the third $1,600 for the same. Dealers assort them into intermediate qualities and arrange the scale of prices accordingly. Java, Macassar, Suluk, Batavia, Ceylon, and other eastern islands, all export these edible swallows nests to China. The annual quantity shipped from these places is 242,400 pounds and at the above prices, this very peculiar property is worth $1,263,519, and all this demand rests upon the capricious wants of a single people. The business is very hazardous, but it pays pretty well the limited number engaged in it. We have never seen the best quality, but the inferior qualities we have often handled while they were in possession of Judge Libhart, of Marietta. They were not a tempting morsel to us, looking like a rough cup of dirty white glue. Of course the poor people among the Chinese cannot afford to consume them, therefore they are exclusively the monopoly of the nobility and the rich.

FLORAL SPECULATION.

The following, which we have seen floating around in the newspaper press of the country "long, long ago," is now going the "rounds" again, for the dozenth time, for aught we know to the contrary, and still has an interest that will never diminish; exhibiting as it does the trivial foundation upon which a *speculation* may rest, its vast extent, and the fictitious value that may be attached to things that are almost totally destitute of anything but a merely ordinary value at all.

It is difficult to perceive on what merit the "Tulip Mania" could have been based, for at best, their season is short, and they are destitute of fruit, flavor or odor, and on the ground of utility, far inferior to the bulbs of *onions*. Had they been poppies they might have yielded *opium*, and have been classed with things commercial; but being merely *Tulips* they had nothing to recommend them, saving their beauty, and even on this score they are far inferior to many other flowering plants that enter into the lists of the *Floriculturists* of the present day. The antiquity of the event, however, and its novelty, entitle it to a permanent record.

The Tulip Mania.

Of all things in the world in which to make a corner, to excite a speculation, to be puffed by brokers, it would seem as if flowers would be the last. But that a whole nation should grow mad over bulbs, that the industry of a people should be turned aside from the pursuit of agriculture to that of horticulture, and that the mania should spread from the phlegmatic Dutchman to the phlegmatic Englishman, seems almost incredible. Yet in the beginning of the seventeenth century the desire for tulips had so spread over Europe that no wealthy man considered his garden perfect without his rare collection of tulips. From the aristocracy the rage spread to the middle and the agricultural classes, and merchants and shop keepers began to vie with each other in the rarity of their flowers, and in the prices paid for them. A trader at Haarlem was actually known to pay half his fortune for a single root, not from any expectation of profit in its propagation, but to keep it in his conservatory for the admiration of his acquaintances.

The first tulip seen in Europe was beheld at Augsburg, in Germany, in 1559, and was imported from Constantinople, where it had long been a favorite. Ten or eleven years after this the plant was in great demand in Holland and Germany. Wealthy burghers of Amsterdam sent direct to Constantinople for their precious bulbs, and paid extravagant prices for them. The first roots planted in England were brought from Vienna in the year 1600, and were considered a great rarity. For thirty years tulips continued to grow in reputation. One would suppose there must have been some virtue in this flower that made it so valuable in the eyes of so prudent a people as the Dutch. Yet it has neither the beauty nor the perfume of the violet nor the fragrance of the rose. It hardly possesses the beauty of the humble sweet pea. Its only recommendation is its aristocratic stateliness; and this should hardly have commended it to the only democratic republic on the globe. But it is by no means the first time that fashion has turned ugliness into beauty and rarity into wealth.

In 1634 the rage for tulips among the Dutch was so great that the ordinary industry of the country was neglected, and the whole people turned to the production of tulips. As this mania increased, prices increased with it, until in 1635 merchants were known to have spent $40,000 in the purchase of forty tulips. At this time each species was sold by weight. A tulip of the kind known as the Admiral Lietkin, and weighing 400 grains, would sell for $1800; the Admiral Von der Eycke, weighing 450 grains, was worth $500; a Viceroy of 400 grains would bring $1200. Most precious of all, a Semper Augustus, weighing only 200 grains, was thought to be cheap at $2200. This last species was much sought after, and even an inferior plant would readily sell for $800. When this species was first known, in 1636, there were only two roots of it in Holland, and those not of the best—one belonging to a dealer in Amsterdam, and the other was owned in Haarlem. So anxious were the purchasers for this new variety that one person offered twelve acres of valuable building land for the Haarlem tulip. That of Amsterdam was sold for $1840, a new carriage, two gray horses, and a complete suit of harness. As a specimen of the value of these bulbs we give the actual copy of a bill of sale for certain articles given in exchange for one single root of the Viceroy species:

Two lasts of wheat	$179
Two lasts of rye	223
Four fat oxen	192
Eight fat swine	96
Twelve fat sheep	48
Two hogsheads wine	28
Four tons beer	13
Two tons butter	77
One thousands pounds cheese	48
One bed, complete	40
One suit clothes	32
One silver cup	24
	$1000

Since that day tulips have declined in value, but wine, butter, and cheese have decidedly advanced.—*Wm. R. Hooper, Harper's Magazine.*

FARM MORTGAGES.

Almost every one who has had occasion to buy a farm, and to leave lie a portion of the purchase money on mortgage, must have felt the injustice of being taxed for what he does not really own. A man buys a farm for say $10,000, and $5,000 remains; he pays taxes to the full value of the $10,000, besides paying $500 in this State or $500 in the West for the use of the $5,000 remaining unpaid on the land. But the Government not only makes him pay a tax on the whole ten thousand dollars, supposing the farm to be assessed at the full value, but it comes the second time and takes the holder of the $5,000 he has "out at interest." Now the man who has money at interest is determined to make six per cent. at least on his money. He must do it to make it worth his while to have money out at all. And so he looks about to see how he can so fix things as to make it fall on the holder of the land. So he either takes it into consideration in fixing the price of the land if he is selling; or if he is a mere lender on land he extracts a heavy "bonus," or buys a mortgage at a discount in order to make him whole; and in this way the one who is so unfortunate as to owe anything on land, pays taxes twice on his indebted portion to one only when it is clear of all incumbrances. This is a curious anomaly in law. Usually it is thought to be the genius of good laws to favor the honest, industrious, struggling debtor; but in this particular case of a tax on mortgages this law is made to operate in just the other way.

It seems remarkable that any tax should have ever been imposed on mortgages under the head of property. If there be any tax on income, the money derived from mortgages might have there a legitimate place. But as *property* it is clearly absurd, as a mortgage is simply the evidence of debt. It is no more property than is a duly-attested receipt for money paid. It is indeed nothing but a promise to give property in case certain stipulations are not carried out in manner and form as aforesaid. It is in no sense property, yet as property it is taxed, although the property which it covers is already taxed in the hands of the one to whom it has been deeded.

It came up before the Supreme Court of California recently, by the objection of some mortgage-holders to pay this sort of "property" tax, and the court decided in favor of the holders. And now what do other States say, in which this anomaly exists?

The above, from the editorial column of the *Germantown Telegraph*, applies equally to town houses, and other species of real estate, both in town and country; and, having had some experience in this and other systems of taxation, we have for twenty-five or more years failed to see the right of it in any case, for this is the *practice* if not the *law* in Pennsylvania; a practice which we have often and always condemned, and which has just as earnestly been defended, even by some of those who were its victims. Mankind are generally—almost proverbially—lax in tax-paying, or in making just returns of what is legally taxable; and many people either feel themselves justifiable, or excusable, for defrauding the government, solely on the ground that the tax is *not* equitably, or *is* excessively, levied. This, of course, is not *right*, although the law may be *wrong;* but in any event, hundreds, thousands, yes, tens of thousands of dollars are annually lost to the government and the honest portion of the people, through the unjust duplication of taxes; to the government, because knaves omit to make a fair return, on the ground that somebody else is paying the tax, and to the honest people, because they are paying double taxes.

A comparatively poor man owns two properties worth one thousand dollars each, and sells one to his poorer neighbor, taking his obligation for the payment of the same; and if they are both honest men, they pay the taxes on two thousand dollars worth of real estate, at the usual rates of taxation, and the one who holds the obligation of the other is taxed additionally for one thousand dollars which he is deemed to have "out on interest." If any law-maker can see justice in this he is gifted with a higher degree of moral penetration than we are—that's all.

During the rebellion the United States revenue laws were administered in the same way, although we had it over the autograph of a distinguished member of the Committee of "Ways and Means," that such was never the intention of the law. For instance—a marble mason was taxed six per cent. on a finished slab of marble; a looking-glass manufacturer was taxed the same amount on a finished mirror; a hardware merchant was taxed the same on locks, knobs, screws, casters and nails; a dealer in "cabinet findings" was taxed on veneers, turned work, paints, oils, and varnishes. All these taxes being added to the first cost of all this material was assessed upon the cabinet-maker who used them, and then he was taxed on the value his labor added to the combining of this material into a piece of cabinet work, and also on the cost of materials with the previous taxes included; and yet obtuse revenue commissioners affected not to see that there was a duplication, if not a triplication, or quadruplication of taxes, members of Congress or even-handed justice to the contrary notwithstanding.

Human beings—unregenerated human beings at least—are morally weak; but when they come consciously under inequitable taxation, and see the mal-application and fraudulent appropriation of taxes after they *are* as-

sessed and collected, it is not so surprising that taxes should be so long withheld, so grudgingly paid, and so meagerly returned. It *does* seem, that no matter how honest and disinterested men may appear before they get into office, as soon as they attain such positions they become indifferent or are solely absorbed in schemes of self-aggrandizement, and neglect the interest of the people entirely. Let us have *equitable* taxation, whether the taxes are *honestly* paid or not. *Once* taxed is enough, in a country of equal laws.

INSECTS, AND INSECT REMEDIES ONE HUNDRED YEARS AGO.

From the U. S. Magazine of 1779.

"In the fall of 1776, I moved from Philadelphia into Kent county, in the Delaware State, where, observing the destruction of the fly made on the wheat, it recalled to my memory having read in an English magazine some twenty or thirty years since, a like calamity in France, which nearly brought on a famine, and the method the French took to stop the devastation. Accordingly last spring I bespoke my year's consumption of that grain, of a neighboring farmer, to be delivered to me immediately after harvest; but I did not get it until two weeks after it was cut, in which time I observed the fly had begun its depredation. I then put a blast into the oven, but not sufficient to heat it for baking; when the wood was burnt down, I raked out the coals with what ashes the rake would bring out with them and having previously prepared a tub of water, and a large mop; alternately I rinsed the mop and swabbed out the remaining ashes until the hearth was so cooled that I could bear my finger on the bricks nearly ten seconds.

Immediately I then tumbled in my wheat, and having closely stopped up the oven, I let it remain therein twenty-four hours. This process, I find, has totally destroyed the insect and its embryo. Thus, while the neighborhood around me are obliged to eat their maggoty, putrid grain, we have good bread, as heretofore.

At first I was fearful of one or other of three evils attending the process; either it would kill the vegetation, or it would prevent fermentation, or it would give the flour a brown cast, and perhaps all three; but I have the pleasure to find neither is the case, for we have as light and as white bread as formerly, and on trying a small handful of the wheat in moist earth, I found it take root and sprout in about three days, and I could not perceive a grain miscarry.

By the best accounts I could gather, the farmers hereabout have lost near two-thirds of their present crops by the fly, and what remains is light, very disagreeable to the taste, and I believe very unwholesome. A common sized oven will, at one operation, kiln-dry sixteen or eighteen bushels, no matter how full the oven is, which my be turned in at the hole left to carry off the smoke in heating. Thus, one oven in a week will secure one hundred bushels from the voracity of that destructive insect. Grinding it into flour immediately after reaping, will answer the same end; but this is an advantage that but few can obtain, and if the whole could, the mills must lay idle the remainder of the year.

Perusing the *London Magazine* for the year 1773, since I wrote the above, in the month of May for that year, I found the following experiments, addressed to a member of the *Royal Society*; and as I apprehend the re-publication may be of great utility, I shall be much pleased to see it in your useful magazine.

BENJAMIN MIFFLIN.

The above writer belonged to an old and distinguished Pennsylvania family, and was no doubt a brother of THOMAS MIFFLIN, a Revolutionary officer, and one of the early governors of the State, under the Constitution; and the insect to which he alludes under the name of the "Fly" was no doubt, a species of "weevil," for there is no *fly* that we wot of, the maggots of which could do any damage to wheat after it had ripened. The "midge" (*Cecidomyia tritici*) after the larvæ has matured, goes into the earth, and effects its transformation there. This insect then must have been the black or "granary weevil" (*Sitophilus granarius*) which infests corn, wheat and other grains. The adult female deposits its eggs on ripe grain, from spring to fall, and the larvæ lives and undergoes its transformations within the kernel. We have often detected it on the heads or ears of ripe wheat in the field; and when the eggs are hatched the young *larvæ* bore into the floury part of the grains of wheat and corn, if indeed the mother does not first puncture the seed before she deposits her eggs. We have also seen tens of thousands of these weevils in granaries, cornribs and old barns, and we happen to know that they have a very injurious effect upon the quality of the wheat, and the flour that is made from it.

Now, admitting that the foregoing article has reference to the granary weevil, we do not think any better plan has been developed for its destruction during the entire century than that which was practiced one hundred years ago, by Mr. Mifflin, and which had been known in France a quarter of a century before. For this reason we reproduce it here, and also to show the antiquity of agricultural entomology, and illustrate the progress we are making in that direction. Kiln-drying has often been recommended for infested grains, nuts and seeds, and where it has been skillfully done, it has been successful. It is true, this process may be a *slow* one, but if it is a *sure* one it is worth trying. Perhaps we have too little veneration for old things, only *because* they are old. We want in some quick way to "dose" insects, and then let it work its own way, whilst we turn our attention to some other speculation that will "pay" better. The article alluded to in Mr. M.'s closing paragraph, we reserve for another occasion, for, during the year, we intend to place 1876 and 1776 in contrast where we think it can be useful.—ED.

OLD BUFO.

We entertain a feeling of profound regard for the common toad (*Bufoamericana*) and also for those who condescend to say a kind word in his favor. And yet, it is in reality no act of *condescension* to do so, but an imperative duty; for, of all the hopping or creeping things that have a local habitation among us, there is none more useful than the toad; and yet he is almost universally despised, if not hated and maltreated. He does no harm whatever, but on the contrary, a great deal of good, and consequently he is always a welcome guest to our domicile and garden. Indeed, they seem to know that they are welcome and often conduct their scavengering labors in our presence, seemingly to show what they are capable of doing. We know not how long a toad will survive, but it seems that we have recognized the same old rusty-coated blinkers for a succession of seasons. They have the most capacious mouths and stomachs of any animals of their size and weight, and appetites to correspond. We are satisfied that they answer the end for which they have been permitted to exist, far nearer than many of the human species.

Toads.

The toad is a most useful thing in a garden. I had a plant dreadfully infested with wood-lice, almost destroyed by them, and a toad located himself by as its protector, and to be ready in an emergency he made in the mould a hole all but deep enough to hide himself in, but not deep enough to prevent his having a thorough good view of the plant; and when wood-louse, beetle, or anything of the kind appeared near him or the plant, out he came and pounced upon it—"You are mine!" This was wholly his work. I only watched him sometimes, greatly pleased at his success. Another time as I was walking along a path in the garden I saw the toad approaching; the pace was quick for a toad, but I soon saw what he was after. Just on before him was a beetle which I expected to see caught, but ere there was apparently time for them to meet, the beetle had disappeared, so quickly that my eye was not quick enough to see it taken, but no doubt it was in the toad's mouth, as I heard a click that told the tale of capture. Two other toads seem to have concerted between themselves how to act one evening so as to take a border regularly, and in order to do their work well it appeared to be arranged that one of them should go on the border and the other stay outside, having the box edging between them; and so they did their work of clearing, keeping just opposite the one to the other, as I was watching them from the window above. I wish we could all act with good feeling towards such useful creatures. They do much good and no harm, but I have every reason to believe they are sometimes treated most cruelly.—R. T. in *Gardener's Chronicle*.

TO CORRESPONDENTS.—E. J. D.'s poetical effusions will appear in *season*.

OLD AND NEW FLOWERS.

I noticed an article in your paper last fall speaking of the deterioration of our old-fashioned flowers, and of the inferiority of the new Hybrid roses, when compared with the old "Hundred leaf" "York and Lancaster," Cabbage roses and others. I will agree with the writer as regards perfume, but not as regards form and coloring. A gentleman residing in Cassville (Mr. I. Baumgartner) has roses in his garden which usually bloom profusely from June till "Jack Frost" puts an untimely end to their loveliness, and the quality of the flowers will bear comparison with any of their kind. I do not remember just how many varieties he has, but quite a number, and most of them he has budded himself. Fine Hybrid roses are the "rule" rather than the "exception" in Lancaster, Grant county. I noticed very fine ones there this summer.

Now, as regards the old-fashioned flowers, such as Pinks, Phlox Drummondii, Asters, Petunias, and last but not least, Verbenas, I cannot, so far as my experience goes, agree with the before-mentioned writer. In 1873-74 my Asters were almost equal to Dahlias. This year they were not nearly so fine, but the fault was my own. I gave them a shady location and but little care, which they resented by giving me small stunted flowers. My Phlox were perfectly beautiful. I counted over forty distinct varieties, and the flowers were very large and the colors brilliant. My Petunias were not so large nor the colors as fine as usual; my own fault again, for the most of them were self-sown. My Portulaca, or Rose-Moss, was the finest I ever saw. Three years since I bought some double Moss seed from James Vick, florist; the first season there was but one kind, which proved to be double flowers—they were red; all of the Pink, Magenta, Yellow and White, were single. The next year in the same bed, *self-sown*, I found some fine double white flowers, and one root of double yellow. This year almost every root in the bed bore double flowers—yellow, white, and three or four shades of red, and the flowers so large that they looked like roses, the half-blown buds being equally as large as rose buds.

My Verbena bed was very fine; there were three or four shades of red, three or four of yellow, some pure white, some variegated. The bed and every inch of the ground was perfectly covered with a dense mass of foliage and flowers, some of the branches running out three or four feet from the main stalk, taking root at each joint and sending up new branches of flowers. My Verbenas commenced blooming early and bloomed till long after the frost had killed all the other flowers, except the Pansies.

I must speak a word in favor of the Tropeolum Majus, as a running vine. Mine were planted in front of a high porch for the purpose of giving shade in the afternoon, when the sun would shine directly on that side of the house. My plants commenced blooming when less than two feet high, and I was quite sorry to see them do so, feeling quite sure that there would be no vines to serve as a screen from the sun this summer; but I was mistaken; they did run, soon reaching the top of the porch and then running over the roof quite a distance, the whole length of the vines being fifteen feet and blossoming constantly, so that the front of the vines were one continuous mass of flowers. Some of the largest in size and finest in color were along the top of the porch, covering the eave-trough. Over another porch I had Madeira vines. They are beautiful with their thick waxen glossy leaves, and so clean, no worms or insects about them. If any one wants vines with but little trouble get a bulb of Madeira vine and take pains to give it a rich soil, and the next year you can cover the whole house with vines if you wish, such quantities of bulbs will you have in the fall.—*Josephine C. Long, Grant co., Wis., Ger. Tel.*

THE CENTENNIAL EXHIBITION will open on the 10th of next month. It will be the finest display in buildings and industrial products ever seen in one collection, and will be worth seeing.

THRUSHES.

"When fair Aurora blushes,
And skies are serene and clear,
The Linnets, Larks and Thrushes
With music delight the ear."

The TURDIDÆ, or Thrush family, is a pretty numerous one, and includes some genera and species that have never received the distinctive name of "Thrushes;" therefore, to apply the term *Thrush*, in a general sense, to a bird, may mean a Robin, a Bluebird, a Ruby-crowned Wren, or a Water Ouzel, as well as the true Thrush; and formerly the Catbird and the Mockingbird belonged to the same family; and, judging by similarity of form and song, they seem to be nearer allied to the family of Thrushes than some of those included at present in it.

The term *Turdus*, from whence the family name of these birds is derived, literally means a *thrush*; but the common name of Thrush is not applied to all, even in the genus *Turdus*, of which the common robin is an example. We have about twenty species belonging to the Thrush family in the United States, (eight of which belong to Lancaster county,) and nine of these have received the common name of *Thrush*. All these birds are good "insectors," and laws ought to exist, and be enforced at all times, against their destruction. Some of these birds, especially when young, are esteemed good game birds, and this is particularly the case with the Robins. (*Planesticus migratorius.*) Great bundles of these birds may often be seen garnishing the doors and windows of fashionable restaurants, notwithstanding the wise laws enacted by our Legislatures for their protection and preservation. This bird is an almost universal favorite, and it is beginning to increase very rapidly, and is re-establishing its confidential relations with the human family, where these laws are respected.

The Thrushes sometimes migrate northward prematurely, and we have on several occasions seen great flocks of Wilson's Thrush (*Turdus fuscescens*) overtaken by a "cold snap" in the month of March, and perish by hundreds. When rearing their young, they devour enormous quantities of insects and their *larvæ*, daily, although later in the season they become voracious "berryers," and this fact is considered sufficient in the minds of some to engage in their destruction.

The songs of these birds are varied and cheerful, and the first bird-music that we became familiar with in the days of our youth, and in after years we recall them with feelings of pleasure, and when we hear them we are irresistibly carried back in memory to

"The light of other days."

THE CULTIVATION OF HARDY ROSES.

There are over two hundred species of the rose described in botanical works, but our almost innumerable garden varieties have been obtained from only a dozen or fifteen species, which, by cultivation, by hybridizing and cross-breeding, have produced almost endless shades of color and habit of growth. As much confusion exists in the nurserymen's catalogues as to their proper classification, we will notice some of the leading species from which our garden varieties have originated, giving their most striking peculiarities. This will enable amateur growers to determine which is the most proper of the different modes of cultivation, which we shall describe, to apply to the varieties they may grow.

Rosa damascena, the Damascus or damask rose, is of Syrian origin. All of this tribe have rough spiny shoots, leather-like leaves, and long reflexed sepals or calyx leaves. They have a robust habit of growth and large flowers, mostly in the lighter shades of red. It is from this species and its varieties, crossed with others, that the so-called hybrid perpetual or remontant roses were derived. Although free growers, they do not require severe pruning. The old "four-seasons" rose of the gardens is a type of its varieties.

R. centifolia, the hundred-leaved, Provence or cabbage rose, is a native of the Eastern Caucasus. The sepals or calyx leaves in this species are not reflexed; the flowers are mostly globular in form, with large petals, very double, and somewhat drooping, the flower stems not being as strong as in most of the other species; they are generally exquisitely fragrant. Among the many varieties of this species is a section of very dwarf growth and free habit of blooming. This species has been largely hybridized with other species, and a very large number of garden varieties produced. According as to what they were crossed with does their habit of growth take its character; some are very vigorous, and should be pruned but little; others are more delicate in growth, and require close pruning. They all require rich soil and high cultivation. The old cabbage-rose of our grandmothers' gardens and the moss-rose belong to this section.

R. gallica, the French or officinal rose, is a native of France, Italy and Caucasus. This rose is of very robust growth and erect habit. The flowers are generally high-colored, large, very double, and borne on stiff, erect footstalks, but do not have the fragrance of the hundred-leaved rose; but this is increased by drying, while that of the damask rose is almost destroyed in that process. Nearly all of the hardy variegated roses are derived from this species. All the varieties from this species require high cultivation and liberal pruning.

R. spinosissima, the Scotch rose, is a native of Scotland, Caucasus, and many parts of Europe. It is a dwarf, compact-growing bush, with creeping roots, and very spiny, and the double-flowering varieties were formerly much grown in our gardens, but are now seldom if ever seen, it having gone out of fashion, which is to be regretted, as it came into bloom very early in the season, and was exceedingly fragrant, with flowers rather small, but globular and very double. It requires very little pruning, and will thrive in poor, sandy soil where other roses will not.

R. alba, the white rose, is a native of the central parts of Europe, and is also found in Cochin China. The foliage of this species has a glaucous appearance, as though covered with a fine gray powder; the shoots have scarcely any spines. There are no high-colored varieties of this species. They are mostly of moderate growth, and require rather close pruning.

R. rubiginosa is the sweet-brier rose, of which there are several double varieties, some of which have quite high-colored flowers.

R. lutea is the yellow rose of the north of Italy; of this there are three double varieties. The well-known Harrison's yellow is one of these, and is easily grown. The Persian yellow requires to be budded on a sweet-brier or Manettii stock to succeed well. It does best in a rather moist, poor soil, and should not be much pruned. There is another double yellow rose, from Syria or the Levant, known as *R. sulphurea*, which is scarcely worth growing, as it seldom opens its buds.

R. alpina is the Boursault rose of our gardens; it is a native of the Alps and the south of France. It is a sort of half-running rose, with long, flexible red shoots, and is well adapted for training against fences and outbuildings. It will grow in almost any soil, and requires but little pruning except shortening back a little.

R. rubifolia is our well-known prairie rose. Its varieties are all strong growers, but should be but moderately pruned.

R. arvensis, the Ayrshire rose, is a climbing rose of rapid growth, very hardy, and will do well where other roses will scarcely grow. The varieties of this species are well adapted for covering walls, arbors and similar structures.

From these different species, crossed and re-crossed with each other, have originated various classes of hybrids, which have been classified as follows:

Hybrid Provence Roses.—These are derived from the Provence and French roses. Generally they produce large, well-formed and very fragrant flowers, and are strong growers; hence they are very suitable for growing on poles or pillars. They only produce flowers once in the season. They are of easy culture, and should be but moderately pruned.

Hybrid China Roses.—These are derived from the Provence and French roses, crossed with the China, noisette and tea-scented roses, but in so doing have lost the ever-blooming character of the last. They are very vigorous growers, and make superb pillar roses, having flowers of large size, fine form, very full, and of exquisite coloring. They require to be well thinned out in pruning.

Hybrid Bourbon Roses.—These are obtained from the Provence and French roses, crossed with the Bourbon rose instead of the China or tea-scented. They are remarkable for the exquisite form of the flowers, some of which are elegantly cup-shaped, and have greater substance of petals than the hybrid China. They are also more abundant bloomers; the foliage, too, is heavier and stronger. They require to be very closely pruned.

Hybrid Perpetuals, or Remontants.—These are derived from all sorts of crossing and re-crossing, until it is difficult to tell definitely from what particular species they were derived. It is a misnomer to call them perpetuals in this country, for unless the parentage of the damask or four-seasons rose predominates in them, they do not produce flowers more than once a year. When that parentage predominates they will produce flowers a second time toward the autumn. Owing to their mixed parentage, they vary much in regard to hardiness, habit of growth, mode of flowering and requirements of cultivation. Some require close pruning, and others should be pruned but slightly.

Damask perpetuals have a large infusion of parentage from the China rose. They are of moderate growth, very fragrant, of a very bushy habit, and do better when grafted than when on their own roots. They require a very rich, rather stiff soil and close pruning.

Perpetual Scotch roses are hybrids between the Scotch rose and the damask perpetuals. Only two or three really good sorts have been produced; these commence blooming early in the season, and under proper treatment will produce flowers at intervals until October.

Perpetual moss-roses are derived from the Provence moss-roses crossed with the four-seasons rose. They are but poor growers, and require very high cultivation, rich soil and severe pruning to make them succeed well.

Almost all the roses imported into this country from Europe are budded on the sweet-brier or Manettii stock, as this gives them a stronger growth. What are called standards

are gratted on stocks four to five feet high, but they are perfectly worthless in this climate, and it is only throwing money away to buy them, as the hot sun in summer and the dry, cold winds of our winters kill the stock in a year or two. What are called dwarfs, or those budded within three to six inches of the ground, do better, but as they are continually throwing up suckers from the stock, they require constant attention to cut them out, for if left to grow, they so impoverish the top as to destroy it. We therefore recommend the growing only of such sorts as can be grown on their own roots; these all our leading nurserymen can furnish, as in this country they are now seldom grown in any other way.

Roses are all gross feeders, and require a liberal supply of manure, which, however, should be well rooted before being dug in. It should not be dug in with a spade, as the roots are thereby cut off, and much injury thus done to the plant; it should therefore be done with a spading-fork. Two to three inches of mulching manure should be laid on the surface as far as the roots extend; for the rose delights in a cool, moist soil, loams suiting it best. They should be pruned in February or early in March every year. When the shoots are very strong prune them back one-fourth or one-third their length; if not strong, cut them back to one-half their length. The buds on these shoots will then push and produce blooms. At the next season these secondary shoots should be cut back to two or three buds, when they will again produce blooming shoots. The third season, the shoot which has thus produced two crops of flowers should be cut clean out close to the surface of the ground, as it will seldom produce good flowers the third year. By proper attention to manuring, and thus encouraging strong new growth, and pruning as thus directed, rose-bushes can be grown to a large size, and made to produce fine flowers for fifteen or twenty years.

Roses are much troubled with what are known as the rose-bug, the rose-slug, and aphides, both green and black. To destroy the first, syringe the plants with a solution of whale-oil soap. The slug destroys the under side of the leaf, and can be destroyed by dredging the under side of the leaves with powdered white hellebore, taking care not to inhale it, as it produces convulsive sneezing. The aphides are readily destroyed by dipping the ends of the shoots in strong tobacco-water, to which sufficient soft soap has been added to make it slightly glutinous.

The best season for transplanting roses, if from the open ground, is in October, but they will succeed if planted very early in the spring. When transplanted from pots, the spring is the best time to do it; if done in the autumn they are liable to be thrown out of the ground.

In making a selection of sorts from the remontant class, always choose the strong-growing sorts, or those having a strong infusion of the four-seasons stock, as they are more likely to produce flowers in the autumn, and the flowers are generally larger and finer than the other hybrids. Avoid those having a large predominance of China rose stock, as they are generally feeble growers, liable to mildew, and entirely lose their ever-blooming character when hybridized with other species.

CULTURE OF ASPARAGUS.

Very much has been written on this subject, and a great deal has appeared even in our own columns, but with each recurring year there seems to be something to learn and to unlearn, and hence though we were to write an article on it every year, in the light of continued experience, there would probably be something new to be told each time.

So far as the farm-culture of asparagus is concerned, there seems to be little new to be told; and yet one of the practices which the plow cultivators have found necessary to practice—of necessity and not because it was thought to be absolutely the best—seems coming to be considered a good thing under any circumstances.

It is the general practice in field-culture to set the plants six, eight, or even more inches deep, and more in light soils. This was not thought to be any great benefit, but because the ground could then be easily plowed and cultivated in the spring. After the asparagus was fit to cut in the spring, no farther culture was attempted. Weeds and grass may grow, but when the fall comes and the tops die away, or the spring approaches, the whole can be plowed over, harrowed and cleaned, the whole operation being conducted above the level of the roots, which thus has the advantage of a light soil to push through as well as a thoroughly clean surface to begin the year with, at least. Recent experiments which we have seen referred to recently, both in this country and abroad, seem to show that this depth of earth over the roots is a great advantage; that the finest and sweetest asparagus results from the plant having to push its way from a good depth up to the surface; and it is recommended in some instances even to have the plants as much as a couple of feet below. This seems so utterly inconsistent with all we know of food-culture, (for most plants as a rule like to have their roots near the surface of the ground) that were not the practice endorsed by some of the first names in horticultural literature, we should hesitate to refer to it. But the facts and figures undoubtedly prove that where the roots are some distance below the surface the very finest asparagus has been the result.

But, and here the greatest caution is needed to note the full force of language, the plants are not set deeply in the ground. They are planted very near the surface in the first instance, and the depth is gained by depositing on the surface. Though the asparagus is a seaside plant and therefore supposed to be fond of water, it is found by experience that it loves rather dry ground, or rather situations where the water does not lie long before it passes away; and this rather dry condition of things is secured by planting pretty near the surface. Where this naturally dry condition of things cannot be obtained in any other way, ditches are dug between the beds and the soil from them thrown on to the beds, so as in this way to drain off the water and make the whole thing dry. These ditches are annually dug out and the accumulations thrown over the plants, and what with the annual manurings and the soil thrown out the beds are made annually higher and of course the plants get to be farther and farther away from the surface from year to year. But all this time the roots are kept high and dry, and it is as much this elevated and dry position added to the depth, that gives the plant its great advantages.

We have heard of people who have set plants deep down from the ordinary level surface of the ground, and always with injury, especially in clayey or heavy soils. In these cases the very fact of making the bed deep and loose, only increases its chances of getting water-logged, the water running over the hard, firm soil into the looser earth provided for the bed. The roots are thus always cold and damp; and very often, especially when first planted, rot away entirely. The point is to have the roots deep under the surface; but still the ground around the roots must be high and dry.

It is interesting to note how our forefathers often found out good practices without knowing exactly the reason for them. In all old gardens asparagus was planted in beds with deep ditches between them; and we all know that the asparagus of that time was better on the whole than the asparagus nowadays, and since we have adopted the flat and level system of culture. They all thought gardening a business in which one had to learn the art, see how things were done, and ask no questions. Modern gardening is supposed to be founded on the "reason for things," and anyone who is capable or supposed to be capable of tracing cause from effect, is regarded as likely to make quite as good a fellow as one who has been years at the business. But all these little things show how advantageous is experience, and how much we should listen to the results of experience, although for the time being we may see no reason in them.—*Germantown Telegraph.*

FISH CULTURE.

As usual, the subject of *Pisciculture* and the *Fisheries* continues to occupy a large share of the public attention, in view of the popularity of the measures taken toward the increase in the supply of fresh-water fishes, and the proper utilization of the products of the waters generally.

Of the various State Commissions, those of Virginia, California and Maine have lately published their reports of satisfactory work.

The varied enterprises in which the United States has been engaged during the autumn have been successfully prosecuted—the United States hatching establishment on the Sacramento river, under the charge of Mr. Livingston Stone, having obtained nine millions of eggs, in bulk amounting to eighty bushels. Some two millions of the young were hatched out and placed in the Sacramento for the purpose of keeping up its supply, and the remainder of the eggs were sent east, for the most part to the State Commissioners of Fisheries. The introduction of young fish into suitable waters was prosecuted mainly during the months of December and January, and nearly all the waters of the United States east of the Missouri have their share. A very large number were planted in the headwaters of the Ohio, Mississippi, and other streams in the central portion of the United States, as well as in the waters tributary to the Great Lakes, and those of the east from Maine to Georgia. It is not too much to hope that in a few years most satisfactory results from the experiment will be experienced. Mr. Atkins has also continued his work in collecting and developing the eggs of the Eastern Salmon, at Buckport, Maine, and has secured between three and four millions. These, as being later in the year, and of slower development, will be distributed in March or April. In addition to his labors with the sea salmon, Mr. Atkins has also secured a large number of eggs of the land-locked salmon from the Great Lake Stream, in Eastern Maine, some nine hundred thousand eggs in all having been placed in the hatching boxes. In the course of its labors during the summer of 1875, having reference to the shad, about twelve millions of young were hatched out and distributed in various waters by the United States Fish Commission.

A very important enterprise of the same general character is that which is now in progress under the direction of the Fish Commissioners of Canada, Michigan, Ohio. The Michigan Commissioners are now hatching about seven millions of white fish eggs, those of Canada having almost as many. The Ohio Commissioners were unable to complete their establishments in time for extensive operations this season, but they have at their four hatching stations a considerable number of the eggs of the white fish, partly furnished to them by the Commissioners of Michigan.

An important movement has been made on the Hudson river by Seth Green, under the direction of the Fish Commissioners of New York, in the multiplication of sturgeon. The economical value of this fish is only beginning to be appreciated in this country, although in Europe it has long ranked among those of most importance. But already a large business in the manufacture of isinglass and caviar, as well as in supplying this fish for consumption, both fresh and smoked, has been prosecuted for some time. The Hudson river formerly abounded in sturgeon, which have become scarce, and the object of Mr. Green's work has been to increase the number. An incidental benefit resulting from the multiplying of these fish, it is expected, will be the destruction by them of the stake nets which at present do so much to prevent the natural increase

of shad in that river, the nets being too weak to resist so powerful a fish as the sturgeon.

The prominence of the turbot and sole among the more expensive fishes of Europe has suggested the idea of introducing them into American waters; and at the request of Mr. J. S. Kidder, of Boston, the United States Fish Commissioner is now engaged in making preparations for a sufficient number of young fish from the British coast to that of Massachusetts to make a satisfactory experiment, the expenses to be borne by Mr. Kidder.—*Harper's Magazine.*

TREE LAWS.

A few weeks ago we referred to an absurd attempt to get Congress to pass a law in regard to patents on new fruits. The agricultural press has spoken emphatically against it. We see now that another scheme is before the House in regard to tree laws, in which the agricultural press has been as emphatically against as in the patent plant matter. It is really astonishing how easily ill-considered matters like these can obtain a hearing, and even approval, before a body so generally intelligent as are the men who compose the American Congress. The project now is to appoint a Commissioner of Forestry, to take charge of American forests, with a view to their preservation. This is, we believe, the third year that the attempt has been made to found this new department; but though twice defeated, it seems bound to rise again.

We all know now that much that has been said about this forest-tree subject is the veriest trash, and has been kept before the public systematically, no doubt, for the interest of a few who want to be constituted a Board of Commissioners. There is, so far as the practical question is concerned, nothing for such a commission to do that the agricultural press of the country has not already done. We—all of us—have pointed out that there is a waste of timber going on, but this waste has no bearing, or very little, on our future supply. Where timber is wasted, it is generally in localities where it is really worth little because it is not near any place where it can be marketed, nor would it be for many years; and therefore it is burned down and cut to make way for farm crops. Wherever it is near to any such market, or near to a prospective market, it is seldom destroyed. It needs no law for its preservation under such circumstances. Americans can see questions of profit and loss as quick as any one, and will not wantonly destroy that which will make them rich. As for timber outside of civilization, people talk of preserving it as if a tree were rocks and stones and would last for ages. Most of our great western forests have already reached mature age, and are on the downward road. Many of these are between one and two hundred years old. It is impossible to preserve that which Nature has doomed. How are "Commissioners" to "preserve" them? Even were they much longer-lived than they are, the chief trouble comes from forest fires much more than from the woodman's axe. Can a Commissioner prevent the sportsmen's wad or the spark from the locomotive?

What we really want is not so much the "preservation" of the old forests in the far-away parts of our great country as the *encouragement of new plantations!* and this planting is not a work for the general government to do, which does not propose to hold public lands.

But supposing that there was nothing more in this proposition than the mere creation of a new bureau with a new pack of office-holders, what is there in it more than ought properly to fall within the existing Department of Agriculture? Forestry has ever been regarded as an adjunct of agriculture, and there is nothing proposed to be reached by this Commission that might not just as well be accomplished by the Department of Agriculture as it at present exists. Indeed, the present Commissioner has paid considerable attention to the forest question, and could do more, if encouraged by Congress or other influences to do so.

At any rate, nobody wants this Commission, if we read aright the feelings of our agricultural exchanges. It is simply a "job," and nothing more.—*Germantown Telegraph.*

THE DAIRY AND BUTTER MAKING.

At a late meeting of the Eastern Experimental Farm Club, at West Grove, Chester county, Mr. Reeder, of Bucks county, was introduced and spoke mainly upon the ventilation of dairy houses. He had been much troubled in years past; the spring-house would overflow when heavy rains occurred, and in the summer the milk would sour and thicken before the cream would rise, and in winter it was too cold to get the full value or benefit of the milk; so he resolved three years ago to build a house or apartment for dairying purposes, and before doing so visited some of the most noted in New Jersey and Chester county. His observations satisfied him that by securing a proper ventilation and temperature he could have good butter at all seasons of the year, and upon philosophical principles he would warm his house in the winter, and keep it cool in summer. In the summer he would have a large V shaped ice box located in one portion of the room and regulate the temperature by ventilation, and in the winter he would have artificial heat by a stove or furnace, and regulate the temperature as in summer. He took exceptions to Prof. Wilkinson's mode, the Gulf Stream principle, as impracticable, as well as expensive; he liked the cool air principle much better than the cold water baths for milk; and here Mr. R. explained his ideas to the audience, as to what he esteemed a model dairy house.

After Mr. Reeder closed, Mr. Hardin, of Ky., was introduced, and entertained the club for more than an hour upon his practical theory of butter making. He said he started a butter dairy about four years ago, near Louisville, Ky., where the climate was hot and humid, and where animal substances decayed rapidly; where insects and parasites were numerous, and to spread out milk in the usual way in pans was to invite the enemy, which he was anxious to avoid. To overcome these difficulties he began a series of experiments by the use of shallow pans in open air, and step by step he lowered the temperature and increased the depth of the milk, until he reached the Swedish plan of setting milk, immersing in water at 40 degrees Fahrenheit, in cans twenty inches deep and 8 inches in diameter. As a matter of economy, he built a box with double sides and a close-fitting double door, and so arranged as to exclude the surrounding atmosphere. He also inserted a shelf in the upper part of the box, for the reception of ice, which is quite a desideratum in warm climates. In this box he sets his cans of strained milk with a tight cover, and thus subjected to the cooling process, and left in at the ordinary temperature, which, in such cases, is about 46 degrees, for the space of from thirty-six to seventy-two hours. All this time the milk is sweet, and the cream is also sweet, and is churned in this condition. Mr. H. contends that the points attained by his process of cooling and butter making, are a better flavor, uniformity in quality, better grain or texture, as well as keeping quality; that the cost of the utensils and buildings are trifling in comparison to the present method of building spring-houses with the patent ventilators, and with much less labor or care. In this case, or with my method, the ice shelf is filled once a day only, and the cans, which hold from 30 to 35 pounds, are set in or taken out, as desired, and a man can do nearly all the work if required; and with this economy in labor there is a corresponding economy in the cost of pans, which is about one to four in favor of deep cans. He also argues in favor of his operation as a matter of health, especially to the dairy women, as they are not at all exposed to long attendance in the damp spring-houses or vaults. Mr. Hardin gave satisfactory evidence from actual experiments, not only conducted by himself, but by experienced butter makers, and in every instance he made more butter from the same number of pounds of milk than by the old method, with a flavor equally as good if not better. The size of the milk box or refrigerator for a dairy of 5 cows is about 4 feet 2 inches high, 2 feet 2 inches deep and same in length, and can be made or sold for about $25.

John I. Carter read an essay from Prof. Wilkinson, of Baltimore, upon the subject of butter making. It was expected that the Professor would be here in person, but illness prevented his being in attendance, and that the members should not be wholly deprived of his counsel, reported on paper, as the next best thing he could do. The Professor was opposed to the sudden cooling of the milk; that in so doing the animal odor was retained in the milk or cream. He claimed that gradual cooling or artificial heat would assist in throwing off the animal odor and thus produce a fine quality as well as texture of butter. He also stated that milk heated to 140 degrees or 150 degrees and then cooled would keep sweet much longer than when cooled in the natural way, and also contended that cream raised on milk set in deep vessels will not make as good butter, or of as good quality, as that set in shallow pans.

THE BEST COW FOR THE DAIRY.

In treating of this subject we discard at once the idea of combining every good quality in a single animal—such as large size, nice quality butter, deep milking, ease of fattening, beef producing, &c. Such an animal never lived, or never will live, for the reason that some of these qualities are incompatible with each other. What the butcher requires is heavy carcass—the very opposite of what the dairy desires. The latter wants all the secreting and assimilating organs to concentrate in the udder for the production of milk, whilst the butcher wants them to centre on the back and ribs for the building up of flesh. For this latter purpose, there seems to be no cattle equal to the Durham or Holstein, and to that end they have been bred for a century, just as the Jersey has been bred for richness of milk and the largest amount of high flavored butter.

If the farmer desires a cow that will produce the finest article of the latter, and one that will retain the largest money value for the food required, then we should say by all means take the Jersey. A discreet farmer, even had he never seen a specimen of the kind, would be very likely to describe as his preference just the qualities she possesses. But if bone and muscle, Durham or Holstein, would fill the bill much better, whilst the amount of food required to keep up their thrift and status would be much greater. The smaller the size, therefore, of a cow, so that she unites therewith the faculty of secreting the largest percentage of rich butyraceous matter, the better; and such, unmistakably, is the province of the Jersey. It is not so much the amount of food appropriated and taken into the stomach that constitutes her chief value for the dairy, as it is in the use made of it when so appropriated. The Jersey cow knows nothing of accumulating fat on the back and ribs, nor is it required of her. She appropriates nothing in that direction, but possesses in an eminent degree the marvelous faculty of assimilating and secreting from her food, a milk rich in oleaginous matter—the material of which the butter is formed—and for which especial purpose she seems to have been created.

What the farmer or grazier wants is a cow small in stature, with the least amount of bone and offal, and somewhat wedge shaped—wide behind and tapering to the front, with hips sufficiently broad to sustain the weight of the bag when filled, a small head, prominent eye, yellow and soft skin, a capacious paunch, a flat instead of a round rib, a thin tail, a tapering muzzle, prominent milk veins, a thrifty constitution, and with all a gentle disposition;

and then, to yield milk which can be churned in the shortest possible time, and turn out butter of a golden color and of the highest flavor.

All these requirements are to be found in the Jersey cow, and in none other; and if the farmer has a taste for the beautiful in nature or art, for the fine scenery and the green fields, dotted over with the useful as well as the ornamental, he would find resembling in a herd of Jersey cows, a flock of fallow deer, and for which at a distant view they might readily be taken.

For The Lancaster Farmer.

A NUT FOR THE BOTANISTS TO CRACK.

So accustomed is the botanist to be confronted with new and singular forms in the vegetable world—with unexpected developments and odd facts—that now-a-days it must be something wonderful indeed that excites more than a momentary surprise. Already acquainted with more than 120,000 different forms of vegetable life, the discovery of a new species, although a very pleasant and acceptable result, scientifically considered, is nevertheless an achievement that does not call for special remark. Sometimes, however, circumstances give rise to fresh facts concerning long and well-known members of the vegetable kingdom, that bother him more than to properly determine where to place a newly discovered but doubtful specimen.

It has been the fortune of the writer to be brought face to face a score of times with a singular fact (to him at least) in the economy of that familiar friend, and we hope favorite, of every reader of this, the common sunflower. (*Helianthus annuus.*) As often as the circumstance presented itself, it set us to puzzling over it, but inasmuch as we never reached a conclusion concerning it that was entirely satisfactory, we herewith present it to the readers of The Farmer, in the hope that some one else may be able to offer an acceptable solution of the problem.

Across the broad plains of Kansas, Nebraska and New Mexico, are wide and well-beaten highways, over which thousands of wagons laden with merchandise and drawn by mules and oxen, are passing and repassing during eight months of the year. In dry and favorable seasons no Pennsylvania road is firmer or harder, and under favorable circumstances, the well-defined, grey trail can be traced for miles with the naked eye. During the great part of the year the rain-fall is but light, and the slow, white-shaded caravan moves along with scarce an impediment. But there are times when the windows of heaven are opened, and the floods descend, and then what was once a road that might rival a paved street in hardness, becomes little better than a quagmire. When this occurs it is customary for the wagon trains to leave the beaten track and open a new road in the also soft but less-yielding prairie to the right or left of the old highway. Each succeeding train for the same reason follows in the newly laid-out path, and the result is the entire abandonment of the old road for purposes of travel.

No sooner is this done than is seen the remarkable fact to which we wish to call attention. On each side of the deserted road at once springs up a strong, dense growth of sunflowers, and these fringe the once traveled route, sometimes for miles, but more generally until, the soil becoming harder, the new road again leads into the old one. I will not assert that this is the case in every instance, but I believe it to be so nine times out of ten; it is the rule, which a few exceptions, if there be any, would only confirm. These sunflower plants are from one inch to ten or more feet high, and at the proper season laden with flowers. Although not a dwarf variety, as the tallest stalks prove, even the most diminutive ones generally rejoice in small but well-developed discs, turned sunward; times without number have I measured a plant only four inches high with a beautiful crown of golden glory, and as often as I did so, I could not but marvel whence and how this phanerogamian came to take its place in such an odd and seemingly out of the way locality. It must be remembered that this occurrence is seen far from any settlement, often hundreds of miles from any human habitation, and therefore very unlikely to be the result of human agency. Naturally birds suggest themselves as the involuntary disseminators of the seed, and thus furnish a clue to the mystery; but in that dry and treeless region birds are far from being plentiful, and even if they were so, would be much more likely to be attracted to the new roads in search of the droppings of passing animals, and thus convert them into long avenues bordered with a spontaneous growth of sun-flowers. Neither can we attribute the result to coyotes; these, it is very true, will eat anything from a seed to a buffalo steak when hungry, and are constantly prowling along the beaten highways with the same purpose that the birds do, and therefore, like them, would be more likely to seek a new road than an abandoned one; therefore we must acquit them also of any instrumentality in the matter. Winds cannot do it, for they would scatter the seed broadcast over the prairie where the plants are not found; the belt of sun-flowers is always well-defined along the roadside, and varies in width from ten to thirty feet or even more; straggling stalks are occasionally seen at some distance from the main body, but such cases are exceptional.

I feel assured that some other potent agency is at work in the production of this singular circumstance. The difficulty I find in accounting for it is, that every hypothesis that suggests itself applies with even more force and cogency to a like condition of things along recently made roads, but where, as we have seen, it is found wanting. Some one, perhaps, better versed in the mysterious workings of the countless forms of vegetable life that surround us, may be able to penetrate the secrecy that enshrouds the subject, and make clear what is now obscure. Perhaps if the secret were laid open, it would, from its very simplicity, teach us how little we really know concerning the mysterious workings of natural laws.—*F. R. D., Lancaster.*

For The Lancaster Farmer.

THE COST OF PLANTING AN ORCHARD.

Any intelligent farmer can reckon up the cost of making an orchard of apple-trees. This way: Plow the land deeply, and manure it as fully as for a crop of corn; harrow well along and across, and roll, to break all hard and large clods. Fair sized apple-trees can be got for twenty-five cents each. If planted thirty feet apart both ways, forty-eight trees will plant an acre; cost, twelve dollars. If set forty feet apart both ways, thirty-six trees will plant an acre; cost, nine dollars. To an orchard of ten acres the cost for trees will be from ninety to a hundred and twenty dollars, but such a number could be got for a hundred dollars at the greater number of trees. It is generally now supposed that Indian corn is the best crop the first year upon a newly-planted orchard, as it shades the trees in the hottest months, and when cut up in fall the trees get the benefit of sunshine and air, which harden them to withstand the winter's cold. A hill of corn is left out for every tree; so the loss is very small. The corn crop should be taken off and shocked in another lot, so that the whole land of the orchard will be plowed and seeded down with wheat and grass. The grass crop, after the wheat, may remain three or four years; then plow and crop with grain. Give heavy manuring in the course of rotating crops; the orchard will be again seeded down to grass, to lie for five years, giving a top dressing of manure or concentrated fertilizers (if they are good). During these years the orchard will yield nearly as good crops as are on other open fields, the soil will be well stirred for crops of corn and potatoes, the trees will make large growths after the second year, and when large enough the orchard may be pastured. The cattle and sheep will eat up the fallen fruits, and the grubs within them, and that will destroy many hundreds of noxious insects yearly. In time the orchard will yield double crops; say grass or grains and fruits also. Some of the trees may need setting straight and staked up; some may need slight pruning to balance their heads. The best varieties that thrive in the locality should be got, and all purchased from responsible nurserymen, who advertise in The Farmer.—*Old Husbandman.*

For The Lancaster Farmer.

THE CULTURE OF VEGETABLES.

Many gardeners and others skilled in the culture of vegetables, lost their crops of late beets, carrots, parsnips, salsify, parsley, celery, and onions, from seeds of last year, by sowing them too late. The long-continued dry weather so dried the soil that the seeds did not germinate. The seeds of those crops have hard shells, and it requires much moisture in the soil to soften the shells and let the germs push through to grow.

As soon as the soil is fit to dig or plough, sow the seeds at once of carrots, parsnips, salsify, parsley, celery and onions, and plant onion sets. Sow early beets plentifully, in case of failures of late varieties. Generally, late beets and carrots are sown a month later than the early varieties, but last year they failed. Parsnips, salsify and celery need all the season.

The best parsnip is the Sugar parsnip. Long Orange carrot is the best. White solid celery is best. The Curled parsley is best. The Yellow Strasburg onion is best. The best two peas are Extra Early, for first crop; Eugene, for second crop, sown two weeks later than the Extra Early. Stowell's evergreen sugar corn is the best. Dwarf wax bean is the best bush bean. Lima pole bean is the best shelling bean. The German wax pole bean is the best pole bean whose hulls are eaten, as string beans are. It needs no stringing, and neither does the dwarf wax bean. They have no strings; are both very rich and buttery. The Long Blood beet is the best for late crop. The Early Rose potato is the best. There are many new varieties highly commended by seedsmen, such as Extra Early Vermont, Brownell's Beauty. They are most excellent. There are several others, all sold by pound, peck, bushel, and barrel. The Colossal asparagus is best. The dark Egyptian beet is in high repute for early crop. The Hanson lettuce is the best. For cabbages, get Large York for early, and Flat Dutch for late.—*Old Cultivator.*

For The Lancaster Farmer.

RICH AND POOR GROW A GRAPEVINE.

Every householder should grow one or more hardy grapevines. When trained upon arbors or fences they do not take up any surface space in the way of other crops. A neat arbor over the back kitchen door is a comely appendage to it, and furnishes a grateful shade when clothed with vines. It also serves as a rack, on which to hang small towels in daily use in the kitchen. The *Concord grape* is the best for general culture; is of thrifty growth, and yields plentifully. The fruit is black, and ripens early and keeps sound long. The Isabella is also a good variety. The Catawba does well in sunny situations and in dry seasons, but in shady places and wet seasons it does not color and ripen its fruit well. The *Walter* is a superior variety; yields large crops. The fruit keeps long, and is the only native grape fit for making raisins of. If raisin-making ever becomes a business in our country, the *Walter* grape will be the one for the purpose. There are many other choice varieties for wealthy amateurs to cultivate with pleasure to themselves. All the varieties flourish best and yield largest crops when the shoots are bent from the perpendicular; a half horizontal position is best, after rising some feet from the ground. So an arbor with sloping roof is the best. It is said that grapevines grown close to the house impart a lively feeling to its inmates. Plant now.—*Old Husbandman.*

For The Lancaster Farmer.

SUMMER-BLOOMING BULBOUS FLOWERS.

Lilium (Lily) holds the first rank. The species and varieties are numerous, and of surpassing beauty, of many colors of blooms, spotted, striped, etc. Lancifalium or Japan lily is exceedingly beautiful; six varieties. Golden lily is wonderful for large size, beauty and fragrance. All the above bloom in July and August, when other flowers are wilted. The White lily perfumes the whole garden in June; of pure white. The famous "Orange lily" accompanies the White in June blooming; so do Superbium, Pennsylvanicum, Philadelphicum, etc.—all orange, and spotted with maroon. The Tiger lily is well known; there are several new, superior varieties; one with double blooms. We can remember when the Candidum, Chalcedonicum and the Thunbergianum—all of several varieties and of great splendor—were universally grown and highly prized. All the above species are hardy, and may stand in the same places for five years. The following genera are tender; planted in spring, the bulbs kept in cellars in winter: *Gladiolus* is now very popular; of hundreds of splendid varieties of many shades of blooms, and bloom in July and August. *Iris*, the bulbous Iris, is very beautiful, with much blue in blooms. *Tigridia* (Tiger flower), two species: the blooms are beautifully spotted. *Tuberose*—now of several varieties of single and double blooms—blooms in late fall, and delightfully fragrant. The variety named *Pearl* is of late introduction; grows only half as tall as the others; it produces thrice as many blooms, all double and sweet scented. *Variegata* has leaves striped with white and green; is a gem without blooms, yet it flowers as freely and sweet scented as the old species.—*W. E., Philadelphia, April* 1, 1876.

For The Lancaster Farmer.

OLD INVENTIONS AND INVENTORS.

As the Millers of Lancaster county are forming a "Millers' Association," I will contribute a few items about the inventors of the olden times, and other matters relating thereto.

Why does a barrel of flour weigh 196 pounds? This originated in England, and was explained at a meeting of the "Corn Exchange" in London, attended by our late Minister, Mr. Schenck, thus: a "stone" is an English weight of fourteen pounds. Seven stone makes ninety-eight pounds, which is a half-barrel, and fourteen stone make 196 pounds, or a barrel.

One of the most noted Lancaster county mills of the olden times, was the Litiz Mill, now owned by Benjamin Ritter, and upwards of one hundred years ago by the Moravian society of that place. It was then leased to a man by the name of Klaus Keln, who made and sent cargoes of his flour to Jamaica, W. I. On its arrival in the West Indies, on one occasion, it was discovered that the barrels contained *shipstuff*.*

On the return of the vessel information was made to the Philadelphia merchants, who at once petitioned the Government for the appointment of a *Flour Inspector* for the port of Philadelphia, and this was the origin of that office in this State.†

The machinery in mills at that time was very clumsy and complicated. After the wheat was ground, it required the presence of a boy to work on the bolted stuff in the bolting apparatus.

There once lived a man on Hammer creek, at a place now known as *Brubaker's Mill*, but formerly Peter Stauffer's mill. This Peter Stauffer, the former proprietor, had seven sons, one of whom was the great-grandfather of the writer, and the seventh son was the great-grandfather of Mr. Jacob Stauffer, the patent agent of Lancaster city.

In those days it required a boy to attend the hopper, called the "hopper-boy." The Stauffers, however, went to work and invented an attachment called the *Hopper-boy*, first used in 1764, and continued in use from that day down to 1840, and is still in use in some localities. The Stauffers were great millmen. At one time there were no less than eight "Stauffer Mills," in Lancaster York, and Franklin counties.

Oliver Evans, the author of the "Millwright's Guide," took out a patent for the Hopper-boy, and commenced to collect patent-right fees about the year 1812, and when his agents came to Lancaster county they were refused payment by the Stauffers and others, as it was a well known fact that the Hopper-boy was a Lancaster county invention, and quite as well known that the Stauffers were the inventors.

Evans brought suit, several cases of which appear in the legal records of that period.‡ These suits came off in Philadelphia. Sons and grandsons of the original inventors were still living, and those who were too old to go to Philadelphia-made affidavit before the uncle of the writer of this imperfect sketch, who was a justice of the peace—a country "squire." There was one of these machines in Frederick's mill (now Ritter's mill) and Mr. Frederick took it along to Philadelphia. When it was exhibited to the jury as one of the original machines as invented by the Stauffers, they immediately rendered a verdict in favor of the defendants (the Stauffers.) Inventions are often claimed by persons who have no right to them, and who never should have been granted a patent on them.

Within the the last three years a writer in the *North American*, in speaking of Oliver Evans as a great inventor, among other things accords to him the invention of the *Hopper-boy.—L. S. R., Warwick, April*, 1876.

For The Lancaster Farmer.

ANNUAL AND BIENNIAL FLOWERS.

All hardy annual and bienuial flower seeds should be sown in April. The new varieties of the well known species are very superb. Of annuals, Sweet Alyssum and Mignionette are sweet scented. Drumondii Phlox, Candytuft and Portulacca, are pretty dwarfs. Eschschaltzea, Calliopsis and Larkspurs, are showy. So are Marigolds, but their smell is unpleasant. The above may all grow where they are sown. The following may be sown in warm spots, or in frames with glass sashes, in May, and transplanted when two or three inches high: Double German Asters, Balsams, Zinnias Browallia, Globe, Amaranthus, Gaillardia, &c., all very beautiful.

Biennials.—The new varieties and species are very lovely. The seeds are sown, and the plants transplanted, when large enough, of all the species, and bloom the second year. Sweet Williams and China pinks of many colors, and double and single blooms. Canterbury bells, white, sky blue and dark blue. Foxglove, the original rose-colored species, a white and yellow-white varieties. Columbine, a rose color, a blue, purple, white, violet, &c., with both double and single blooms. Carnation pinks of various colors, single and double blooms. Heddewigi pinks and Laciniatus pinks are both fancy pinks of great beauty.—*Flora.*

For The Lancaster Farmer.

WHICH POTATO IS THE BEST?

The potato is more extensively grown and more generally used than any other culinary vegetable; and the good varieties are, perhaps, the most wholesome of all vegetables. We have had a large number of varieties for trial; many have been of good quality, but not so productive as the inferior varieties, so cultivators have grown the inferiors for profit. The *Peachblow* yields large crops upon sandy soils, but it is too much of the coarse *horse-yam*. Its hard core makes only two-thirds of it fit to eat. The following are good for early use: Early Rose, Extra Early Vermont, King of Earlies, Snowflake, Alpha, &c. For late crops grow Late Rose, Brownell's Beauty, Peerless, and White Peachblow. They are all good varieties. The Early Rose and Late Rose are well known as first-rate, both in quality and productiveness. Brownell's Beauty is a splendid looking tuber, of first quality; and, so far as we have grown and seen it in many places, is very productive. The Peerless is also excellent and productive. We almost fear the White Peachblow, as coming from the old Peachblow. It is well to try all new kinds, as one tuber can be bought, which can be cut into many sets for a fair trial. They may produce a bushel for next year's planting, so the experiment is not expensive.—*Solanum.*

For The Lancaster Farmer.

HOW I RAISED MY TOMATOES.

I may as well state at the outset that my experience in the cultivation of this delicious vegetable has neither been derived from a long-continued series of experiments, nor from its production on an extended scale. Nor is the system pursued original with me; on the contrary, the hint was taken from the agricultural corner of a country newspaper, and for aught I know, may be the plan continually followed by truck gardeners. I simply wish to relate my own experience, from which the reader may draw his own deductions.

The ground set apart for my tomato patch was only sixteen feet long and seven feet wide: it is what is known here in the city as "made" ground; that is, not the natural surface soil, but made up of earths of several kinds, dug out of cellars and excavations, and used to fill up low places. This was not the most promising sort of material out of which to construct a garden soil; but there was no help for it, and the only thing to do was to make the most out of it. It was heavily manured in the spring of 1874 with chicken droppings, dug over several times in the spring, and again in the fall after the few vegetables that grew on it had been removed. Contrary to the oft repeated assertion that tomatoes do not require a rich soil, I gave the ground another heavy manuring of the same kind in the spring of 1875. The backward season also permitted it to be spaded over deeply two or three times before the plants were finally set out. Care was taken to mix the earth and the fertilizer as thoroughly as possible, and in this I was pretty successful; but even now, with a liberal addition of sifted coal ashes, it is uninviting and heavy.

Into this contracted piece of ground, three rows of plants were carefully set out, the rows running the long way, and each one contain-

* How different it was with the flour which Washington shipped to the same port; his "brand" was sufficient, and therefore, it needed no inspection.

† This office seems to have originated in consequence of fraud, which perhaps may account for its subsequent fraudulent administration in so may cases—no great credit to Lancaster county.—Ed.

‡ In a collection of patent cases decided in the upreme and Circuit Courts of the United States. By James B. Robb, conselor-at-law. Boston 1854, vol. 1, page 166. Evans vs. Hettick, [3 Wash. 408]. Action for an infringement of the plantiff's right to the *hopper-boy*, described in his patent. Plea not guilty. The evidence was the same as in the case of Evans vs. Eaton (1 Peter's Rep. 322,) save that David Aby, one of the defendant's witnesses, said the hopper-boy used by the defendant, was the *Stauffer's hopper-boy*. This consists of an upright shaft with a cog-wheel that turns it, geared with the water-power of the mill. An arm or board, somewhat resembling an S, with strips of wood fixed on one side, and so arranged as to turn the meal below it, cool and dry, and conduct it to the bolting chest. Of course, sundry legal quibbles were brought to bear as to the identity of the original invention of Staffer and the patent subsequently granted Oliver Evans. On page 193, the case concludes thus: "If it was in use, in any part of the world, however unlikely or impossible that the fact should come to the knowledge of the patentee, his patent for the same machine cannot be supported." "*Verdict for the defendant.*" We find another case of the same, Evans vs. Eaton, [3 Wash. 443]. The defendant upon testimony of numerous witnesses, proved that Daniel Stauffer first saw it in operation on his father's, Christian Stauffer's mill, in the year 1774. In 1775 or 1776, he erected a similar one in the mill of his brother Henry; and another in Jacob Stauffer's mill, in 1778 or 1779. Philip Frederick swears, that in the year 1778, he saw a Stauffer's hopper-boy in operation in Christian Stauffer's mill; and another in U. Charles' mill, and that it was always called "Stauffer's machine," (page 198). George Roup, states that in 1784 he erected one of these hopper-boys in Branneman's, and in 1782, he got the description from Abraham Stauffer, as in use in his father's mill. This case concludes on page 207, in these words, "*verdict for defendant.*"

These abstracts from the lengthy reports, are simply given to confirm the statement made by Mr. Reist.

J. S.

ing six plants. This was rather close work, but I hoped to overcome it by the plan of cultivation I had in view. The plants were of the *Trophy* variety, and were purchased on market of Mr. George W. Schroyer, of this city. They soon took root and grew rapidly, and ere long required additional support: this I afforded them in the shape of props four feet high, to which they were tied near the ground, and again near the head of the plant, and sometimes a third and fourth time before they were as high as the sustaining poles.

As soon as the growing vines manifested a disposition to flower, I began to remove with a sharp knife all the leaves from the ground about half way up the stalks, and to this plan I rigidly adhered from first to last. Two or three of the most thrifty shoots sent out from the main stem were permitted to grow, but these also were constantly freed from all unnecessary foliage in the shape of leaves. Branches of fruit would form at intervals, and while these, in all instances, were left, the leaves both above and below them were removed as often as the occasion seemed to demand it. It was continually a matter of surprise to me how rapidly the leaves grew. I think I am within bounds when I say that in the height of the season a large armful of leaves was cut from these eighteen plants regularly once a week.

When the vines were as high as their supports, quite narrow strips of board were nailed on the latter the entire length of the rows, and transversely across them other strips of the same kind were laid, whereon not only the vines might rest when they grew higher than their supports and bent over, but likewise to sustain the branches of fruit when too heavy to be supported by the stalks themselves. On the top of this lattice-work, as I may call it, the process of leaf pruning went on, even to the end of the season. Bunches of fine tomatoes in every stage of maturity adorned the plants from within a foot of the ground to their outer extremity.

Meanwhile the ground beneath was thoroughly cultivated: every few days the rake was passed through it, loosening the soil, destroying the weeds, and preventing it from baking around the roots of the plants. In dry weather they were regularly watered by hand, and were not allowed to suffer for want of moisture. As the lowest and first formed fruit ripened and was removed, the few leaves that had been permitted to remain on the branches were also taken off, until finally hardly any foliage was to be seen within three feet of the ground, and the sun had free access to the roots of the growing, bearing vines. This I regard as a great advantage, and which could not have been secured had the useless foliage been permitted to remain and cover the ground with its dense shade.

By this plan I obtained from twenty to thirty-five tomatoes from every plant: the average, I suppose, was about twenty-five. I presume this, when the quality of the fruit is considered, to be a fair yield; at any rate, I was satisfied with it, and I saw very little on market that equaled it, either in firmness or fleshiness. Although the spring set in very late, my tomatoes began to ripen not long after the southern article came into market, and before any of my neighbors could indulge in the home-grown article. It was with some pride, (pardonable, I trust,) that I called the attention of chance callers to the handsome clusters of every shade, from a delicate green to darkest red, that were everywhere visible. It is true that before they began to ripen, the absence of foliage seemed at first sight to convey the idea that the vines were more thrifty than prolific, and my attention was called to this fact often enough, but I invariably asked the critic to count the number on a single vine, when he, too, came to the conclusion that twenty-five tomatoes was, perhaps, as large a yield as was usually realized from vines that were permitted to grow up without support, only to tumble down and cover three or four square yards of garden ground planted with other vegetables.

I do not think the foregoing was a fair test of this plan. My ground is not favorably located. Its eastern boundry is a high board fence, which prevents the sun from reaching the plants at that end at an early hour, while on the western side is a stable which obstructs the sun after two o'clock in the afternoon. With all these drawbacks, one plant attained a length of ten feet, and bore several clusters of fine fruit within twelve or fifteen inches of the top. The severest pruning did not appear to interfere with the growth, either of the vines or fruit. I feel assured that had the entire foliage been left on them, the result would have been much inferior tomatoes, as well as much later ones. The free access of sunlight to the soil stimulated the growth of the plants, and its access to the growing fruit was equally influential in giving color and flavor to it. In a more favorable locality and better soil, much better results might reasonable be expected.—*F. R. D., Lancaster, Pa.*

For The Lancaster Farmer.

BEES AND BEE HIVES.

Your Farmer is always a welcome visitor—full of information of a useful character, if properly applied. Several correspondents have given their views on Bee Culture, and I ask a small place in your columns for a few words on the same subject. I have studied the nature of Bees for many years. It requires time and patience, but now I think I have been fully paid for all my trouble.

First, then, as to size and shape of hive, also surplus honey-box. I find natural swarming to be the best, as nature never made a mistake in her work. The hives should be made of pine, one inch thick, clear of knots, ten and a half inches square on the inside, and fifteen inches high. In this size the Bees will build nine straight combs, and in the fall they will contain thirty pounds of honey. Twenty pounds will feed the largest stock during seven months of winter. This amount can be, and is gathered in from ten to fifteen days during the white clover harvest, and I want the balance as a surplus. This I get from one box on the top of the hive, which holds fifty pounds, and I seldom fail to get them full. I remove them in September, therefore the bees are annoyed only once; but when small boxes, containing only five or six pounds are used, they are required to be removed as soon as full, which will be every five or six days. Then there is as much time lost in getting the boxes cleaned and all the corners puttied, ready for work, as it takes to fill them. Count this lost time of the bees and you will find yourself minus at least twenty pounds of honey, besides the frequent disturbing and annoyance you cause them.

My hives are plain, with four cross sticks to support the combs. The boxes contain movable frames, one inch and three-sixteenths wide, and a quarter of an inch space between for room for travel. Now, with a little melted beeswax on the end of a stiff feather, draw a line along the middle of the top and two ends of each frame, and the bees will wall on to this and fill each frame with a straight worked comb, and each frame can be removed without disturbing the others.

I learned this in the year 1849, in Valparaiso, Chili, on board a German ship, which carried fifty stock on board, bound for San Francisco. I took down the model in my diary, and on my return home adopted the plan, and have never desired a change. In the winter I always put on the boxes, leaving the passage way open, so that the sweat from the bees may pass up and evaporate, otherwise it would drop to the bottom and form ice, and in time freeze them. When new pollen is to be had I shut them off from the box by passing a piece of tin between the hive and the box, until the first swarm comes off. I then remove the tin that they may go up and fill with honey, believing it to be worth more than the second swarming, as this is a preventive, having space for bees and room for work.

I have received many solicitations to purchase Italian queens, or entire hives. I once did purchase a hive at a big figure, and had it two years, and I never got either a swarm or any surplus honey; but before killing them I hybridized my American black bee, which I think is an improvement. I came to the conclusion that the Italian bees are like the "natives;" so long as they have a dollar they will not work to accumulate a store, and after the hive is full they will not gather any surplus.—*Wm. I. Pyle, West Chester, March 17th, 1876.*

For The Lancaster Farmer.

THE HUMMING BIRD.

On reading the interesting article on the nature of the Humming bird, in The Farmer for this month, I notice different opinions in regard to their mode of living, breeding and the size of the bird. I think their food is insects taken from the flowers and sometimes from spider webs. In confirmation of this I send you a feather taken from the tail of a Humming bird, which I extracted from a spider's web in Chili, South America, twenty-four years ago. The bird had been caught in the web just as I came to a flower bush in full bloom, and in the bush was the spider's web. The spider was throwing his coils around the bird, which was struggling hard to free itself. With a stick I set the spider off and released the bird. I then knocked the insect on the ground. It "hissed" at me and swelled up as large as a toad. It was as black as coal, except its legs, which were brown and very long. I think it could stand at least four inches from the ground. I killed it, and then relieved the bird of its netting, which was almost as strong as thread. I then drew the only three feathers which composed its beautiful tail. The middle one was stiff and of a brown color; the other two (one of which I send you,) were of a snowy white, although, as I have had them since 1852, they have become somewhat discolored. The one I send you was a little longer (the length of the barrel) say a quarter of an inch. The bird was a chocolate color in the shade, with blue neck and green head; in the sun it would change colors or shades. After the tail was out there was not much of it—not much larger than a small humble bee. It is called *Guainambi rara*, or a rare variety of the Humming bird. As I brought this feather from a foreign country, procuring it from the tail of the smallest member of the feathered tribe, and have preserved it since 1852, I thought you might consider it something of a curiosity.—*Wm. I. Pyle, West Chester, March 26th, 1876.*

For The Lancaster Farmer.

TRANSPLANTING HARDY TREES, &c.

April is the chosen month of spring for transplanting hardy trees, shrubs, herbaceous flowers and perennial vegetables, such as roots of rhubarb, asparagus, horse radish, &c.; heavy loams should be well stirred and finely broken to put about the roots in transplanting. The holes should be larger than the extent of the roots, so that they will all be spread out in their natural positions. If the farmers of Lancaster county could perceive how much they are favored with good soil, good climate, and the fine rolling lay of their lands for the culture of hardy tree fruits, they would soon make themselves and their county famous for choice fruits. The farmers of Chester and Delaware counties are more advanced in fruit culture, though less favored in soil, climate, &c. It is not too late now to begin.

In planting ornamental trees and shrubbery, the deciduous species should be set out first, and as soon as frosts are over and soil fit to dig in. Evergreens can be transplanted later; yes, in May. Hardy herbaceous flowers should be planted early, and the more tender species can be set out in May and June.—*Horticola.*

For The Lancaster Farmer

WHAT CAUSES HONEY-DEW ?*

There has been much speculation about honey-dew, and as yet no settled conclusion arrived at. There has been seen falling from above a moisture or a dew which is sweet to the taste: hence its name, honey-dew. As it cannot come from *nothing*, we conclude it is the result of *something*, and below will be found what seems to the writer as a probable cause.

It is a well known law of nature, that vapor is constantly arising from the surface, and ascends to a colder strata of air, when it becomes condensed and falls in the form of rain and dew. It is also well known that flowers of the fields, forests, gardens, and widespread prairies, are constantly throwing off an aroma, a fine etherealized essence, which no doubt arises and becomes condensed like the vapors, and falls, the same as rain and dew.

We cannot conceive from whence comes its sweetness, unless from this cause.—*A. Allen Noe, Lancaster, Pa., March* 10, 1876.

OUR PARIS LETTER.

Farming on the Continent of Europe.

Correspondence of The Lancaster Farmer.

Paris, April 1, 1876.

INFLUENCE OF TEMPERATURE ON MILK AND BUTTER.

M. Tisserand having visited the dairy districts in the vicinity of the Baltic, draws attention to the advantages to be gained by the conservation of milk, the preparation of butter and the making of cheese at lower temperatures than what are generally employed. France, and perhaps other countries as well, fail to enjoy all the advantages in butter-making that the farmers of Denmark and Sweden reap by the adoption of a lower scale of temperature. In France it is believed that, in order to obtain good cream and good butter, the temperature ought to be maintained between 53 and 55 degrees Fahrenheit; below this, the cream, it is alleged, will not mount. M. Tisserand has experimented on milk, fresh from the cow, at temperatures varying from 41, 50 and 95 degrees, pending 24 and 36 hours, and found that the cream rose most rapidly as the temperature approached most to 32 degrees; that the volume of cream obtained was greater, the yield of butter superior, and the quality of cheese and butter peculiarly fine. There is nothing surprising in all this; it is only natural that cold should act on milk as it does on beer, wine and such fermentable liquids, by conserving and ameliorating them, by preventing those changes due to the action of the agents of fermentation. The excellence of Vienna beer is owing to its being fabricated at a very low temperature. In the north of Europe milk is kept at a temperature very low by means of ice, and the ice is preserved in trenches for summer use. Thus there is not a little economy in dispensing with fuel and its apparatus for heating. Milk cooled down to 37 or 39 degrees, by means of a running stream of spring water, will, according to M. Tisserand's experiments, yield 10 per cent. more butter than when maintained at a temperature of 57 degrees. M. Dahl, of Norway, obtains 17 ounces of butter from 12 quarts of milk, churned at 37 to 39 degrees, while 13 quarts were required to produce the same quantity of butter when the temperature was maintained at 64 degrees. It is owing to this peculiar method of preparation that Denmark is enabled to export butter to China and Japan. One drop of milk contains 45,000 globules of various dimensions, the largest being fewest in number. These globules, consisting of fatty matter, resemble a sky clustered with stars, and only occupy 7 or 8 per cent. of the volume in which they move; being lighter than the serum in which they float, they mount to the surface, the largest globules first, and form cream. In Denmark the milk is placed in block-tin vases twenty inches deep and sixteen in diameter; these are placed in a reservoir, where water is constantly running, and to which ice can be added.

THE GOVERNMENT SHOW OF FAT STOCK.

The Fat Stock Show just held in the Palace of Industry, under governmental auspices, marks a notable progress over that of last year, both in general entries and the symmetry of the animals. The first cattle show in France dates from the year 1844. The display of sheep was above all remarkably excellent. This year, also, bulls, rams and boars were admitted for the first time, and although no prizes were awarded, the classification by a tried jury must tell by drawing the attention of breeders to those points recognized as superior, embodying thus sound advice for all whom it may concern. There were some excellent specimens of the White Charolais and the Red Breton, as well as of that splendid race, both as to form and fineness of skin, the Charolais-Nivernais. In rams, the Merino took the lead, and perhaps next its crosses. The Shropshire-down and the Disbley-merino had very fine representatives, some weighing 260 pounds, and exhibited what is considered the ideal of form—absence of horns, short neck, and consequently chest well developed. The display of poultry was very beautiful, and a cock and five hens, belonging to the Crevecœur race, which obtained the *prix d'honneur*, looked superb in their jet-black plumage and tuft. The dead poultry were monster masses of grease. In fat stock, a Charolais-Durham, etc., weighing 18 cwt., and aged 34 months, obtained the first prizes, as did also a lot of three sheep, aged 8 months and 15 days, weighing collectively 41½ cwt.; in pigs, a Yorkshire-Berkshire-Normand animal, aged 10 months, weighed 43¾ cwt.

THE STANDARD FRENCH CATTLE SHOW.

The principal fat cattle show in France is that which has recently taken place at Nevers; it is, in a way, the standard for the country. What the breeders and rearers seek, is not an animal excessively fat, for such would be objectionable, but an increase in the saleable meat, of good quality, tender and juicy, with the fat spotted, as it were, throughout the lean. In place, as formerly, of having only a yield of 50 per cent. of meat, as much as 65 and even 70 per cent. is now obtained, the skin, tallow, offal, &c., being thus reduced to 30 per cent. This will not diminish, however, the price of meat, because persons who formerly eat it but twice in the year, consume it at present every day. In the neighborhood of Nevers, the rent of pasture land has risen nearly five-fold in twelve years—what was fr.12 per acre is now 60. The locality has a special race of stock, the *Nivernais*, which is the product of successive crossings of the white Charolais with white Durhams. There is a large business carried on in the fattening of cows, a proof that the prejudice against that kind of meat—never a rational one, is on the decline. As a general rule, animals of a mean size are preferred by French butchers; large races do not bring so high a price as average ones; and three sheep, weighing 90 pounds each, are more profitable than one of 220 pounds.

TELLIER'S NEW PROCESS OF PRESERVING MEAT FRESH.

It is in this month that the company formed to work the Tellier process of preservation of meat in a fresh state, will despatch its first specially fitted up ship to La Plata. The process is this: The germs of decomposition are killed by a temperature of 32 degrees, and live only between one varying from 42 to 48 degrees. Tellier, by means of methylic ether, has conserved meat perfectly fresh and savory, save a loss of 10 per cent. in weight, for 57 days, the ether maintaining the temperature at the freezing point and dry by the aid of ingenious generating cold machinery. France consumes 4,000 tons of fresh meat daily, and the company expects to add thereto by 100 tons, so the competition cannot frighten farmers, for the present, at least. The voyage from La Plata to France is expected to be made in at most 30 days. The animals will cost but fr.70 at the port of shipping, near which they will be slaughtered.

SUBSTITUTE FOR CLIPPING HORSES IN AUTUMN.

M. Veterinary Surgeon Felizet recommends that instead of clipping working horses in autumn, a good shining coat, free from skin dust, can be secured by giving the horses, from the middle of September, either alone or mixed with their evening feed of oats, one-tenth of a quart of bruised hemp seed, and the same quantity of buckwheat in its natural state.

ECONOMICAL FEEDING OF STOCK.

Very minute attention is being given to the economical feeding of stock. For their sustenance only, the food ought to be in proportion to the one-sixty-sixth of their weight. It must also be borne in mind that the consumption is not so much in relation to the animal's weight as to the capacity of its chest, and that two animals, each 600 pounds in weight, will consume a little more than a single animal of 1,200. In the case of draught animals, their rations ought to be doubled for every twelve hours of work, taking hay as the type of nutrition. Of course, a dietary wholly consisting of hay is not to be thought of, but grains substituted *pro rata*. In the case of growing animals, in addition to their sustenance ration, they will require 14 pounds of forage to add one pound to their weight. For fattening, 10 pounds of hay added to the ordinary feed, will produce one pound of meat, and a supplemental ration of one pound of food will yield an increase of one pint in the milk, provided the cow be of a good milking breed; if not, the augmented food will only fatten. A point not to be overlooked, is to have a trustworthy cow herd, who will possess some clear ideas respecting the necessity of feeding animals at fixed hours, and duly measuring their rations. He ought to exclude all damaged food, or adopt the usual means for ameliorating it, never forcing an appetite.

THE PRESERVATION OF GREEN FODDER.

M. Goffart, who is one of the apostles of the movement in favor of the preservation of green maize for winter and spring feeding, asserts that he has received thousands of letters from his countrymen and foreigners, testifying to their success, and craving for more information. A few items on this important topic. The Giant Maize, or Caragua, though the seed has never been imported from Nicaragua, is the variety to sow. It yields as much as 70 tons per acre. M. Goffart cuts his green maize into lengths of four inches, by steam and hand machines. He has suppressed the angles in the trenches, and since the ends of the pit are oblong, the maize suffers less deterioration. He has also employed portable doors, when the pits are opened, to take out the forage. This plan better excludes the air. He pitted two tons of chopped green rye the 8th of last May, and opened the pits the following September, when the cattle eat the rye the same as green maize then supplied to them. All green fodder can be similarly preserved in an uncut as well as in a chopped state.

MISCELLANEOUS NOTES.

Much conversation has since a year taken place relative to the Telliez process for cultivating potatoes. The tubers were planted in August, and were ripe in January. The agricultural society deputed one of its members to test the experiment. He followed exactly the instructions of M. Telliez, and with the tubers supplied by him, planting others in a like manner. The sample tubers vegetated, and the produce from six tubers just raked up, was less than half a pint, the potatoes not being much larger than hazelnuts. The other tubers planted did not vegetate at all.

As hay is scarce this year, farmers substitute cut straw, steeping it with some bran for twelve hours with ordinary cut roots. When potatoes are employed, such ought to be either cooked or fermented.

The subject of planting trees, chiefly poplars, on the roadsides, is strongly opposed in many localities by the owners of property in the vicinity of the trees: the roots stretching into the neighboring land feed in a soil where they have no right. The state, on an average, nets one franc per annum by the prunings on each tree—proprietors estimating their loss at two francs.

*See page 49 of this number of The Farmer.

OUR FARMERS IN COUNCIL.

Proceedings of the Agricultural and Horticultural Society—Cultivation of Wheat—Selection of Fruits—How to take Care of Our Lawns.

The regular monthly meeting of the Lancaster County Agricultural and Horticultural Society was held in the rooms of the Athenæum on Monday, April 3rd, inst., the President, Calvin Cooper, in the chair. On account of the weather the attendance was very small.

The committee appointed by the chair, at the last meeting, to report the best variety of apple trees for planting, made their report. The committee consisted of M. D. Kendig, of Manor; H. H. Engle, of Marietta, and Casper Hiller, of Conestoga. The report consisted of two parts, the following being written by Casper Hiller, who was unable to be present, and the latter by the other two members of the committee:

Best Variety of Apple Trees for Planting.

The task that has been laid on your committee is by no means an easy one. Thirty years' experience, to a close observer and experimentalist, might enable him to say pretty conclusively what is worthy of planting on his own patch; but, if he has also been a close observer, he has noticed that what is good with him is often worthless in another part of the county, and often so on his neighbor's land. Different soils, different elevations, different exposures, &c., make much difference in varieties. The list herewith presented may, from these causes, not prove satisfactory to all, but embraces such varieties as have a general reputation for good, or have proven satisfactory to your committee:

Early Summer Varieties: All Summer, Red Astracan, Sine Qua Non.

Late Summer Varieties: Benoni, Mellinger, Jeffries, Townsend.

Fall Varieties: Gravenstein, Hubbardston Nonesuch, Smokehouse, Jersey Sweet.

Winter Varieties: Baldwin, Dominie, Fallawater, Greist's Winter, Belmont, Smith's Cider, York Imperial.

The committee appointed at the last meeting to report on some of the best varieties of apples for cultivation in this vicinity, would recommend the following as our choice, in order of precedence, confining ourselves to six varieties of each as being ample:

Summer—All Summer, Mellinger, Strawberry, Duchess of Oldenburg, Garrettson's Early Primate.

Fall—Fall Pippin, Jeffries, Gravenstein, Porter, Maiden's Blush, Smokehouse.

Winter—R. I. Greening, Hubbardston.

Best Keepers—Smith's Cider, York Imperial, Golden Russet, Creek.

There are others of equal value, but would discourage running into too many varieties, except for the purpose of testing.

On account of the slim attendance, Mr. McComsey moved that the reports be laid on the table for dis-

cussion at the next meeting, when he had no doubt there would be a larger attendance. So ordered.

Condition of the Crops.

Reports of crops being next in order, Mr. Pownall, of Sadsbury, said that the wheat at the close of winter looked better than last fall. The Foltz wheat has taken the place of the Mediterranean varieties. It appears to give great satisfaction, and he thinks it gives more wheat and straw than any other kind of wheat. The clover looks very poor, is thinly set, but there is a chance for improvement.

Ephraim Hoover said that in Manheim and East Hempfield townships the wheat fields do not look as promising as on previous occasions. The Foltz wheat appears to stand the freezing best. The other varieties of wheat sown appear to be getting less, and here and there in the fields can be seen vacant spots. He could not tell the cause of this. The grass looks promising. The clover is frozen out, in some places roots and all. This is the case all over his section of the county. During the last cold snap the peach blossoms and grapes do not appear to have been injured. If this is the case we will have a large crop of peaches and grapes.

Martin Kendig, of Manor, said the crops in his neighborhood were about the same as those spoken of by Messrs. Pownall and Hoover.

John Huber said that the peach trees lying on high ground were not injured by the late cold snap. Those that were in low grounds were invariably found frozen.

Mr. Cooper, the President, said that as far as he had examined, he found all of the peach blossoms frozen.

Mr. Pownall said that the peach growers in his neighborhood reported some peach blossoms frozen that were in high places.

Mr. McComsey called the attention of the Society to an article on harrowing wheat in spring, which he had clipped from the *Country Gentleman*. It was a matter he had never heard of before, and as it claimed to increase the crop from 10 to 15 bushels to the acre, he thought it a matter that should attract the attention of all engaged in farming pursuits. He hoped that after the article was read every farmer would test the matter, and give the result of his experience to the Society. The article was then read by one of the members of the press present, and is as follows:

Harrowing Wheat in Spring.

The advantage of harrowing wheat lands thoroughly in the spring, as soon as the ground becomes dry enough to prevent the horses from sinking into it, is known to many farmers who have practiced it, but is unknown to the majority. Wheat is usually sown in September, upon well-prepared land. This land is left there subject to all the storms of rain and snow, and the dry weather in succeeding spring, until after the wheat is harvested. In consequence, the land becomes in May and June nearly as hard as a meadow. At a season of the year when the plants are in the greatest vigor of growth, the land is so hard as not to give one-half the nourishment it would if kept mellow by any process. Suppose, for instance, corn should be planted in the fall, under similar conditions with wheat, and that the winter did not injure it; and that it were left without cultivation of any sort until harvested—it is evident that the yield would be diminished over one-half; in fact, the yield would probably be so light and poor as to be almost worthless.

Now, wheat, from many experiments in its cultivation by hand in England, shows as great sensitiveness to cultivation as corn—the yield, by careful hand cultivation, being increased to 60, and, in some instances, 80 bushels per acre. Now, a thorough harrowing of wheat in the spring, in a very inexpensive manner performs the cultivation nearly as well as when done by hand. If the crust formed by the winter snows and spring rains is thoroughly broken, and the ground to the depth of two or more inches well pulverized, the effect upon the wheat is almost like magic. It starts into the most vigorous growth, and in a few weeks has nearly or quite doubled in size the wheat not harrowed. In pieces of wheat which have come under the writer's observation, which were harrowed in strips—that is, one strip not harrowed at all, and other strips on each side thoroughly harrowed—in the early part of June, the harrowed wheat stood fully one foot higher than the unharrowed at each side, and in every way was strikingly ranker and more vigorous. Mr. Robert G. Swan, of Rose Hill farm, Geneva, N. Y., who has heavy clay land, says he has harrowed his wheat for four years with the Thomas harrow, and finds the yield to be increased fully ten bushels per acre. Byram Moulton, of Alexander, Genesee county, N. Y., harvested from fifty acres 1,600 bushels of wheat. His neighbors only obtained about ten bushels per acre. The only difference in land or treatment was that Moulton's wheat was thoroughly harrowed with the same implements in the spring, and his neighbors' was not.

The effect produced by harrowing barley and oats, after they have obtained a growth of four or five inches, is equally as marked. I have observed many instances where fully twenty bushels per acre increase, in consequence of thorough harrowing, was obtained.

These facts and many others of similar character show clearly the great profit which farmers may derive from a thorough cultivation by harrowing of wheat, oats, barley and other sown crops.

Mr. D. Smeyen knew of a gentleman in York county who cultivated his wheat, the result of which was a gain of 10 or 12 bushels to the acre.

Mr. Kendig said that the Thomas harrows referred to in the article read, were entirely different from those used around this part of the country. In our harrows the spikes run directly through the beam; in the Thomas harrow they are bent back to an angle of about forty-five degrees. They don't cut clean through like ours, but merely go over the ground, pulverizing it very nicely. He believed if wheat was cultivated, it would prove beneficial.

Mr. McComsey: All summer crops depend on cultivation to a great extent. As such was the case, he could not see why the same would not hold good in wheat. He believed there was something in it, and advised all present to spend a day in a small patch near the house, using a hoe instead of a harrow.

Mr. Ephraim Hoover had read an article several years ago, which stated that a gentleman in England went over his wheat field with a large brush, which loosed up the soil around the roots of the wheat to some extent. The result was a large increase of wheat. If the farmers had no harrow, they might take a large brush, as did this gentleman in England. For experimenting on a small patch, he would prefer a rake to the hoe. If corn, potatoes and tobacco could be raised successfully by cultivation, he could see no reason why wheat could not.

Mr. Pownall did not believe much in harrowing wheat, as the harrow would destroy the young grass. Timothy and clover are generally sown about the time you would do the harrowing, and he believed the grass was worth more than the increase of wheat you would derive by the harrowing. If you did not sow grass he would be in favor of harrowing the wheat.

Mr. Cooper received a small bag of grain from Michigan some years ago which he sowed about twenty-four inches apart. In the spring he harrowed over the ground twice, and the result was a large increase of grain, there being a perfect mass of heads, with large grains. The harrow he used was a small one, eighteen inches wide, and he harrowed the ground crossways. He believed there is room for a great deal of improvement.

How to take care of our Lawns.

"Our lawns and how to take care of them," was the next subject brought before the Society.

Mr. Kendig believed this was a subject that would attract every one if it was brought before the people in a proper shape. Every family should have a yard, and have it laid out in walks and planted with trees, shrubbery and flowers. He pointed out the many advantages and pleasures derived from such a place, and said that in arranging a front yard he would lay out a flagstone walk from the door to the gate, around the edges of which he would have a flower bed. In different parts of the yard he would plant all kinds of choice fruit and ornamental trees, and over the walk he would erect a grape-arbor.

Ephraim Hoover believed in having trees and shrubbery in the yards. Every person should plant them; if not for their own benefit, for that of others. On the trees we should build bird houses, and encourage, instead of drive the birds away, as some farmers do. The insects they destroy are worth far more than the little fruit they eat. In regard to the making of walks, he did not think curbstones should be used, as they injured the scythes when you cut the grass. A pebble walk is very nice, and much preferred. A place which has a yard well planted with fruits and flowers is always attractive, and when offered for sale will enhance the value thereof greatly. A few hours each day spent in planting flowers, fruit and ornamental trees, will soon bring out a dull yard. This can be done after dinner, an hour which is frequently spent in sleep by the farmer.

Mr. Pownall believed in ornamenting our yards. In traveling with friends, and when they would pass a place where the yards were laid out in trees and flowers, they were sure to ask him, "Who lives there?" The presence of trees and flowers makes a home look cozy and comfortable. In making a walk he would put lime on the ground before the pebbles were put down in order to kill the grass. Where this is done, grass will not grow for five or six years. Evergreens should be planted on the north and south ends of the buildings. They grow very fast, and soon become a shade and protection to the house.

The subject eliciting no further discussion, was, on motion of Mr. McComsey, deferred for further discussion at the next meeting.

Mr. E. H. Hershey, of Columbia, was appointed by the chair to prepare an essay on the subject for the next meeting.

Mr. McComsey was also requested to prepare an essay for the next meeting, the subject to be selected by the gentleman himself.

Entomological—Brown Tree-Borer.

A bottle of worms and a piece of an apple tree was presented to the society by Mr. Pownall. The tree was a thrifty grower and was blown down during the late storm. The worms, etc., are thus described by Prof. S. S. Rathvon:

The accompanying bottle of worms are the *larvæ* of the "Brown Tree-Borer," *Parandra glaber*, of one and two years old. The tree was about eighteen inches in diameter, part of a transverse section of which exhibits the locality of the *larvæ* in the trunk, and the manner in which they have been operating in it. This section was cut about two feet from the ground, and it will be seen that the borers have confined their operations, at the height mentioned, exclusively to the heart; the surrounding wood being perfectly intact and solid. At the earth-base of the tree are perforations through which the young grubs seem to have entered, and for a short distance upward their burrows are nearer the outer surface; but higher up they seem to have all congregated in the heart, in which there were more than one hundred individuals of various sizes. As there are no horizontal perforations anywhere through which the mature beetles could have escaped, if any have escaped at all, it must have been through the aperture below; but, as it would have required one year yet before the largest of these *larvæ* matured, I infer that none have yet been transformed to the beetle state, and that eggs were probably only deposited in 1874 and 1875. The tree being very large, did not seem to be materially injured by the presence of the worms.

In addition to the foregoing allow me to say, that this apple tree was blown down by the violent equinoctial storm of March last; that previous to sawing the trunk into sections—according to Mr. Pownall's statement—there was no external indication that the heart was unsound, or that it had been infested by "borers" at all; nor was there anything in its general health to lead to such a supposition. I do not state positively that the *larvæ* were those of *Parandra*, and if so, that they were of the species *glaber*, as we have several species, but I have found *glaber* the most common. I have often found *Parandra* in decayed wood, and on one occasion, where the trunk of a tree (an oak) had been broken off by a storm, I found the heart decayed, perforated, and containing *larvæ* similar to those exhibited by Mr. Pownall, and in the debris of the hollow stump I found many fragments, as well as whole specimens, both living and dead, of *Parandra glaber*. I therefore inferred these to be similar, if not the very same. I have never found the "striped apple tree borer" (*Saperda lineata*) under the same circumstances. The heart of this tree, for about six inches in diameter, was in a state of brown decay, and was perfectly honeycombed with various sized perforations, according to the sizes of the borers, which were from a quarter to three-quarters of an inch in length, and of corresponding thickness.

The white wood surrounding the heart, was perfectly sound, healthy looking and sappy. Although Mr. P. took out over a hundred of these *larvæ* he did not explore the whole trunk—probably he might have obtained as many more, if not five hundred. We have always found the larva of the striped borer in independent burrows, immediately under the bark, or in the white wood further in—unless the tree was a small one—and in perpendicular position, or nearly so. In this instance the galleries were in various directions—perpendicular, horizontal, and at various angles—often one breaking into another, and all within the decayed portion of the tree. No mature insects, or fragments of the same, were discovered. If they exist they will be found in the stump, but very probably they had yet matured. Subsequently a small aperture was discovered at the base of the tree, which was supposed to have communication with the decayed heart.

Mr. Pownall very justly remarked, "If these are the true apple tree borer what becomes of the remedy of *going after them* with a barbed steel wire?" for they are located in the heart, from two to three feet from the ground, or any aperture of ingress.

These larvæ, although seemingly not fully developed, have the general resemblance of the *Longicornia*, but the *status* of *Parandra* has for a long time been considered *dubious*.

There being no further business, the society adjourned.

GENERAL MISCELLANY.

The Best Chickens.

Not unfrequently we are asked which is the best breed of chickens; but it is by no means an easy question to answer. If we were to ask the same question of a dozen men, all having different breeds in their possession, we should not be surprised to hear as many answers as there were men. While men differ, and we continue to have so many breeds of chickens of superior quality, it will be vain to expect them to agree as to which is the best. We are reminded of the gentleman who said he was glad that all men were not like him, or all would have preferred his wife; but was speedily met with the rejoinder from another gentleman: "And if all were like me, nobody would have wanted her." So with the choice of chickens. While some prefer a certain breed, and will have no other, others will prefer any breed but that. *The Poultry Bulletin* commends the beauty of the Black Spanish, and Mr. J. Y. Bicknell speaks highly of them as layers, and as to their har-

diness. C. Y. Wilson, of Massachusetts, extols the Light Brahma, and, while some prefer them of a modified age, he wants them as large as possible, and claims that a blindfolded epicure could never distinguish the difference in the meat.

E. S. K. writes to the *Poultry World:*

"As many persons are inquiring what breed of fowls is the best for general purposes, permit me to say, that after fairly trying Leghorns, White Brahmas, Dark Brahmas, and Houdans—each variety of the best stock that could be obtained—I find that Houdans are superior to all others. Leghorns produce as many eggs as Houdans, but the chickens are tough and stringy, compared with Houdan chickens, while the hens are no better as setters. Both Light and Dark Brahmas have the defect of accumulating fat with such facility that, unless great care is exercised in feeding them, they cease to lay. They also have a constant tendency to sit, and the chickens are mainly legs after they get too large for broilers. Houdans are such restless and persistent foragers that an excess of grain thrown to them does not render them lazy."

But the very thing E. S. K. recommends in the Houdans—restlessness—would be considered objectionable by three-fourths of those choosing a new breed, and especially those living in or near towns and villages, where they are likely to bother their neighbors.

J. F. King writes the *Poultry Argus:*

"I have fully made up my mind to raise the Brown Leghorn in spite of anything. I have tried in the course of my experience a great many breeds of fowls, and have settled down on Brown Leghorns as being the best and the most economic egg producers on the list; and eggs are more profitable to me than poultry."

Mr. King speaks for eggs alone; and thus we might go through the list, some claiming for the Games great superiority for the fineness and delicious flavor of the meat, which is generally conceded. While we have not even a desire to settle the question as to the best, we have a word to those who wish to improve their chickens on the farm by crossing and grading up, thus avoiding the expense of starting anew at fancy prices. Several important points should be looked to—such as laying qualities, early maturity, large size of body without too great length of legs, meat fine, juicy and of good flavor, and especially they should be hardy.

Our experience is in favor of the Partridge Cochins, but, from our limited knowledge of the Buff Cochins, we believe them about equal—the bodies heavy and well feathered and legs short. The Partridge Cochins lay well winter and summer, mature early, are good mothers, docile, very hardy, and meat delicious. By putting one cock with ten or twelve hens, the flock will soon be graded up. These cocks should be exchanged for others, or sold and others bought, every spring, and there need be but little trouble about sickness. Two neighbors buying one year can exchange the next. Good cocks can be bought for from $2 to $5, and the increase in weight alone will doubly pay for them the first year.—*Journal of Agriculture.*

Spring Care of Sheep.

This is a job that is very often neglected, to the great inconvenience of the sheep and loss to the owner. It takes but a short time for a couple of men to go over two or three hundred, and the amount of wool saved will more than doubly pay the expense, to say nothing about the relief it gives the animal, and the saving of trouble afterwards and the risk of losing some, for it is not uncommon that the accumulation of filth causes soreness, which the flies soon find out, and in a very short time all will be over with those so unfortunate as to become thus affected. I have known as many as a half-dozen to be killed in this way out of a flock of less than two hundred. Warm, wet weather is the most apt to produce these results, and the merino sheep are the most apt to give trouble in case of neglect.

If the tags are put in the fleece at shearing time, care should be taken to have them well washed, as it is not an uncommon thing for people to get themselves into serious trouble, when through an avaricious desire they allow them to be put in without this very necessary precaution. I knew one to lose fifty dollars and another forty dollars in this way. As good a plan as any is to leave them out and sell with unwashed wool; it saves trouble of washing, and they can be disposed of on their merits. As a rule, a deduction of one-half is asked, which in most cases is not too much.

In handling sheep care should be taken not to catch them by the wool, as is so often done. It is just as easy to grab them by the hind leg or around the neck, and passing the arms around the body, they can be lifted up with ease. Gentleness in handling sheep is a very essential thing, and they who practice it will be rewarded with quiet flocks. They should early learn that they are in no danger from those whose business it is to watch over them.

After a winter with as much rainy weather as there has been during the past one, there is danger of sore feet, and should the season continue wet, there will be more or less in this direction; and, as is very often the case, an ounce of caution is worth a pound of cure, and a stitch in time saves nine. The hoofs will grow long, and will require trimming, for which a sharp knife or a pair of toe-nippers, or both, will be needed. If any are lame, they should be examined, and if in the least sore, trim well and apply some pure pine tar or a little powdered vitriol, or in many instances a little salt, well rubbed in, will have the desired effect. If foot-rot gets among a fresh lot of sheep, it makes sad havoc and quick work. Never let a sheep limp a day without knowing the cause, and give immediate attention.—*M. N. Russell, Hammondsville, O., March 8, 1876.—Ger. Telegraph.*

Lambs and Calves.

Now for the calves and lambs, and there is no interest with which farmers have to do where the "ounce of prevention" pays better than here. Be sure and have the cow gaining when the calf is dropped. Give a warm, dry room, with a good bed for "lying in," a light but generous diet afterwards, with no ice water; treat her with gentle kindness, and above everything else, keep her from cold draughts of air, and you will find that it will pay ever-so-much better than doctors and farriers after your cow has gotten out of sorts from want of proper care when she most needed it.

A cow that is gaining when she calves, and is taken care of at and after the calf is dropped, is almost sure to do well; and such a one is all ready to commence her season's work of producing butter-stock.

It has been my invariable practice, for more than twenty years, to feed my cows lightly before calving with ears of corn, unless they are in good grass; and I have not had one to retain the afterbirth in all that time.

So, too, care pays when the lambs are dropped in cold weather. Every man that has a considerable flock should have two or three small warm pens, into each of which he should put three or four sheep a few days before they are to lamb; and if the weather is cold he should look after them once or twice in the night, and there is really no more need of losing a lamb than a calf.

It is sometimes the case when a sheep has twins that she will own but one, unless she or they have help. Usually if she is put in a very snug pen immediately after the lambs are dropped she will accept the situation. If one stubbornly refuses to own her offspring, just put her head between two stakes driven into the floor of the pen and let her be there. I never knew one I could not subdue. By all means have a nursing bottle on hand, and feed the lambs just enough to keep them hungry and smart; and if the sheep are poor milkers give them shorts and potatoes with plenty of salt, sulphur and water. Cut the tails pretty short at three days' old, if the lambs are smart, but within the first week usually. Keep off the ticks and the lamb will be fit to sell in season for the dam to get in good order for winter, and a sheep that comes to the barn fat is about half wintered.

"An ounce of prevention is worth a pound of cure."—*D. H. Thing, West Mt. Vernon, Me.—Ger. Tel.*

What Will Pay.

Year after year crops are moved off without returning anything to the soil. Manures are put under the rains and the dropping of eaves until they are drained of their best material and rendered nearly useless. This could be obviated by building cheap sheds to cover the manure as thrown from the stables. This can be done at a small cost and will pay. Winter is not a good time to build, but for such a purpose as this it is better to build now than not at all. Plaster should also be used in the stables to prevent the escape of ammonia, and care should be taken to keep it in as good condition as possible. If the barns and yards are so situated that the wastings are carried off by every rain, a little time with a team, plow and scraper, will make a ditch (a broad, open one it should be) around the barn on three sides; then at all times keep this filled with the trash and litter which naturally accumulates about the barn. The ditch will hold the water, etc., from the yard, and cause the straw to rot rapidly and will afford a large quantity of good manure. When the manure is removed in the spring, the ditch can be filled with wheat straw, upon which a few bushels of lime has been scattered; then as fast as it rots pile it up in the ditch and fill the spaces between each pile with straw, and so on. In the fall there will be a fine pile of manure, which will renovate the worn out field; or to scatter on the exposed knolls on the wheat field, preventing winter killing. Another great waste is the large crop of weeds, which each year is allowed to go to seed, and spread all over adjoining farms.

Using too much hard labor is another way of wasting on the farm. Many machines can now be used to save much of this labor. More horse-powers must be used. And after we have raised our crops they should largely be fed out on the farm. It is much cheaper to ship corn, oats, etc., in the form of meat than to send it in the bulk as raised; besides the soil is made richer, instead of constantly reducing its producing capacity.—*Prairie Farmer.*

Management of Manure.

A farmer's manure account is the next thing to his bank account, and everything that helps one aids the other. The old *Hearth and Home* had, while living, an excellent practical contributor, who was famous for "hammering away" at the manure heap. Here is a scrap from one of his papers, as good now as the day it was written: "Where all the stock is kept in one large barn, with a manure cellar underneath, there is little difficulty in managing the manure, especially if there is a large tank for the spare liquid. The main points are to provide sufficient ventilation, so that no deleterious gasses shall penetrate to the hay or cattle above, and to use enough material to keep the manure from getting wet. On farms where considerable straw and cornstalks are used, and where the manure is kept out of doors, the main point is to get the manure into a compact heap. Where the manure from the cow stables and pig pens is thrown out into a small heap by the door, it freezes through and no fermentation takes place until spring; but if all the manure from all the horses, cows, sheep, and pigs is put together in a large, compact heap, fermentation will set in, and the frost will not penetrate more than a few inches on the outside. Our plan is to place the heap in some central point and wheel all the manure daily to the heap, shake it out, and spread it about the heap; endeavor as much as possible to mix the horse, cow, and pig manure together. It is necessary to insist on this point, as the men have a great disinclination to spread the manure about. If they become negligent, set them to turn the whole heap over. This will do the manure good, and teach the men a lesson. They will will soon learn that a manure heap carefully spread out, can be handled than much easier one left in small heaps with the cornstalks running from the lower barrow to the one above, as a well made load of hay can be unloaded with less labor than one built without thought or skill. It will pay to manipulate with as much care as if you were making a mammoth hot-bed. An hour's work now, when there is comparatively little to do, will save two hours' work in the busy days of spring. Manure so managed, if the stock is well fed, can be reduced one-half without the loss of any fertilizing material. Last year our manure so managed was in splendid condition by the first of May to draw out and spread the ridges for mangolds."

Feeding Poultry.

It is said that a very common-looking man, and one who was supposed to be a very common sort of person, found himself in the capital this last Congress, having been elected a representative from a far distant State. Anticipating fun, some old stagers asked him what were his sensations on first entering so grand a building. He replied, as they thought, innocently, "he wondered how a man like himself had ever had the luck to get into such a place," but, he added, "my second thoughts were still more surprising, for when I looked at you, it was a complete puzzle how you got here."

We suppose some such feeling as this must be uppermost in the minds of many readers on what goes as agricultural matter in the rounds of the papers. They are often tempted to write, but in their modesty hold back because they cannot conceive what they would like to say could get admission into a popular paper; and thus they wonder still more when they see the character of the stuff that so often really finds a place there. Often we see paragraphs of this kind and wonder how it is that they pass as they do the eyes of the editors.

Here before us is an article on chicken-feeding, which is made up from some floating paragraph so as to appear like an original editorial note. We are told that the hen that eats the most is the one that produces the most—which, in a certain sense, may be true. Building on this, we are assured that one bushel of corn will make just twelve and a half pounds of eggs, and the paragraph then closes with this reflection: "Most farmers have a feeling that the corn which is fed to poultry is thrown away. They should look upon the transaction as just so much grain exchanged for eggs."

We fancy that most farmers have never learned this exact mathematical way of turning corn into eggs. Those who have had experience in raising fowls know that the best success with them is when they are left in a great measure to scratch out their own daily bread. To give a fowl all the grain it will eat, is the surest way to make it lazy and worthless. The active fowl is the healthiest, and good health is the first essential of a good layer, as well as of a long liver. The proper way to treat fowls is to place them where they can be encouraged to get their own food, only making up what they themselves cannot find.—*Germantown Telegraph.*

FOUR thousand eight hundred and forty square yards make an acre; a square mile, six hundred and forty acres. To measure an acre, two hundred and nine feet on each side make a square acre within an inch.

Don't Chop with a Poor Axe.

Chopping with a poor axe is like mowing grass or like cradling grain with a cradle that is not fit for use. A great many choppers will hack, *hack*, HACK all day with an old poor axe, using up sufficient muscle to chop two cords of wood, while with that old "stub" not more than half a cord will be chopped. It is the worst sort of policy to chop with an old and worn-out tool, as a chopper with a good axe, during a few days, will earn more than enough to cancel the difference between the prices of a new axe and an old one. Chopping is fatiguing labor, even when a chopper has a good axe. If the steel at the edge of the axe has been in use so long that it will not retain a satisfactory edge, or if the corners have been broken off or worn away so that the edge is as circular as a small wheel, better cast the axe away and procure a new one. In case there is a satisfactory amount of steel at the edge, let the part of the tool near the cutting edge be ground down to a proper thickness. But when grinding beware of reducing the steel too thin. Many a good axe has been spoiled simply by being ground too thin near the cutting edge. The steel close to the cutting edge must be sufficiently thick to possess the necessary strength required to resist the strain when the edge is entering hard and gnarly timber. When the steel near the cutting edge is ground so thin that it is no thicker than a piece of paper, no axe can be expected to retain a good cutting edge. Many choppers suppose that the thinner the steel is near the cutting edge the more rapidly they will be able to chop. But there never was a more grave mistake. If nothing were required when chopping but to cut off the grain of the wood, a very thin axe would be the best. But the point of the axe near the edge should be of such a form as to heave out the chips as the grain of the timber is severed. In order to accomplish this point most efficiently, the cutting edge from the front corner to the inside corner should not be circular more than one-fourth to one-half inch. Then the steel should be beveled gradually towards each corner from a point about one inch back of the middle of the cutting edge. If ground in this way, that peculiar form of the axe will heave out a chip at almost every blow.—*Practical Farmer.*

Ammonia as a Cure for Snake Bites.

Several cases of snake bite, in which the value of Prof. Halford's remedy, subcutaneous injection of ammonia, has been demonstrated, have, says the Melbourne *Argus*, lately occurred in the colony. At Seymour, on the 14th of December, a young man, 26 years of age, named Dwyer, was bitten by a snake between the thumb and the first finger of the right hand. The wound was received at 9 o'clock, and no treatment was applied until half past eleven, when the patient was powerless and almost insensible, ammonia was injected into the right arm, when he revived at once. He suffered a relapse, but the ammonia was again successfully applied, and he ultimately recovered.

At Bungaree a young girl was bitten by a snake, and gradually sank into a state of stupor. Two hours and a half after she was bitten ammonia was injected. Relief was immediately obtained and the girl rapidly recovered.

A third case happened on the Acheron, eleven miles from Alexandria, where a little girl two years of age, the daughter of a farmer named Doak, was bitten by a snake just above the ankle of the left foot. Symptoms of complete coma were setting in when the ammonia injection was used with magical effect. The child sat upright and became quite lively. A relapse occurring, a second injection was made with as great effect as before, and the child from that time continued to improve until her recovery.

Another case is mentioned of a native woman on the Wirretia station, South Australia, who was bitten by a snake on the ankle. She became unconscious, and the surface of the body was turning cold when ammonia was injected. The woman at once revived and recovered.—*Pall Mall Gazette.*

Hints about Meat.

The leg of mutton is the most profitable joint, containing most solid meat. The neck is an extravagant joint, half the weight consisting of bone and fat. The shoulder has also much waste in bone. The breast does well for dinner, nicely stuffed; it is much cheaper than other joints. Sirloins and ribs of meat are very extravagant joints, from the weight of bone. The roasting side of the round part of the buttock, and the part called the "topside," are the most profitable family eating. The mouse buttock is used for stewing, shin is used for soup or stewing. The quantity of butchers' meat consumed in a family is, on an average, three-quarters of a pound a day for each person; but when the family consists of women and children, half a pound per day is about the quantity consumed, one with another, independent of hams, bacon, poultry, fish and game. Meat should be wiped with a dry, clean cloth, as soon as it comes from the butchers; fly-blows, if found in it, cut out, and in loins the long pipe that runs by the bone should be taken out, as it soon taints; the kernels, also, should be removed from beef. Never receive bruised joints. Meat will keep good for a long time in cold weather, and, if frozen through, may be kept for months. Frozen meat must be thawed before it is cooked, by plunging it into cold water, or placing it before the fire before setting it down to roast. It never will be dressed through if this precaution is not taken, not even when twice cooked. Pepper is preventive of decay, in degree; it is well, therefore, to pepper hung joints. Powdered charcoal is still more remarkable in its effect. It will not only keep the meat over which it is sprinkled, good, but will remove the taint from already decayed flesh. A piece of charcoal boiled in the water with "high" meat or fowls, will render it or them quite sweet. A piece of charcoal, or powdered charcoal, should be kept in every larder. Hams, after being smoked, may be kept for any length of time packed in powdered charcoal.—*The Housekeeper.*

Holding on for Higher Prices.

The question often comes up, whether it is best to sell a crop as soon as it is ready for market or to hold on for higher prices. It is a question which cannot be decided by newspaper articles. There are so many temporary or local circumstances which largely enter into the question and on which everyone must decide for himself. But in a general way there is no doubt that it is best to sell as soon as ready, and this is the advice that we have frequently given in these columns.

Even though prices be low, and there is the reasonable prospect of a rise in a short time, there are the losses from shrinkage and waste, which in a large number of cases are quite as much as any average increase in price would be. In the articles which we have before given, and to which we have alluded, we have presented this fact particularly, and we remember especially referring to the case of a friend who put one hundred bushels of potatoes in the cellar in fall, and which only turned out eighty when sold in spring. Here was a loss of twenty per cent., and with interest on the receipts, if they had been sold in fall, requires a good advance to make it worth while to hold under such circumstances.

We refer to the matter now because we believe that this figure, twenty per cent., even by those who are conscious of a loss by keeping, is generally believed to be quite as much as is lost; but we have recently seen some figures which show that it is often much greater than this. Twenty per cent. is given as about the loss by shrinkage in corn; but as much as thirty-three per cent. is claimed as the loss in potatoes if kept till late in the season, say June. This is a strong argument against the general principle of holding on. —*Germantown Telegraph.*

Potato Growing.

As an article of daily food for this country, and some other countries, the potato has no rival. Hence it becomes an important question—what variety is best, all things considered? The kind that yields best and of the best quality, is a desideratum much to be desired. There are so many circumstances bearing on both points of the question that it is difficult to arrive at correct conclusions. A potato that has proved good this year may, under different circumstances, next year prove a failure.

The Early Rose for an early and the Jackson White for a late potato, seem now to be preferred in New England markets. They are both good potatoes, but not one jot better than several other kinds that yield double what either of these varieties do. We have in this country several varieties besides the two mentioned above, that I think will prove excellent potatoes. The Peerless, of which I know nothing personally, but have heard it possessed considerable merit in quality and yield; and Breese Prolific undoubtedly has the same good qualities. I experimented with Brooks' Seedling last year, and think it equal to the Early Rose in quality, while it will yield twice as many on the same land. I would say to any one not familiar with it, that it resembles the Early Rose, a shade darker, somewhat thicker, a good late potato, ready to dig first of October. There are but few Early Rose raised for the market in this section; they are good enough, but yield sparingly.

It seems to me, if we can find a late potato as good in quality as the Early Rose, and a much better yielder, it ought to supersede it after it is well ripened. The Rose might retain its place as an early potato, say for August and September, and Brooks' Seedling, or some equally good one, for the remainder of the year.—*J. G. Goodhue, in Germantown Tel.*

Care of Hogs.

Hogs love sulphur, and a considerable amount of it is necessary to keep them in fair health. When hogs run at large and find green food they supply themselves with what is needed, but pigs kept in close pens and fed on house slops or corn need some more laxative food. Charcoal should be fed to hogs frequently. Keep a supply by them in small boxes. Mix four quarts of salt, two ounces of sulphur, and one bushel of wood ashes, and keep constantly in the pens in boxes. It tends to reduce fever, destroy worms and aid digestion.

Whipping Horses Dangerous.

I would caution those who train horses or use them upon another point, viz.: that of exciting the ill-will of the animal. Many think they are doing finely, and are proud of their success in horse-training by means of severe whipping, or otherwise rousing and stimulating the passions, and then, from necessity, crushing the will through which resistance is prompted. No mistake can be greater than this, and there is nothing that so fully exhibits the ability, judgment and skill of the real horseman as the care displayed in winning instead of repelling the action of the mind. Although it may be necessary to use the whip sometimes, it should always be applied judiciously, and great care should be taken not to rouse the passions or excite the will to obstinacy. The legitimate and proper use of the whip is calculated to operate upon the sense of fear almost entirely. The affectionate and better nature must be appealed to in training a horse, as well as in training a child. A reproof given may be intended for the good of the child, but if only the passions are excited the effect is depraving and injurious. This is a vital principle, and can be disregarded in the management of sensitive and courageous horses only at the risk of spoiling them. I have known many horses of a naturally gentle character to be spoiled by whipping once, and one horse that was made vicious by being struck with a whip while standing in his stall.—*Prof. Fowler.*

Much in Little.

A man walks three miles an hour; a horse trots 7; steamboats run 17; sailing vessels 10; rapid rivers 7; slow rivers 4; moderate winds blow 7; storm blows 36; hurricane 80; a rifle ball 1,000; sound 743; light 723,000,000. A barrel of flour weighs 196 lbs.; barrel of pork 200; firkin of butter 56; a tub of butter 34. Wheat, beans and clover seed 60 pounds to the bushel; corn, rye and flaxseed 56; buckwheat 62; barley 48; oats 35; bran 20; timothy seed 58; coarse salt 85. Sixty drops make a drachm; 8 drachms make an ounce; 4 ounces make a gill; 4 gills a pint; 60 drops a tablespoonful, or half an ounce; two tablespoonful an ounce; 8 teaspoonful a gill; 2 gills a coffee cup or tumbler; 6 fluid ounces a teacupful. Four thousand eight hundred and forty square yards make an acre; a square mile 640 acres.

To measure an acre: 300 feet on each side making a square within an inch. There are 2,750 languages. Two persons die every second. A generation is 35 years, average length of life 21 years. The standing army in Prussia, war times, 1,200,000; Austria, 825,000; Spain, 100,000; Belgium, 94,000; England, 75,000; United States, 24,000. Mails in New York city weigh 100 tons a day. New York consumes 600 beeves daily, 700 calves, 20,000 sheep and 20,000 swine in winter.

Potatoes for Horses.

I once came near losing a very valuable horse from feeding him dry hay and oats with nothing loosening. I have never believed in dosing a horse with medicine, but something is actually necessary to keep a horse in right condition. Many use powders, but potatoes are better, and safer, and cheaper, if fed judiciously. If those who are not in the habit of feeding potatoes to horses will try them, they will be astonished at the result. I have known a horse change from a lazy, dumpish one to a quick, active, headstrong animal in five days, by simply adding two quarts of potatoes to his feed daily. If very much clean corn-meal is fed, they do not need so many potatoes. Too many potatoes are weakening, and so are too many apples. When I was a lad, I was away from home at school one winter, and had the care of one horse, one yoke of oxen, and one cow, every one of which I had to card or curry every day. The horse had three pails of water, four quarts of oats, two quarts of small potatoes, and two quarts of corn extra every day he worked, with what hay he wanted, and a stronger or more active horse of his inches I have never yet seen.

Care of Horses.

The London *Horse Book* says: "All horses must not be fed in the same proportion, without regard to their ages, their constitution and their work, because the impropriety of such a practice is self-evident. Yet this is constantly done, and is the basis of disease of every kind. Never use bad hay on account of the cheapness, because it brings on inflammation of the bowels, and skin diseases. Chaff is better for old horses than hay, because they can chew and digest it better. When a horse is worked hard, its food should chiefly be hay—because oats supply more nourishment and flesh making material than any other kind of food; hay, not so much. Rack feeding is wasteful. The better plan is to feed with chapped hay, because the food is not then thrown out, and is more easily chewed and digested. Sprinkle the hay with water that has salt dissolved in it, because it is pleasing to the animal's taste and more easily digested. A tablespoonful of salt in a bucket of water is sufficient.

Plaster on Clover.

Please inform me whether it will be beneficial in sowing clover seed in the spring on wheat, to broadcast wood-ashes or plaster, or the two mixed. Or shall I wait until after the wheat is cut, and then sow the plaster and ashes on the young clover? I wish a fertilizer to the wheat as well as the clover. In what proportion should the plaster and ashes be used to the acre?—*A. S., Maryland.*

[The common practice is to sow plaster on clover in the spring, the year after sowing the seed; but if it could have an additional dressing the year previous, as soon as the wheat is cut, this would tend to make a stronger growth in autumn. It would be less advantageous to sow immediately after the sowing of the clover seed, but the experiment is easily tried. In some seasons, and on certain soils, it might assist the growth of both wheat and clover, but generally the result would be light or imperceptible. Ashes are often useful, sometimes not; and the only way to determine this point is to try the experiment. As both ashes and plaster must be sown dry, it will make no difference whether they are mixed or sown separate.]—*Country Gentleman.*

Hollow Horn.

If the horns of the animals are cold in the morning, you may expect they have the horn ail. If the eyes look dull and heavy, and the matter gathers in the eyes, and the nose is dry and does not sweat, it is another evidence of horn ail. If the hair is dry and stands out straight, and the droppings are dry and hard, it is a third indication. Take a common teacup half full of good strong vinegar, put in a tablespoonful each of fine salt and black pepper, ground fine, and let it soak. In the morning put a tablespoonful in each ear of the animal affected; the next morning repeat the dose. If the case is not a bad one, two applications will generally effect a cure. As soon as the natural warmth returns to the horns then the cure is effected. I would not recommend to bore the horns nor cut them off till the above remedy has been tried. In applying the medicine it will be necessary for one person to hold the head and another to apply the medicine. Be sure to hold the ear up, so that the liquor will not run into the head. I have not known a creature to die with the horn ail, that has been treated with this, for forty years.

A Full Vocabulary.

The *U. S. Tobacco Journal* publishes the following list of ingenious phrases used to describe the many qualities and peculiarities of leaf tobacco:

Body, veins, texture, heavy, thick, thin, fat, tough, hairy, soft, hard, dry, wet, fine, common, spongy, silky, fleshy, ledery, short, narrow, broad, long, dark, light, brown, brownish, red, reddish, yellow, green, fiery, shrinky, shrivelled, old, new, sweated, heated, unsweated, mild, high-flavored, rank, dull, glossy, shiny, spotted, sprinkled, dotted, sound, rotten, touched, damaged, damaged on the butt, damaged—per cent., over sweated, raw, lively, white ash, gray ash, blue ash, spiderweb ash, bony, bad, burning, funky, rim throwing, blistering, flacky, coaling, wouldn't hold fire, pole burned, frosted, fishy, salty, quality, for export, working up, low, high priced, shabby, farmer's packed, regular packed, mark-weight, re-weight, worm-eaten, cured, killed, dead.

Tree Mignonnette.

This is by some supposed to be a distinct variety from the common kind grown in the garden, but it is not. The tree form is due to careful pruning and attention, and there is no variety of mignonnette which will assume a tree form without constant care. The way to raise a "tree" mignonnette is to sow the seed as usual, and when the plants are about two inches high, select one of the strongest, and plant in a pot or box by itself, and keep it well supported by a stake. Every side branch that appears must be pinched off, but the leaves must be allowed to remain on the main stem as they are needed for the health of the plant. When the plant is about a foot or more in height, the side shoots may be permitted to grow, but they must have their heads pinched off occasionally to force them to form a bushy top. It will take some months to accomplish this, but it will make a beautiful plant.—*Country Gentleman.*

What it will Do.

If a mechanic or clerk saves 2¾ cents per day, from the time he is twenty-one until he is threescore and ten, the aggregate, with interest, will amount to $2,900; and a daily saving of 27½ cents will reach the important sum of $20,000. A sixpence saved daily will provide a fund of $7,000—sufficient to purchase a good farm. There are few employees who cannot save daily, by abstaining from the use of cigars, tobacco, liquor, etc., twice or ten times the amount of the six cent piece. Every person should provide for old age, and the man in business who can lay by a dollar a day will eventually find himself possessed of $400,000.

Hay-Making in Norway.

Of this a correspondent thus writes: "The way they make hay in Norway will be new to your farmer readers. The grass is hung up on poles to dry, and I have never seen such bright colored hay in my life. It is almost as bright a green as when growing. In some fields you see strings of fences, a few rods long, which begin and end nowhere. These lines of fence are about as wide apart as a New England farmer makes his winrows. On these fences the grass is hung till the wind and sun can cure it. The sun does not burn it. That is one way, and perhaps the most common. The other way is to plant posts in the fields, twelve feet or so apart, and in these posts insert pegs about one foot asunder. On these pegs poles are laid, and on them the grass is hung just as we used to dry paper at the mills down East, forty years ago. The result is hay that any farmer would be proud of.

Everlasting Fence Post.

I discovered many years ago that wood could be made to last longer than iron in the ground, but thought the process so simple and inexpensive that it was not worth while making any stir about it. I would as soon have poplar, basswood, or quaking ash, as any other kind of timber for fence posts. I have taken out basswood posts, after having been set seven years, that were as sound when taken up as when they were first put in the ground. Time and weather seemed to have no effect on them. The posts can be prepared for less than two cents apiece. For the benefit of others, I will give the recipe: Take boiled linseed oil and stir it in pulverized charcoal to the consistency of paint. Put a coat of this over the timber, and there is not a man that will live to see it rot.

Controlling Bulls.

Without a ring a bull is unmanageable, unless there is some contrivance which can hobble his action, and I know of none such. Were one obliged to incur the trouble of forwarding a full grown bull, unused to be handled, what would be the best aids to provide? I think to provide a strong head-stall or halter, having rings, with a rope wound round the base of the horns, and its two very long ends passing through the head stall rings, and then allowed to trail on the ground behind one on either side, would be advisable headgear; and what besides? The herdman's staff should not be of the ordinary form, *i. e.*, opening with a snap; but it should have a screw passed through both sides of the loop at the top, so as to prevent the possibility of the snap opening and allowing the ring to escape the grasp of the staff.—*A. B., in London Field.*

Eastern and Western Wheat.

Eastern grown wheat has some advantage of western grown in quality. In grinding up a mixture of western and eastern wheat adds considerably to the value of the flour. A much larger quantity than usual was shipped this year to Ohio on account of the western wheat being rather below the average in quality. The wheat of New England, and, indeed, the Eastern States down to Delaware and Maryland; on the other hand, is above the general average in quality. Climate has not only much to do with the quality of these articles, but the little variations we find from season to season has a considerable influence also.

How to Make an Omelet.

The proper way to make an omelet is to take three teaspoonfuls of milk for each egg, and a pinch of salt to each one also. Beat the eggs lightly for three or four minutes, and pour them into a hot pan in which a piece of butter the size of a walnut has been melted a moment before. The mass will begin to bubble and rise in flakes immediately, and the bottom must be lifted incessantly with a clean knife so that the softer parts run in. An omelet should be cooked about three or four minutes, and made in this way will melt in the mouth. If a little parsley and some well-boiled onion, cut into small pieces, be added, it is much improved.—*Bertha, Cheltenham, in Germantown Tel.*

Cooking by Cold.

The *Scientific American* says: Quite recently a Hungarian chemist, Dr. von Sawicczwsky, it appears, has investigated all the various ways suggested for preserving meat, (by chemicals, cooking by heat, and hermetically sealing, etc.) and has found points of objection to all, has attempted the preparation of the material by subjecting it in a perfectly fresh state to a temperature of 33° below zero, Fah., and sealing it afterwards in tins. The results obtained have been highly satisfactory; the meat on being removed from the cans appears, in point of smell and color, as fresh as if just taken from the butchers' stall. An extensive factory is being erected in Hungary for its manufacture

Brittle Hoofs.

Horses or mules' hoofs are often rendered brittle by causing them to stand on the heated manure or filth in the stables, and sometimes by chronic "founder" or fever in the feet. If the first cause is suspected, it should be stopped at once; if the latter is the cause, it should be remedied by giving the horse some cooling medicine, placing the hoofs in a bath of water so hot that it cannot be borne by the hand, and then smearing them with glycerine. The remedy may need to be repeated for some time, until all heat or fever is removed, when the glycerine dressing should be continued until the new growth of horn replaces the old one.—*American Agriculturist.*

It is stated that corn loses one-fifth and wheat one-fourteenth by drying. From the estimate made, it seems that it would be more profitable for the farmer to sell unshelled corn in the fall at 75 cents than to keep it until spring and sell it at $1, and that wheat at $1.25 in December is equal to $1.50 the succeeding June. In cases of potatoes—taking those that rot and otherwise lost—together with shrinkage, there is little doubt that between October and June the loss of the owner who holds them is not less than 33 per cent.

A curious statement has been made and published in a French paper in regard to hens. It reckons the number of hens in France at 40,000,000, valued at $20,000,000. Of these about one-fifth are killed annually for the market. There is an annual net production of 80,000,000 chickens, which in market yield $24,000,000. The extra value to be added for capons, fattened hens, and the like, at $2,000,000 The production of eggs per pen, worth $48,000,000. In all it is reckoned that the value of hens, chickens and eggs sold in the markets of France, is $80,000,000.

For kitchen and pantry floors there is nothing better than a coat of hard paint; the cracks should be filled with putty before it is applied, and the paint allowed to dry at least to weeks before using. Then it is easily kept clean by washing (not scrubbing) with milk and water; soap should never be allowed to touch it. "Red lead and yellow ocher I prefer for coloring; the former makes a hard paint that wears well."—*Scientific American.*

A fruitful source of malaria is found in the earth adjoining ponds which are dammed for manumanufacturing or other purposes. The soil in the vicinity, through the water being raised above its previous level, becomes soaked, and hence damp and very dangerous to health.—*Scientific American.*

In washing calicoes in which the colors are not fast, be careful not to boil them; but wash in the usual way with soap, and rinse in hard water. For dark-colored goods add a little salt to the water; for light, a little vinegar.

Yeast Dumplings: Take light bread dough, shorten it a little, put salt in boiling water, then form the dough in small dumplings, drop them in the water and boil 20 minutes.

Omelet: Beat the yolk and whites of 4 eggs together with 2 tablespoonfuls of milk; add salt and pepper; fry in hot butter and lard; eat while hot.

LITERARY NOTICES.

Mentor in the Granges and Homes of Patrons of Husbandry. By Rev. A. B. Grosh, first Chaplain of the National Grange.

This is a handsome Royal 12 mo. of 478 pages, something, in style, size, and quality, like the "Odd-Fellows Improved Manual," by the same clever author, whose name and literary reputation alone would be a sufficient guarantee to us of the intriusic value of the work without having seen it. Its object is to explain the origin, aims and government of the Order, answer objections, advise candidates, teach the lessons of each degree, duties of officers and members, and aid Patrons to be better members of families, of the Order, and of society. Embellished with a portrait of the author, and a large number of excellent engravings of the emblems, symbols, and official insignia, this work has received, very justly, the commendations of the highest official functionaries of the Order, and ought to be in the hands of every Patron of Husbandry in the Union. Not to know this work, by those for whom it is designed, must inevitably argue themselves unknowing and unknown. We do not see how any intelligent or progressive Patron can deny himself the privilege of daily perusing its golden-freighted columns, unless he "loves darkness rather than light." Indeed, its domestic and social instructions can never be limited to the "pent up Utica" of the Grange, but are equally applicable to the "vast unbounded continent" of human society, wherever the spark of civilization has lighted up and burns. Its moral ethics are such as have received the stamp of approbation among the wise and good of all ages, and therefore we have no hesitation in recommending it to all cultivators of the soil at least, and especially "to the household of its faith." Published by Clark & Maynard, No. 5 Barclay street, New York, at $2 per copy, and sold exclusively by agents.

OUR FENCE CORNERS

FINDING OUT THE SECRET.

Mrs. Brown and her gossip, Mrs. White, were conversing about husbands and the secrets of Freemasonry. Mr. Brown was a Freemason; and the fact of not being able to share the secrets of the order with him made Mrs. Brown very unhappy. She was pouring out her grief to Mrs. White, and saying for the thousandth time, "I wonder what they do in the lodge room?"

"I have no doubt but it is dreadful," replied Mrs. White. "But if my husband was a Mason, I'll bet I'd find out what he did."

"But how? They dare not tell."

"Ah! but I'd make him tell."

"How! oh, how?" asked Mrs. Brown, anxiously.

"Hush! I'll tell you; but don't breathe it for the world, because it is a dead secret."

"No, no; I won't."

"Well, do you know that tickling a person's ear when they are asleep will make them talk?"

"No. Will it, though?"

"Yes. Now you wait 'till Brown comes home from the lodge next time, and have a broom straw in bed with you. When he gets asleep you tickle his ear with it gently, and he will begin to talk about what he has been doing in the lodge, and in this way can get the whole of the business out of him."

"Gracious me. You don't say so, Mrs. White?"

"To be sure I do. I always get my husband's secrets out of him in this way."

"I'll do it!"

"And you'll tell me all about it, won't you?"

"Certainly. But you must never say anything about it?"

"Oh, of course not. I'm very close mouthed," replied Mrs. White, earnestly.

So it was agreed upon, and they separated. But unfortunately Mr. White overheard the conspiracy, and lost no time in informing Mr. Brown, who laughed heartily over it.

A few nights afterward Brown attended a meeting of his lodge, and his wife was all anxiety regarding it. On retiring, she armed herself with a spray from her broom and wakefully waited for her lord and master to return. At last she had almost broken down the veil of secrecy which had troubled her so long, and her heart beat wildly when she heard him open the front door and come in.

Of course she professed to be asleep, and did not see the comical smile on her husband's face as he turned on the gas and began disrobing for bed. But he said nothing, and in a few minutes he was comfortably tucked in and gave out premonitory indications of approaching slumber.

Then Mrs. Brown opened her eyes cautiously, and convinced herself that he had gone to that land from which sleepy husbands never return until sometime next day. Cautiously she reached under the pillow, and took the broom straw from its hiding place. Then she reached over carefully and began to tickle her husband's ear, and he was all the time doing his best to keep from exploding with laughter.

Finally he began to talk a little, and her ears were keenly alive to every syllable.

"Yes, he must die," said he. "He betrayed our secrets to his wife. I've got to kill him—the lot fell on me."

Mrs. Brown screamed and leaped from the bed, while her husband, unable to control himself, gave vent to his laughter and disturbed the neighbors for the next ten minutes. But they never came to any understanding about the strange affair. She never asked him what he was laughing at, and he never asked her what it was which made her scream and leap out of bed so quickly.

Mrs. Brown and Mrs. White don't speak now. She thinks Mrs. White played a joke on her, and she seems to have lost much of her anxiety regarding the secrets of Freemasonry.

A REFLECTION ON THE COURT.—When Judge Hewett was on the bench in the Western District of the State of New York, and Colonel Billings was trying a case before his honor, the judge overruled so many of the lawyer's exceptions that Billings got out of patience, and spoke so severely that the judge at last demanded in a voice of thunder:

"What does the counsel suppose I am here for?"

Colonel Billings looked sadly disconcerted, scratched his head, thought a moment, and at last, with a bland smile on his face, replied:

"I confess your honor has got me now."

A NEW HAMPSHIRE dealer in fancy fowls sings the praises of his favorite breeds in the following unique hymn:

If you want some feathered st
That will not your wishes m
When at their nests you daily kn } ock,
Buy some eggs or get a fl
Of the famous Plymouth R

WHEN a Chicago man loses the respect of the community, he takes his gun and starts out to kill an alderman as the only means of being restored to popular esteem.

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Prof. S. S. RATHVON, Editor. LANCASTER, MAY 15, 1876. PEARSOL & GEIST, Publishers.

THE FARMERS HOME ORGAN.

The Lancaster Farmer;

A MONTHLY NEWSPAPER,

DEVOTED TO AGRICULTURE, HORTICULTURE, DOMESTIC ECONOMY AND MISCELLANY.

PRACTICAL ENTOMOLOGY

Made a prominent feature, with special reference to the wants of the Farmer, the Gardener and Fruit-Grower.

Founded under the auspices of the Lancaster County Agricultural and Horticultural Society.

Edited by Prof. S. S. RATHVON.

THE LANCASTER FARMER has now completed its seventh year—the last having been under the auspices of the undersigned as publishers. When we assumed the responsibility of the publication one year ago, it was with a determination to make such improvements during the year as would place the Farmers' Organ of this great agricultural county in the very front rank of publications of its class. That we have done so, our readers will bear cheerful testimony. But our work of improvement is only fairly begun. We propose to make the volume for the Centennial year still more interesting and valuable than its predecessor for 1875. In this, however, we need the co-operation of every friend of the enterprise. To make it a success, every one who now reads THE FARMER should at once send us at least one new subscriber.

The contributions of our able editor, Prof. RATHVON, on subjects connected with the science of farming, and particularly that specialty of which he is so thoroughly a master—entomological science—some knowledge of which has become a necessity to the successful farmer, are alone worth much more than the price of this publication.

THE FARMER will be published on the 15th of every month, printed on good paper with clear type, in convenient form for reading and binding, and mailed to subscribers on the following

TERMS:

To subscribers residing within the county—

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All subscriptions will commence with the January number unless otherwise ordered.

All communications intended for publication should be addressed to the Editor, and, to secure insertion, should be in his hands by the first of the month of publication.

All business letters, containing subscriptions and advertisements, should be addressed to the publishers.

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LANCASTER, PA.

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CONTENTS OF THIS NUMBER.

OUR FENCE CORNERS

Serves April Just Right.

NOT THE FESTIVE SEASON THAT IT IS CRACKED UP TO BE.

Some fellow gives the mouth of April a dig under the fifth rib, as follows:

April is the month when the earth is most rent by earthquakes, and the air by the voice of the orange-hawker.

In April a bald-headed lie is called a joke.

In April there is either a new bonnet in the family or a row.

In April a woman ties a towel around her back hair, snatches up carpets, wears out brooms, and never neglects to leave a chunk of soap on the bottom stair for a man to step on.

In April Sunday-school children begin to look forward to pic-nics, lots of attenuated lemonade, and very robust colic.

In April girls prepare for croquet by buying shoes a size smaller than before.

In April big, brawny men chase little spheres of stocking-ravelings around cow pastures, and call it base ball.

In April politicians are miserable. 'Tis then they buy hats and pay election bets.

In April bankers, car conductors and other men of wealth eat asparagus, and the rest of the people try to be happy on such spring fruits as boiled beans and fish-balls.

In April a young man nightly stuffs his pockets with maple sugar and strikes out for the home of his girl. Two fond souls chaw the same cake of sugar quite frequently that night.

In April a virtuous man takes his semi-annual bath.

In April children are not happy without ten hard-boiled frescoed eggs. They eat the eggs and the doctor calls presently with a stomach pump.

In April the farmer goeth forth to sow—sew does the seamstress.

In April the tramp turneth up his nose at soup-houses and goeth forth seeking whose chickens he may devour.

In April flatboats and skiffs navigate our streets most successfully.

In April rhubarb pies and other abominations lead the best of people into profanity, and their countenances into bow knots.

In April the house-fly reappears in the milk pitcher. He is not a successful swimmer.

In April it is very apt to rain. When not engaged in raining it sometimes showers a little. The showers are useful, for, as everbody knows, "April showers bring forth cauliflowers."

In April you can see a man streaking to the dyer's with his last summer's clothes tucked under his arm hard times stamped over his noble brow. In other respects he is destitute of stamps.

In short, April is not the festive season that it is cracked up to be. In the sweet words of impassioned verse:

April is a skim milk month,
When feeble does the pulse stir—
'Taint warm enough for calico coat,
And you feel like a fool in an Ulster.

The Vest Pockets.

A young man from one of the suburban districts was in one of our tailor shops getting measured for a vest the other afternoon.

"Married or unmarried," queried the merchant, after taking down the number.

"Unmarried," said the young man with a blush.

"Inside pockets on the left hand side, then," observed the tailor, as if to himself, making a memorandum to that effect.

After a moment's pause, the young man from the suburbs inquired:

"What difference does my being married or unmarried make with the inside pocket of the vest?"

"Ah, my dear sir," observed the tailor with a bland smile, "all the difference possible as you must see. Being unmarried, you want the pocket on the left side, so as to bring the young lady's picture next to your heart."

"But don't the married man also want his wife's picture next to his heart?" queried the anxious youth.

"Possibly there is an instance of that kind," said the tailor aching his eye-brows, "but I never heard of it."—*Danbury News.*

A YOUNG minister, somewhat distinguished for self-conceit, having failed disastrously before a crowded audience, was thus addressed by an aged brother: "If you had gone into that pulpit, feeling as you now do on coming out of the pulpit, you would have felt on coming out of that pulpit as you did when you went up into that pulpit."

WHILE an Iowa woman was struggling in the water, and likely to drown, her husband yelled out: "New bonnet—swim for life!" and she kicked out and safely reached the shore.

The Lancaster Farmer.

Prof. S. S. RATHVON, Editor. LANCASTER, PA., MAY, 1876. Vol. VIII. No. 5.

HOUDANS.

The French people, always so widely reputed for economy, have well attained their good name in the poultry line. No nation upon earth is so widely engaged in the rearing of chicks and production of eggs, nor so successful. The climate of France being especially suited and very mild, we find lack of hardiness and a delicate constitution prevalent among the so-called "French Breeds." But of these the Houdans are the most hardy and are really, when properly bred, a strong and hearty fowl. They are easily reared, mature early, weighing about four and a half pounds at four months. Their flesh is juicy and very desirable for the table, on account of which they are very appropriately designated "The French Dorking" (for edible qualities of which see last number of THE FARMER.) Houdans are very prolific, the cock is a lively fellow and should be allowed a goodly number of hens. These need not be all Houdans, but some should be Brahmas, Cochins, Plymouth Rocks, or some other good setting variety, for in this respect the Houdans are not to be relied upon. They are first class layers, and may be ranked nearly with the Hamburgs in number of eggs, while in size, both of eggs and fowls, they are far ahead A Houdan's egg is as large as a Brahma's, and often larger. It is to be lamented that Houdans are not very popular in America, but such is the case. We have a friend who devotes all his time and much expenditure to produce fine specimens of this breed, and yet he scarcely has a market for surplus stock. However, it only requires that their merits should be more generally known and they can not fail to "take," as possessing superiorities which should give them distinction as a "Farmer's Fowl." We give herewith a fine illustration which we had re-engraved by Mr. Price for our new descriptive catalogue of poultry, now in preparation.

As will be apparent, Houdans not only claim economic praises, but also demand a second glance as a "thing of beauty." The cock is a stylish bird, his head being surmounted by a large crest and also bearded and whiskered so as to nearly hide his face. Comb bright red and antler-like. His plumage throughout, as also that of the hen, should be nicely intermixed with white and black. Like the Dorkings they have the supernumerary fifth toe. —*W. Atlee Burpee, Philadelphia, May 6, 1876.*

WRITE FOR THE FARMER. We desire to make it the exponent of the practical experience of farmers, gardeners, fruit-growers, bee-keepers, stock-raisers and housekeepers. Give us your ideas. We will see that they are put in proper form.

SELECTING FOWLS FOR BREEDING.

The significance of the words at the head of this article should be studied and fully comprehended by all breeders. The common, the average bird, should not be used to breed from if you wish to attain the best result. Don't use a cockerel or a pullet only because it is a pure specimen of this or that variety, but because it is the best specimen of this variety within your reach. The rule should be to breed only from the best. Every farmer, as well as the fancier, should select those he intends to keep for breeding. Selection is none the less necessary because common barn-yard fowls are kept. The best of common breeds is even more ahead of the average than the best of the pure bloods. The beautiful birds seen at our best shows have been produced by careful selection. The short-horns that sell for such enormous prices were produced by long and painstaking selection. It was breeding from the best. This long breeding from the best produces prepotent animals that will repeat their excellencies to their progeny. This law applies to all our domestic animals—chickens as well as horses.

Some good farmers think the common barn-yard fowls just as good for profit, on a farm, as fancy varieties. Upon such we wish to impress the necessity of constant selection, each year, of those to be kept for future breeding. One who should follow this rule for ten years, would have a flock of fowls fit to exhibit; and his profit during the ten years will have been much greater than by the common plan of keeping any fowls you happen to have. The flock is reduced every year by killing; let those for market always be the most undesirable in form, etc., retain those that have been healthiest, hardiest, most thrifty growers and the finest in form. This will cost you nothing. A pound of chicken from the least desirable of your flocks will sell in the market for about the same money, although these cost you more in proportion to weight than the best: yet you should always get rid of an undesirable chicken at the first opportunity. A few years of proper selection will give you breeders that produce nearly uniform chickens. The best feeders cost less per pound, and from their uniform growth look better when dressed and bring a better price in market. Let every farmer adopt this system of selection, and he will soon be an enthusiastic believer in blood.

NEW USE FOR CHICKEN FEATHERS.

"According to statistics very carefully compiled," says a writer in *La Nature*, "we throw away yearly a quantity of chicken feathers, the intrinsic value of which is equal to the money which we pay out for cotton." A startling statement, but the author considers it true; and he proceeds to explain how the feathers are prepared to make them valuable. The operation is to cut the plume portions of the feathers from the stem, by means of ordinary hand scissors. The former are placed in quantities in a coarse bag, which, when full, is closed and subjected to a thorough kneading with the hands. At the end of five minutes, the feathers, it is stated, become disegregated and felted together, forming a down, perfectly homogeneous and of great lightness. It is even lighter than natural eider down, because the latter contains the ribs of the feathers, which give extra weight. The material thus prepared is worth, and readily sells in Paris, for about two dollars a pound. About ½ troy ounces of this down can be obtained from the feathers of an ordinary sized pullet; and this, on the above valuation, is worth about 20 cents. It is suggested that, through the winter, children might collect all the feathers about a farm, and cut the ribs out, as we have stated. By the spring time a large quantity of down would be prepared, which could be disposed of to upholsterers or employed for domestic uses. Goose feathers may be treated in a similar manner, and thus two-thirds of the product of the bird utilized, instead of only about one-fifth, as is at present the case.

The chicken down is said to form a beautiful cloth when woven. For about a square yard of the material, a pound and a half of down is required. The fabric is said to be most indestructible, as, in place of fraying or wearing out at folds, it only seems to felt tighter. It takes dye readily, and is thoroughly waterproof. There appears to be a good opportunity here for some ingenious person to invent machines to cut and treat the feathers.

This statement must be received as simply suggestive. People are not so much interested in what the feathers thus prepared will bring in Paris, but at the nearest point of disposal. But we imagine that the feathers can be utilized in many ways, and that they can be dis-

posed of with profit, if the question of demand is studied enough to determine just how and where they can be sold to best advantage. Why should we save old rags, which bring only a few cents per pound, with such care, and throw away chicken feathers and other things in the same list, as useless?

CABBAGES.

(Brassica oleracea.)

For a detailed history of this well-known and very popular plant we refer our readers to Vol. 7, page 39, of THE LANCASTER FARMER—our present object being to devote our attention, and the attention of our readers, to a consideration of some of the varieties of that almost universally cultivated garden vegetable—varieties that have not become as common in Lancaster county as they deserve to be, and as they are in other localities, and especially those of our larger seaboard and inland towns and cities. The first we shall introduce is

Borecole.

"Borecole—sometimes known under the name of Kale—is but one of the many varieties of the celebrated cabbage family. It seems to be distinguished by a large, open head, and generally by curled or wrinkled leaves. It has a peculiarly strong, hardy constitution. It is thought very valuable for cultivation in the Southern States, because it requires little or no protection during the winter months. The principal sub-varieties are: the *Scotch Kale*, the *Green curled*, the *Cæsarian Kale*, and the *Thousand-headed Kale, or cabbage.*"

Culture.

"Sow the seed—one ounce of which will furnish four thousand plants, or about that number—during the first halt or the middle of May, but not earlier, unless the season be quite forward. Transplant in July into rich, mellow soil. For more particular directions, the reader is requested to refer to the article on CABBAGE, before alluded to, which is cultivated in the same manner. For preservation in the open air through the cold weather, the plants should be quite close together in a trench, with the earth drawn up to the lower leaves, and covered with straw or litter. When a head is wanted, it is only necessary to remove the covering and cut off the stalk with a sharp knife, leaving the stump in the ground, where it will produce fine greens in the following spring.

"*For seed*—have some of the best heads where grown, or else transplant during open weather into rows three feet each way. It is the nature of this family of vegetables to intermix freely, and run into hundreds of sub-varieties; care must therefore be taken to prevent different kinds flowering at the same time in the vicinity of each other."

Use.

"Borecole is considered very delicate, and is much improved by an exposure to the frost. The crown or head of the plant is cut so as to include the leaves, which do not exceed nine inches in length. It boils well, and proves very tender and sweet.

To Cook Greens.—If not fresh and plump, they should be soaked in salt water for half an hour before cooking. Put them in boiling water, with a little saleratus to preserve their color. A little salt should also be added. Keep the water boiling briskly until they are quite tender.

Brussels-Sprouts.

"Still another variety of the *Brassica* family, or tribe, and by many cultivators known as the Thousand-headed cabbage. The stem is erect, often four feet high, and having on the sides a great number of miniature cabbage head, each being one or two inches in diameter, about the size of a large walnut. The top of the stem much resembles a late Savoy, from which, indeed, it is thought to have originated. It is greatly esteemed on the continent of Europe, particularly in Belgium, and is now attracting some attention in this country."

Culture.

"The plants are raised from seed—an ounce being sufficient for about twelve square yards of ground—to be sown in April or May, according to the earliness of the season. Transplanting to be performed in June or July; the plants being set in rows, two feet each way. The leaves at the top of the stem are cut off some ten or fifteen days before the sprouts are gathered. The other details of cultivation correspond so much to the management of *cabbage* that, to avoid all unnecessary repetition, we refer the reader to that vegetable.

"*For Seed.*—Cut of the top of the stem, and permit the flower stalks to come from the little sprouts only. Great care is required to prevent intermixture with other varieties. Where this cannot be avoided it is the best plan to purchase the yearly supply of seed from an honest seedsman."

Use.

"The tops are said to be of very excellent flavor, while the sprouts are eaten as winter greens. It is yet an unsettled question, whether the sprouts are improved by being touched with frost before they are gathered. They commence ripening in autumn, and continue in season for the table throughout the winter.

"*To Boil.*—Place the sprouts in a vessel of clean water, and let them remain for one hour. They ought to be washed clean from dirt and insects. Then boil them until they become quite soft, when they are to be drained and stewed with cream or floured butter. Season with pepper and salt, or serve to table with some kind of sauce."—*Schenck's Gard. Textbook.*

After we are in possession of good garden vegetables, it is of some importance to know how to prepare them for the table, suitably to the taste of civilized society. We have partaken of these vegetables that were excellently flavored and palatable; and on other occasions we have found them execrable—not fit for the stomach of a heathen, much less an enlightened Christian. As a general thing, no variety of the cabbage plant is either palatable or wholesome, unless it is thoroughly boiled; and, unless in the form of *saur-krout*, it is better not to be cooked with meat of any kind. When cooked as "greens," some people are in the habit of boiling it with a piece of smoked pork (flitch) which makes a sort of *mess* for which *we* entertain nothing but repugnance, especially when the pork is rancid, which some people thinks adds to the flavor of the dish; and this is also the case in cooking green, or "string-beans." It is true, that "Bubble and squeak," that is, beef and cabbage together, is not so objectionable, especially when the cabbage is white and tender, the beef young and moderately fat, and the whole thoroughly boiled; but white cabbage, or "Weiss-krout," dressed with good cream or floured butter, is far preferable, and this is also the case with any variety of the cabbage. If a fatty or oily substance is deemed absolutely essential, pure fresh "sweet-oil" would be preferable to beef or pork; but, of course, in this, people must be left to the dictation of their own individual tastes—tastes that have been inherited, or that have been acquired by a long life of usage. There are stomachs that crave and appropriate great slices of bacon—golden-hued and rancid—with perfect impunity, that would revolt against the most delicate oil. Cabbages, in all their varieties, well boiled and dressed with a sauce—such as is used in dressing asparagus are, by many persons, preferred to that generally limited vegetable, which is always too high priced for the consumption of the poorer classes. Of course, the varieties of the cabbage we have described above, have not the staple value of the typical variety, and therefore they perhaps will never be as extensively cultivated as the latter, but still, *as* varieties, they are annually coming more into favor.

FARMERS, this journal is devoted to your interests; what are you doing to increase its circulation among your friends and neighbors?

OUR CENTENNIAL INTERNATIONAL EXPOSITION.

This month will be memorable in history as giving birth to the formal opening of an event that had its conception five years ago, and, after a long gestation, has for the past three months been in travail, and was finally ushered into recognized being on the 10th of May; and for ultimate success and final development will depend upon the liberal lactation vouchsafed by our whole people. There is little profit in speculating upon who will witness another such event, and what will be the condition of our country and its people an hundred years hence. The event has culminated—it is now upon us—and if we have done nothing to aid its progress, it may be too late to do it now. There is, however, no lack of material, for it appears that all of the available space is occupied, and if every one had become an exhibitor who has felt that he ought to have been one, or who others may have thought should have been, it is very clear that the great Fairmount Park could hardly have furnished accommodations for the whole. The pending event will for the next six months afford our people a rare opportunity to see the "*world as it is*," for unless we possessed more than ordinary personal influence, or official position, it is questionable if we could see so much of the customs, costumes and productions of foreign countries, or such fair representation of their best people, as we may see in Fairmount Park during our Centennial and International Exposition. All the world will have floated in and squatted in that grand, enchanted enclosure for the time being, to the great gratification, edification and instruction of those who pay it a visit. We need not advise, for no doubt all who *can* will patronize the *great Exposition.* The daily and weekly papers contain such elaborate reports of the formal opening that we do not deem it necessary to report them here.

HONEY ANTS AGAIN.

We have for some time past been in the receipt of another "lot" of those singular "honey ants" we alluded to in our November number of 1875 (p. 175). On this occasion we received them through the kindness of Mr. Jno. E. Murphy, of Santa Fe, New Mexico. From the small number received we secured a quarter-ounce bottle of their honey, which we consider a large yield from such pygmies of the insect world. These ants are of a light or reddish-brown color, the eyes very black and conspicuous, and, except when the abdominal portion is much distended with honey, scarcely a quarter of an inch in length. They have long since been described by both European and American authors, under the scientific name of *Myrmecocystus mellegrans.* An allied species (*M. mexicanus*) is common in Mexico, and also a species, belonging to a different genus, with similar honey secreting powers. When the abdomen is exposed or inflated, they are said to resemble small baloons or grapes, the integument being nearly transparent. We have only access to brief references to them in the first and second volumes of the *American Naturalist*, from which it appears that they live in the earth, and that their honey is elaborated for the support of other members of the colony who do not secrete honey, and that these honey-makers are successively slaughtered when a sacharine repast is desired; so that "killing the goose to secure the golden egg" has its type in the insect realm, as well as among higher intelligence. The honey itself is sweet to the taste, with a slight acidiferous (perhaps formic) pungency, which is, however, more perceptible to the smell than to the taste, and probably, diluted and in quantity, would make a medicinal, if not a refreshing summer drink. There surely—as in the case of honey bees—must be some other use for it than merely to feed the non-producing members of the colony.

Query: The question is suggested, how is the race of honey-making ants perpetuated, when those individuals that possess that

faculty are systematically destroyed to feed the others? Being so far removed from their native locality, and knowing so little of their habits and their general history, we will not attempt to solve the question, but leave it to the pronounced Darwinian and anti-Darwinian schools of science to "fix up" or settle between them. Perhaps, like some social and political questions, it can be settled satisfactorily to both parties—as duels are often settled after a harmless discharge of weapons.

INSECT REMEDIES ONE HUNDRED YEARS AGO.

Perusing the *London Magazine* for the year 1773—since I wrote the former article—in the month of May of that year I found the following experiments addressed to a member of the Royal Society; and as I apprehend the republication may be of great public utility, I shall be much pleased to see it in your useful magazine:

On the Effects of Elder in Preserving Growing Plants from Insects and Flies.

"1. I was led to my first experiments by considering how disagreeable and offensive to our olfactory nerves the effluvia emitted by a brush of green elder leaves are, and from thence reasoning how much more so they must be to those of a butterfly, whom I consider as a being as much superior to us in delicacy as inferior in size. Accordingly, I took some twigs of young elder, and with them whipped the cabbage plants well, but so gently as not to hurt them, just as the butterflies first appeared—from which time, for these two summers, though the butterflies would hover over and flutter around them, like gnomes or sylphs, yet I could never see one pitch,* nor was there, I believe, a single caterpillar blown after the plants were so whipped, though an adjoining bed was infected as usual.

"2. Reflecting on the effects above mentioned, and considering blights as occasioned by small flies and minute insects, whose organs were proportionately finer than the former, I whipped the limbs of a Wall plum-tree as high as I could reach, the leaves of which were preserved green, flourishing and unhurt, while those not six inches higher, and from thence upwards, were blighted, shriveled up, and full of worms. Some of these last I afterwards restored by whipping with and tying up elder amongst them. It must be noted that this tree was in full bloom at the time of whipping, which was too late, as it should have been done once or twice before the blossoms appeared. But I conclude from the whole, that if an infusion of elder was made in a tub of water, so that the water might be strongly impregnated therewith, and then sprinkled over the tree by a hand-engine once every week or fortnight, it would effectually answer every purpose that could be wished, without any possible risk of hurting the blossoms or the fruit.

"3. What the farmers call the "yellows" in wheat, and which they consider as a kind of mildew, is in fact occasioned by a small yellow fly with blue wings, about the size of a gnat. This blows in the ear of the corn,† and produces a worm almost invisible to the naked eye; but being seen through a pocket microscope, it appears a large yellow maggot, of the color and gloss of amber, and is so prolific, that I last week distinctly counted forty-one living yellow maggots or insects in the husk of one single grain of wheat—a number sufficient to eat up and destroy the corn of a whole year. I intended to have tried the following experiment sooner, but the dry, hot weather bringing on the corn faster than it was expected, it was got and getting into fine blossoms ere I had an opportunity of doing as I did; but, however, the next morning at daybreak two servants took two bushes of elder, and went one on each side of the ridge,‡ from end to end, and so back again, drawing the elder over the ears of corn of such fields as were not too far advanced in blossoming: I conceived that the disagreeable effluvia of the elder would effectually prevent those flies from pitching their tents into so noxious a situation. Nor was I disappointed, for I am firmly persuaded that no flies pitched or blowed on the corn after it had been so struck, but I had the mortification of observing the flies, the evening before it was struck, already on the corn, six, seven or eight on a single ear; so that what damage had accrued was done before the operation took place; for on examining it last week, I found the corn which had been struck, pretty free of the yellows, very much more so than what was not struck. I have therefore no doubt but had the operation been performed sooner, the corn would have remained totally clear and untouched. If so, simple as the process is, I flatter myself it bids fair to preserve fine crops of corn from destruction, as the small insects are the crops' greatest enemy. One of these yellow flies laid at least eight or ten eggs, of an oblong shape, on my thumb, only while carrying by the wing across three or four ridges, as appeared on viewing with a pocket microscope.

"4. Crops of turnips are frequently destroyed when young by being bitten by some insects—either flies or fleas. This, I flatter myself, may be effectually prevented by having an elder-bush spread so as to cover about the breadth of a ridge, and drawn once forward and backward over the young turnips. I am confirmed in this idea by having struck an elder-bush over a bed of young colliflower‖ plants, which had begun to be bitten, and would otherwise have been destroyed by these insects, but after that operation it remained untouched. In support of my opinion, I beg leave to mention the following fact from very creditable information: That about eight or nine years ago this country was so infested with cockchaffers, or oak-webs, that in many parishes they ate every green thing but elder, nor left a green leaf untouched but elder-bushes, which alone remained green and unhurt amid the general devastation of so voracious a multitude. On reflecting on these several circumstances, a thought suggested itself to me—whether an elder, now esteemed noxious and offensive, may not be seen one day planted with and entwining its branches amongst fruit trees, in order to preserve the fruit from destruction of insects; and whether the same means which produced these several effects may not be extended to a great variety of other cases in the preservation of the vegetable kingdom.§ The dwarf elder, (*ebulus*) I apprehend, emits more offensive effluvia than common elder—therefore must be preferable to it in the several experiments. BENJAMIN MIFFLIN."

From the U. S. Magazine for May, 1779.

Of course the reader will perceive that only the introductory and foregoing are from the pen of Mr. Mifflin, all the rest being from the *London Magazine*, orginally, hence it will also be seen that the experiments were made in Europe.

In regard to this "elder bush" and "elder decoction" remedy, we have frequently seen it recommended, during the last twenty years, in some of our American newspapers and agricultural journals, but we have never learned that any experiments were made and the results published in this country.

We remember, distinctly, that in our boyhood the elder-bush was generally considered a good antidote against flies troubling horses in summer time, but we did not take the trouble to ascertain whether it was better than any other kind of bush. We also remember that a farmer, with whom we wrought, almost invariably covered his meat, which he brought from the town in harvest time, with elder bushes; but we did not learn that they were used as an antidote against flies, but to keep off the heat of the sun, or because they were more conveniently gathered than other kinds. This we *know*, however, that our Elders—*Sambucus canadensis, et pubens*—are often infested by "Plant-lice"—*Aphis*—by species of *Capsus*—"Plant-bugs;" and that the flowers are sometimes fairly eaten up by "Rose-bugs"—*Macrodactylus subspinosus*; moreover, the heart or pith of the canes are infested by the *larvæ* of our beautiful "Elder-beetle"—*Desmocerus cyaneus;* but, as "what is one man's meat is another man's poison," the plant may have a destroying or repelling power on *other* insects.

The common elder of Europe is the *Sambucus nigra*, of which there are three varieties, the berries of which are black, red, and green. These are cultivated—especially the first—for the purpose of making a favorite winter beverage, and supposed to be slightly narcotic. According to Rind, Boerhaave, the great physician, is said to have regarded the elder with so much reverence, for its medicinal virtues, that he always raised his hat when he passed a tree or bush of it. The leaves are *narcotic, purgative* and *acrid;* the flowers, in decoction, are *diaphoretic*—that is, they promote perspiration. Elderberry wine is a common domestic beverage in this country, and is considered "wholesome." Gullet, it appears, considered the "Dwarf Elder"—*Sambucus? ebulus*—the most virulent. As we have some of the same species of noxious insects as those alluded to in the foregoing paper, in this country, and also others allied to them, this elder-bush remedy is so simple that its virtues, if any, might be easily tested, and we do not think it ought to be rejected untried, only because it is old. These insects and these remedies will at least illustrate how long a time the agriculturist has been battling against destructive insects, and what little progress has been made in exterminating them. There might be some use in going back and giving old remedies a more thorough trial than they have elicited heretofore.

The insect alluded to in the first paragraph is doubtless the "White Cabbage Butterfly"—*Pieris rapæ*—of which there has been an abundance all over this country, better known in its *larva* state as the "Green Cabbage-Worm." In the second paragraph the writer, no doubt, alludes to the "Plum-slug"—a species of saw-tly (*Selandria*), or to the "Plum-louse"—*Aphis prunus*—or to both; species of these also infest the plums of our country.

The third undoubtedly alludes to the "Wheat-midge"—*Cecidomyia tritici*—which also infests the wheat of this country and has been imported from Europe. We have observed these depositing eggs under similar circumstances.

The fourth may allude to several species of insects which infest the turnip, both in Europe and America, some of which are identical. The "Turnip saw-tly"—*Athalia spinarum*—the "Turnip-flea"—*Altica nemorum*,—the "Turnip-leaf plant-louse"—*Aphis rapæ*—and several others, infest the turnip crops of England and the continent of Europe.

We, of the present period, are apt to think that our forefathers had a grand, easy and jolly "old time" of it, but when we appeal to the records we find that they were solicitous about the same things that now excite our anxiety or attention; therefore, if this old document can afford no instruction it may afford some consolation.—ED.

"HONEY-DEW."

The *facts* of our esteemed correspondent, W. P. Bolton, in reference to his observations on honey-dew, are of sufficient importance to give him a respectful hearing through the medium of the FARMER. But we think that he has unwittingly created a phantom in order that he may demolish it. If he reads our paper in the April number of the FARMER carefully over again, he will find that we nowhere stated that "*all*" honey-dew was caused by *Aphids*, but that we recognized several causes for its appearance on plants; we mainly denied that it was caused by the condensation of aroma, odor, or scent, as Mr. Noe had suggested.

Mr. B., residing on a farm, and endowed with the necessary intelligence, has therefore opportunities to make observations that we have not possessed for thirty years, but we confess that we have never seen the saccharine substance, known as honey-dew, on grass that we did not suppose was discharged from aphids, from flowers, or from the exudation of trees, shrubs or plants, and not by any means from the clouds. And yet, under very extraordinary circumstances, it may be as possible for this substance to be carried up into the air and then deposited on plants, as it is for pollen to be carried up and then to descend in what has been popularly termed "sulphur showers."

The feathers of fowls "bedraggled with dew," is a very common occurrence, and one that we have often seen, and we have also

*The word "pitch" here means to alight on, or settle down on the plant, for the purpose of depositing eggs.

†It is almost unnecessary to state that the word "corn" in the above article has no reference whatever to what we call *corn* in Pennsylvania, but to wheat or rye; indeed, the term *corn* was originally applied to the seeds or *fruit* of all cereals.

"The spring is waning fast, my love,
The *corn* is in the ear."

We have no "corn in the ear" at that season except wheat, rye or barley. What we call corn is called *maize* in England and elsewhere.

‡The word "ridge" has reference to what in Lancaster county is termed a "land"—that is, the field in plowing is laid off into *lands*, the furrows on each side being turned towards the centre, leaving a valley between each land, and a faint ridge in the middle.

‖Now generally termed cauliflower, a variety of *Brassica oleracea*, or cabbage.

§A bush of elder laid on fresh meat or fish in the summer prevents the fly from blowing on them. And it is not impossible, from the foregoing experiments by Christopher Gullet, that water strongly impregnated therewith, and once a week or fortnight sprinkled over cabbages, will preserve them from being lousy.

seen the "Buttercups" blooming so plentifully in meadows, in the month of June, that any "bird wading through them" must have swept some of it off, leaving it upon their nether feathers.

Although our own personal experience, or that of any of the authorities we have consulted, are not in corroboration of Mr. B.'s views, still he cannot be mistaken in what he has actually seen, and therefore we hope that during the present season he may be able to make the *facts* manifest to others, so that in the mouth of two or three witnesses every word may be established."

We append the following extract as pertinent to the subject, especially in reference to the condensation of scents:

A Mystery of Perfume.—No one has yet been able to analyze or demonstrate the essential action of perfume. Gas can be weighed but not scents. The smallest known creatures—the very monads of life—can be caught by a microscope lens and made to deliver up the secrets of their organizations, but what it is that emanates from the pouch of the musk deer that fills a whole space for years and years with its penetrating odor—an odor that an illimitable number of extraneous substances can carry on without diminishing its size and weight—and what it is that the warm summer air brings to us from the flowers, no man has yet been able to determine. So fine, so subtle, so imponderable, it has eluded both our most delicate weights and measures and our strongest senses. If we come to the essence of each odor, we should have made an enormous stride forward, both in hygiene and in chemistry, and none would profit more than the medical profession if it could be as conclusively demonstrated that such an odor proceeded from such and such a cause, as we already know of sulphur, sulphurate hydrogen, ammonia, and the like.

AMERICAN TOBACCO.

It really is astonishing that a vegetable so utterly useless as a life-sustaining product, should have attained such immense proportions in the agricultural, manufacturing, commercial and financial interests of our country. As a monetary resource, or a medium of exchange, it is almost as important as gold or silver, and would do about as much for humanity, in sustaining life and comfort in a case of famine, as would the "precious metals." The Agricultural Report for the months of March and April, 1876, says—"Our annual census of tobacco, in counties producing not less than 100,000 pounds, makes a large increase of production over the crop of 1874, which was a comparative failure; and in some sections a heavy increase in area of cultivation. The returns have not all been received, and the aggregate produced last year is, therefore, delayed until the publication of the annual report." The following table will show the aggregate production in part of the several tobacco-growing States, over the minimum limit above named. Only York and Lancaster are included in the report from Pennsylvania, and over four-fifths of the amount was produced by Lancaster. The table will also show how almost incomparably small our crop is, when placed in juxtaposition with the great tobacco-growing States of the Union.

Tobacco Crop of 1875.

Pennsylvania	15,150,000	pounds.	10,106 acres.
Maryland	14,532,000	"	21,300 "
Virginia	38,733,416	"	62,500 "
North Carolina	9,885,472	"	21,010 "
Florida	350,000	"	450 "
Kentucky	64,691,600	"	103,062 "
Tennessee	21,792,600	"	24,000 "
West Virginia	706,250	"	1,675 "
Ohio	8,273,518	"	13,134 "
Indiana	8,500,000	"	19,500 "
Illinois	5,526,000	"	10,801 "
Wisconsin	2,210,000	"	4,139 "
Missouri	24,486,000	"	26,186 "
Total	214,866,856	"	317,863 "

Ohio was almost a total failure, her tobacco crop of 1874 being 15,063,348 pounds. This only partial return of the tobacco of the country for 1875, would amount—at an average of 10 cents per pound—to the enormous sum of $21,486,685.60. Suppress this trade and withdraw it entirely from the commerce of the country—either by Royal or Republican edict, or by popular acclaim—and we may well imagine what the consequences—for the time being at least—might be. Is there any other crop wherein 317,863 acres would yield such a pecuniary return?

We do not choose to moralize upon the subject, or we might ask ourselves in sober earnest, "What does the great bulk of this immense product result in?" Even if its *use* was not *abused*, and there were no charges against its healthfulness, it only ends in "spit," and slime, and ashes, and smoke. But, the philosopher may ask—"What does any other material substance end in?" "What but dust!" dust!! dust!!!

Any one visiting Agricultural Hall in Fairmount Park, during the pending Exposition, will be perfectly surprised at the immensity, variety and magnificence of the Tobacco on exhibition there, especially that of Edward Holbrook, of Louisville, Ky.

AMERICAN FRUITS.

And now, for a moment, permit me to call your attention to the consideration of the question, "How shall we obtain varieties of fruits which may be adapted to the various latitudes of our immense territory?"

The great loss sustained in the importation and trials of trees from foreign shores, and even from different quarters of our own country, which are not adapted to our own location, suggests the answer that new varieties must be produced from seed, and to the manor born, to remedy this evil. The adaptation of plants to various climates, and their distribution over the earth, involves a study so profound that few have any definite knowledge on the subject. Why some are suited, by their constitution, to a wide extent of territory, and are able to adapt themselves to almost any altitude or latitude or temperature without material change, while others are confined to a narrow limit, and will not prosper elsewhere; or, why a fruit may succeed in one location and a few miles distant fail entirely; why some are aquatic, and some thrive in arid soils, while others are parasitic, are mysteries which mankind has not yet been able to solve. The human constitution will frequently endure the change of country and climate, but the extent to which plants can bear these changes is fixed by an immutable law; therefore, all attempts to acclimate such as are not naturally congenial will fail in the end, except it be within very narrow limits—not, however, that a tree or plant may not sometimes endure greater degrees of cold or heat than it is subject to in its native climate; but no one should suppose that time will produce a physiological or constitutional change in them.

It is, however, sufficient for us to know that we can produce some seed fruits which, by their constitution and habits, are capable of enduring the cold and heat, the drought and moisture, and other vicissitudes of the region we inhabit; but the idea that we can accustom a tree or plant to conditions not consistent with its laws of being, is a chimera of the imagination. The only acclimation that we can rely on for obtaining trees and plants of stronger constitution is the production of new varieties from seed hybridized by the hand of man, or naturally cross-fertilized by insects or the air. Whatever opinions may have been entertained to this we must come at last, that for the acquisition of hardy, valuable fruits, adapted to the various locations of our vast territory, we must depend mainly on the production from seed. Thus have I discoursed for many years to you—thus have I promised to do while I live.

Much has already been accomplished by the production of new varieties of American fruits from seed, but how little compared with the results obtained in other lands by the art of hybridization in the vegetable kingdom. To this art we are mainly indebted for the numerous fine varieties of grains, flowers and vegetables introduced in our time, and the same success will reward similar efforts to produce new and valuable fruits suited to our climes.

Says Prof. Grey, in his admirable essay at our last session: "Most of our esteemed and important fruits have not so much been given to man as made by him, and man's work in this respect is mainly to direct the course, or tendency of nature." The success which has attended the American florist in the production of new and fine varieties of camellia, the rose, and other plants, which rival the choicest varieties of the old world, is indeed remarkable, and it will be far greater when the same scientific knowledge is applied to the production of native fruits.

The laws which govern the procreation of species by cross-impregnation are now so well understood by those who have scientific knowledge as to leave no doubt of success. Thus the farmer as well as the florist is producing result which, as to form, habit, color, proportion and beauty, surprise the operator himself, when he sees how kindly nature co-operates with his efforts to bring forth the object of his desires.

There may be disappointments—these are the lot of humanity—but the philosophical principle is correct, and the results of practice are now universally acknowledged; and although the improvement sought for may not be realized in every instance, experience has taught us that it will come at last. But my object is to encourage our cultivators in the belief that, by the sowing of the seeds of our best varieties, and by cross-impregnation, there is a wide field for improvement, and that all other attempts at acclimation are fruitless. And have you ever thought, my friends, of the many fine fruits which you might have raised by sowing of seeds which you have carelessly thrown away?

Not that I would discourage the planting and proving new varieties from other regions, holding fast such as are suited; and where they do not succeed in one location, it is possible they may be adapted to another.

This is especially true with regard to the varieties of the strawberry. While one cultivator cannot grow the variety bearing my name, another declares he will grow no other; and thus with the Hovey's seedling, which, after forty-two years of existence, has this year (1875) carried off the highest prize offered by the Massachusetts Horticultural Society for the strawberry.—*Marshall P. Wilder, at Chicago, Sept.*, 1875.

[How very much the precepts inculcated in the above accord with the practice fifty or sixty years ago, when local or native varieties were produced from seeds, and such things as budded or grafted peaches were unknown, or nearly so. It is true, there were more bad peaches then than good ones; but under any circumstances, there were always plenty of peaches, apples and cherries.]

QUERIES.

What has become of "Leoline?" We long to hear from her again, and hope nothing of a disabling character has befallen her. If *consistency* is "a jewel," how much more so is *constancy*. Perhaps "more pressing duties compel her to take her leave," and if so, we must encounter the vicissitudes of the centennial year without her aid. If *we* have inadvertently given offence, then "grant us leave by circumstance to excuse ourself."

We might also say, what has become of some of our other correspondents, of whom we indulged such "pleasing hopes?" Have they "become weary of well-doing," or have they permitted themselves to fall into those states of apathy which are so detrimental to the free exercise of mental and physical energy? Wake up, friends, wake up!

The Reduced Fare on the Pennsylvania railroad, during the continuance of the Centennial exhibition, will offord our readers an apportunity of seeing this wonderful exhibit of the industry of all nations at a moderate cost. Round trip tickets from Lancaster, good on any train, for one day, cost only $2.30; and good for fifteen days $2.75. This company has made the most liberal and complete arrangements to accommodate the traveling public. See time table on last page of this issue.

PECK'S IMPROVED LIQUID ATOMIZER.

The accompanying illustration represents PECK'S IMPROVED LIQUID ATOMIZER, for destroying "Potato Beetles" and other noxious and injurious insects; and, according to our apprehension, from having seen the machine in operation, it distributes whatever fluid may pass through it, as expeditiously, as economically and as efficiently as any invention we have yet seen; and now that it has undergone a vast improvement since our notice of it in our July number for 1875, we think it may be classed among the inventions worthy of our *illustrious Centennial*.

A large portion of all the labor expended in the production of food is lost through the depredations of insects. Within the past few years the damage to the potato crop of the country by the Colorado beetle has been many millions of dollars, and each succeeding year sees a still greater area doomed to suffer from this scourge. Cotton planters often see the result of months of labor destroyed in a few days by worms. The Curculio has made the cultivation of the plum almost impossible, in nearly every part of the country, and the currant worm and other insects have wrought utter ruin to currant and gooseberry bushes in thousands of gardens. The pear crop is greatly damaged every year, in quantity and quality, through injury to *the leaves* by slugs, and a large proportion of all the pears and quinces produced are made unmarketable by Curculio stings.

Insecticides.

Insects may be destroyed by applying Paris green, hellebore or other poisons to the leaves on which they feed; or they may be driven away by the application of substances offensive to them, such as solutions of whale-oil soap, carbolic soap, carbolic acid, gas tar, aloes, gamboge, salt, infusions of quassia, Cayenne pepper, or anything that is distasteful, from being possessed of putrid qualities, or that is intensely bitter, hot or acrid.

Peck's Liquid Atomizer

Offers to farmers and fruit growers a more perfect means of protecting their crops from damage by insects than has heretofore existed. It consists of a tank fastened across the shoulders, which contains in liquid form whatever is to be applied; attached to the side, and worked by a crank, is an air pump, consisting of a double bellows and air chamber. Connected with the tank and air pump by rubber tubes is a pipe or nozzle. When in operation a small stream flows from the tank to the point of the nozzle, where it is caught by a current of compressed air, and blown out in an exceedingly fine mist.

Economy, Efficiency, Safety.

By all the ordinary methods there is required a large amount of material to make a very imperfect application, and there is more or less danger when a virulent poison is used. With this apparatus a small amount of material may be so perfectly distributed as to kill every insect and moisten both sides of every leaf, by throwing the liquid in such a finely divided or atomized state that it will float for a time in the air. An atomized liquid will adhere to the under side of a leaf, to fruit, and, in fact, to whatever it touches, so firmly that it cannot be shaken off. If any one will think of a drop of water being divided into a thousand atoms, and these atoms deposited at a little distance from each other, he will have some idea of the manner in which this machine does its work. Safety is assured in this method of application by the use of a nozzle, which conveys the liquid to a little distance from the operator before it is discharged.

We call the attention of our readers to the advertisement of the proprietors in another column, in this number of THE FARMER, and for further particulars would advise them to send for circulars.

We have received one of these machines, but as we have neither time, opportunity or occasion to operate it, we have placed it in the hands of Mr. W. D. Sprecher, Seed Store, East King street, Lancaster, Pa., where all interested may call and examine it for themselves.

VALUE OF BARNYARD DUNG.

The following practical essay was read before the Fettercairn, Scotland, Farmers' Club, by James Mitchell, of Montrose:

Until recently the chief, and in many cases the only fertilizer the farmer used, was farmyard manure; and now that this is to a certain extent superseded by artificial manures, there is just the danger that it may be too much overlooked. Farm-yard manure has its proper place in agriculture, and so has artificial manure. He proposed in the following remarks, principally to treat the question of urine, its relative value to the solid excrements, and the most effectual manner in which urine can be economized.

Some agriculturists hold exaggerated opinions as to the value of farm-yard manure, others undervalue it, while some manufacturers and agents of artificial manures only manifest their ignorance by treating farm-yard manure slightingly, and decrying it, in season and out of season, on the absurd supposition that by doing this they will induce the farmer to order more artificial manure than he otherwise would. The only valuable ingredients in farm-yard manure are the urine and the solid excrements. The other ingredients are simply straw, &c., which have little value in themselves, and simply serve to absorb and keep together the urine and solid excrements.

The approximate value of the urine of the horse, cow, sheep and pig is as follows: Horse, 30s; cow, 20s; sheep, 30s, and pig, 10s per ton. The approximate percentage of ammonia contained in the urine of these animals is: Horse, 1.6; cow, 0.9; sheep, 1.7, and pig, 0.4. The phosphates contained are trifling, being 1 per cent. in the horse and pig, ¾ per cent. in the cow, and ½ per cent. in the sheep. The additional value of the urine of these animals consists of a small percentage of potash and soda salts, &c. Comparing these facts with the approximate composition and value of the solid excrements of the same animals, we find that the solid excrements of the horse are worth 15s per ton; the cow 10s; the sheep 25s, and the pig 6s; or, in other words, the value of urine is about double that of the solid excrements. In comparing their value, however, it is only fair to say that the value of the solid excrement is principally owing to its being saturated with the urine. Thus it is evident, that, if anything is to be done in economizing the farm-yard manures, it must be *urine* that is to be considered first.

In considering this subject a good deal of valuable information can be obtained from the Chinese. We consider these Celestials as little better than savages; it is, however, a well-known fact, that they are much before us in this matter, as in many others, and there is no doubt that we are the losers by thus disparagingly treating them and their ideas, or rather ignoring them altogether. It is certain that they are now, and have been for hundreds of years in many respects very far advanced in the science [art] of agriculture, and among them the excrements, liquid and solid, treated and prepared in various ways, serve almost entirely as their fertilizers. One writer says: "Human urine is, if possible, more husbanded by the Chinese than night-soil for manure; every farm or patch of land for cultivation has a tank, where all substances convertible into manure are carefully deposited, the whole made liquid by adding urine in the proportion required, and invariably applied in that state. The business of collecting urine and night-soil employs an immense number of persons, who deposit tubs in every house in the cities for the reception of the urine of the inmates, which vessels are removed daily with as much care as our farmers remove their honey from the hives."

It may be roughly estimated that the average urine passed by cattle daily is about two gallons, so that in the course of a twelvemonth every beast would pass from three to four tons of urine, the value of which would be from £5 to £6; and, in addition, a proportionate quantity and value of solid excrements, or, in other words, the total excrements, liquid and solid, obtained from a cattle beast in a year would be worth from £8 to £10. Thus, supposing the case of a farmer with an average stock of cattle, during the year, of 50 head, he would collect from 150 to 200 tons of urine per annum, showing a value of £200 to £300 ($1,000 to $1,500). Of course a very large proportion of this would go direct to the soil during the time the cattle were upon the grass; still, it is not over-estimating the value of what can be collected, taking into account the urine from the horses and other animals on the farm, to say that, provided the whole urine be collected, the quantity would represent a value, say, of £100, or even more.

Covered courts, properly paved, with channels conducting the urine into a reservoir, are recommended as the most economical plan of saving the urine. It would also be a great saving to sprinkle these courts, from time to time, with vitriol. This would fix the ammonia, and thus prevent the loss of the most valuable portion. It would also keep the courts sweeter, and preserve the health of the animals. It need be applied only sparingly, diluted with water. The fumes arising from manure are injurious to the stone and lime of walls, and the vitriol would also prevent this. The loss of ammonia by evaporation, in turning dunghills, can also be prevented in the same way—sprinkling the dung with vitriol while turning the heap.

INSECT DEPREDATIONS.

"When we reflect upon the alarming increase of noxious insects, and the loss of untold millions of the productions of our country by their ravages on our crops, it becomes a matter of grave interest that the pomologist should be ever ready to contend with this host of vile creation. These pests will probably continue to afflict mankind in the future as in the past, for their kingdom is established throughout the earth. "It extends," says Harris, "from the

torrid zone to the utmost limits of polar vegetation, and from the lowest valley to the mountainous regions of perpetual snow." And as our friend, Doctor Hull, President of the Illinois State Horticultural Society, has truly said, "just in proportion as you increase improved fruits, just in that proportion will fruit insects increase with you." The wonder, therefore, is not that they are permitted to exert their baneful influence on this fair world, but that mankind are so neglectful of efforts for their destruction.

The Almighty gave us dominion not only over the beasts of the field, the fowls of the air and the fishes of the sea, but "over every creeping thing that creepeth upon the earth," and yet we allow them to become our masters. One thing is certain, our duty is to overcome them as we would any other evil, nor tire in our efforts, unless we are willing to admit that insects are more powerful than men.

It is estimated by Prof. Riley, that the damage done by insects within the limits of our country is not less than three hundred millions of dollars annually, and that Napoleon at the summit of his prosperity, never inflicted more damage on a nation than the lilliputian insect army inflicts on the United States; and well does he remark: "If an enemy were to cause a small part of the injury which results each year from the depredations of even one of our insect enemies, the whole country would resound with a clamor for the suppression of the invaders."

We have learned how to conquer the potato-beetle, the caterpillar and curculio, the canker and currant worms, the aphis and red spider, and the rose-slug; we can prevent the depredations of the borer and the codling moth, and may we not yet hope to devise means to prevent the terrible scourge of the grasshopper in the west, and the phylloxera on our vines. Indomitable perseverance is the price of reward, in the acquisition of noble ends, and this is especially true in regard to the culture of fruits.

Accustomed as we are to the "canker worm" in Massachusetts, we as generally protect our orchards from its ravages as we do our fields from the invasion of cattle; the efforts of Ellwanger and Barry, Dr. Hull and others, are crowned with an annual crop of plums, by a little care, at the proper time, in shaking off the trees and picking up the dropping fruit; the canker worm is prevented by the application of tar and oil, or printers' ink, for a few weeks; the caterpillar by the use of the hand or brush for a few hours; and the borer by a few moments' examination; and these examples are illustrations of the principles which I would enforce, and of what may be done; and were we to fail in this, it is through neglect of the means which have been placed in our hands.

"Thus God delights to teach the lesson ever,
That our success depends on our endeavor."

"The study of entomology, as teaching us the habits of insects, both useful and injurious, is of the highest importanee, in connection with the culture of plants and fruits. And we, therefore, rejoice in the spirit of enterprise which has of late been awakened on the subjeet. Were we to be told that there was no method to prevent the depredations of insects, we should lie down in despair; but we do little better while we do nothing to prevent them, and if men would give their minds to the subject most of the evils of whieh we complain might be prevented."

The foregoing we extract from the annual address of Marshal P. Wilder, delivered before the *American Pomological Society*, at its fifteenth session, held in Chicago, Illinois, on the 8th, 9th and 10th of September, 1875. Although it contains but a brief and very general outline of the subject, it amply illustrates its vast importance, and furnishes an endorsement of the very highest authority. Doubtless the incursions and depredations of insects are often unavoidable and unheralded; but it is too apparent for successful denial, that in many instanees their redundaney and destruetiveness are the results of sheer neglect, indifference, or willful ignorance—an ignorance which, under other circumstance, would border on criminality. It is becoming just as important for the farmer or fruit-grower to study the periods, transformations and destructive habits of insects as it is to observe the times and seasons for plowing his ground, planting and cultivating his crops; and the neglect of the former may ultimately be as detrimental to his pecuniary and social interests as a neglect of the latter. To be forewarned is to be forearmed; and, therefore, if the matter has not been already anticipated, it ought now to elicit attention in this, the beginning of the flowering and fruiting of the year. "*He that hath ears to hear, let him hear.*"

ADAPTING MEANS TO ENDS.

There may be sound sense in the old "saw"—"A *jack* of all trades is a *master* of none;" but on that score there is "another side to the question;" as well as in many others; as may be gathered from the following, which is going the 'rounds' of the weekly press, and which we clip from the columns of a cotemporary as *apropos* to the present times, when there are so many idle young men, simply because there is no employment to be obtained in their special crafts.

A Little Good Advice.

"I am always sorry for a man who knows how to do but one thing. I have often seen such men. I gave ten dollars to one who could speak and write five or six languages, and translate beautifully; but in the middle of a hard winter he could not get a living. I know another man who had preached twenty-five years, till his throat failed him, and he used to go around looking very blue and sad, until people pitied him and got up donation parties for him, because he was good for nothing except to preach. I knew a lady who had taught school for twenty years, till she was a poor, nervous, broken-down woman, and didn't know how to make a dress for herself. Now boys and girls, every real man should know how to do one thing well. Every wise farmer has a principal crop; but he has always a little something else to live on. Don't put your money all in one pocket. If you want to get along right well, learn one sort of work to get along by, and all sorts of work to get a living with when your one sort gives out?"

That there are so many in the world who are willing to do only one thing, does not arise so much from the fact that they *can* do only one thing, as from the fact that they *will* do only one thing or nothing, and if they can find no employment at that one thing, they feel themselves perfectly justifiable in waiting in listless idleness until that one thing "turns up" again.

It is questionable whether that kind of people are the kind of stuff that is needed for the social development of this planet, nor yet for its commercial, mechanical, agricultural or economical development. Such people never master their *situations*.

Whilst it is eminently desirable that a young man, in acquiring a knowledge of a trade, profession, or other occupation, should concentrate his whole mind, will and energy into it, in order that he may become proficient therein; still, when that fails him through financial disaster, or from other causes, without a reasonable prospect of a return of prosperity in the future, he should be willing to devote the same energies towards the acquisition of some other calling, whereby he may be relieved from a life of idleness and dependence. It is true, that there are some occupations in which he could not expect to become sufficiently proficient to obtain a livelihood on account of his advanced age—yet, there are many other callings in which any man under the age of thirty could succeed in if he had the will to do so, and in some even if he were ten or fifteen years older. There are plenty of men in the world, who, if they were suddenly dropped down, as if from a balloon, on to an uninhabited island or continent, could readily adapt themselves to their isolated circumstances, wanting only the material out of which to carve their self-support, and this "adaptation of means to ends" ought to characterize their course and conduct in the midst of society at any time.

Interview many of the thriftiest and most successful business men of the country, and you will be astonished how many of them are following occupations different from those they started out with in early life—and this is especially the case with the citizens of towns and cities. Many men, if they cannot find employment at the business they have chosen as their worldly occupation, instead of turning their hands to something else, are content to relapse into idleness and worthlessness.

Many fail sometimes, from personal deficiency half a dozen times before they succeed—at different occupations, even in prosperous times—and the most that this may demonstrate is, that they had mistaken their calling; but none succeed who do not "try again." The absurdity of young men waiting two or three years for "something to turn up" in their occupations favorable to their chances of obtaining employment, has no parallel among those possessing sane minds on the subject. These errors of judgment are often the results of wrong thinking upon this subject, through which a conclusion is come to that one honest occupation is more respectable than another, and that eventually their services will be solicited without any trouble to themselves. This is underestimating their surroundings and overestimating themselves.

There are circumstances under which they must *ask* before they can expect to *receive;* they must *seek* if they desire to *find*, and they must *knock* before it will be *opened*, and this must be repeated again and again, even at the expense of being importunate.

If all the willfully idle men were wiped out of existence the world and society would still rotate the same as when they constituted a part of them. The world owes no man anything but what he, by his active energies, may be able to get out of it by his labor.

Therefore, if you are a farmer, a lawyer, a doctor, a mechanic, or any other calling, go to work on *something*, if only it is honest and useful. If you can't get anything to do at mathematical instrument making, perhaps you may be able to succeed at stone-breaking, or something else, or you never can stand acquitted by the world or human *society*.

For The Lancaster Farmer.

DECORATING FLOWER GARDENS.

From the middle of May to the middle of June is the proper season in our latitude to decorate flower gardens with bedding plants, ever-blooming roses, etc.—which are purchased growing in flower pots—and the roots of the gladiolus, tuberose, dahlia, etc. The species and varieties of bedding plants are very numerous, diversified and beautiful; so every taste or whim can be satisfied. The flower class have blooms of many colors, and the plants are of many sizes and habits of growth; some are very brilliant and showy in blooms; others are very fragrant, though less showy; another class have charming, sweet-scented leaves. So in making selections it may be best to have a portion of every class for diversity's sake, and a pleasing whole. The class with ornamental leaves are also of numerous species and varieties, and very diverse in appearances. None of them are sweet-scented, but they make a beautiful and long-lasting show. There are three styles of arrangement. In the *promiscuous* arrangement many kinds are set upon the same beds; so mixed that the tallest are farthest off the edges, and the most dwarf-like nearest to the outer edges; all so set as to make a pleasing contrast and good show. The sweet-scented species are so set as to give fragrance to the whole. The *ribbon* style is much adapted to the ornamental leaved class, making rows of different colors. They make a long-lasting and beautiful show, but have no sweet perfumes about them. The *self* style consists in making many small beds in a cluster, or near to each other; each bed is set wholly with one speeies or variety, and every bed different from the others. For ex-

ample, a bed of verbenas, a bed of petunias, etc. Sweet-scented beds will be made with mignionette, sweet alyssum, heliotropium, etc., all with fragrant blooms. Beds of sweet-scented leaved geraniums, lemon Napoleon, etc., are made for diversity. Every style has its admirers and practitioners.

Upon large lands, maintained with much wealth, there is room to have all the styles, but we have often seen as much real beauty around a well-kept farmer's garden as in extensive parks. Wealth is not always accompanied with fine taste and prudence.

For a good show of blooms in the autumn, plant out dahlia, chrysanthemum, scarlet sage, ageratum, Mexicana, ever-blooming roses, geraniums, and plenty of tuberoses, for sweet scent.—*Flora.*

For The Lancaster Farmer.

FRUIT CULTURE IN LANCASTER CITY.

The very general opinion that little fruit is grown in cities, is as mistaken as it is prevalent. This delusion exists not only among our country friends but is quite as common with city residents, who ought to know better. If we take our own city as an instance, we may safely say that not one-fourth of its adult male inhabitants could give anything like an approximatively correct estimate of the small and other fruits annually raised in the yards and gardens embraced within the city limits.

The few square miles whereon the city stands is certainly not a very extended area, but this space, limited as it is, is cut up into hundreds of lots of greater or less dimensions, each with its individual owner, and these owners have of late years taken good care to make the most of the limited domain that belongs to them. A full lot being 250 feet long, allows considerable room if judiciously used, to such as choose to avail themselves of it for fruit-growing purposes; and as two or more lots are frequently in possession of a singe proprietor, a still greater opportunity is afforded to set out trees or prepare strawberry beds. It has often been a matter of surprise to us to see the variety of choice fruit trees that many owners contrive to rear on such circumscribed limits; indeed, the danger is that in his efforts to make the most of his few square yards, he will so crowd his trees that they interfere with each other, thereby retarding their proper growth and development and causing the production of inferior fruit.

It would be worse than idle to attempt to grow all the various kinds of fruits in a city that the farmer does in the country. The absurdity of planting many apple trees for instance, is manifest to every one, and consequently not much attention is given to that fruit. It is those fruits whose trees require least room, that are most in favor. Dwarfs are especial favorites but not exclusive ones, and we know of standard pears, the growth of half a century, whose thrifty, towering limbs would do no discredit to the amplest country yard or orchard. Pears, peaches, apricots, plums and cherries are most abundant, and the country visitor who is not aware of the fact, never suspects as he passes through our principal thoroughfares, that behind the rows of tall and imposing houses are ample green yards filled with all manner of choice fruits that would perhaps throw into the shade those that adorn the yard of his rural home.

It is only by making an extended ramble through the alleys and by-ways of Lancaster, as I did on this bright, crisp May morning, that a true idea can be formed of the extent to which fruit-growing is here pursued. The bloom of the apricots had already fallen, but the pear, cherry and peach trees were exceedingly beautiful with their wealth of flowers, giving promise of an abundant harvest. Even the city air was made redolent with the far-reaching fragrance.

The exact extent to which fruit culture is carried within this city is, of course, difficult to determine, but we are satisfied that aside from the single item of apples, it is equal to that of any united dozen of townships in the county. The quantity of grapes grown is enormous; nearly every yard, large and small, has from one to half a dozen vines, from which large crops of most excellent fruit are obtained. So little care and room does this latter fruit require, that it is a universal favorite; trained along walls, balconies and fences, it leaves the open ground available for stone fruits or garden purposes.

It is an open question, whether a city, in some particulars, does not possess superior advantages over the open country in the matter of fruit culture. In cities of considerable size, the temperature is always from three to five or more degrees higher than it is outside of them; no one needs to be told what an advantage this is; that difference is often enough to preserve a fruit crop from destruction; particularly is this the case in the spring, when unseasonable frosts ofttimes come to mar the fruit-growers' hopes; the shelter afforded by the closely surrounding houses, stables and other buildings, has preserved many a promising yield from the destructive ravages of violent storms; at the same time the interiors of most of our blocks or squares are sufficiently open to admit all the sunlight, rains and breezes essential to the full growth and perfection of all fruits adapted to this latitude. So far as we have observed the ravages of the curculio and other noxious insects are not greater within the city limits than beyond them. Neither is the fruit raised in any degree inferior to that grown in more open districts; on the contrary, much of it is unexceptionally fine, both in appearance and quality, in proof of which we need only call attention to the many prizes in this department, that fell to the share of Lancasterians at the last State Agricultural Fair. Many readers will remember the very large and very excellent display of fruits placed on exhibition at that time by Chas. E. Long, esq., and which bore away the palm from even professional fruit-growers; there are many other amateurs in this line among us, who could, in the proper season, make such a showing of fine fruits as would literally, as well as metaphorically open the eyes of trained pomologists.

The number of factories and manufacturing establishments in this city that might be regarded as producing vapors and gases hurtful to fruit of any kind, is extremely limited, and it is even doubtful whether there are any such at all; at all events no deleterious effects have become noticeable from this cause. The protection now so generally accorded to the English sparrows have made them astonishingly abundant throughout the city, and they and other small insectiverous birds render valuable services in ridding our fruit trees from the insect hordes that are continually depredating upon them. If some of the owners of hundreds of broad acres throughout the county could by some means get a glimpse of the large variety of fine and thrifty fruit trees that ripen their luscious, bough-laden products in the rear-yards and gardens of many houses in this city, they would begin to believe we are not so entirely dependent upon outside sources for our fruit supplies as they supposed.—*F. R. D., Lancaster, May* 1, 1876.

For The Lancaster Farmer.

SEASONABLE HINTS.

All hot-beds should now be made, and sown when fit. All vegetable seeds needed for spring and summer sowing should be purchased at once, and when the busy season comes on they will be in readiness to sow and plant. It is foolish and hungry-like to buy seeds in small quantities when needed, as valuable time is often lost. Seedsmen's catalogues for this year are all published, and can be had for the price of mailing. They give accounts of all the well-known varieties and many new species, as well as of flowers, both annuals and others.

Every farmer can produce plenty of wholesome vegetables for his household cheaply by cultivating with horses: Beans, peas, sugar-corn, cabbages, asparagus, potatoes, celery, cucumbers, melons, squashes, etc., until they spread and cover the ground; tomatoes, egg-plants, peppers, late cabbages, etc., are often planted between the rows of peas, and sometimes celery and corn, making two crops upon the same ground with one plowing. Spinach and radishes are often sown broadcast, rutabaga turnips are cultivated with horse in late summer and fall, and white-flesh turnips are sown broadcast in August. Beets, carrots, parsnips, salsify, onions, (of sorts) pot herbs, etc., should be planted in narrow rows, for economy of land. The soil can be kept free of weeds by frequent hoeing. The root crops have often to be thinned by hand; and the best time for this work is just after a rain, when it is too wet to do other work, when the thinning of beets, carrots, parsnips, salsify, etc., can be accomplished more quickly, and at the same time the onions can also be weeded, and rhubarb can be kept clear of weeds with hand hoes. At this time the ground for these small crops can be plowed, harrowed and rolled; then drills should be made, and the sowing and planting accomplished, thus producing cheap vegetables. It is culinary vegetables, in judicious quantities, along with substantial food, that gives the bloom of rosy health to the face, and whitens the skin; imparts *nerve* to the lads and *beauty* to the lasses.

Where flower seeds are needed, they should also be procured now, in order to be ready to sow when the proper time arrives. Some species should be sown as soon as the frosts are over in the spring and the soil fit to dig; other species should not be sown until May, in the Middle States. They are naturally more tender than others.

[The ably conducted Lancaster Farmer should be more than a "local paper;" it must go over all the northern half of the nation.]—*Old Cultivator.*

For The Lancaster Farmer.

CHOICE EVER-BLOOMING ROSES.

From the establishment of the Garden of Eden up to the present time, the rose has been admired above all other flowers, especially those species whose blooms were beautiful and fragrant. From our own earliest remembrance they have been called the "Queens of all Flowers," and the "Sunny Garden's Pride." Before the present century all the species only bloomed once a year. Now, we have thousands of varieties of constant bloom, and the flowers delightly fragrant. So diversified are they that they are now divided into several classes, such as Chinese Daily and Thea, Noisette, Bourbons and Hybrid Perpetuals; the last class is the most hardy for the northern half of the nation for out-door culture. Their blooms are as large and fragrant as the old Cabbage and Moss roses. They bloom profusely in May in Pennsylvania and if the fading blooms are constantly cut off they continue blooming all the growing season. They make strong and stately plants, withstanding winter's cold well.

The following varieties make a choice dozen: General Washington, bright, scarlet crimson, full flower; General Jacqueminot, shining velvety scarlet crimson: Triomphe de l'Exposition, rich velvety crimson, very full; Duke of Edinburgh, brilliant maroon crimson: Jeanne Gross, blush, very large double blooms; La France, bright satiny rose color, large, splendid; Princess Christiana, blush, white, large cupped flowers; Mad'lle Bonnaire, pure white, large and full; Pearl de Blanches, pure white, large flowers, thrifty growth; Giant of Battles, shining scarlet crimson, free bloomer; Baronne Adolph de Rothschild, bright rose, very superb; Louis Van Houtte, brilliant crimson, maroon shaded.

For nicely kept gardens, where much care is given to flowers, the following classes are admirably suited, of constant bloom, and very fragrant: The Bengals or Dailys, Bourbons and the Teas. They need covering with straw during winter and bloom well in glass houses all winter; all are well worth growing.

We often see accounts of ever-blooming Damask and Moss roses, but we have never seen them bloom more than once in the year. So the original species of them are the best. The old Red Moss is the king of all. Roses are bought, growing in flower-pots, and planted at all seasons.—*Rosacea.*

For The Lancaster Farmer.

HONEY-DEW.

Without intending to endorse Mr. Noe's theory of the origin of honey-dew, as suggested in the April number of The Farmer, I wish to call attention to a few facts which are directly opposed to the hypothesis that *all* honey-dew is discharged by aphids.

About the middle of last June, during the time that honey-dew was so unusually abundant, it was found upon the grass in the fields entirely away from trees or other plants upon which aphids feed. It was so abundant in many places that the feathers upon the lower part of the bodies of turkeys and other fowls that were running through the grass became coated with it, so that they looked as though they had been greased.

The honey-dew did not appear in spots on the leaves, as is usually the case, but was spread over the whole upper surface, and in such quantity as to glue the leaves together, making the woods glisten in the sun as though the trees had been varnished. It would have taken immense numbers of aphids to have produced all this coating of honey, and yet these insects did not appear to be more abundant than is common at that season.—*W. P. Bolton, Liberty Square, Pa.*

For The Lancaster Farmer.

THE DAIRY—No. 3.

In the March number of The Farmer I have sketched over the different breeds of cattle. Much more might and should be said on this important question which would extend these articles far beyond my intention. As there are plenty of cows among the different breeds that will, with proper care, yield 225 to 250 pounds of butter in a year, and some considerable more. No one should feel satisfied with a cow that will not reach the former figures, but all should aim at the very highest, which may be reached by continued judicious selection and proper mating; hence the importance of a more general knowledge of this matter. We have good authority for stating that no better milk cows reach the Philadelphia market than those from Lancaster county, and it is not creditable that its cows should have a better reputation generally than its butter, from which it is evident that they receive better attention than their products. It is to be regretted that so many excellent cows are allowed to be taken to the city to be milked dry, and then passed to the shambles, while so large a proportion of poorer ones are kept at home to breed from. Such a short-sighted policy is like "killing the goose that lays the golden egg," and its continuation cannot help but prevent the speedy improvement of milking stock, and instead, will cause it to deteriorate. In selecting a cow we invariably want a good one; but a good cow in the hands of one party is often not so in the care of another, hence her value very often depends on her owner. A cow may be compared to a machine, which may be the best of its kind, but if inferior material is used the product will be inferior also; or both machine and material may be first-rate, but if it is run by incompetent hands the product will fall short both in quality and quantity. Want of proper stabling and shelter is very often a leading cause of cows being of little value as milkers. In many cases where ample stabling is provided, stock is turned out from morning until evening, irrespective of cold blasts, snow storms and cold rains, which invariably diminish the flow of milk. In order to attain the best results, proper food given at proper times is all important. Grass in summer and hay in winter form the chief staples of feed almost everywhere, but with either, quality rules the quantity as well as quality of milk and butter. One great error with farmers generally is, not cutting their grass early enough. The difference between hay from young grass and such as is commonly made is so great, that it is surprising that it is not better understood. Corn sown at intervals, to be cut and fed when pasture runs short, is of great value to keep up a regular flow of milk, and any that is not needed will, when cut and well cured, be far superior to common corn-fodder. The latter is poor feed for milk cows, unless it be cut and steamed or scalded, adding to it whatever grain is fed at the time. Corn meal and shorts or bran, with some oil-cake, contain elements necessary to produce the best results. Without roots of some kind, however, the store of feed is not complete for winter feeding. Grooming and feeding are as important to the cow as to the horse. Noisy boys or unruly curs must not be allowed to worry cows, but instead caress and keep them quiet.

The prevalent custom of feeding well when fresh and only half when dry has injured many cows. It is, at best, a very short-sighted policy. The best milkers generally run down in flesh during the milking period, with the best feeding, and if not fed well when dry will always be poor. Feeding should be regular whether fresh or dry, so as always to keep up her vital stamina so that when the calving period arrives, instead of being exhausted she will be invigorated to pass the critical period safely and without being affected with hollow-horn and other diseases incident to exhaustion. Farmers and dairymen who feed their cows well and regular the year round scarcely ever find any difficulty with hollow-horn, the latter being only another name for hollow stomach and hollow chop-chest.

Protection from the hot sun in summer is as important as from snow storms and cold blasts in winter, all of which disturb the regular flow of milk. A shed or cool stable to turn them in for a few hours during the greatest heat of the day, even without any feed, is far better than panting in the hot sun over the best of pasture. Where the soiling system has been adopted the case, of course, is different. Whether the latter is preferable to pasturing is still a mooted question and depends very much on circumstances. Where pasture is thin and short it is no doubt preferable to pasture, but heavy grass of any kind it is economy to cut and haul to the racks or mangers, for in the latter case one acre will feed as far as three if pastured. Cows are sometimes inclined to eat foul garbage and rubbish, and drink stagnant water or liquid manure, all of which seriously injures the quality of milk and its products. It is, therefore, equally important that pure water only is provided for drink, as well as proper food. The prevalent custom with farmers of cleaning out their cow stables once a week, instead of once or twice a day, is at best but filthy and slovenly and seriously affects both the cow and her milk; but of which more hereafter.

Another mistaken custom is very common, *i. e.*, the raising of calves for cows. The heifer is generally more neglected than the steer; as the latter is intended for beef he is looked after in good time so as to be fit for the shambles as early as possible, consequently he is kept in a fair and thriving condition. On the other hand, the heifer is generally left to shift as best she can until about producing her first calf, when she is hurriedly fed up for a few weeks in order to make a cow of her. Those, however, who understand their business pursue a different course. From the time she is weaned, if the highest milking qualities are aimed at, she is fed with just such food as will produce the best flow of milk in the cow. Such a course of feeding will develop the milk organs to the fullest extent by the time she comes in with her first calf. She will then (other things being favorable) be more of a cow than she would ever have attained under the above mentioned slip-shod method of making cows.—*H. M. E., Maricttu, May 8th.*

[TO BE CONTINUED.]

For The Lancaster Farmer.

TUBEROUS-ROOTED FLOWERS.

This class of flowering plants is, and always was popular, being pretty and needing but little culture and care. Many superior additions have been made to it in our own time. *Dicentra* (Dielytra) comes in bloom earliest; there are three species—with ladies' ear-drop-like flowers in great profusion—crimson, scarlet and white. *Pæonia*, of hundreds of varieties and various colors, all beautiful. *Iris* (Flag Lilies)—the English, Persian and Spanish species were popular a half century ago. The improved German varieties, called *Germanica*, have made a great revolution. They are of thrifty growth, dwarf habits and abundantly flowery. Every variety is beautifully variegated in blooms, such as yellow and plum, blue, white and rose, white and dark purple, salmon and purple, creamy white spotted with purple, lilac and deep purple, bright yellow and dark green. *Lily of the Valley* is often classed with tuberous plants.

The above are hardy. The following are tender, planted in spring, and their roots dug up in the fall and kept in boxes of soil in cellars all winter. They should be covered with *dry* soil in the boxes. *Dahlia*—of hundreds of varieties. *Tritoma*—three species. *Canna*—many varieties. *Caladium* (now Calicasia)—two species. Canna and Caladium are only fit for park gardening. They are too large and coarse for flower gardens. Bedding plants are far superior to them for flower gardens.—*W. E.*

For The Lancaster Farmer.

PLANTING AND PRUNING EVERGREENS.

From the middle of May to the middle of June all evergreen trees, shrubs, hedges and box-edgings may be safely transplanted and established plants pruned. If the plants to be set out are to come far have them transported by express, to have them as short a time on their way as possible. When they arrive unpack them at once, put their roots in the ground and cover them with soil: then water the roots and branches thoroughly, to refresh them, and set them out where they are to grow. Dig the trenches or holes larger than the spread of their roots and break the soil fine to put about their roots. If the weather is very dry sprinkle the plants with water, through the "rose of garden watering-pot." That will retard evaporation from the plants and refresh them until they make new fibers to sustain themselves. They should be sprinkled with water every second day until it rains. Evening is the best time to sprinkle them.

The pruning of evergreen trees and shrubs has been brought to great perfection by our horticulturists. The trees which would now be lean and half naked have been made rich, and many giants of leafy verdure. The same with shrubs and hedges. We have done much of this work for twenty-five years back. The skillful pruning of evergreens has been extensively practiced in Europe for many centuries past. May in spring, and September in autumn, are the chosen months for pruning all evergreens.—*W. Elder.*

For The Lancaster Farmer.

CHOICE VEGETABLE CROPS.

In the latitude of Pennsylvania and northward there is much cropping in the vegetable garden in May and June. In May early cabbages and lettuce are transplanted from hot-beds into the open ground, and tomatoes, egg-plants and peppers are set out in June. The *best* tomatoes are the *Extra Early* for first crop, *Cook's Favorite* for second crop, and the *Trophy* for late crop. They may all be planted at the same time, and will succeed each other in ripening. Those who have not all the above kinds of plants can purchase them in any number from seedsmen and nurserymen, who grow thousands for sale. Other crops to be put in in May are late potatoes, beets, carrots, peas, sugar corn, bush-beans, etc.; and in this month also sow the seeds of fall brocolli and endive, and all the species of sweet and pot herbs. In June plant Lima pale beans, cucumbers, musk melons, early and late squashes, pumpkins and watermelons, succession crops of sugar corn, bush-beans, and transplant late cabbages for full crops, as the cropping will then be full. Roots of asparagus, horseradish, rhubarb, etc., may be set out in May. All kinds of vegetable plants

can be got from seedsmen and nurserymen. The whole ground should be fully cropped, as the cost of seeds and plants is small compared to the value of their products.—*W. E.*

For The Lancaster Farmer.

TO PREVENT THE BIRDS FROM PULLING CORN.

Two or three days before your corn comes up take a bushel of corn and throw it in a vessel of water. When the young corn first makes its appearance above the ground sow a few quarts of your soaked corn every morning or evening, along wood sides and near shade trees, or wherever birds are most likely to be troublesome. Blackbirds pull corn for their young and want it soft, hence it is but little use to sow dry corn. No matter if it is soaked until sprouted. The germination of the seed changes the starch into sugar and makes it very palatable. I would much rather use a bushel or two of corn in this way than shoot a single bird. Of course the corn must be sown every day until the crop is out of the reach of the birds. If any is left it can be fed to the chickens or pigs. Birds seldom pull early planted corn, for the reason that their young are not yet hatched.—*J. C. L., Gap, Lancaster co., Pa., May 5th*, 1876.

FARM ACCOUNTS.

The present may be as good a time as any to recur to a duty which can hardly be urged too often upon the farming community—the duty of keeping careful and systematic accounts of all expenditures and receipts. Although the calendar year begins with the first of January, and the time for commencing financial transactions, as well as for forming good resolutions in general, corresponds with that date, the farmer's year commences practically with the opening of spring, and with the first preparations for regular farm work. There is an old proverb which maintains that "it is never too late to mend." So with this matter of farm accounts. It would be better to begin in midsummer than not to begin at all, because whatever mistakes and inaccuracies might result would speedily correct themselves, and a good habit would be formed which would gradually systemize all transaction of the farm, and of business. But a farmer who commences now, and systematically notes down all outgoes and all incomes, will be in time to secure a very fair statement of the work of the year, and by the 31st of December next can tell whether his labor has been profitable, and what per cent. it has yielded upon the capital invested. More than this, he will be able to determine which crops have yielded the best returns, and will be able to regulate intelligently his operations for the ensuing year. Instead of estimating the profits of a crop by the total yield, or the gross receipts for it, he can tell within a few cents and sometimes within a fraction of a cent what every bushel has cost him, and from these figures as a basis can determine the exact net profit. After a method for keeping such accounts has been once clearly fixed upon, the jotting down items of labor and results from day to day will requiie an insignificant expenditure of labor and time. In households where there are children some of the necessary figuring may be safely and wisely entrusted to them. They will feel greater interest in such work than in the problems which their arithmetic contains, and it will be of more practical benefit to them because it will serve as an introduction to the actual duties of life.

As to the best method of keeping accounts, probably most farmers will be able to determine for themselves by acting on the suggestions contained in their circumstances and surroundings. There are regular account books, we believe, drawn up, ruled, and divided in such a way as to assist the farmer in registering in their proper place all the transactions of the farm. Just how much help, if any, is to be got from such books can be determined only by experiment. But, other things being equal, the simplest method will be the best; and the less the matter is mixed up with the technicalities of regular book-keeping the better. A farmer who has tried the experiment of keeping regular accounts and finds it satisfactory and profitable in every way, recommends the following general system. Each field should be numbered, and the number of acres it contains marked down in an account book. Everything that is done for each field should be charged against it—labor, seed, manure, interest, taxes, etc. Everything got from each field should be set down to its favor, whether sold or used on the farm or in the family, at the regular market value. When permanent improvements are made the cost should be divided in the accounts so as to distribute the burden in right proportion over the several years in which the field or farm will reap the benefit of them. At the end of each year an inventory should be taken of stock, farming implements, etc., so that the account may be properly opened for the year ensuing; and whatever gains or losses there have been in stock, and whatever wear and tear is perceptible in the farming tools, should be reckoned in balancing accounts.

A system like the above, with such modifications and changes as may be suggested by individual experience, will be found to greatly lessen the worry and anxiety of farm life and to pay for itself many times over in the definite knowledge it will yield as to the exact proportions of profit and loss. A business man who fails to follow out some regular method of book-keeping, and to ascertain from time to time exactly where he stands, is sure of encountering bankruptcy and ruin; and the farmer, though he may be enabled to avert such disaster by the relative caution and safety of his transactions, can never attain the prosperity which belongs to him by trusting blindly to luck, and neglecting to keep adequate and systematic records of his dealings.

COMMERCIAL VALUE OF HEN MANURE.

I find the value of hen manure variously estimated, from the statement of Harris Lewis, before the Massachusetts State Board of Agriculture at Barre, that he "never used hen manure on the corn crop without having benefited it more than all the corn the hens ate," to so low an estimate as not to make any account of it. In a large part of the published statements of the profit on poultry, there is no mention made of the manure, but it is a very valuable fertilizer. The *American Agriculturist*, 1873, page 327, says: "Hen manure is almost exactly identical in quality and effect with guano, and may be used in the same manner. Its value, if free from foreign matter and dry, is $50 a ton." The *Poultry World* estimates it to be "almost equal to guano in richness," and a correspondent of the same paper says: "I would rather have it than Peruvian guano." The *Live Stock Journal* estimates "that a hen will produce one bushel of manure in a year, which compared with the price of commercial fertilizers, is worth $1.00. Lewis Dunbar, West Bridgewater, Mass., according to statements in Flint's report, 1871, values it at $1.00 a bushel, and again in 1872, at 87 cents a bushel.

But let us see how much a fowl will eat in a year, and then find how much the manure from that amount of food would be worth. By statement of S. B. Bird, Framingham, for six months ending Sept. 20th, 1868, an average of fourteen fowls ate fourteen bushels of grain or 1.4 gills each per day. By statement of Lewis Jones, Wayland, for ten months ending Sept. 1st, 1867, fifteen fowls ate twenty bushels of grain, or 1.2 gills each per day. By another statement of S. B. Bird, for eight months ending Sept. 15, 1867, sixteen fowls ate fifteen bushels of grain, or 1 gill each, per day. The writer found by experiment, that seventy fowls ate nine bushels of grain in twenty-three days, or 1.43 gills each per day. I find an average of the fourteen statements to be 1.25 gills per day, or 1.78 bushels per year for each fowl.

Prof. S. W. Johnson estimates the nitrogen in commercial manures to be worth thirty cents per pound, potash seven cents, and soluble phosphoric acid sixteen cents per pound. I find by table in Flint's report, 1872, page 167, that, 1.78 bushels corn contain 1.8 pounds of nitrogen, which at thirty cents per pound is worth fifty-four cents; 0.35 pounds potash at seven cents per pound, is worth two cents; 1.13 pounds phosphoric acid at sixteen cents per pound, is worth eighteen cents. Hence we find the fertilizing elements in 1.78 bushels corn to be worth seventy-four cents. Allowing ten per cent. for loss, we have sixty-seven cents, the value of the manure of one fowl for one year. I found that my seventy fowls in twenty-three days, made five bushels of manure, which amounts to 1.36 bushels a year for each, consequently one bushel would be worth fifty cents. This is considerably less than some of the estimates I have collected, but I think it is very nearly correct. By feeding oats, bran and meal, the manure would be a trifle richer, but I think corn is the chief food given, and is a fair representative of the average quality of the food of poultry. Certainly the manure is too valuable to waste, and I think those farmers who have no place where they can confine their fowls, would find it to their advantage to build a good house and yard, and keep them in it most of the time, thereby saving the manure and their gardens too.—*Cor. New England Journal.*

A WRINKLE FOR THE YOUNG PEOPLE.

In view of the cares and responsibilities of housekeeping, a young woman cannot begin too early to cultivate an acquaintance with culinary art; and there is no better way of acquiring and retaining this knowledge than by setting up a private recipe book, in which to jot down all tried and proved recipes, worthy of such distinction, that may be met with, either at the family board, or at the table of a friend. I began the practice when about 12 years of age, at the instigation of an experienced matron, herself a model of order in everything relating to housekeeping, and subsequent observation has often made me look back on her friendly counsel with respect and gratitude, and say to myself that even in worldly things, "A word spoken in season, how good it is?" That these remarks may be equally useful to some young aspirant to prospective duties, I proceed to give a few hints to those who may feel inclined to adopt the plan.

First, then, let extreme simplicity of arrangement characterize the start. In the first flush of the new idea, it may be very amusing to divide and classify, but as the novelty wears off these elaborate devices become irksome, and may tend to disgust altogether. All that is wanted is a blank ruled book of a suitable size, and after numbering the pages, and writing the name of the owner, and the date, it is ready for work, which may be proceed with as follows:

Never take a recipe on trust, or even on the recommendation of a friend; try it yourself before entering it in your book—you will thus be saved the pain of finding out, too late, probably from an error in diction, that it does not turn out well, when by adhering strictly to the rule, to enter nothing till you have tested it, you know at once that all your recipes can be depended on, and that there is no mistake about them. How often in reading a recipe in a cookery book, you think—That looks promising! I wish I knew if it would answer. With your own book you need not be at such a loss; you have there confidence that is not misplaced, and confidence in what you are about, is generally half the battle. Therefore, we would say—write down everything you can make yourself, from a water-gruel to a *pate de foie gras;* and with your book, and your knowledge, you may take the world, broadside on, and when other trades fail, you can set up a restaurant; or go out as a *chef de cuisine;* or, if you are of literary turn, you can lecture at some school of cookery; or even get the length of writing in the *Agricultural Gazette*—though, for this last, you would probably require a training of at least 30 years, before you attained to the required proficiency.

Some recommend the plan of dividing the book into departments, as we see in works on cookery—fish by itself—soup by itself, &c.; but as I said before, I think that all such divisions interfere with the simplicity of arrangement, which is the surest means of encouragement in what might otherwise become a distasteful task. In preparing a work on cookery for the press, of course it is absolutely necessary that everything should be classified, and as in that case the whole is completed at once, it becomes comparatively easy. But in a private book—added to during the most part of a lifetime—it is very different, and there is no better plan than just to jot down recipes as they turn up, trusting to the index and the numbering of the pages to find what is wanted at a glance. Above and beyond my private recipe book, I compiled (as I once mentioned before in the *Agricultural Gazette* of May 22d, 1875) what I called a housemaid's book, which I have found quite as useful as the other, and therefore I hope I may be pardoned for alluding to it again.

In the first place, I lay down general directions on matters connected with housemaid's work—little matters that a half-trained servant scarcely thinks worth attending to if directed by word of mouth, but which in black and-white assume an unthought-of importance. Next, the work is laid out for every day in the week, so that a portion of the house is specially overhauled each day. Besides other items, unnecessary to recapitulate, all the house cleaning recipes are entered in this book, and the person who is to use them has only to ask for an order on the shop when she wants a fresh supply of material.

With the cook I proceed on another plan. I induce her to set up a book of her own, and when a new dish is introduced I show her, perhaps once, how to concoct it; I then pencil it on a scrap of paper for her, and she enters it in her book in her own handwriting—plain to herself, if to no one else—and in time she becomes possessed of all the household recipes, and her mistress will be amply compensated for her trouble by the present comfort of a thing being properly done, and the prospective assurance of the woman going a better servant than she came.

I fear I have rather wandered from the heading of this paper, but as people cannot always remain young, I may, perhaps, be excused for leading up to matters pertaining to riper years, though if young people would take the trouble of trying to impart what knowledge is possessed, it would be found that the very act of teaching would confirm the understanding and expand the intellect, for it is not always the scholar who reaps the sole benefit. "Willing to communicate," "Apt to teach," are precepts much inculcated in that Book of Books, whose rules of life commend themselves both to faith and reason.—*A. L. O. S., London Agl. Gazette.*

"HOLSTEIN" CATTLE.

Confusion seems to be getting worse confounded in the minds of some breeders, and of many purchasers of the large black and white Dutch cattle, which for reasons set forth in the herd book, edited by Mr. Cheney, are styled *Holstein.*

Col. Waring, the accomplishsd editor of the *American Jersey Cattle Club Register*, who is as well posted in the matter as any stock breeder, in his recent charming volume, "A Farmer's Vacation," wherein is set forth, among many other delightful themes, the aspects of "Dutch farming," as seen with his own keen eyes, puts the matter in a nutshell in this wise:

After describing a farm in the old North Holland polder, called the beemster, on which were twenty-five immense Dutch cows, black and white, giving an average of sixteen to twenty-four quarts of milk per day, he says: "The bull was a fine specimen of the breed, quite as good as the best of those of his race in this country, where, on the *lucus a non lucendo* prineiple, and with our curious facility for calling foreign animals by their wrong names—as they do *not* come from Holstein, and as their equals have never existed there—they are known as 'Holsteins;' just as Jersey cattle are called 'Alderneys.'"

It is conceded on all hands that the Holstein cattle are a smaller and different colored race from these big black and white Dutch cattle, and that the importation into this country by Mr. Cheney, on which the Holstein Herd book is founded, were of this latter class, and *that the herd book is confined to these alone*, the proprietors and editor excluding cattle *not of the large black and white kind*, even if they come direct from Holland, or even Holstein—if there are any there. No one has any right to find fault with a herd book devoted to any particular class of stock, and it is only with the name that any dissatisfaction arises, and importers, breeders and purchasers of Dutch stock, or Holstein stock, who have assumed that "Holstein" was nsed as a generic term to embrace all pure-blooded cattle from the "low countries," will feel disappointed on finding that only the "large black and white North Holland Dutch cattle" are admitted to the Holstein Herd Book. But so it is, and the requirements are so plainly set forth in the prefaces of Mr. Cheney to the two volumes of the Holstein Herd Book already published, that no one can err in the matter, and if the brown or red spotted cow, though a fresh importation from Holland or Holstein, is refused admittance to to the herd book, it is so because she is not black and white. Cannot this be understood, and our pedigree committees and agricultural correspondents not get more confused on the subject.—*R. Country Gentleman.*

VETERINARY NOTES.

Interfering Horse: I am inclined to believe your horse the subject of a gross habit, which shows itself at the fetlock, and which has suffered abrasion from striking or interfering. I know of quite a large number of boots, but all are more or less liable to chafe and irritate the joint. I think the very best thing you can do is to bathe daily with oak bark one-fourth pound, and water five pints; boil two or three minutes, and when cool add one pint of acetic acid; this will keep down fever and brace and strengthen the joint. The best appliance for your case is a stock made of fine kip; let it be the shape of the shank bone and fetlock joint; round the edges, punch holes half an inch apart, and lace with a shoe lace. Put this on when at work, and take it off when not at work. Clean and replace when you go to work again. I had a mare which wore a pair of these socks so long that my friends named her "leather stockings." Eventually she got strength in the joint, and I removed the socks.

Angular Tumor on Jaw: Most surely the enlargement you speak of is a stickfast. The causes are injury from any accident, bruise, etc., chiefly from hereditary predisposition. I think you may venture to veal the calf, as the tumor is inactive, and of so recent a date. You will fail in attempting a cure. If the animal was my own, no matter what its claim to superiority, I should never think for a moment of raising it.

Swelling on Neck of Horse: Paint constantly with a small brush dipped in strong tincture of iodine. Should this fail after a few weeks' trial, apply instead biniodide ointment. Keep from being chafed or irritated, or it will terminate in fistula most surely.

Sprained Stifle: Absolute rest and a deep, clean bed are needed. Watch him closely in his first attempt to get up. Lift him by the tail, so as to prevent a fall or serious struggle. Feed no grain for awhile; keep his bowels open, and keep the tender parts moistened with oak bark, 1 pound; water, six quarts; boiled two or three minutes; when cool add one quart of acetic acid.

Quittor: Have the hoof pared thin on the side affected. Open at the bottom, so as to give free vent to the pus, etc. Inject carefully half a teaspoonful of butyr of antimony, or if the opening is large enough, soak a piece of tow or cotton batting in the butyr, and crowd to the bottom. When the virus is destroyed, which will be after two or three dressings, heal by injecting a compound tincture of myrrh and aloes, daily.

Weak Ankles in Colt: If the ankles are very weak, and incline to bend back so as to bring the fetlock close to the ground, you will have to rive out some ash or oak splints; pack the uneven parts with cotton batting; starch a long cotton bandage, (8 to 12 feet long) and evenly apply the splints, and then evenly wind the bandage. Remove every third day until no longer needed. If an ordinary weakness, the oak bark astringent lotion, already twice recommended, will be all you will require.—*Wm. Horne, V. S., in Country Gentleman.*

THE HAMBURGS AS LAYERS.

J. G. McKean, of South Ackworth, N. H., writes to the Boston *Cultivator* that in his experience no variety of fowls equals the Hamburgs as layers. They are hardy, small eaters, and wonderfully prolific; but on account of their small size, are not recommended for their flesh. Nothing shows the breeder's skill better than a well-marked Golden or Silver-Spangled Hamburg in good condition. It requires much skill to breed them correct in marking, more than any other breed. The great objection to Leghorns is that their combs and wattles freeze badly, unless they have very warm quarters. Of course, the Asiatics will endure cold weather the best—but Hamburgs are reasonably hardy in this respect. All remember the old Bolton Grays; they were about the same as the Silver-penciled Hamburgs, only not bred to such perfection of marking. Most farmers will tell you they never had such layers as the Bolton Grays. It is not unusual for hens of this breed to lay 200 eggs in a year. The eggs are rather small, pure white, and usually very fertile. The hens are good layers till they are three years old, while most breeds are best the first year. Of course, the Hamburgs are not the best for all purposes, but for eggs they stand at the head. They are foragers and somewhat inclined to ramble, but on a farm where there is room, this is no objection. Many tarmers have a horror of the old "settin' hen," and do not want to raise many chickens; this breed is just the thing for such men. I think fancy runs too much now to the large breeds.

Two Bee Questions Answered.

A couple of vexed questions about bees were recently answered by Professor C. V. Riley, at a bee-keepers' council in St. Louis. The first query was: "Do bees make, or gather honey?" The Professor says they make it. Thus does Science proclaim that the venerable Dr. Watts was wroug when he asserted that the busy bee "gathers honey all the day from every opening flower." The nectar lying in flowers never would beeome honey, says Professor Riley, no matter how manipulated by the hands and minds of men; but it is taken up by the bees and passed through a state of semi-digestion and excretion, resulting in the manufacture of what is ealled honey, yet still retaining in part the flavor or perfume of the flowers, by which we determine one kind of honey from another. Professor Riley's views were corroborated by a paper read by a botanist and chemist of Louisiana, describing the process of change undergone by nectar in the stomaeh of the bee, in order to become honey.

The second qnestion is an interesting one to fruit raisers, as it involves the mooted point of "whether Bees do or do not injure fruit." Professor Riley, on being appealed to, produced an illustration of the order of hymenoptera, stating that the mouth of the bee is the most complicated structure in inseet anatomy. Its construction, however, is the same as that of the wasp, and no one denies that the wasp is capable of destroying fruit. The Professor thought bee-keepers were prejudieed aganst the idea of sueh power in the possession of a bee, bnt it is true. Still, while being capable of injuring fruit, the bees rarely do so except in seasons of severe drought and when urged by necessity. This fact is no derogation to the usefulness of the inseet, for the exercise of its power as a polleuizer is of undoubted value to the orchardist, even with all its depredations upon fruit.

OUR PARIS LETTER.

Farming on the Continent of Europe.

Correspondence of THE LANCASTER FARMER.

PARIS, April 6, 1876.

The French Association for the Advancement of Agriculture, has held its seventh session. The Association counts over three thousand members, including not only landed proprietors, farmers, and the representatives of every branch of collateral agricultural industry, but also men distinguished in the sciences, arts, and manufactures, and whose opinions have authority in the discussion of economic questions. The resolutions passed by this body exercise a powerful influence on the government, and bring about important legislative ameliorations. Permanent commissions, charged with special subjects, present their reports at the annual sittings, and such serve as the texts of the debates. Of course, these discussions tend to modify, in the most useful manner, the habits of the farming community throughout France. Among the many interesting topics treated, were the

RECOMPENSING OF TEACHERS WITH GOLD MEDALS

who have voluntarily established school gardens and founded experimental allotments on their own account. At Mettray, where official agricultural problems are worked out, it was demonstrated that beet intended for sugar ought only to be planted at mean distances. Prof. Millot exposed how fossil phosphates, when treated with sulphuric acid, to be converted into superphosphates, after a certain time decrease in value, in consequence of a certain portion of the phosphoric acid becoming insoluble. What is the value of this acid which thus retrogrades, and how can its percentage be determined in advance? That knotty question, how to determine the commercial value of sugar beet, was disposed of by the resolution, that the market price ought to be in a ratio to the richness of the root, and that the "densimeter" was the best instrument for ascertaining saccharine intensity.

THE PHYLLOXERA

occupied the lion's share of attention, and the result of the general comparison of notes, systems and remedies, was, that no effectual agent has yet been discovered for the destruction of the bugs, which, up to the present, have laid waste half a million acres of vineyards. All, however, is not barren from Dan to Beersheba; the disease does not spread, but its ravages are more intense where it exists, and entomologists have revealed the insect's habit of laying its eggs during winter. The difficulty to contend with, is the marvelous fecundity of the insect, which in four months can produce eight hundred millions of bugs. The sulpho-carbonates have lost ground. They do not kill the insect so much as imparting a fresh vigor to the attacked vine. M. Rohart's plan of steeping small cubes of wood in sulphuret of carbon, to be deposited around the roots of the vine, was welcomed warmly. These "picturesque mitrailleuses" discharge a good office.

Dr. Schneider, of Thionville, treats an important subject from a new point of view. He demands, why not encourage

PRECOCITY IN ANIMALS FOR MILK,

as well as for meat? In the latter case, the object is to fatten an animal in thirty-six instead of sixty months, by good feeding. On the contrary, the powers of reproduction, that is, the yielding of milk, are most active or precocious where the dietary is sober, if not miserable. Poor families are most prolific, and weeds most productive. Fecundity is the ally of humble rations, and fat the emblem of opulence, is not an attribute of virility. *Embonpoint* is incompatible with the faculty of generation. If a sterile cow or an ox exact thirty-six months and good diet, to be precociously converted into meat, a heifer could in that period have produced, upon a modest regimen, one calf, perhaps two, and from twelve to fourteen months of milk. The production of milk is less costly than that of meat. It can be less expensively disposed of, and if meat has increased in price so also have butter and cheese. The properties for fattening are but one and the same thing, and pre-exist in the animal, only both aptitudes cannot be developed at the same time. Thus in France, Dutch or Normal cows are kept for the express purpose of yielding milk to the calves of the Durham breed.

M. Weiske, of Pros Kau (Prussia) has confirmed the results now generally admitted to flow from

SHEARING SHEEP,

viz: that animals so treated are better suited for fattening than such as have not been shorn. Two merino sheep, in full fleece, received during seventeen days a daily ration for each, of 2¼ lbs. of meadow hay; half a pound of crushed barley, and less than half a quarter of an ounce of sea salt. After being shorn on the eighteenth day, the same ration was continued for an equal period. The examination of their manure showed there was no difference as regards their digestive powers; they consumed less water after, than before the clipping; respiration and perspiration being less. The appetite was increased by the removal of the fleece; the temperature of the body being less, more food was necessary to maintain the natural warmth, and the more rapid fattening is simply to be attributed to this increased appetite, and not to any marked superiority in the power of assimilating food. M. Weiske has also given from one-half to three grains of arsenic—the dose rising gradually, per day to sheep, in a solution of water; he found the animal's appetite, and capability of assimilating food, increased; they drank more water and rapidly augmented in flesh.

DELETERIOUS INFLUENCES OF CHEMICAL MANURES.

M. Lacroix, of Belgium, confirms the complaints that of late are too frequently heard, of the deleterious influences of chemical manures on germination, in the case of light soils and pending dry seasons. He has lost, as well as some neighbors, during the last year, his maize, carrots, turnips and potatoes, from this cause, the too close proximity of the seed with sulphate of ammonia and animal refuse. The seed pushed regularly and the plants throve vigorously, where there was no contact with the chemicals. In a humid season, or where the manures are applied before sowing, and well incorporated with the service-layer of the soil, the danger is less. In France, as a general rule, the fertilizers are distributed some time before the sowings; the process is said to be more conducive to the "nitrification" of the soil, in addition.

THE BEET-SUGAR WAR

has assumed large proportions in the north of France. Putting aside the legislative elements of the question, the manufacturers and farmers have been at loggerheads. The agriculturist wishes to cultivate beet for feeding, as well as sugar-making, hence, he aims at a large yield of roots, a result that the manufacturer resists. The dispute will likely be less ardent, if the "densimeter" proves a reliable instrument for marking the saccharine value of the roots, irrespective of their size. The manufacturer, in general terms, cannot conduct his business profitably, if a quart of beet juice does not yield a good quarter of an ounce of sugar. The farmer who produces twenty tons of beet per acre can count upon a price of *fr.*20 per ton, being a money yield of *fr.*400 an acre. The agriculturist is ambitious to have two strings to his bow, to raise beet for sugar and for stall feeding. This latter object is making way, since the Count Rœderer has successfully preserved his pulped beet—which has never passed through the distillery or the sugar factory—in trenches, with chopped green maize. The beet preferred for sugar is the variety not larger than a good carrot, not growing much above the soil, with leaves drooping, rather than erect, ripening early, and yielding eighteen tons per acre.

THE ANNUAL HORSE SHOW

has just opened in the Palace of Industry; the number of entries is 396, of which Normandy alone constitutes two-thirds, and one breeder no less than forty-six animals; the south of France, where Arab blood predominates, sends only 23 exhibits, the north four, and the east one. There is an improvement to be noted in carriage and saddle horses, as for draught cattle the Percherons cannot be surpassed. The question of horse breeding in France is one that is passionately debated; the truth, separated from the dust and din of the strife, is this, that the government, though neighboring nations do the same, ought to abstain from supporting state studs, and leave the market open to the general operation of demand and supply; if the army wants good horses it can obtain them when the commercial price is paid for them. Those regions of France that repel the government crutch to assist horse breeding are exactly those best supplied with the best horses.

THE CULTURE OF PARSNIPS

is largely extending in France for cattle feeding, and as an ordinary garden vegetable it is also in great demand; the soil that suits beet will satisfy the parsnip, and the manure is ploughed down or dug in; the seed is sown either in rows by the machine, or broadcast, and the plants receive but two weedings and hoeings—when the plants are five and fifteen inches high respectively; the leaves are cut in the month of September, and allowed to fade for twenty-four hours before being given to the cattle; the roots can be taken up during the winter as required, frost does them no harm; the ration is, 16 lbs. three times a day, and the roots are cut; when given to pigs they ought to be cooked. In the west of France the parsnip replaces oats for horses, and being very nutritive all animals quickly put up flesh when fed on this root.

The agricultural community warmly supports

THE PROJECTED INTERNATIONAL EXHIBITION,

and is resolved that its interests shall not be shelved on the coming occasion, as was the case in 1867. Several gigantic plans are already sketched. Nothing like taking time by the forelock. There is one idea that will be carried out pending the exhibition, viz.: an International Congress, where the leading features of each nation's agriculture will be explained and compared.

M. Gasparin has made an analysis, which amounts almost to a discovery. Boussingault and Fresenius have each drawn attention to

THE ABSENCE OF IRON IN WHEAT.

Gasparin has found, after several minute tests, 20½ per cent. of iron in the grain of wheat and 13¼ per cent. in the straw; and that while the phosphoric acid, magnesia and iron concentrated themselves in the grain, the silica and the lime accumulated in the straw. The same relative accumulation of salts were observed respectively in the kernel and the shell of oak glands. In every pound of wheaten bread there is then 1½ grains of iron. M. Gasparin also states that the quantity of phosphoric acid extracted by wheat from the soil is less than is generally supposed. The same distinguished chemist analyzed some lichens, growing on calcareous rocks, and found their ashes to be precisely composed of the same minerals as the soil derived from the disintegration of the rock.

M. Jahnke, of Berlin, has adopted the *Metayer* system in the cultivation of his estate, and a neighbor has followed his example. The plan has succeeded as well as it does here; proprietor and Metayer divide the profits, share and share alike.

OUR FARMERS IN COUNCIL.

Proceedings of the Agricultural and Horticultural Society—Crop Reports—How to Keep Our Lawns—Interesting Discussion.

The regular monthly meeting of the Lancaster County Agricultural and Horticultural Society was held in the rooms of the Athenæum, on Monday, May 1st, the President, Calvin Cooper, in the chair. The following members were present: Calvin Cooper, Henry M. Engle, Levi S. Reist, Johnson Miller, Peter S. Reist, Alex. Harris, Jacob B. Garber, J. H. Hershey, Levi W. Groff, Martin D. Kendig, Pharus P. Swarr, Ephraim S. Hoover, John C. Linville, Simon Hershey, S. S. Rathvon, John Basler, Mr. Royer, Samuel Landis, D. W. Swartz, Henry Erb, Israel L. Landis, Andrew Lane, Henry Reist, John M. Stehman, Reuben J. Erb, and the reporters of the press.

Condition of Crops.

The report of crops being in order, Johnson Miller, of Warwick, said that the wheat crop from present appearances will be an average one. The Foltz wheat takes the lead of all other varieties. The Clarvson white winter wheat, four quarts of which were sown last fall, is entirely winter killed. The Jennings white wheat, as well as some other varieties, present a better prospect for a good crop than they did this time last year. The cold and dry weather is very disadvantageous to oats. The grass is in a very bad condition, some of the new fields having been plowed up by the farmers for corn and Hungarian grass. The latter article will be extensively raised this year to take the place of hay. The old grass fields are well set, but from all appearances the hay crop this year will be shorter than the crop of last year. Mr. Miller thought it would be well to plow up all new grass fields that would not be worth leaving for haymaking, and sow them with Hungarian grass, and he would recommend the sowing of one bushel of clover and one bushel of timothy seed to every ten acres thus prepared. By this arrangement nothing would be lost and the fields would be set down with grass in a favorable season. The grass question should be made a study and the frequent failures accounted for. A great many farmers are getting ready to plant corn. Some have planted already. The prospect for fruit could not be fully reported, many of the trees being in full bloom, particularly the peach trees. The cold snap of Sunday night and Monday, he thought, would be destructive to some fruit.

PETER S. REIST, of Manheim, remarked that with the thermometer at 40 on the 30th day of April, and 30 on the first day of May, he could not give a very favorable report of the crops in his neighborhood. In accordance with the reigning planet, Mars, he looked for a general destruction of the fruit crop. So far, wheat was the only promising grain. The new fields of grass look poor. The oats, he thought, was nipped by the late cold weather. In view of these facts, and further, that it was only six weeks until the commencement of haymaking, he had cause to feel discouraged. Farmers had yet a great deal to do—the burning and hauling of lime being the most important. He then referred to the cost and trouble of preparing this article, and said that on the 6,000 farms in this county, 1,000 bushels of lime were used on each farm, which, at a cost of ten cents a bushel, would amount to $600,000.

EPHRIAM HOOVER, of Manheim, noticed in his drives about the township, that there was only here and there a good wheat field. In most of the fields large bare spots were noticed. This was occasioned by two causes—the destruction by the fly and the late spring. With all these disadvantages, nothing but second rate crops could be looked for. The Foltz wheat looks more uniform and is the best. The grass is very short and as far as observed will be a light crop. The grass in the new fields is generally winter killed. The young clover has been nipped by the frost and cold winds. A great many farmers have ploughed up their fields for Hungarian grass and corn.

MARTIN KENDIG, of Manor, and Mr. HERSHEY, of

West Hempfield, reported the crops in their neighborhood about the same as those of the gentleman referred to above.

H. M. ENGLE, of East Donegal, said that the grass and wheat on the southern slope of the Susquehanna river looks very well; hardly a poor wheat field could be seen. On the heavier soils, the winter wheat looked poorer. The young grass on loamy soil at first looked poor, but now it is looking well. He advised the members present not to plow the grass fields up so soon for Hungarian grass, but let it have a little time, and he thought it would yet turn out to be a good crop. The prospect of fruit looked promising. He did not think it was injured by the late cold snap. If the cold should continue, he did not think it would hurt anything beyond peaches and cherries. The apples could not be hurt by the cold now.

LEVI S. REIST had some Lawrence pear trees, planted on high ground, some of the blossoms of which were frozen one week ago. It was a hardy tree, exposed from all sides, and it was regarded as singular that only a part of the tree was affected.

A bill of Jacob Heline's for $4.50, for putting up a stove and taking care of the room, was ordered to be paid.

Our Lawns and How to Keep Them.

H. M. ENGLE being called upon to give his experience in the making of lawns, arose with the remark that he had had little experience in making lawns, and was not prepared to say much upon the subject. One thing he knew, however, and that was, no lawn could be kept in good condition without the aid of fertilizers. Wood ashes or manure were regarded the best fertilizers. The proper time to apply them would be in the fall, and in the spring rake them off. To some persons, to whom this kind of fertilizer would seem offensive, he would recommend the use of liquid manure, which is generally easy to get. The grass should not be let grow too much. Cut it as often as you can, and leave it lay. If left lay to decay, it becomes the best kind of fertilizer, and will keep the lawn in good condition without resorting to any other. This can easily be done, for when grass is cut with a lawn mower, it is spread evenly over the surface, and is hardly noticed.

EPHRAIM HOOVER would like to know what was the best way to prepare a new yard. Would it be best to sow it in grass seed or sod it?

H. M. ENGLE had experimented a little in this respect. When he built, he prepared his ground for a lawn and sowed lawn or green grass, with clover and a little rye in it, but the season was so dry the winds blew most of the seed away with the dust. If the season was favorable he would sow seed, as it was the cheapest; but to make sure, sodding was the best method.

LEVI S. REIST had success in sowing seed for a lawn, but it required a great deal of attention. After speaking of his place, he referred to an incident which happened some thirty years ago. A wealthy gentleman lived in the neighborhood of Mount Joy, and around his mansion he had a beautiful lawn, which was regarded in that day as a very foolish and expensive luxury. A few years after the gentleman prepared this lawn, he failed, and he distinctly remembered that it was a common remark that "no wonder he failed; he had a lawn." Mr. Reist was in favor of lawns, and in keeping them up and beautifying them.

PETER S. REIST did not think grass sown on fresh cellar ground would ever amount to anything without a manure dressing was put on it. The best and surest way to make a lawn on a new piece of ground was to sod it at once. In referring to the way in which lawns should be laid out, Mr. Reist said that fruit trees should be extensively planted, in preference to ornamental, and closed by ridiculing the making of rockeries. Rockeries were regarded by this gentleman as a great nuisance.

H. M. ENGLE: What appears beautiful and ornamental to one does not appear so to another. This was no doubt the case with Mr. Reist. He was an advocate of rockeries, and he ventured to say that in a few years Mr. Reist would also admire and advocate them.

MARTIN KENDIG was in favor of rockeries, and hoped the day would soon come when more of them would be put up in the country. The expense and labor in preparing them is not great, and is well paid by the pleasure derived from them. In the front part of his lawn he would plant ornamental and fruit trees, while near the door he would have shrubbery. The best fertilizer he knew of for lawns was tobacco stems. Their fertilizing elements are very rich, and are very easily removed in the spring. They are also a good fertilizer if applied to shrubbery.

JOHNSON MILLER thought more benefit would be derived if fruit trees were planted instead of lawns.

H. M. ENGLE scouted the idea of turning every available inch of space into dollars and cents. If lawns are satisfactory to the persons who have them, it pays well enough. Shade as well as fruit trees should be planted. At one time apples, pears and peaches were the only fruit trees grown. Now a farmer is not satisfied unless he has all the varieties in the market planted on his place. So it will be with lawns. Ornamentation has a great deal to do with refinement.

MR. COOPER, the President, was glad to hear the difference of opinion expressed. In his opinion, there was nothing more beautiful than a nice lawn dotted over with trees. Such places are always attractive. Some people have their buildings, garden and orchard all enclosed with one fence. He regarded this a good idea, as a great deal of labor was saved, besides it looked neat and attractive. In a place like this he would have curved walks.

EPHRAIM HOOVER, with one exception, agreed with Mr. Cooper's remarks, and that was, in a place where there were no dividing fences the chickens and cattle would be sure to get in and destroy much that would be valuable as well as beautiful.

Best Varieties of Apples.

LEVI S. REIST said that Hubbardston Nonesuch did not keep as well for him as the Baldwin apple.

H. M. ENGLE: It is a very difficult task to say which are the proper kinds to plant, as there were so many good varieties. In this respect people generally look to the nurserymen for information. On account of so much uncertainty, the different tastes of people, the variety of soils and situation, he was unable to say or recommend which were the best varieties to plant.

MARTIN KENDIG recommended and spoke very highly of the Mellinger apple. The apple originated on the farm of Mr. Mellinger, near Safe Harbor, about twenty years ago. For years it has been known in this locality as being productive and a good keeper. It resembles the Smokehouse in some respects, can be used for sauce in early harvest time, and will keep until the holidays. The Smith's cider was also recommended. It was a very popular winter apple, and had been grown with good results by him.

The difference between Bucks county and Berks county Smith's cider was explained by Mr. Cooper.

LEVI S. REIST presented the Society with a sample of the Northern Spy and a few varieties of the Pippin apple to taste.

MARTIN KENDIG thought that the amount of rainfall in the different parts of the county should be reported for the benefit of the members.

After the subject was thoroughly discussed, it was moved that a committee of five be appointed to report each month through the chairman, Johnson Miller.

ISRAEL F. LANDIS wanted to know what had become of the resolution in reference to having the Society represented at the Centennial.

President COOPER said the matter looked very dark and gloomy. At a meeting of the Fruit Growers at Doylestown it was resolved to do nothing unless an appropriation could be received. An appropriation of $3,000 was asked; it was brought before the Legislature, and placed upon the calendar by a two-thirds vote, but he did not think it would amount to anything, as it could not be reached in time to be of any benefit. In view of these facts, the Society would not be represented, but he hoped this would not keep any of the members from exhibiting.

JOHNSON MILLER asked that the committee appointed to represent the Society at the Centennial be discharged. Granted.

C. L. HUNSECKER was requested to prepare an essay on rain for the next meeting.

"How can we best improve the appearance of our farms?" and "What is the best method of taking care of our boys and girls on the farm, so as to make them happy and contented?" are the subjects that will be discussed at the next meeting. Adjourned.

OUR BEE-KEEPERS IN COUNCIL.

Proceedings of the Lancaster County Bee-Keepers' Society.

The second meeting of the Lancaster County Bee-Keepers' Society was held at Kauffman's Black Horse Hotel, at 10 o'clock on Monday, the 1st inst., Peter S. Reist in the chair. The attendance was large.

After the reading of the minutes of the last meeting, the chairman read an essay on

"Will Bee-keeping Pay?"

on which he said that the subject of the essay ought to be the main question of the society, as it would result in much benefit to it. There are about 800,000 stands of bees in the United States, which produce about 15,000,000 pounds of honey, the value of which was estimated at $3,000,000. The number of bee-stands in this State are about 40,000, which produce 800,000 pounds of honey, valued at $160,000; but of this large number, Lancaster county represents 3,000 stands, which produce 60,000 pounds of honey, at a value of $12,000. This the essayist thought a low estimate, and believed it could be increased 300 per cent. He also thought that bees were decreasing in this State, on account of their keepers not knowing how to handle them. North Carolina contains the most bees, next to which are Missouri, Kentucky and Tennessee. The number of bee keepers in this county was estimated at 70,000. In regard to the improvement of hives, Mr. Reist said that the greatest was made some twenty years ago, by a Mr. Langstroth, who made the frame boxes which facilitate the handling of bees, together with the art of making artificial swarms, the introduction of which has been very beneficial. In referring to the introduction of the Italian bee, he said a man named Julius Smith, of this county, claimed the honor of introducing it in this country from Germany. The proper place to have a hive was between the house and barn, so that it could be watched without any extra care or time. After referring to a number of books treating on bees, which he advised the members to read, he closed by saying that the members should meet to discuss different questions on bee culture and adopt the best methods. By this means all will be able to derive more benefit by attending the meetings.

A constitution directing that the society meet four times a year in this city, and that each member pay an initiation fee of 25 cents, was read and adopted.

ADAM B. HERR, the Secretary, read an essay on bee hives. The essay was a lengthy one, and advocated the use of double-story hives, which had given the gentleman great satisfaction as well as profit. From one of these hives the essayist said he took 129 pounds of honey, for which he received thirty-five cents a pound.

After the reading of the essay, one of the hives in question was produced and examined by the members.

A discussion on the merits of hives in general then ensued.

MR. REIST wanted to know what was the cause of honey granulating.

HENRY HUBER, of Martic, thought it was caused by age.

J. F. HERSHEY, of Mount Joy, did not think it was caused by age, but by the temperature. If honey is put in a cool place it will soon become granulated.

Several other members agreed in regard to Mr. Hershey's theory, one of them saying that he knew of honey, which was kept in a proper temperature, that was forty years old, and it never became granulated.

JOHN HUBER, of Pequea, was elected treasurer of the society, and HENRY MYERS, of Mount Joy, assistant secretary.

After the members present signed the constitution, the society adjourned to meet in the Athenæum rooms, in the afternoon at one o'clock.

The Society met promptly at 1 o'clock. The constitution, which was adopted at the morning meeting, was read over again, after which the following persons signed it:

Peter S. Reist, Oregon; J. F. Hershey, Mount Joy; A. B. Herr, Columbia; H. H. Meyers, Spring Garden; John Huber, Marticville; J. Kepperling, Safe Harbor; A. H. Shock, Safe Harbor; Abram Wright, Safe Harbor; L. Fleckenstein, Creswell; Daniel Kreider, Lancaster; A. B. Nissley, Marietta; E. Hershey, Leaman Place; D. H. Lintner, Lancaster; J. R. Stock, Smithville; H. R. Maskey, Millersville; L. R. Nissley, Maytown; C. B. Nissley, Mount Joy; John Snavely, Rothville; John Z. Taylor, Strasburg; L. S. Reist, Oregon; David E. Mayer, Strasburg; H. Huber, Marticville.

Reports from different sections being now in order, the following were made:

HENRY MYERS, of Mount Joy, reported all of his bees in good condition. He had a neighbor who lost only one swarm out of sixty-eight swarms that were wintered.

J. F. HERSHEY, out of sixty-two swarms wintered, lost two swarms.

A. H. SHOCK stated that he had taken two swarms from one bee and three from another, which wintered well and are now in good condition.

PETER S. REIST reported blossoms plenty, and in consequence the bees were very busy.

LEONARD FLECKENSTEIN said that his bees were in good condition. He wintered his bees on a summer stand, and out of twenty-one swarms thus wintered he lost only two.

ELIAS HERSHEY wintered thirty-two colonies of bees on a summer stand, and lost none. The bees are now in good condition.

D. H. LINTNER lost two swarms out of eight colonies which he had wintered. In his region the prospects are good.

H. K. NISSLEY was opposed to covering the hives with corn fodder and other protecting material. Out of seventeen swarms that he wintered on summer stands he did not lose any, and they are now all doing well. Bees belonging to his neighbors are also doing well.

H. B. NISSLEY protected his bees during the winter by putting corn fodder over the hives, but of thirty-four swarms wintered, he lost three. His bees are now gathering honey very fast.

A. H. Shock said he preferred to give his bees, in winter time, candy as a stimulant. In other seasons he gave them syrup.

J. F. HERSHEY gave his bees syrup in winter, which he placed in such a position that the bees were not exposed to the cold when they went to get it.

D. H. LINTNER fed his bees every day for breeding purposes until the blossoms appeared.

"What is the Best Mode of Artificial Swarming?"

was the next subject discussed.

J. F. HERSHEY said the best mode of artificial swarming was to let the swarm get strong in bees and wait till they cease storing honey. Then take out the queen bee and comb from one hive, and from another hive take four or five combs without bees. Change the stands, and give a new queen to the old swarm. In other words, take combs from No. 1, bees from No. 2, and put all in No. 3.

JOHN Z. TAYLOR believed that straight combs could be built by all bees without handling. If the bees commence to build crooked, just incline the hive. The bee will then always build a comb straight with the hive.

JOHN KEPPERLING thought the safest and surest way was to first get a fertile queen. He did not believe in artificial swarming.

LEONARD FLECKENSTEIN preferred a fertile queen for a new hive.

At this point a lengthy discussion and description of the various ways in which bees were hived was entered into by most of the members present.

J. F. HERSHEY had reason to believe that bees flew away on account of the sun shining on the hives and heating them too highly.

LEONARD FECKENSTEIN thought that artificial swarming would prevent the absconding of bees.

Several modes were given how to raise new queens. The principal theory advanced was to place them in a nursery, and another to let them raise themselves.

J. F. HERSHEY said the best mode of introducing queens was to place them in a small wire cage, one end of which should be closed up with a piece of comb. This small cage should be placed in the hive, when the queen will work itself out of the cage by eating or boring through the comb. The queen will thus be introduced into the hive. Various other modes were spoken of, such as sprinkling the queen with peppermint or assafœtida.

J. F. HERSHEY also thought the best way of producing box honey was to first place a small box in the hive and coax the bees into it; then place a larger box over this one, and so on until you get as high as twenty pounds of honey in one box. In this way he had got as high as 140 pounds of honey from a single hive, for which he generally received thirty-five cents a pound.

The idea advanced by Mr. Hershey appeared to be the general opinion of the rest of the members.

ELIAS HERSHEY thought the best size of frames were 12x12 inches.

HENRY HUBER was of the opinion that frames should not be over seven or eight inches square.

J. Z. TAYLOR preferred a frame about twelve inches high. In such hives the bees would not freeze so readily.

PETER S. REIST said his frames were about ten by eighteen or twenty inches.

J. F. HERSHEY said bees made more honey in a small frame than they did in a large one. He thought the proper size of a frame should be 12x12 inches.

LEONARD FLECKENSTEIN preferred a frame 13 by 11 inches. More honey is made in a shallow frame than in a high one.

HENRY HUBER said in an experience of forty years he never had a bee to freeze as long as there was some honey in the hive. He preferred small frames. He did not believe bees wanted much air. He put bees in a surplus box and covered it with wire, thus giving the bees plenty of air. In a short while the bees had closed up every crevice, not giving much chance for any air to get in.

At the conclusion of the above remarks, Mr. HUBER said he would like to know the reason a person could hear the queen making a peculiar noise when the bees were going to swarm the second time, and not the first time.

ELIAS HERSHEY said he had read, that on second swarming the old queen made the peculiar noise referred to when she was trying to get at the young queen in the cell, in order to destroy it. When she found she could not get at the young queen she would start off and leave the hive, the bees following in a swarm.

J. R. STOKE wanted to know if the moths would kill a strong and healthy swarm.

ELIAS HERSHEY never heard of a healthy swarm being killed by the moth. Bees are often killed by moth, but it is always the fault of the box. Never allow a place in a box where a miller can go in that a bee cannot follow.

J. F. HERSHEY thought the best mode to keep away ants was to put wood ashes around the posts. The next thing was to use good lumber in the making of the boxes.

"How to Prevent Robbing"

was the next question discussed.

J. F. HERSHEY believed the best method to prevent robbery was to put soft hay in front of the entrance of the hive which was being robbed. In this way the bees that were in the hive were allowed air, and had a better chance to get at the robbers. In another sense, if the entrance was not protected with hay, the robbers would flock about it and make it too hot for the bees that were in the inside. When it would become too hot for them they would all rush out, thus leaving the robbers the master of the hive. Another way to prevent robbers, Mr. Hershey said, was to change the position of the hives, when the bees would get bothered and the fighting would stop.

HENRY HUBER said the way he prevented robbery, was to first find out the robbers. When this was done, he would go to that hive, raise it, and knock the comb all to pieces with a stick. This, the speaker said, would give the robbers plenty of work to do at home, and by the time they have their hive fixed up again, they will have forgotten all about the robbery at the other hive.

A. B. HERR was of the belief that when all other remedies failed, the robbers should be taught and destroyed.

PETER S. REIST, the chairman, asked what was the best remedy to prevent swelling when stung by a bee.

ELIAS HERSHEY recommended hartshorn.

HENRY HUBER said the best way was to get stung as often as you could. After that the system will get used to it, and the sting will not cause swelling.

A. H. Shock, Henry H. Myers and Daniel Lintner were appointed by the chair as a committee to prepare questions for discussion at the next meeting, and to appoint an essayist.

The second Monday in August was named as the time for the next meeting, the place of meeting being Kauffman's Black Horse Hotel.

The hour of adjournment having arrived, the society adjourned.

GENERAL MISCELLANY.

Lawns—How to Make and Keep Them.

One of the most beautiful features about a country residence is a well cultivated and well kept lawn. It is also the most difficult spot about a place to keep in order, unless one has the facilities for keeping it irrigated; for the very time of the year when it is most desired that it should look the freshest is, in most parts of our northern and western regions, the driest period of the season. We present herewith some suggestions for the laying out, seeding, and care of a lawn, the result of our own experience and that of others, which we believe will be interesting and useful to a great number of our readers.

In preparing ground for lawns, where the expense is not of so much consequence as the good results, a good subsoiling is preferable, because in such soils the roots go down deep, and in this way get moisture when the weather is dry. Very good lawns can, however, be had by ordinary plowing, as for any good crop. It is best, however, to have the ground plowed up and leveled a year before the grass is sown, or it will sink in places, and then the surface becomes uneven. Where the lawn has been made in this way, and inequalities of the surface exist, earth may be brought in the spring, and spread smoothly over the lawn, and rolled down firm. The grass will grow through this, and make a solid, even lawn.

As soon as the frost is gone, and before the ground is hard, the lawn should be rolled. From various causes there is generally left an inequality of surface after the winter is over, and this the rolling is to remedy. In spite of all the care to keep weeds out of lawns, they will often get in, especially on lawns that are newly made. The best thing is to have the lawn hand-weeded for the first few years. Early in the season the lawn mower should be set going, but experience is against setting the knives too low. Close cutting we have found to be an injury to the grass. It leaves the roots exposed, and the sun is apt to dry and kill the grass.

A lawn requires an occasional top dressing of manure; but there is no necessity of applying it every year, and it should not be used too green. Well rotted stable manure, mixed with soil, makes an excellent dressing and should be spread over the lawn at least two or three inches in thickness, early in the spring. Some prefer putting it on in the fall, and leaving it to protect the roots through the winter. There is a diversity of opinion as to the use of manure for this purpose, from the fact of its liability to introduce seeds of weeds, which the use of artificial fertilizers obviates; but we have never experienced any ill effect from the use of the former.

The kind of seed to be sown, to make a lawn, depends upon the climate, condition of the land, and composition of the soil. In the Northern States the English mixed lawn grass seed, with an excess of white clover and red top, are considerably used; and in the Middle States the Kentucky blue grass does well. Red top does the best in clayey, and the others in lighter soils. Grasses and clovers are gross feeders, and demand good food, else they will not present a good appearance. The white daisy will often show itself in fields and lawns that are too poor to nourish grasses; and to get rid of this pest it is needful to make the soil richer. The truly practical man, says an agricultural writer, will dress his worn-out grounds with either superphosphate of lime or Peruvian guano, or some other good fertilizer. They will soon show that the grasses can drive out the daisies or mosses, if they are only properly fed.

A surface dressing of superphosphate of lime will also cause an abundant growth of clover, and often it will occur where the clover has not before been seen; and even nitrate of soda will give to the new growth a deep richness of color, and thicken the turf rapidly. The constant cutting and carrying away of the grass produces exhaustion of the soil, until at length it becomes so poor that the grasses die out in a great degree; and the daisies and mosses take their places, until fresh plant food is given, and their growth strengthened. There are some strong, deep soils upon which time seems to make little impression, and no manure is required; but they are only the exceptions.—*Scientific American.*

The Management of Lamps and Oil.

The lady of a house in which we are sometimes a guest, was in great trouble with her lamps, of which she had three or four different styles for burning kerosene. One lamp after another, a short time ago, began to burn poorly; new wicks were put in all around, but in a few hours they were as bad as before. Being taken into consultation, we suggested that she had poor oil; but the oil was Pratt's, and bought in the original packages, besides, there was the German student's lamp, in which the same oil burned splendidly. We became interested in the case, and made a careful *diagnosis*, as the physicians say. The oil was of a good kind, the wicks were new, the lamps, of different styles, each apparently perfect, and as good as ever; while all the lamps but one had been gradually growing bad, and were now nearly useless; this burned as well as ever, and as well as any lamp need to burn. A minute's thought given to the difference between the student's lamp and the others, gave us the clue to the trouble. Asking for a glass jar, an empty fruit jar was brought, and all the oil from one of the delinquent lamps, with a previous shaking, was turned into it. The appearance of the oil in the jar was such as to call forth an exclamation of surprise, as well it might, for it looked like muddy water. Here was the cause of all the trouble, an accumulation of dust and other impurities. The lamps had been filled month after month without emptying; the wicks took up the clear oil, leaving the particles of dust behind; the lamps being daily filled, this dirt gradually accumulated, until at last it was present in such quantities as to clog up the wicks and so destroy their porosity that they could not take up enough oil to give a proper light. Clean oil and new wicks being supplied, the lamps gave as good a light as ever. "But how did the students' lamp help you to guess what was the matter?" we were asked. Because we saw that the wick was not in the main body of the oil, but was fed by a tube which we noticed started from the oil reservoir at some distance above the bottom, so that the impurities could settle and not reach the wick. On emptying of the outer reservoir of this lamp the oil was found to be as bad as in the others, but the particles of dust did not get to the wick. The quantity of dirt in the oil induced us to go a step farther, and inquire where the main supply of oil was kept; we found that the can was in an open shed, and not far from where the coal ashes were sifted; the funnel used to fill the feeding can was kept close by. Here we had the whole story, the funnel, daily wet with oil, was where it could catch whatever dust might be floating in the air, with an extra supply when the coal was sifted. When the feeder was filled the dust from the funnel was washed into it, and from thence it went into the lamps, where it accumulated with the result we have stated. Of course this, the main source of the trouble, was easily remedied by providing a proper place for the oil-can and funnel. The lady was delighted at finding so ready a way out of her troubles, and we relate the case in order that others may profit by the experience. As most of the lamps now in use are of some kind of metal, their contents cannot be seen, and it will be well to ascertain occasionally the condition of the oil within them. With the utmost care some foreign particles will find their way into the oil, and after a long time that in the lamp will be quite impure. If the oil emptied from the lamp is allowed to stand a few hours all the dirt will settle to the bottom, and the clean portion may be carefully poured off for use. See that the oil vessels and funnel, if one is used, are kept away from the dust.—*American Agriculturist.*

Cloverseed.

There is at least one product of the farm with which the market is not overstocked, and that is cloverseed. At this writing, good seed commands, in bulk, from nine to ten dollars per bushel. Happy is the man who has it to sell. One writes us that he has just disposed of his crop from eleven acres for the handsome sum of four hundred dollars. We venture to say that man is pretty well convinced that "farming pays." But unfortunately, very few have seed to sell, and many still more unfortunate have it to buy, and dire are the complaints of this class. It is said that cloverseed is in the hands of a few dealers, who are making a "corner," running up the price to extortionate figures, etc., etc. This is all nonsense. There is not enough of it in the market to make a respectable corner. Dealers have to keep a sharp lookout to obtain enough to supply customers, and at this writing the market is almost bare, at this point.

We have never advised farmers to raise cloverseed for market, but we have frequently urged them to raise enough for their own use. Ordinarily, every one can do this. We know that last season was an ex-

ceptionable one, and the crop was a failure over a large extent of country. But this contingency should have been provided for from the previous year's crop. Some farmers always keep a supply of seed, of all kinds they cultivate, a year ahead. The practice is to be commended. It provides against the accidents of the seasons, and gives a sense of security which alone is worth more than the money represented by the small amount of seed lying idle.

The advantage of having seed does not consist in saving the purchase money, simply, though that is no small item now. A greater advantage is that it is sown with a more liberal hand where there is plenty of it to be had without buying. We have no doubt that a great deal of land that ought to be sown in clover this spring will go without or get but a scanty supply. This should not be the case. It will pay better to buy seed than to miss the clover crop. But whatever you do, sow enough on land you do seed, if you have to let some go without. We would rather have one acre well seeded than two half seeded. It is not too late yet to do this work. Scratch the field with a light harrow, first. It will not hurt the wheat. When the clover appears, give it a dressing of plaster, and it will come out all right. It is not advisable to buy seed for oats ground, as the chances of failure are too great.

Understanding, as most farmers do, the great value of the clover crop, they should require no urging to provide plenty of seed for the future. The farmers of Nebraska and Kansas have learned this lesson of providing for the future out of the abundance of the present. We are told that it is a rare thing to find a farmer there without a year's supply of corn ahead, if he is able to hold it; and thus they are prepared for another grasshopper raid. It would be well for us to imitate their example as far as seed for another year is concerned.—*Practical Farmer.*

Farming in Continental Europe.

Before a recent meeting of the Colora (Md.) Grange, Mr. Adam R. Magraw, well known in this city, delivered an address on his observations of rural life on the European continent, from which we extract the following:

While at school in Switzerland a companion and I one day learned to our cost the summary manner with which trespassers are dealt. We had been playing in the meadow attached to our school. The grass was of course worn short by the running to and fro of nearly a hundred boys. In an adjacent field the grass grew high, thick and fragrant, and as we were much fatigued, the temptation to lie down and rest in the nice long grass was more than we could resist, and in a moment we were over the fence and stretched at full length in the dense grass, which almost covered us. We rested undisturbed, and returned to our own meadow quite refreshed, never dreaming we had done any damage. The next morning we were sent for to meet our principal in his office. As such a message always meant business, we started with our hearts in our mouths, wondering what was up, and our forebodings were not a little intensified, on entering the office, to behold a constable. Our teacher sternly asked us if we had been in Mr. ———'s field and damaged his grass. We assented to having been in the field, but demurred to the damage. We were informed, however, that damage had been done, and we were each obliged to pay about one dollar or one dollar and a half. Since owning a farm in Cecil, I have many times wished for a law like the one I broke when a boy in Switzerland. Here a dozen cows may graze on you a whole night, and do great damage, but it will take you weeks, if not months, to recover a cent, and maybe in the end, after having paid lawyers' fees and traveling expenses, you will find that your expenditures equal the sum claimed for damages.

In France my stay was in Louraine, one of the most fertile districts of that country, where fruits of all kinds grow luxuriantly, especially plums and pears. Here it was I saw the most primitive of plows, and one, too, that was in constant use. It was nothing more than a round piece of rough wood, about four feet long and three or four inches thick. One end was sharpened and shod with iron a few inches from the butt, and two narrow pieces of wood arose and formed the handles, and not far from the pointed end a ring was fastened, to which the team was hitched. I did not see it at work, but I have no doubt it answered its purpose very well, viz: of turning over a thin white soil. I came across it whilst gunning, and could hardly believe so rude an implement could exist and (what is more) be used in this progressive age.

Hints for the Season.

Chicken coops should be kept dry and wholesome. It is not necessary to clean them often if they are kept well littered with dry earth, ashes or dry sawdust. Give the fowls liberty to roam at large, if possible; if not, supply them with animal food in some shape, also lime, ground bone and green vegetables. A box containing pulverized charcoal should always be within reach of the fowls, as it is a great preventive of disease. Do not be afraid of snow water. Fowls will always drink it whenever it is convenient, and I have never seen any ill effects from it.

Your supply of eggs will depend very much on the quantity and quality of food furnished. Never overfeed. More fowls are ruined by being over-fed than by being fed too sparingly. I have often heard people complain after this style: "My hens do not lay worth a cent, and they have all the corn they can eat." Some fowls that have a large range and exercise much may lay well if they are stuffed day after day with corn; but it is very poor policy and economy to feed in that way. Give fowls light food and not all they can eat. A variety of hard food (corn, barley, wheat, buckwheat, &c.;) the principal supply should be soft food, thoroughly scalded.

Corn and oats ground together, such as is commonly used for horse feed, and wheat bran (the coarsest), mixed in equal portions by measure, well scalded, is the best and most economical food that can be used. Give this in the morning, and grain sparingly at night. Never feed old fowls oftener than twice a day, and, if they have fields to roam over, feed no more than half what they would naturally eat. Occasionally give them a little ground mustard, ginger or pepper in their food, but do not always be doctoring them. Follow these rules, and if your fowls do not lay, you may reasonably expect they never will. The food recommended above is also suitable for young chicks, young ducks and old ducks, and, in short, all kinds of poultry. Never feed raw mush, do not confine your young chicks to a steady diet of raw meal and cold water. On a farm, where they have unlimited range, they may do well; but cracked corn is far better, and should be alternated with the soft food. Boiled eggs for young chicks can be dispensed with; they are too expensive, and the scalded food answers every purpose. Remember that much depends on the proper manner of feeding.—*J. Y. Bicknell, Westmoreland, N. Y.*

Neatness in Making Butter.

The *Practical Farmer* says it is admitted by butter makers of extensive experience that impurities and noxious odors in the atmosphere where cream is rising will injure the flavor of the butter. We recollect that a neighbor killed a skunk more than a hundred rods distant, and the offensive and pungent odor from the dead animal was wafted during the entire day toward the pantry, in which there were several pans of milk. The butter made of that cream tasted so offensively of the odor of that skunk that it could not be used for culinary purposes. X. A. Willard writes on this subject, that "when milkers are allowed to come directly from the stable to the milk-room, it will be impossible to keep the latter sweet and clean for the time being."

There are hundreds of butter makers, we are aware, on whom the importance of this single point cannot be too strongly urged, since they often consider many little things of this kind in regard to dairy management too insignificant to merit attention. But in butter making the observance of little things is often the great secret of success.

There is no doubt that immense quantities of poor butter are made from the milk set in improper places. The kitchen pantry, the living room and cellar used to store vegetables and other family supplies, will impart peculiar taints to the milk and cream, in such a degree as to be destructive to flavor, even though the butter in other respects be skillfully handled. Dairy rooms so situate as to catch the odor from the pig-stye, the cess-pool, or other decomposing filth, cannot be used for making good butter. There should be a freedom from filth and impurities of every description about the milk-house, and the milk should be delivered by the milkers in an ante-room, or some point outside the milk-room, and from thence conveyed to the place where it is to be set for cream. In this way the fumes and the litter from the stable may be kept from the milk-room.

The causes of poor butter are various, the most important of which are lack of cleanliness, the want of proper dairy utensils, the need of a good dairy-room or place for setting the milk, neglect in manipulating the cream at the right time, unskillful working, packing, and storing the butter, and finally, lack of knowledge in part or whole of the process required for making a prime article.

Destroying Weeds.

July and August, says the *Rural New Yorker*, are probably the best months in the year for destroying weeds. The summer heats are at their fiercest, and all annual weeds cut down at the root speedily wither and die. The tougher perennials have made their growth for the season, and have nearly perfected their seed. The root then has least vitality, and if the top be cut off a feebler effort is made to reproduce it, especially if the weeds grow in a tough sod of grass. We have known frequent mowing of thistles in sod to reduce the vitality of the patch so much that it would produce only here and there a stalk, until the field was plowed again.

In the growing corn, August is, of all months, the time to destroy Canadian thistles and quack. Keep the plant down as much as possible early in the season; then, as the corn begins to tassel out, go through with a light hoe and cut every spear of thistle and pull up every blade of quack, with all the root that can be got attached. The quack should be put in heaps and burned, but the thistle root will seldom if every start again, and pulling up at this season of the year, or even cutting off, is final and certain destruction. The cost of doing this is not large, varying with prices of labor and abundance of weeds; but we are satisfied that it is always a profitable operation on all land foul with thistles. We have repeatedly had the cost more than repaid, not only in the corn crop, but in the succeeding oats and barley, besides leaving the land cleaner for years thereafter.

Worms in Fowls.

Some years ago I had several fowls drooping about with all the symptoms of cholera, except that they lingered for a longer period. After experimenting with almost every known remedy, I at length determined to make a *post mortem* examination, and, if possible, determine the cause. Accordingly I proceeded carefully, that nothing should escape my notice. Arriving at the intestines, I found that the entire lining was apparently removed, and they contained no less than fifty worms, about two inches in length and as thick as an ordinary knitting needle, both ends coming to a point like a pin. They were white in color and as tough as sinews. I then gave the remaining fowls close attention, and frequently saw that as soon as they passed from one fowl another would hastily swallow them, and, I doubt not, would soon become affected. At length I hit on the following remedy: After they had gone to roost I made a strong tea of common worm seed, and gave each one about three tablespoonfuls. Early next morning, before they had left the perches, I removed the dropping from beneath them and found it literally alive with worms. I again dosed them on the following evening; this time they did not expel so large a quantity. I then began feeding them wheat shorts and bran, adding a little stimulant, and carefully avoiding anything that had a tendency to irritate the intestines. In the course of a week they were seemingly as lively as ever. Since then I have found, on several occasions, small, conical worms in turkeys in great numbers, and am of the opinion that thousands die from this cause, while it is attributed to cholera. The symptoms from which I detect it are from their slow, stiff, crampish movements, and disorderly, sorrowful appearance.—*Ex.*

Manure for Grass.

No crop gets less attention than grass. If manured at all, it is only incidentally with some other crop—rarely for itself alone. Corn, wheat and barley get the manure, and when seeded the young clover takes what is left. After this, if the field be pastured, the droppings of animals left in lumps over the field are all that the lands get till they are plowed again. This is considered improving the soil; and it is. No matter how mismanaged, clover is a benefit, and whatever else he may do, the farmer who sows and grows clover is making his farm better. What, then, might not the result be if the same care were taken of the clover-field as of other crops? It does not need cultivation; the long deep reaching roots mellow and pulverize the soil as nothing else can. If the clover grows thriftily, the top acts as a mulch, shading the ground and keeping it moist. A crop of two tons or more of clover, whether plowed under or cut for hay, can hardly fail to leave the soil better than it was before. It should be the farmer's aim to grow the largest possible crops of clover. A slight dressing of gypsum—one hundred pounds per acre in early spring—often produces wonderful results. But if a farmer has a little well-rotted manure, in scrapings of barn yards, fall is the time to apply it. Clover is often injured by freezing and thawing winters, and a very slight covering of manure will afford a great deal of protection. Rich earth from the corner of fences is well worth drawing a short distance on young clover, provided that the ground is hard and firm. If the field is not to be mowed next season, coarse manure can be used. —*Prairie Farmer.*

To Fix or to Lift a Gate-post.

The following is an excellent plan of setting a post for a gate or fence firmly in the ground: When the post-hole is dug, a flat stone is laid in the bottom, against the side upon which the strain upon the post causes it to press. The stone receives the pressure, and having a larger surface than the post, is not so apt to work into the earth at times when it may be wet and soft. When the post has been placed, and the post-hole nearly filled with earth, another stone is laid against it upon the side towards which it is drawn by the weight of the gate or fence. The use of the stone distributes the pressure over a greater space, and there is much less tendency for the post to work loose. When a post is to be moved, it may be readily drawn out of the earth by fastening a chain or rope around the bottom of it, and carrying it over a stake or a piece of plank if nothing better is to be procured, and then hitching the team to it. A large portion of the force of the team is changed in its direction to an upward one, and this is generally sufficient to lift the post. Small stumps, or partly decayed large ones, may be lifted out of the ground in the same manner.

Advantages of Drainage.

What are the effects of drainage? Thorough drainage deepens the soil. Of what use is it to plow deep and manure heavily, while the soil is full of water? The roots of plants will not go down into stagnant water; the elements of plant food are not all on the surface, many of them have been washed down by the rains, some of them are found in the decomposing rocks themselves. Take away the water and the roots will find them.

Drainage lengthens the seasons. In our climate this is an important point to be gained. If by drainage, one or two weeks could be gained, it would be quite a relief in our backward springs, when there is so much to be done in so short a space of time.

Drainage increases the effect of the application of manure; the soil being dryer, is more easily worked fine; the manure is also more evenly distributed. The water also passing through the soil, carries fertilizing matter down to the roots of the plants. When there is stagnant water, manure must decompose slowly, if at all; but let the water pass off, the air is admitted, and decomposition takes place.

What observing man is there who does not know that his crops are improved in quality by drainage? Sweet English grass and clover take the place of sedge and rushes.—*Mass. Plowman.*

Don't Use the Hatchet or Saw.

Of all the blunders, says the *Gardener's Monthly*, that the common farmer and some others make with trees, none is so common or so hurtful, and which he is so long finding out, and of which he might know so certainly, as the practice of the cutting of lower limbs. All over the country nothing is more common than to see the mutilated trees on almost every farm. Big limbs cut off near the body of the tree, and of course rotting to the heart. This is a heart sin against nature. The very limbs necessary to protect the tree against wind and sun, and just where the limbs are needed most, they are cut away. But the greatest injury is the rotting that always takes place; when a big limb is sawed off, too big to heal over, it must rot, and being on the body, the rotting goes to the heart and hurts the whole tree. It is common all over the country to see large orchards mutilated in this way. We often see holes in the trees where big limbs have been cut away, where squirrels and even raccoons could crawl in. Perhaps the only reason these trimmers would give is that the lower limbs were easiest got at, and some would say they wanted to raise a crop under the tree.

Our Nut-Bearing Trees.

The *Cultivator and Country Gentleman* gives the following sensible hints on a subject which all farmers ought to take into serious consideration: "While much attention is properly given to the improvement of varieties of apples, pears, grapes, and other fruits, new and improved hickory nuts and chestnuts have scarcely received attention. Some nut-bearing trees are much more productive than others. This is a quality which should be sought in producing new varieties. We have seen hickory nuts twice as large as the average and with shells almost as thin as the thin shelled almond. These characters should be specially aimed for, while the flavor is all important. Some years ago Dr. Long, of Alton, exhibited chestnut burrs, from a tree of his own raising, each containing seven perfect nuts. One reason why raising nuts has not been profitable is, doubtless, taking the trees at random, without any attempt to secure the very best. If such men as Van Mons or Knight should take hold of this matter they might possibly give us some entirely new sorts of nut-bearing trees of great value."

How to Pour Tea.

There is more to be learned about pouring out tea and coffee than most ladies are willing to believe. If those decoctions are made at the table, which is by far the best way, they require experience, judgment and exactness; if they are brought on the table ready made, it still requires good judgment so to apportion them that they shall prove sufficient in quantity for the family party, and that the elder members shall have the stronger cups. Often persons pour out tea who, not being at all aware that the first cup is the weakest, and tea grows stronger as you proceed, bestow the poorest cup upon the greatest stranger and give the strongest to a very young member of the family, who would have been better without any. Where several cups of equal strength are wanted you should pour a little into each, and then go back, inverting the order as you fill them up, and then the strength will be apportioned properly. This is so well understood in England that an experienced pourer of tea waits till all the cups of the company are returned to her before she fills any a second time, that all may share alike.—*Housekeeper.*

DRY buckwheat flour, if repeatedly applied, will remove entirely the worst grease spots on carpets or woolen cloth, and will answer as well as French chalk for grease spots on silk.

White and Red Wheat.

It is said that the hard wheats are natives of warm climates—such as Italy, Sicily and Barbary. The soft wheats from northern climates—such as England, Russia, Belgium, Denmark, and Sweden. There is, however, one exception to this general rule, as the celebrated Polish wheat is hard, and from this reason it is contended that it is not a native of Poland, but was introduced here from some milder climate. The English atmosphere is so humid that it is impossible to ripen wheat hard, but in many cases it requires artificial heat to harden it before it can be ground into flour. Different soils and climates materially change the nature and variety of wheat. The difference between red and white wheat is not in variety, but is owing chiefly to the variety of soil on which it is grown. A generous dressing of wood ashes applied to the growing wheat in the former part of the growing season will exert an excellent influence in rendering wheat of a lighter color than it would be without potash. Lime is excellent, also for the same purpose.—*N. Y. Tribune.*

Cutting and Curing Tobacco.

The *United States Tobacco Journal* makes the following statement of some experiments which have been made in some of the tobacco producing districts of Germany (Scheoien and Pfiatz) with decided success. At the time the plant is ready for cutting, judgment should be used in determining the body and texture the leaves possess at such time. If the leaf should be of a flimsy, weak character, the whole stock, including *the root*, should be extracted and nailed or hung up in the barns, with the tips of the leaves hanging downward. This will greatly benefit the leaves, as the sap contained in the root will gradually diffuse itself into the leaves, and add considerable to their strength and the coming successful sweating process. If, on the other hand, the leaves should be of a heavy character, then only the leaves should be cut and hung up. This will reduce the surplus of sap, deprive the leaf of any accumulation of strength, turn out to be of a thinner and more desirable texture after sweating.

Sunlight.

Any lady who keeps house-plants knows enough to keep them where they will get the benefit of the sunlight. You may look at the lilies, roses, pinks, and dahlias, of your flower-garden, and you will notice they all have beautiful colors. You may rear those same flowers in places where the sunlight is entirely excluded, and keep them in the dark, or supply them with artificial light only, such as candles, lamps, and gaslight, and you will find they will not have that pure, brilliant color which nature designed they should have. The same is true of men, women, and children, if they are deprived of sunlight. Demonstrations of this fact may be seen in your fashionable parlors, where women and children spend most of their time, and the windows are kept blinded to keep out the sunlight for fear it might injure the carpet.—*Hall's Journal of Health.*

Boxwood Edgings.

In the spring move back the soil and gravel, roll the walks nicely, and they look as clean and fresh as if new. Before finishing the walks, clip the edgings so as to have them only six or eight inches high. Treated in this way, the top of the edging is sometimes slightly frosted, but no more is injured than is desirable to cut off in clipping. I have practiced this method, says a correspondent in the *Practical Farmer*, and have seen others do the same for two score years, and have never seen a failure with it. For dividing walks from beds, both in the kitchen and flower garden, no other edging is as good or as lasting as this. It should never be allowed to grow more than ten inches high, and six inches high and thick is better. When over a foot high and thick, it looks clumsy, injures the crops near it, and injures the appearance of both walks and beds.

Calla Lilies.

Mrs. Rollin Smith, of Swanton, Vt., writes to the Burlington *Free Press* as follows: "Since the notice in the *Free Press* recently of my possessing a continual blooming calla, I have received several letters from different parts of the State, asking me for the treatment which produces such favorable results. I use a four gallon jar, and give an eastern exposure. In the summer I keep it wet enough so the water may stand on the top, and at all times very wet. Once a year I take the plant, shake the earth from the roots, and fill the jar with earth taken from under old sod. As soon as a blossom commences to wither I cut it down, never allowing a flower to die on the plant. The result is, in sixteen months I have had eighteen blossoms on the same plant, and at the present time it has two very large full blossoms."

FARM laborers in Vermont are engaging themselves at $15 per month and board, where last year $25 was paid.

Early Tomatoes.

To get early tomatoes, says a writer on the subject, you must, as soon as your tomato plant has made four leaves, pinch the top bud from the stem, then take up the plant and transplant it in a common box frame, where the ground is rich and loamy. The box will keep off the wind, and plants sown and grown there eighteen inches apart will produce fruit two weeks earlier than the same planted in the open ground. A mat or a few boards spread over the frame at night will keep them from frost, and is far easier and quicker than going over a field nightly and setting boxes over each hill. As soon as the plants set fruit on two blossoms of each branch, and the top has grown two or four leaves, the pinching off of the top of each branch should be again put in practice.

Death of a Famous Horse.

The death of the celebrated horse Hambletonian will be regretted almost as if the brute had been a human being. The sire of some of the best horses in the land, his name has been familiar to all lovers of animals for a quarter of a century. Other horses have trotted faster than he did, but it is doubtful whether this would be true if he had been given to the turf as other animals have been. While yet a mere colt he trotted a mile in 2:18½; but he was never trained to his best speed. His owners have preferred to make him useful in improving the breed of horses in this country, and his descendants constitute to-day the very best stock we have. He has died at the age of twenty-seven years, and his skin is to be stuffed for honorable exhibition in Central Park.

New Potatoes.

This season is redolent of new varieties of the potato, all of which are cracked up by the crackers-up to supersede anything hitherto known. Just so. Farmers, who will not finish their planting for some days to come yet, are too shrewd to be taken in by new sorts at exhorbitant prices, without possessing some accurate knowledge of their quality and productiveness. It would be rather monotonous for us to recommend again the cultivation of the White Peachblow—just as much so as the Springfield *Republican* nominating Charles Francis Adams for every important political post that looms up—but we shall engage no other for our next winter's supply, even though we pay twenty-five per cent. advance on all others in its market.—*Germantown Telegraph.*

Planting Gardens Early.

A great many people plant their gardens too early. A few warm days always cause people to think they had better plant many vegetables that would do better if planted two or three weeks later. At the South gardens may be planted in March and April, but at the North but few things should be planted before May. Lettuce, onions, beets, and peas are the first to go in, to be followed in two or three weeks with sweet corn, beans, melons, &c. In the States extending from Delaware to Maine, not a hill of corn, beans or melons should be planted before May 15th, and in cold springs it would be better to plant such things about May 25.

Whitewash.

The following receipe for whitewash is recommended by the *Scientific American*. It answers for wood, brick or stone: Slake about one-half bushel unslaked lime with boiling water, keeping it covered during the process. Strain it and add a peck of salt dissolved in warm water, three pounds of ground rice put in boiling water and boiled to a thin paste, one-half pound powdered Spanish whiting and one pound clear glue dissolved in warm water. Mix these well together, and let the mixture stand for several days. Keep the wash thus prepared in a kettle or portable furnace, and when used put it on as hot as possible with either painters' or whitewash brushes.

Poultry Manure.

Fifty fowls will make in the roosting house alone, 10 cwt. per annum of the best manure in the world. Hence fifty fowls make more than enough manure for an acre of land, 7 cwt. of guano being the usual quantity applied per acre, and poultry manure being even richer than guano in ammonia and fertilizing salts. No other stock will give an equal return in this way, and the figures will demand careful attention from the large farmer. The manure, before using, should be mixed with twice its bulk of earth and then allowed to stand in a heap covered with a few inches of earth, till decomposed throughout, when it makes the very best of manure that can be had.

A SIMPLE and ingenious microscope is suggested by a writer in the *Scientific American*. Two metallic strips form a sort of forcep, in which two holes are bored opposite each other; a drop of glycerine is put in each of these holes, and the drops act as convex lenses, which can be adjusted at will by pressing the strips together.

Jefferson's Ten Practical Rules of Life.

1. Never put off till to-morrow what can be done to-day.
2. Never trouble others to do what you can do yourself.
3. Never spend your money before you have it.
4. Never buy what you do not want because it is cheap.
5. Pride costs as much as hunger, cold and thirst.
6. We never repent of eating too little.
7. Nothing is troublesome that we do willingly.
8. How much pain those evils cost us that never happen.
9. Take things by their smooth handle.
10. When angry, always count ten before you speak.

Root Pruning and Blight.

E. A. Riehl, a cultivator of much experience, states in Calman's *Rural World* that he has found root pruning an efficient preventive of fire blight, if properly performed. He says he has root-pruned trees in summer that were blighting and immediately checked the disease; and he has known it to be equally successful with others. He remarks that in all cases where unsuccessful, it has not been efficiently performed, the roots being either not cut at all, or cut too far from the base of the trunk. For medium sized trees he cuts about two feet off, and goes deep enough to sever the principal roots. He recommends early spring as the best time.

Hyacinths in Glasses.

These may be put in water now. The bulb should be placed, in the first instance, with its lower end not quite in contact with the water, and should be pure rain or pond water, and need not be changed unless it becomes offensive. When the bulbs are in glasses, they should be set in a dark place for about a month, then gradually inured to the light, filling up the glasses at the water subsides. The bulbs will flower in the greatest perfection if placed in a cool, airy situation, well exposed to sunlight; but it is usually desirable to place some at least in a warm place, to accelerate the flower's period.

The Crops in Illinois.

A Cairo, Ill., despatch states that the peach crops of Southern Illinois, if no more frosts occur, will be a decided success. Only a small portion of the buds have suffered thus far. The early red apples are all destroyed, but other varieties are uninjured. On the level prairies the wheat prospects are poor, but in the rolling and timber lands the crops will be as good as usual. The farmers express the opinion that there will be no trouble from the chinch bug this year.

Care of Fowls.

In caring for your fowls provide them with a vessel of lime water for an occasional drink. It is prepared by pouring hot water over quick-lime, and after the lime is settled and the water covering it has become clear, pour it off. It will keep fit for use for a considerable time.

Farmers' Fruit Cake.

One pound of fat pork, chopped fine; one pint of boiling water; one pound of raisins; one pound of currants; five cups of sugar; one pint of molasses; ten cupsful of flour; cinnamon, cloves and nutmeg; two teaspoonsful of soda; four teaspoonsful of cream of tartar; citron if you choose.

Biting the Nails.

Try rubbing the tips of the child's fingers with bitter aloes. It is a sure cure for thumb sucking and may be for nail biting.

Punch defines "fashionable extremes" as "high heels and low forheads."

The Grangers of the United States have over $18,000,000 invested in their various enterprises.

The cattle drive from Texas this year will number about $350,000.

The hens of France are said to earn their owners $80,000,000 a year.

Drop a piece of alum the size of a bean into a pail of water, and the liquid will become as clear as crystal.

An old farmer said to his sons, "Boys, don't you ever speckerlate, or wait for somethin' to turn up. You might jest as well go and sit down on a stone in the middle of a medder and wait for a cow to back up to you to be milked."

The *North Carolina Journal* reports that in consequence of the scarcity of money cows have become almost the medium of exchange in that State, a thin cow passing for $8, one in good winter order for $10, and a fat one for $13.

The late Reverdy Johnson's estate includes 1,000 acres of land in Anne Arundel county, 1,000 acres in Alleghany county, and between 500 and 600 acres a short distance west of the city of Baltimore. The last mentioned tract is worth about $1,000 an acre. Mr. Johnson had no insurance on his life.

The *Scientific Farmer* admonishes farmers not to rush heedlessly and enthusiastically into large expenditures on the special "formula fertilizers," but to feel their way by the trial of a few acres at a time, looking forward to larger experiments and greater profits another year, if the present year's experience is satisfying.

According to the *New England Farmer*, city stable manure has been sold during the past winter at prices considerably below those of former years, possibly because chemical manures are now competing so generally with animal manures. The manure is pressed into one-third of its ordinary bulk by means of powerful machinery, and the bales are transported to all parts of the country.

Hon. John Shattuck, a noted dairyman of New York, claims that a reddish yellow color on the inside of a cow's ear is an infallible sign of a good rich milker. Mr. J. W. North considers the amount of the secretions of the ear an indication that the butter will be high-colored. Mr. Sturtevant, of Connecticut, agrees with the theory of judging a good milker in this way.

Home-Made Crackers.—A good recipe: Half a tea-cup shortening, three tea-cups of cold water, one teaspoonful of soda, two teaspoonfuls of cream of tartar, and nearly five quarts of flour. Rub the shortening, soda, cream of tartar and salt, well into the flour, and wet up with the water—the dough will be very stiff, needs no pounding nor extra kneading. Cut out, prick, and bake in a quick oven.

It is said that practical market gardeners have found that it is not necessary to make the expensive preparations for the culture of asparagus which are laid down in the books. Some of the best asparagus that reaches the Boston market is grown on ground that was only in ordinary garden condition when the plants were set, the ground being spaded quite deeply enriched with well rotted barn manure, but not worked more than ten or twelve inches deep.

Lime is one of the constituents, to a greater or less extent, of all soils that are capable of cultivation. All plants remove some of the lime from the soil, especially wheat, clover, barley, oats and turnips. It follows that unless the lime be restored, exhaustion will ensue. Yet lime cannot strictly be said to be a manure. It is rather a stimulant. Successive applications of lime without manure will only quicken the exhaustive process. As a means of bringing back run down land, lime alone is useless. Its action is to decompose vegetable matter, and to render more quickly available the plant that already exists in the soil. In this direction it acts like magic. It follows that the best time to apply lime is immediately after the application of a heavy dressing of stable manure, or after turning under a green crop.—*Canada Farmer.*

At a recent horticultural meeting at Nashua one of the speakers gave the results of his experience in hedge planting. He advised a single row hedge, with the plants set about six inches apart. A successful hedge, in his opinion, cannot be grown compact and as it should be, so filled with foliage and shoots that a bird cannot get through, in less than eight years. It needs care and watching and should not be allowed to grow too scraggy limbs at first. The roots of the various kinds of evergreen should be cut about every spring and thus caused to send out fresh sprouts that will make them valuable afterward. One difficulty experienced in cultivating evergreens is that inexperienced persons do not set them as deep in the earth as they should be. They ought to be put deep in the earth and the soil packed about them in such a way that the air cannot get at their roots. If the earth is dry it should be wet with one or two pails full of water and mulched.

Sea-sand is largely used as a fertilizing agent by the farmers of the French coasts of Normandy and Brittany, who apply it at the rate of 353 cubic feet to the acre, and obtain such wonderful results that they are able to reap abundant wheat crops for several years running. The sand is replete with nitrogeneous matter. The mixture of fresh and salt water, at the mouths of rivers, appears to favor the growth of submarine vegetation. Crustacea and mollusks of all kinds get entangled in vast numbers in these bays, and the most productive oyster beds are found there. The beach is covered by the remains of shell-fish, and the weed brought in by the sea is impregnated by animal detritus. These deposits, added to those derived from the luxuriant vegetation which covers the bottom of the sea, and which when torn from the rocks by a tempest sometimes covers the surface so densely as to impede navigation, contribute to the powerful fertilizing qualities of the sea-sand, and explain the results which follow its use.

A correspondent of the *American Agriculturist* writes to impress on farmers the importance of planting an apple orchard this spring. The old trees are bearing less and dying every year, and on many farms no successors are provided for. But apples are as likely to be profitable as any fruit a farmer can invest in at the present time, with a prospect of making money out of them for the next thirty years. They keep better than almost any other fruit, and can be had, in the fresh state, in the northern half of the country every day in the year. Our soil and climate are particularly well adapted to this fruit, and American apples bring high prices in the English markets. Even in years of exceptional abundance and low prices there is compensation to the fruit-grower, because the cheapness of apples introduces them into families where they are commonly used as a luxury, and the fruit is so wholesome and enjoyable that it becomes a necessity. The fruit-grower wants steady paying prices for all that he can raise every year, rather than extravagant profits, which induce everybody to rush into his specialty. Apples grow in the older States in as great perfection as they ever did, if the orchards are properly cared for. Neither are the old varieties running out. Let a few standard varieties be planted, and nine-tenths of them the long-keepers, and the profits will be sure and steady.

LITERARY NOTICES.

Proceedings of the Fifteenth Session of the American Pomological Society, held in Chicago, Illinois, Sept. 8th, 9th and 10th, 1875. This is an excellently well executed Royal quarto of 206 pages, including 51 pages devoted to fruit catalogues, descriptions and copious indexes, in paper covers. The quality of the paper and the typographical execution are unexceptionable, and the matter of the highest pomological authority in the country. The proceedings of this society ought to be in the library of every horticultural and fruit-growers' society in our vast country, as a reference in determining many questions that could not well be determined without its aid, even by those tolerably expert in such matters.

We have only a very temporary access to a borrowed copy, but should we be fortunate enough to receive one of our own we shall avail ourself of the opportunity it affords to make such extracts as will be suitable to this locality. Twenty-six members are citizens of Pennsylvania, but as far as we can discover only two belong to Lancaster county, namely: Messrs. Henry M. and Hiram Engle, of Marietta; the former of whom is a member of the "General Fruit Committee," and the latter has deceased since the last session of the society.

Annual Report of the Secretary of Internal Affairs of the Commonwealth of Pennsylvania for 1874-5. Part 3, vol. 3. Industrial Statistics. This is a volume of 556 pages, of the same size as the Agricultural Report, and of equal quality and mechanical execution, and contains four large, folded, and remarkably well executed illustrations of coke-ovens and oil-wells of the State of Pennsylvania. Although perhaps not perfect in all of its details, it is an improvement on former reports from that office, and contains an immense amount of statistical matter, highly useful to the mercantile, mechanical, mining, farming and domestic interests of the Commonwealth, and should be accessible to all interested in such affairs. In its distribution we would repeat the suggestions we have made in reference to the Agricultural Report; although in neither case do we mean to say that copies should not be sent to other than those we have designated, especially to the editors, or at least the agricultural editors and publishers of the State. Copies of these works should also be placed in the Congressional Library, and the Agricultural Department, at the city of Washington, as representatives of the moral and material *status* of the Commonwealth.

Proceedings of the Pennsylvania Agricultural Society. A royal octavo volume of 617 pp. —including 61 pp. of the proceedings of the *Pennsylvania Fruit Growers' Society*—on fine white paper, a clear impression, and with twenty-nine well executed full-page plates, illustrating horses, cattle, sheep, swine, insects, grapes, apples, peaches, pears, plums, and dairy arrangements. This is Volume 10, and includes the proceedings of 1874 and 1875, the latter of which embraces detailed reports of the State Exhibition held at Lancaster in October last, and is by far the best volume published by the Society. It abounds in essays on agriculture, horticulture, bee culture, stock culture, entomology, botany, and various other subjects relating to husbandry. It also contains all of the transactions of the State Society during the years above named, and ought to be accessible to all the farmers of the Commonwealth. Eight thousand three hundred copies have been printed; and here we would suggest that the State Society, or those charged with the distribution of the work, should send at least one copy: *First*, to every agricultural and horticultural society in the Commonwealth; *Second*, to every scientific and literary association; and *Third*, to every public library in the State, before any distribution of the work is made among the members of the Legislature, as the best plan through which the work can be made accessible to those most interested in it, and not merely a political distribution among those who may never look into it. If they *are not*, these associations and institutions *ought to be* on record in the *Interior Department*, so that State documents may be intelligently and judiciously distributed.

THE GREAT AMERICAN ENTERPRISE A GRAND SUCCESS.

Hints to Centennial Visitors.

The opening of the great Exhibition on the 10th inst., was a grand success. The clouds of the morning broke away at nine, and the sun shone out in dazzling splendor. The city was astir at an early hour, and the streets leading to the park were soon thronged with every description of vehicle. The street cars were jammed. A constant procession of people moved along the sidewalks. The trains on every road hourly brought in their loads of expectant passengers. Philadelphia wore

A Holiday Appearance.

As you gazed up and down the long streets, flags streamed from almost every house, store and public edifice. Chestnut street was magnificent. For several squares in the vicinity of the Continental, that bright thoroughfare was one mass of gaudy bunting. Everywhere over the whole city, from thousands of flag staffs waved the stars and stripes, and the colors of every civilized nation on the globe. Before nine the people began to pass through the Main Building into the space between that and Memorial Hall, and in the course of the next hour occupied nearly all that vast area.

The Scene

at 10 o'clock was one of unusual grandeur. There on the immense platform on the south side of Memorial Hall sat the representative men of a great part of the civilized world—the President of the United States and the Cabinet, members of Congress, Governors of various States, officers of the army and navy in handsome uniform, foreign ambassadors in their rich decorations, Dom Pedro, of Brazil, and hundreds of persons prominent in business, science or office. Away across on another platform just north of the Main Building sat Theodore Thomas' splendid orchestra of 150 pieces, and directly behind them a chorus of one thousand voices. Between these two platforms, one dense mass of human beings. Above, the sun of Austerlitz. All around, the towering edifices, gleaming in glass, packed with the industry of the busy earth, and waving a gaudy flag from every pinnacle in the fresh breeze. It was an ennobling occasion, never to be forgotten. As the distinguished guests passed to their places, cheer after cheer arose from the multitude. It is now after ten, and all is ready.

Gen. Hawley

waved his handkerchief as a signal, Theodore Thomas took his baton, and the orchestra struck up "The Washington March," followed by the national airs of the principal countries of Europe and South America. The arrival of General Grant elicited a cordial demonstration. After the last exultant strains of the Grand March, written by Richard Wagner and performed by Thomas' orchestra, died away, Bishop Simpson arose and invoked the divine blessing on the occasion and the exposition, gratefully acknowledging God's favor to us in the past, and imploring the guidance of the Almighty in all time to come. The grand chorus then sang

The Centennial Hymn

written by Jno. G. Whittier, and set to music by John K. Payne, of Massachusetts. It has a sweetness and simplicity that falls tenderly on the ear. Perfect silence prevailed in the great concourse during its performance. Mr. John Welsh, President of the Board of Finance, now arose, and expressed his gratification in being able after so many anxieties and difficulties to present on behalf of the Centennial Board of Finance these buildings for the purposes to which they are to be devoted.

Mr. Dudley Buck, of Connecticut, then conducted the singing of the Centennial Cantata, written by Sidney Lanier, of Georgia. It is full of energy and expression, the music being finely adopted to the sense. The solos were sung by Myron W. Whitney, of Boston. His wonderful bass was the theme of general admiration. Besides its great range, every note rang in power over that extended space. He is equal in volume to an ordinary chorus.

The Presentation

of the exhibition by Gen. Joseph R. Hawley, President of the Commission, to the President of the United States, was the next feature of the programme. The following is Gen. Hawley's speech:

Mr. President: Five years ago the President of the United States declared it fitting that "the completion of the first century of our national existence should be commemorated by an exhibition of the natural resources of the country and their development, and of its progress in those arts which benefit mankind," and ordered that an exhibition of American and foreign arts, products, and manufactures should be held, under the auspices of the Government of the United States, in the City of Philadelphia, in the year eighteen hundred and seventy-six. To put into effect the several laws relating to the Exhibition, the United States Centennial Commission was constituted, composed of two Commissioners from each State and Territory, nominated by their respective Governors, and appointed by the President. The Congress also created an auxiliary and associate corporation, the Centennial Board of Finance, whose unexpectedly heavy burdens have been nobly borne. A remarkable and prolonged disturbance of the finances and industries of the country has greatly magnified the task; but we hope for a favorable judgment of the degree of success attained. July 4, 1873, this ground was dedicated to its present uses. Twenty-one months ago this Memorial Hall was begun. All the other one hundred and eighty buildings within the enclosure have been erected within twelve months. All the buildings embraced in the plans of the Commission itself are finished. The demands of applicants exceeded the space, and strenuous and continuous efforts have been made to get every exhibit ready in time.

By general consent the Exhibition is appropriately held in the City of Brotherly love. Yonder, almost within your view, stands the venerated edifice wherein occurred the event this work is designed to commemorate, and the hall in which the first Continental Congress assembled. Within the present limits of this great park were the homes of eminent patriots of that era, where Washington and his associates received generous hospitality and able counsel. You have observed the surpassing beauty of the situation placed at our disposal. In harmony with all this fitness is the liberal support given the enterprise by the State, the city, and the people, individually.

In the name of the United States, you extended a respectful and cordial invitation to the governments of other nations to be represented and to participate in this Exhibition. You know the very acceptable terms in which they responded, from even the most distant regions. Their commissioners are here, and you will soon see with what energy and brilliancy they have entered upon this friendly competition in the arts of peace.

It has been the fervent hope of the Commission that, during this festival year, the people from all States and sections, of all creeds and churches, all parties and classes, burying all resentments, would come up together to this birthplace of our liberties, to study the evidence of our resources; to measure the progress of an hundred years; and to examine to our profit the wonderful products of other lands; but especially to join hands in perfect fraternity and promise the God of our fathers that the new century shall surpass the old in the true glories of civilization. And, furthermore, that from the association here of welcome visitors from all nations, there may result not alone great benefits to invention, manufactures, agriculture, trade and commerce, but also stronger international friendships and more lasting peace.

Thus reporting to you Mr. President, under the laws of the government and the usage of similar occasions, in the name of the United States Centennial Commission, I present to your view the International Exhibition of 1876.

This was the most distinct address of the occasion, and was loudly applauded. Amid prolonged cheers,

President Grant

now advanced to the front of the platform and read his address:

My Countrymen: It has been the thought appropriate, upon this Centennial occasion, to bring together in Philadelphia, for popular inspection, specimens of our attainments in the industrial and fine arts, and in literature, science and philosophy, as well as in the great business of agriculture and of commerce.

That we may the more thoroughly appreciate the excellencies and deficiencies of our achievements, and also give emphatic expression to our earnest desire to cultivate the friendship of our fellow members of this great family of nations, the enlightened agricultural, commercial and manufacturing people of the world have been invited to send hither corresponding specimens of their skill to exhibit on equal terms in friendly competition with our own. To this invitation they have generously responded; for so doing we render them our hearty thanks.

The beauty and utility of the contributions will this day be submitted to your inspection by the Managers of this Exhibition. We are glad to know that a view of the specimens of all nations will afford you unalloyed pleasure, as well as yield to you a valuable practical knowledge of so many of the remarkable results of the wonderful skill existing in enlightened communities.

One hundred years ago our country was new and but partially settled. Our necessities have compelled us to chiefly expend our means and time in felling forests, subduing prairies, building dwellings, factories, ships, docks, warehouses, roads, canals, machinery, etc., etc. Most of our schools, churches, libraries, and asylums have been established within an hundred years. Burthened by these great primal works of necessity, which could not be delayed, we yet have done what this Exhibition will show in the direction of rivaling older and more advanced nations in law, medicine and theology; in science, literature, philosophy and the fine arts. Whilst proud of what we have done, we regret that we have not done more. Our achievements have been great enough, however, to make it easy for our people to acknowledge superior merit wherever found.

And now, fellow-citizens, I hope a careful examination of what is about to be exhibited to you will not only inspire you with a profound respect for the skill and taste of our friends from other nations, but also satisfy you with the attainments made by our own people during the past one hundred years. I invoke your generous co-operation with the worthy commissioners to secure a brilliant success to this International Exhibition, and to make the stay of our foreign visitors—to whom we extend a hearty welcome—both profitable and pleasant to them.

I declare the International Exhibition now open.

At the conclusion of the President's remarks the flag was unfurled from the central tower of the Main Building, the choir took up the Hallelujah chorus with orchestral and organ accompaniment, the distinguished guests passed from the platform into the Main Building, and the formal proceedings inaugurating the Exposition of 1876 were over. After moving through the main edifice the procession advanced to Machinery Hall. Under the direction of Geo. H. Corliss, the President of the United States and Dom Pedro started the mammoth engine, setting in motion eight miles of shafting and acres of machinery. The multitude now scattered over the grounds, visiting the various buildings.

The Crowd

was enormous. Perhaps on no other occasion in the history of this country have so many people been packed on one spot. The receipts for admission are placed at $100,000, which at fifty cents apiece, makes 200,000 persons. An extra 10,000 must be allowed for guests, exhibitors, reporters, and workmen. But the enclosed grounds—240 acres—are so ample that as soon as the conclusion of the opening ceremonies allowed the dispersion of the multitude, there was at once a feeling of freedom in strolling anywhere.

Everything passed off smoothly. No disorder and good humor ruled the occasion. There was a general gratification at the forward state of the exposition, the immensity of the buildings, and the variety of the display. America has every reason to be proud of this splendid enterprise. To the brave men who have so gallantly borne the burden of the undertaking, too much praise cannot be awarded. A lovelier scene for the purpose can hardly be imagined. The bright Schuylkill and its little steamboats, the old trees now putting forth their leafy beauty, the shrubs, grass-plots and flower-beds, the shaded dells and their murmuring rivulets, the graceful structures of every hue and design, the walks and drives with their moving masses, the bridges spanning the river, the city with its spires and domes in the distance—all produce a panorama of charming effect.

Hints to Visitors.

The first rush is over, and the Exhibition will henceforth be a kind of permanent museum for tourists through the summer. To those of our readers who have not been on the grounds, a few suggestions may be of value.

Be easy on the subject of good clothes. The floors and walks are very dusty, and black goods especially, soon become heavily coated. There is an attempt at sprinkling, but the heat and constant tramping, maintain a fine cloud in the air. Your common apparel will do very well. Your mind will be at rest. Besides, no one will notice what you have on. It is a Democratic place. Wear easy shoes if you would avoid aching feet.

Put up a lunch before starting. There are restaurants in the buildings and outside, but they are often crowded just at meal time, and you do not care to wait. Then, too, the charge for a small party will amount to a considerable sum. With your own supply you can find a shady spot and play pic-nic whenever the inner man makes the demand. Carry the lunch in a paper, and you will avoid the encumbrance of a basket on return.

It is useless to attempt to make a satisfactory tour of the buildings in one day. You can run through them all hurriedly, but cannot make a careful examination of one-hundredth of what is to be seen. Such a world of objects opens in every direction that you are bewildered. To the ordinary visitor, the Main Building with its curious things in the British, German, Egyptian, and other foreign departments, the Government Building with its insects, minerals, Indian relics, cannon, ships, stamps, and the operations of the army and navy, Horticultural Hall with its array of tropical plants, and Memorial Hall with it wealth of statuary and painting, will be most attractive.

The mammoth Corliss engine in Machinery Hall is, of course, one of the noblest objects on the spot, swinging its giant beams like a thing of life. The Pennsylvania building, thanks to the unwearied labor of Wickersham, has its pleasant rooms stored with a rich array of our educational triumphs. But it is hard to write about the Centennial, without making a catalogue, and we forbear. One day's visit will show you the folly of trying to do so much in so short a time, and you return resolved to start again in a month. Perhaps several short visits, at any rate, will be more refreshing than one continued through several days.

In every department the work of unpacking and arranging is still going on. There are vacant places everywhere yet to be filled; so that it will be much more satisfactory to visit the great show in the course

of two weeks, or even a month, than at present. Everything will then be in finished order. Fairmount park itself will be in the full glory of its summer bloom.

The best train to take from Lancaster is the one that leaves at 4:10 in the morning. This gives you a delightful ride in the early morning, and lands you at the depot at seven, not far from the Main Building. The whole day is thus at your disposal. You can take your choice of various afternoon or evening trains for your return. The next best train is the Harrisburg Express, at 7:50.

If you want to go from the exhibition grounds into the city, and avoid the crowded street cars, take a steam train at the Reading Centennial Depot, at the foot of the hill behind Memorial Hall, which leaves every fifteen minutes, and for fifteen cents you are promptly landed at Broad and Callowhill, at Ninth and Green, or at Richmond. These trains were running like clock-work on the opening day, but unfortunately few of our Lancaster visitors were aware of the facilities thus offered.

PENNSYLVANIA RAILROAD SCHEDULE.
Trains LEAVE the Depot in this city, as follows:

WESTWARD.	Leave Lancaster.	Arrive Harrisburg.
Pacific Express*	2:40 a. m.	4:05 a. m.
Way Passenger†	4:50 a. m.	7:50 a. m.
Limited Mail*	9:25 a. m.	10:30 a. m.
Hanover Accommodation.	9:30 a. m.	Col. 10:00 a. m.
Mail train via Mt. Joy	11:20 a. m.	1:00 p. m.
No. 2 via Columbia	11:20 a. m.	1:20 p. m.
Sunday Mail	11:59 a. m.	2:00 p. m.
Fast Line	3:25 p. m.	4:50 p. m.
Frederick Accommodation.	3:35 p. m.	Col. 4:15 p. m.
Harrisburg Accom	6:10 p. m.	8:10 p. m.
Lancaster train	7:35 p. m.	Col. 8:10 p. m.
Harrisburg Express	7:40 p. m.	9:00 p. m.
Pittsburg Express	9:10 p. m.	10:35 p. m.
Cincinnati Express*	11:30 p. m.	12:45 a. m.

EASTWARD.	Lancaster.	Philadelphia.
Atlantic Express*	12:40 a. m.	3:10 a. m.
Philadelphia Express†	4:10 a. m.	7:00 a. m.
Harrisburg Express	7:50 a. m.	10:30 a. m.
Lancaster train	9:28 a. m.	12:30 p. m.
Pacific Express*	1:10 p. m.	3:30 p. m.
Johnstown Express	3:05 p. m.	6:00 p. m.
Harrisburg Accom	5:50 p. m.	9:00 p. m.

The Hanover Accommodation, west, connects at Lancaster with Limited Mail, west, at 9:25 a. m., and will run through to Hanover without change of cars.

The Frederick Accommodation, west, connects at Lancaster with Fast Line, west, at 3:25 p. m., and runs through to Fredsrick without change of cars.

The Frederick Accommodation, east, leaves Columbia at 12:30 p. m., arriving at Lancaster at 1 p. m., connecting with Pacific Express at 1:10 p. m.

The Dillerville Accommodation leaves Harrisburg at 5 a. m., coming via Mt. Joy, and arriving at Lancaster at 9:05, connecting with Lancaster train.

The York Accommodation, leaving York at 6:22 a. m., connects at Columbia, at 7:18, with the train leaving Marietta at 6:52 a. m., at Lancaster with the Harrisburg Express at 7:50 a. m.

The Marietta train leaves Columbia at 6:30 a. m., and returning, leaves Marietta at 6:52, connecting at Columbia with the York Accommodation, and at Lancaster with the Harrisburg Express at 7:50 a. m.

The Pacific Express, east, on Sunday, will make the following stops, when flagged, viz: Middletown, Elizabethtown, Mt. Joy, Landisville, Bird-in-Hand, Gordonville, Leaman Place, Kinzers, Gap, Christiana, Penningtonville, Parkesburg, Pomeroy, Coatesville, Oakland, Gleu Loch, Malvern, Paoli, Eagle, Radnor, Upton, Villa Nova, Rosemont, Haverford College, Ardmore, Wynnewood, Elm, Merion, Overbrook, Hestonville and Mantua; Lancaster and Downingtown being regular stations.

*The only trains which run daily.
†Runs daily, except Monday.

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Prof. S. S. RATHVON, Editor. LANCASTER, JUNE 15, 1876. PEARSOL & GEIST, Publishers.

THE FARMERS HOME ORGAN.

The Lancaster Farmer;

A MONTHLY NEWSPAPER,

DEVOTED TO AGRICULTURE, HORTICULTURE, DOMESTIC ECONOMY AND MISCELLANY.

PRACTICAL ENTOMOLOGY

Made a prominent feature, with special reference to the wants of the Farmer, the Gardener and Fruit-Grower.

Founded under the auspices of the Lancaster County Agricultural and Horticultural Society.

Edited by Prof. S. S. RATHVON.

THE LANCASTER FARMER has now completed its seventh year—the last having been under the auspices of the undersigned as publishers. When we assumed the responsibility of the publication one year ago, it was with a determination to make such improvements during the year as would place the Farmers' Organ of this great agricultural county in the very front rank of publications of its class. That we have done so, our readers will bear cheerful testimony. But our work of improvement is only fairly begun. We propose to make the volume for the Centennial year still more interesting and valuable than its predecessor for 1875. In this, however, we need the co-operation of every friend of the enterprise. To make it a success, every one who now reads THE FARMER should at once send us at least one new subscriber.

The contributions of our able editor, Prof. RATHVON, on subjects connected with the science of farming, and particularly that specialty of which he is so thoroughly a master—entomological science—some knowledge of which has become a necessity to the successful farmer, are alone worth much more than the price of this publication.

THE FARMER will be published on the 15th of every month, printed on good paper with clear type, in convenient form for reading and binding, and mailed to subscribers on the following

TERMS:

To subscribers residing within the county—

One copy, one year,	$1.00
Six copies, one year,	5.00
Ten Copies, one year,	7.50

To subscribers outside of Lancaster county, including postage pre-paid by the publishers:

One copy, one year,	$1.25
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CONTENTS OF THIS NUMBER.

Old Sayings—Wise and Otherwise.

BY MRS. M. A. KIDDER.

"As poor as a church mouse,"
"As thin as a rail,"
"As fat as a porpoise,"
"As rough as a gale,"
"As brave as a lion,"
"As spry as a cat,"
"As bright as a sixpence,"
"As weak as a rat."

"As proud as a peacock,"
"As sly as a fox,"
"As mad as a March hare,"
"As strong as an ox,"
"As fair as a lily,"
"As empty as air,"
"As rich as Crœsus,"
"As cross as a bear."

"As pure as an angel,"
"As neat as a pin,"
"As smart as a steel trap,"
"As ugly as sin,"
"As dead as a door nail,"
"As white as a sheet,"
"As flat as a pancake,"
"As red as a beet."

"As round as an apple,"
"As black as your hat,"
"As brown as a berry,"
"As blind as a bat,"
"As mean as a miser,"
"As full as a tick,"
"As plump as a partridge,"
"As sharp as a stick."

"As clean as a penny,"
"As dark as a pall,"
"As hard as a mill-stone,"
"As bitter as gall."
"As fine as a fiddle,"
"As clear as a bell,"
"As dry as a herring,"
"As deep as a well."

"As light as a feather,"
"As hard as a rock,"
"As stiff as a poker,"
"As calm as a clock."
"As green as a gosling,"
"As brisk as a bee—"
And now let me stop,
Lest you weary of me.

How an Irishman Did It.

A Yorkshireman having killed a pig, and not wishing to divide with his neighbors, as was the custom, said to his man (who, by the way, was a son of the Emerald Isle):

"Pat, if I give all the neighbors who have given to me a piece of their pork I'll have none for myself. Can you tell me what I am to do?"

"Bedad, sir," said Pat, "it's meself that can do that same thing."

"Good," said the Yorkshireman, rubbing his hands and looking at Pat. "Now tell me what I am to do."

"Faith, sir," said Pat, "sure and when the crathur is cleaned just be afther hanging it against the door where ivery mother's son of them will see it, and early in the morning, before any one is about, get up and take in your pig and hide it away. Thin when your neighbors come be afther telling them that the pig was sthole."

"Capital idea, Pat!" said the Yorkshireman, "I'll do it."

So when the pig was cleaned it was hung up outside, so that the neighbors might see it. The countryman anxiously awaited the approaching night, and at last retired to bed, but not to sleep. Pat, under the cover of the darkness of the night, crept round the house and stole the pig.

The astonishment of the Yorkshireman when, at early dawn, he arose to hide away the pig, but found no pig there, can be better imagined than described. Pat came in with his "Top of the mornin' to ye, sir," and giving him a knowing wiuk, said:

"Master, how about the pig?"

"Well, Pat, the pig was stolen in reality."

"Faith, and that sounds just as natural as if you had lost your pig," said Pat, with another knowing wink.

"But, you blockhead, I tell you the pig *was* stolen."

"Faith, and the sorra a bit o' me thought you could act so well. Just stick to that; its natural as life."

"But," roared the now irate Yorkshireman, "I tell you the pig *was* stolen."

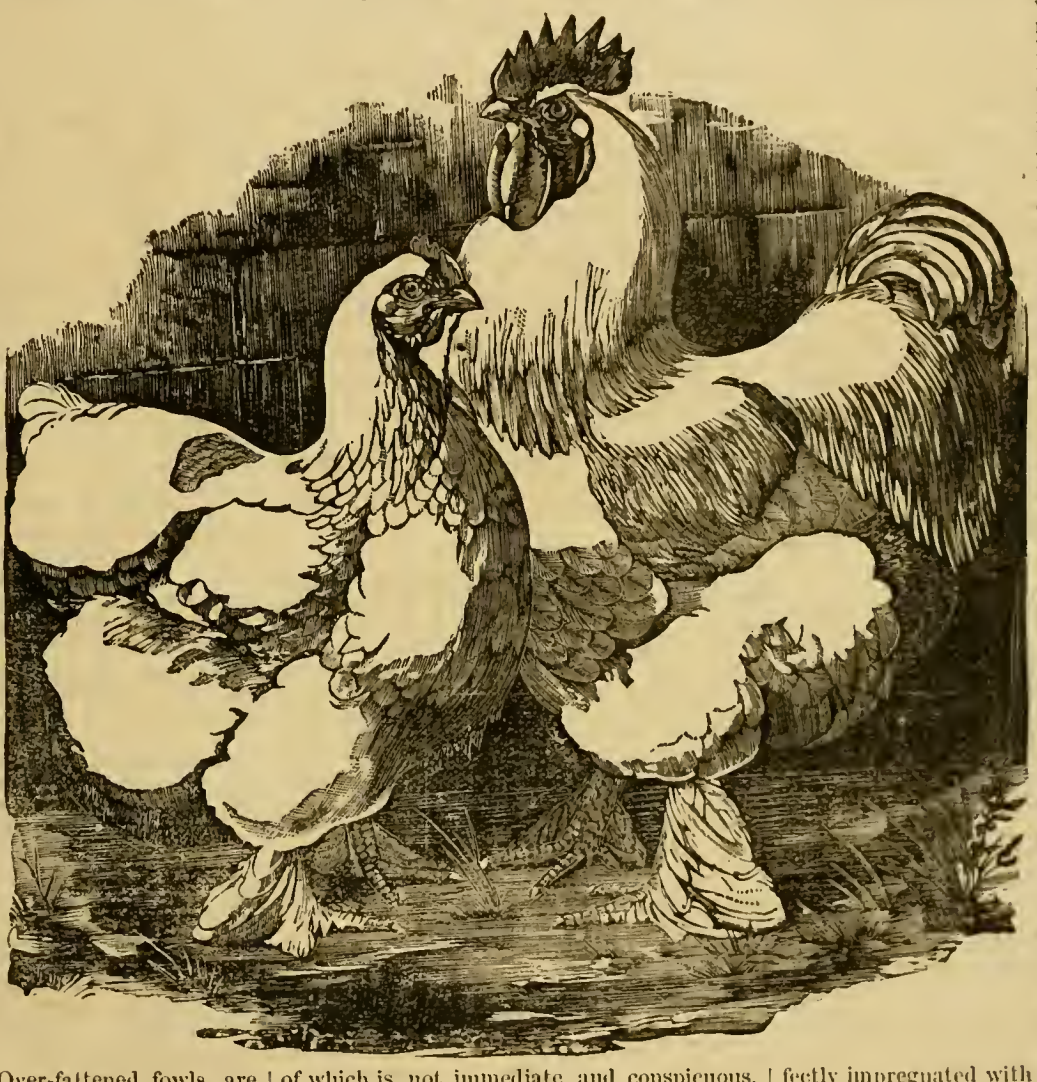
"Ooh!" said Pat, "stick to it, and your nabors will believe you, and sorra a bit of it they'll get. I didn't think you could do it so well!"

The Lancaster Farmer.

Prof. S. S. RATHVON, Editor. LANCASTER, PA., JUNE, 1876. Vol. VIII. No. 6.

WHITE COCHINS.

The accompanying cut portrays a pair of fowls that can not fail to win a second glance on the score of beauty and striking contrast. But strong as is the contrast between the snowy whiteness of the fowl and the densely dark back-ground of the cut, it but poorly illustrates the exceeding beauty of these fowls when scattered over a well-kept green lawn. Then not only is the grandeur of the stately White Cochin walking on the park grass attractive, but also, if in prime condition, there will be an exceeding bright redness of the firm, erect comb and long pendant wattles. Then, take them all-in-all, with their large, heavy, yet symmetrical bodies, their dignified bearing and a more stately and grand fowl could scarcely be demanded. And yet with all their attractions, they are comparatively an easy breed to produce, to a goodly degree of excellence, and are in this respect well suited to the amateur. For their plumage being uniformly white, they do not offer all those ceaseless troubles of breeding and mating which are necessary to the production of correct feathering in the parti-colored fowls. However, there is even here considerable work to be done which will not allow any indifference on the part of the breeder. Although they are throughout, or rather *should be*, a pure, spotless white, free from any intermingling of black or colored feathers, yet there are different degrees of purity of the white, and sometimes they will incline towards a straw color. Only the richest, clearest birds should be retained as breeders. White Cochins should have bright yellow legs, and should be well feathered down to the tips of the toes. They should be of a large size, heavy frame, but not inclined to carry a surplus portion of fat except when prepared for market. Over-fattened fowls are profitable only to kill. They are never afterwards worth their keep for egg-producers. The White Cochins usually lay well—especially in winter, when most needed. They are, like all their Asiatic cousins, inclined to sit, and are, of course, sometimes too heavy and clumsy for thin shelled eggs. They are very easily kept. Although we have always allowed ours the unlimited range of a farm where there were no other breeding fowls, and thus secured greater fecundity for the eggs for sitting; yet they are capable of being confined and bred successfully within very small inclosures. The fence surrounding their yard need only be three or four feet high unless there is danger of the "high flying" breeds from without flying in and thus crossing the stock. The hens lay good-sized eggs of different shades of color. The cock is generally a vigorous bird, and well able to care for fourteen to eighteen hens. By allowing him this number, the hens will not be so continually fretted and injured by his attentions.—*W. Atlee Burpee, Philadelphia, Pa.*



THE COLORADO POTATO BEETLE.

Reports reach us every day, from many parts of the county, of the threatening increase of this destructive enemy of the potato vines, and many anxious inquiries are made, just as if nearly all the papers of the county and the entire country had not been harping on the same string, for the past two years, at least. In fact our people are too indifferent about that kind of philosophy which teaches that "an ounce of prevention is worth a pound of cure." They seem to give little heed to any evil, the danger of which is not immediate and conspicuous. Any intelligent cultivator of the soil, and who has given only a little attention to the increase and destructiveness of noxious insects, must have known, long before this time, something about the history and the habits of the Colorado potato beetle, and what ought to be done to arrest its destructive progress, if he reads, heeds and practically tests the various remedies which have from time to time been suggested or recommended.

We don't ask him to *believe* all he reads or hears said upon the subject; we only ask him to *observe* for himself, and to *do* as his good sense shall dictate in the premises; and if he does this faithfully, we feel sure it will not be long before he finds out *what* to do, *how* to do it, and *when* the most effective time will be to circumvent the enemy of his potato crop. But if he desires to be thoroughly posted upon the subject, and to save valuable time and much corroding anxiety, we would advise him to subscribe immediately for our local agricultural journal—THE LANCASTER FARMER—a paper that seems to have a greater reputation abroad than it has at home—commended both by England and the continent of Europe—and also to get the entire volume for 1875—sets of which can be had at the usual price from the publishers—and we recommend this volume particularly because it contains a very full illustrated history of the potato and other destructive beetles, and what is necessary to be done to prevent their depredations.

Both the possibilities and probabilities of this pernicous pest have been thoroughly discussed in the county of Lancaster for two years or more, but because they have not yet been universally realized, many of the people have accustomed themselves to regard the whole thing as mere talk. What we have said at any time has been based, first upon the experiences of the intelligent farmers and publishers of the west, where this beetle has been depredating for the past fifteen years or more, and from our own experience since their advent in Lancaster county, assisted by our knowledge of the habits of the family of insects to which they belong, their procreation, transformation, gormandization, and adaptation to varying circumstances. We hesitate not to assure our readers that they are as fatal to the products of the soil, as the cancer to the human system, and if neglected, about as difficult to eradicate. Perhaps they may be more aptly compared with the "Canada thistles." There is no safety against their germination and increase, so long as a single fibre remains in the soil. The soil in some places at this time seems to be perfectly impregnated with them, and the past mild winter has been rather favorable to their successful hybernation. During the early and late spring they lay dormant, only coming abroad on warm days just to see how the "land lay," but now as the weather has "warmed up" and the potato tops are appearing, the beetles are ditto.

Potato growers, both in town and country, cannot too soon nor too earnestly go to work *now*, and begin the work of extermination, if they have not already begun it some ten days ago. Turn out the boys and girls, and forestall the pest by vigorous hand-picking while yet the ground is comparatively bare of vegetation. If you have large fields, of course you will have to resort to poisons, the most effective of which is *Paris Green*, and to know how

and when to use it, subscribe for THE LANCASTER FARMER. This and various poison remedies may be applied dry or in a liquid solution, or suspension, and if as a liquid, *Peck's Liquid Atomizer*, advertised in the May number of THE FARMER, seems to well adapted to the purpose, and ought to have an earnest and honest examination and trial. Also, *Anthony Iske's Bug Trap* ought to receive attention by those who are averse to poison, for depend upon it, something *must be done, done well, and done now.*

If the people persist in regarding the history, habits, and perpetuation of noxious insects with indifference, a time may come in our economic history when it may become necessary to make such indifference a civil crime, liable to fines and punishments. If a law can be enacted and enforced *not to do* certain things—such as killing birds, etc.—certainly a law *to do* certain other things—killing bugs, for instance—would be equally within the sphere of legislation. In conclusion, we would direct the reader to the 10th volume of the State Agricultural Report, as containing illustrated histories of the Colorado beetle and other noxious insects, 8,300 copies of which have been published for distribution, but a pamphlet of 25,000 or 30,000, containing those papers, would not have been too many for the farmer population of the great State of Pennsylvania.

CABBAGES, (Brassica Oleracea.)

Broccoli

Is another variety of cabbage, inferior to the delicate cauliflower only, and which it much resembles in appearance, growth and flavor. It is supposed to have originated on the island of Cyprus, in the Mediterranean, and has been greatly improved by cultivation. The name by which it is generally known is derived from the Italian language, and, indeed, we know that it was first carried to Great Britain from Italy. The several sub-varieties which have been produced by chance or intentional hybridization, differ greatly as to the color of their heads, some being yellow, while others are white, purple, etc. As broccoli can be raised more easily and with greater certainty than the cauliflower, it is becoming very popular, especially among small gardeners. The following kinds are considered among the best, viz.: *Grange's Early Cauliflower*, *Early Purple Cape*, and the *Early White Cape.*

Culture.

Market gardeners are accustomed to sow the seed in the latter part of summer, and, at the approach of winter, to set the plants in a cold frame for protection through the cold weather, in the manner directed for cabbage. These plants are to be removed to the open ground in spring and carefully cultivated, by which means heads suitable for cooking are to be expected as early as the month of June.

It is most common in this latitude, however, to wait until April or May, according to the character of the season, before sowing the seed, one ounce of which yields about four thousand plants. In the Southern States the summer frequently proves too hot for the early-planted broccoli to come to perfection, and there the seed can be sown about the middle of July, on shaded borders, to be watered occasionally, if the weather be dry. In about a month's time the plants will be of a proper size for removal to a large bed.

The soil ought always to be mellow and rich, having an open exposure. Sow thinly in shallow drills, six inches apart, and, if the surface be light and dry, press it down compactly by means of the roller, or by walking over a board placed lengthwise of the bed. Should the weather continue dry, some delay in the vegetation of the seed will probably be experienced. The soil may then be sprinkled with water every two or three days until the plants appear, or it may be covered during the day time with a thin layer of straw or light mats. In the latter case, the covering should be removed at an early hour in the evening, that the natural deposit of dew may not be interrupted. Transplanting can be performed in June or July, when each stem shows five or six leaves. Set the plants out in rows, two feet apart each way. The work is best performed in dull, damp weather, and water ought to be given occasionally in moderate quantities until the roots become established, as well as subsequently during times of drought.

The after-culture consists in hoeing the ground frequently and in the destruction of weeds as soon as they make their appearance. In the course of a fortnight or three weeks after transplanting, the earth should be drawn up to the stems in such manner as to form a kind of shallow basin around each. Broccoli will not flourish unless it receive considerable attention from the gardener. It is much annoyed, and oftentimes destroyed, by insects; the attacks of which must be guarded against by the use of snuff, charcoal, ashes, air-slacked lime, etc., sprinkled upon the plants when they are wet with dew or water from a watering pot. The earliest heads from the open air sowing will be of a suitable size for the kitchen in September or October, and, in favorable seasons, a regular supply may be expected from that time until the coming of hard frost.

In the Southern States the winter is mild enough for the plants to remain undisturbed in the open garden, where they will continue in bearing until April. In this part of the country, in the latitude of New York, some protection is necessary. The plants are taken up at the commencement of cold weather, and set in trenches, with the stems buried up to the lower leaves. A cold frame may be set over the ridges, or they can be enclosed by any rough box or boards that has a gentle inclination of the roof sufficient to turn off rain. Boards or shutters may be used for the roof, instead of hot-bed sashes. When the frost becomes severe, throw some loose straw over the plants. In mild, pleasant days, the covering should be wholly or partially removed for the admission of fresh air. In this way fine heads can be gathered from time to time during the winter and spring. The protection ought to be gradually removed when the weather becomes warm. Or the plants can be set out in a shed, or in a light, dry cellar, without the cold frame. Frozen heads should be covered up so that they may thaw slowly, by which means their flavor will be less impaired.

For Seed.

Reserve a few of the best and earliest plants and set them out in April. Water frequently, and the heads open, remove all the shoots except four or five of the best, which will need support by a stake. The seed ripens in September and ought to be perfectly dry before being beaten from the pods. American broccoli seed is sometimes in demand for exportation, but American gardeners generally make use of that which comes from England or France, while in England the Italian seed is preferred.

Use.

Broccoli is not only a very pleasant but also a very wholesome vegetable. It is prepared for the table in the same manner as the CAULIFLOWER, to which the reader will please refer.

CAULIFLOWER.

"Of all the flowers in the garden," said Dr. Johnson, "I like the cauliflower the best." It is the most curious as well as the most delicately flavored of the numerous varieties of the cabbage family. The white flower-buds form a large, firm head, surrounded by long green leaves—being something like a "giant rose wrapped in a green surtout." Its history is not so well known as that of some other plants less valuable in the culinary department. On its being introduced into England from the island of Cyprus, about the beginning of the seventeenth century, much attention was paid to its culture, by which means its appearance and character have been greatly improved. In our own country it is much less known than its merits deserve. To show what an enormous size it can be made to attain under skillful management, we mention a single plant raised in the garden of the late Hon. Peter C. Brooks, Medford, Mass. The bare flower measured thirty-eight inches in circumference and weighed six pounds and five ounces. Its culture is attended with not a little anxiety and trouble, but not by any means sufficient to discourage any enterprising man from the labor. It is not one of the fancy vegetables, and we think it ought to occupy a prominent place in every garden that is worthy of the name. There are two sub-varieties, viz: the *Early* and the *Late*, or *Large*—which will afford a succession of crops.

CULTURE.—For the early crop, the seed—one ounce of which will afford between three and four thousand plants—should be sown in the middle of September, in the manner directed for CABBAGE. If the weather be dry, a little straw kept upon the bed until the seed has sprouted, and subsequently an occasional watering, will prove of great advantage. When the plants have acquired a height of two or three inches they must be thinned out to distances of four inches, so that they may acquire a good, strong growth before cold weather. About the first of October, a piece of ground is to be selected for the cold frame. It ought to be in a warm, sheltered situation, spaded deep, and heavily manured. After being laid into a bed of suitable size, the surface should be finely pulverized and raked smooth. In the course of a week the frame is to be placed over this bed, with a bank of earth upon the outside, in order to prevent sudden alterations of temperature within. When the ground becomes settled, take up the plants from the seed bed, by means of a trowel, and set them in a frame about four inches asunder. Give a gentle sprinkling of water, but do not attempt putting on the sashes or shutters until the weather actually demands it. The longer it can be delayed with safety, the stronger and healthier will be the plants. During very severe weather, the further protection of mats or straw will be necessary; but, to prevent a weak, spindling growth, air must be freely given on every clear day. There is much more danger of injury from close confinement than from moderately low temperature.

Where such accommodations cannot be afforded, and early plants are desired, recourse must be had to a hot-bed, made somewhere about the beginning of February. Should they come up too thick, they ought to be thinned out to distances of four inches, and the surplus ones can, if desired, be set in another bed. The leading direction for the management of the frame is simply to keep the heat at such a degree that the stems and leaves will have a bright green color. To affect this a good supply of light and fresh air are required at all times when the weather will admit of the sashes being raised.

In the middle of spring, or as soon as the gardener deems it prudent, preparations must be made for removing a portion of these early plants from the cold frame or hot-bed to the open ground. The soil should be rich and mellow. In order to secure a succession of crops two beds may be selected—one having a warm, southern exposure, with shelter on the northwest, and the other in the open compartment.

In taking the plants from the frame, some of the very best ought to be left standing, in rows about eighteen inches apart each way. By the protection of mats in cold days and nights, together with extra care in their cultivation, these will come to maturity much earlier than those which are removed. The trowel is a very valuable implement for the work of transplanting, as the roots can be taken up with slight injury. The balls of earth may be set out at distances of eighteen or twenty inches. If the plants in the bed having the southern aspect are covered with hand-glasses, flower-pots, vine shields, or even common wooden boxes, during cool, frosty weather, in maturing, they will succeed those left in the frame, and be several days in advance of those in the open compartment.

By a little management like this the cauliflower season can be much extended; and a result so desirable is well worth the gardener's serious attention.

In case the reader cannot raise plants in autumn or winter, and is unable to obtain them from some more fortunate neighbor, or a nurseryman, he must be content with a late crop. The seed is to be sown from about the middle of April to the beginning of May, and the plants, when four or five inches high, are to be set out like cabbages, in rows two feet apart each way. From unfavorable weather the crop is somewhat uncertain.

The hills for the cauliflower ought to be hollowed upon the top like a shallow cup or basin, that they may be better able to collect moisture. The thorough and frequent use of the hoe is very essential. When the season is dry the plants need artificial watering at least every other day. They ought not to suffer from the drought—a circumstance that will be indicated by a drooping of the leaves, reminding the gardener of his negligence. The head, which it will be remembered, is the edible part, and esteemed for its tenderness and delicacy, can be finely blanched by bending over the leaves or tying them loosely together with a string. Where the whole crop threatens to come to maturity at the same time, a portion may be retarded by the same method. In every season the cultivator must carefully guard against the extremes of heat and cold as well as of drought and moisture.

Late plants, which at the approach of cold weather have no appearance of blossoming, are sometimes removed to a warm cellar, where they will perfect themselves as if in the open ground, and continue in season throughout the greater part of winter. The operation is best performed on a damp, cloudy day, and the roots should be taken up with large lumps of dirt attached. The heads will gradually acquire a good size and be equally good with those taken from the hot-bed.

For Seed.—Set out, in spring, some of the finest-looking heads—the flower buds of which are firm and close. Support the stems and gather the best seed as it ripens. As with all the members of the *Brassica* family, particular care must be taken to prevent intermixture. We would refer the reader to our article on "Saving Seed,"* to be found in the first part of the book, for some valuable hints on this subject.

Use.—We have already quoted the remark of Dr. Johnson about the cauliflower. As far as our own opinion may be worth anything, we do not hesitate to place this in the very front rank of culinary vegetables. Nothing is more inviting to our palate than a good head which is brought to the table well cooked and properly seasoned. It is wholesome and nourishing, especially for invalids, and makes a very ornamental dish.

To Boil.—The head should be cut with most of the surrounding leaves attached, which are to be trimmed off when the time comes for cooking. Let it lie half an hour in salt and water and then boil it in fresh water for fifteen or twenty minutes, until a fork will easily enter the stem. Milk and water are better than water alone. Serve with sauce, gravy, or melted butter.

To Pickle.—Place the heads in a keg and sprinkle them liberally with salt. Let them remain thus for about a week, when you may turn over them scalding hot vinegar, prepared with one ounce of mace, one ounce of peppercorns and one ounce of cloves to every gallon. Draw off the vinegar and return it scalding hot several times until the heads become tender.—*Schenck's Gardener's Text-Book.*

The use of this vegetable is only another instance of that cultivation of *taste*, to which we have frequently alluded elsewhere in the columns of this journal, and its introduction and culinary preparation will always be in proportion to the cultivation of the popular taste. We say this, by no means in disparagement to that taste to which the cauliflower may be repugnant, because we do not allude so much to the *refinement* of taste as we do to a *change* in the taste of a community, whether it be regarded as *progression* or *retrogression*. The cauliflower has been cultivated for many years in America, and yet there is comparatively little of it seen in the gardens or on the tables in Lancaster county. Its chief consumption here is in the form of a pickle, which constitutes an important item in the list of *Fancy Groceries* almost everywhere.

*We will publish the chapter on "Seeds" referred to, in a timely subsequent number of The Farmer.

SOMETHING ABOUT "FIR-TREES."

[From Philip Miller's *Gardeners' Dictionary*, published in London in the year A. D. 1731.]

As many things during this, our "Centennial year," will be "told as a tale long past," we will occasionally find something on agriculture, horticulture, or other subjects kindred thereto, to place in contrast with 1876, just to illustrate how much more is known about these things *now* than there was *then*.

Mr. Miller's *Dictionary* commences with

"Abies: The Fir Tree. The name is derived from *Abeo*, because it advances much in height; and for the same reason it is by the Greeks called *promnoc, i. e.*, to extend in height; or, as others say, of *Abeo*, to go away, because the bark goes away, or is broken off. *It is evergreen; the leaves are single and produced on every side of the branches; the male flowers (or catkins) are placed at remote distances from the fruit on the same tree; the seeds are produced in cones, which are squamose;* that is, covered with scales."

The *species* of this tree, which are at present to be found in English gardens, are:

1. "The Silver, or Yew-leaved Fir-tree—*Abies taxifolio; fructu sursum spectante;*" that is, the fruit growing upward, and an object worthy to behold.

2. "The common Fir, or Pitch-tree; sometimes also called the Norway or Spruce Fir—*Abies tenuiori folio; fructu deorsum inflexo;*" fruit bowing or bending downward; or up and down.

3. "The Virginia Fir-tree, with small, roundish cones—*Abies minor: pectinatis folus; Virginiana; conis parvis subrotundis;*" leaves pectinated, like the teeth in a comb, cones small and somewhat roundish.

4. "The Yew-leaved Fir-tree, with long hanging cones, commonly called the long-coned Cornish Fir—*Abies taxifolio*, variety; *fructu longissimo deorsum inflexo;*" as already indicated, the fruit or cones long, and bending or bowing downward.

5. The Pitch-leaved Fir-tree, with small cone—*Abies piceæ folus brevibus; conis minimis;*" leaves small and pitchy, and the cones of the smallest size.

6. "The shortest Pitch-leaved Fir-tree, with loose cones—*Abies piceæ folus brevioribus; conis parvis binucialibus laxis;*" leaves pitchy and very short, cones loose and of about an inch in length; or an ounce in weight.

7. "The Balm of Gilead Fir—*Vulgo; abies, taxifolus*, variety: *odora Balsami Gileadensis;*" having the odor of the Balm of Gilead.

8. "The Yew-leaved Fir-tree, with round cones, by some also called the Balm of Gilead Fir—*Abies taxifolio*, variety: *fructu rotundiore obtusa;*" cones, or fruit, rounded and obtuse.

"The first and second sorts of these firs are very common in most gardens, and plantations of evergreen trees; and the second sort is very common in the woods of *Norway*, and is the tree that affords the red deals. These trees were (not many years since) much esteemed for ornaments in evergreen gardens; but the leaves and lower branches decaying, and soon falling off, so as to render the under part of the tree bald and unsightly, together with their destroying everything that grows under them, they are not at present in so much request."

"The third sort Dr. Plukenet mentions to have been formerly growing in the Bishop of London's garden, at Fulham, but hath been since destroyed, and hath been retrieved again from seeds sent from New England by Mr. Moore, which were sown by Mr. Fairchild, of Hoxton, who raised several plants from them, and finds it hardy enough to resist our severest cold in the open ground."

"The fourth sort was brought, many years since, from America, and was planted in Devonshire, where are now large trees of this kind, which annually produce ripe seeds, from whence the gardens near London have been supplied. The tree grows to be very large, and makes a beautiful figure, the under part of the leaves being of a whitish, and the upper part of a glaucous, or sea-green color, and the leaves are closely set upon the branches. This tree is also very hardy."

"The fifth and sixth sorts were also brought from America, and planted in Devonshire and Cornwall, and are, by the inhabitants of those counties, used to make spruce-beer, and are by them called the 'spruce-firs; but since any of these sorts may be used for the same purpose, the appellation doth no more belong to these than any other of the kinds. These trees grow much closer and thicker than the common fir; nor are their branches and leaves so apt to decay and fall off, which renders them more valuable."

"The seventh and eighth sorts are promiscuously called the Balm of Gilead firs, but they are very distinct, according to the branches which I had sent me from Devonshire and Cornwall. The seventh sort Mr. Ray mentions in the supplement to his *History of Plants*, as growing in the Duke of Beaufort's Gardens at Badmington. It was also in the Bishop of London's Garden at Fulham, some years since. This sort produced long cones, which are sharp pointed, and stand erect upon the branches, emitting a large quantity of resinous matter; the branches grow flat, and the leaves are very short."

"The other sort produces cones somewhat like those of the cedar of *Libanus;* the leaves are of a darker green, and are produced thicker on every side of their branches, so that it is one of the beautifullest trees of all the fir kind."

"The leaves of these two trees being bruised between the fingers, emit a very strong balsamic smell, which hath given occasion to some to believe that the Balm of Gilead was an exudation from one of these trees, from whence they received their names; but this is known to be a mistake, that curious balsam being the production of a tree very different from this class.

The various uses of these trees, either in medicine or mechanical uses, are too many to be here enumerated, but whoever hath a mind to see these things at large, may turn to *John Bauhin's History of Plants*, vol. 1. page 231, or to *Ray's History of Plants*, where they will meet with an ample account of them."

Then follows a list of the *pines* under cultivation in English gardens at the same period, and a long dissertation upon the cultivation of *firs* and *pines*. It will be observed that at least three of the species of firs cultivated in England prior to 1731, (one year before Washington was born,) were obtained in *America*, and one of them, then already long ago, or "many years since," from *Virginia*.

In Josiah Hoopes' excellent "Book of Evergreens," growing in, or capable of being cultivated in, the territory of the United States, he enumerates and describes eighty-one distinct species of firs, and forty-seven varieties; these latter differing almost as much from each other as the species do. These evergreens are better known in our country or at least in many parts of it, under the common names of "spruce," or "sprucepine," and the above numbers do not include any belonging to the genera *Pinus Cedrus, Juniperus*, &c. This may sufficiently illustrate the progress that has been made since Philip Miller's time, in botanic discovery, nomenclature, classification, and systems of cultivation and reproduction, and fairly contrasts now and one hundred years ago.

The sticklers for long, explanatory, *English*, common names in natural history, instead of short, expressive *Latin* ones, would find their desires gratified in this old *Dictionary* of over a hundred years ago; but even then, as now, it appears that the misnomers in these common names already caused "mistakes," and created confusion; still, when we reflect upon

their limited opportunities, we are compelled to admit that our ancestors knew much more about these things than we are accustomed to giving them credit for.

The *Evergreens*, or *Conifera*, are an interesting group of the vegetable kingdom, and Mr. Hoopes' book has done much in illustrating, classifying and facilitating their study, and has supplied a want that had been long in existence, although time may suggest additions and improvements in some of its details. Of course we cannot on this occasion add anything on the subject of their cultivation, either in Philip Miller's day or at the present time, for this would involve a labor far greater than we are now able to render, nor would any general remarks be very satisfactory in a specific application. We have retained Miller's peculiar orthography and punctuation, but we have suppressed most of his capitalization, in order to adapt it more to the taste of the modern reader; but seeing that he wrote one hundred and forty-five years ago, his style is not so faulty as many of the more modern compositions on the same subject. Our main object in transferring these papers to the columns of THE FARMER is to give character to our *centennial volume* in its efforts to contrast the present and the past in *arboriculture*.—ED.

PACKING EGGS.

We again have the egg season upon us in full swing, and once more we have a few words to say upon the subject, but it is more to packing of the eggs that we would refer on this occasion. Every one nearly has their pet way of sending their eggs, and doubtless there is something to be said for each system, whether boxes or baskets, chaff or hay, be in use. We would not pretend to dictate, or to say that any way is especially superior to another, for we should be inundated with letters from indignant egg-packers, each exemplifying their assertion in praise of their own method by some wonderful successes, and we should believe them, for we have known eggs to hatch, and hatch well, which have been packed in divers ways. Perhaps the most remarkable of all cases which have come under our own knowledge is when twelve eggs were brought from Malta in a *pie dish*, and eleven of them hatched. We actually saw the chickens and know it to be true.

In just touching on the various ways of packing in use we would only put our young hands on guard against faults they may be led to commit. Where boxes are used the labels must be nailed on before the eggs are placed in them, and the lid be screwed down, not nailed. Although we have known eggs hatched in boxes where nails have been used, still it is a great chance if the eggs do not get jarred by hammering. Then the points of the nails used for fastening down the label should be clenched on the under side, or the points might run into the eggs; for only last week we had a package of eggs from a gentleman where the utmost care had been taken to screw down the lid of the box, but the label had been afterwards fastened down with inch nails and had penetrated the shells of several eggs. We cannot, consequently, recommend amateur packers to be too careful over this. Then every egg should, in our opinion, be securely wrapped in a piece of paper; it helps so much towards guarding the eggs from being jarred in transit. But even here we know of one of our greatest Dorking breeders who has marvelous success with the eggs he sells, and who simply places the eggs in chaff and ties down the box lid, using neither nails nor screws; and we saw a letter the other day from a gentleman in Jersey, stating that he had hatched nine chickens from twelve eggs so packed; but the secret here is the string—we are convinced of it. It makes something for the many hands a parcel of this kind has to go through to hold by, and this is the greatest point of all. We would urge on every one, never mind whether you pack in hay, or chaff, or sawdust, or moss, let the box or basket, whichever is used, have a handle, either made of string on the box, or of wicker on the basket, but let there be a handle. No one but an eye witness has any conception how a handleless package gets knocked about. One porter passes it to another, and perhaps he to the guard; or it has, may be, to go by a carrier, or a servant is sent to the station for it, and so the harm is done. It is not the distance does the injury, but the knocks and tumbles the packages get. Now, if they all had handles they would in most cases certainly be taken up by them, and the chance of eggs hatching would be greatly increased.

As we said, we wish to disparage no pet ways of packing, but we would venture to warn our friends against the use of bran, oats, or sawdust—that is, when they are used alone; for however full the packages may be filled with such mixtures, a long journey will shake the contents down much closer, and the eggs will very probably come in contact, when they will necessarily be cracked, and the contents running out from one or two so cracked eggs might ruin a whole sitting. We have, moreover, ourselves seen eggs in a package pierced by the sharp ends of oats; but this would not often be the case except in very thinly-shelled eggs, and such should not be sent out at all as a rule. One or two of our friends use moss, and we believe with immense success, but even then we should always recommend the box being lined with good and soft hay first.

In the use of baskets we have noticed so many which are with a small bottom, sloping up to a larger top; but these baskets are so liable to tilt over.* We should always have them made sugar-loaf-shaped, when they are able to withstand a good shaking without fear of falling over. We have used, ourselves, with great success, baskets of the shape of the wicker cases in which spirit jars are often encased. But of all egg baskets a long way ahead are, in our opinion, those used at Early Wood. They are oval, and are just as country women go for the Saturday shopping with, having huge, upright handles, which it is impossible not to take hold by, for they, being tied together at the top, form a most perfect handle.

All must allow it is but correct for a sitting of eggs to be properly and securely packed when sold, that have to go any distance by rail or carriage, and that the purchaser naturally looks for it. We would, however, ask purchasers not to be too quick in writing sharply about the non-success of a sitting, for often the blame may be traced to their own doors; and, if not, one severe fall at a station or one heavy jarring would often ruin the whole success of a sitting. And we hear, too, repeatedly of failures among the eggs of our most honest and upright venders, whose other eggs sent out have done well, when the cause could only be traced to some such accident as mentioned above. But that a handle easy to lay hold of is of great value to every egg-packer we are quite sure, and would always recommend purchasers to insist upon it.—*W., in Jour. of Hort.*

*Although no reference is made to it in the foregoing article, nor do we recollect having seen it elsewhere, yet it has often occurred to us, that any vessel used for the transportation of eggs, peaches, pears, berries, or in fact any ripe and delicate kind of fruit, should not be smaller at the bottom than at the top; not only because it is more easily overturned than a vessel of wider base, but because the jarring process through long transportation settles the upper wider layers down into a narrower space, necessarily producing a compression that could not occur, if said vessels were of equal size above and below, or of the upright churn-shape. Strawberries, blackberries, and sometimes even cherries, hauled for a long distance in such narrow-bottomed vessels, especially over rough roads, will be found compacted and indented at or near the bottom, while at the top they may have a fair appearance.

Proximately this may also be the case with eggs, especially when the vessels are large, and they have to pass over a rough road, or to withstand the long and continuous jarring of a railroad trip.

It is true that the bowl-shaped nests of birds and domestic fowls favors the pressing of the eggs against each other, but then it must be remembered that the number is usually very limited, and the nests themselves are quiet—perfectly motionless; with just sufficient concentrating force to keep them huddled together, and to facilitate incubation. From the fact that all objects gravitate downward, and when they are of a delicate or tender nature, and are circumscribed by the walls of funnel-shaped vessels, it seems reasonable to suppose that the longer they remain in that condition, and the more jarred they are, the more compressed they will become.—ED.

HOW TO GET RID OF ROSE SLUGS.

"Passing the residence of ex-Mayor Atlee this morning, and admiring the display of roses in his open side-yard, we enquired, "How do you fight the rose slugs." The laconic reply was, "With a small boy at one cent for fifty!" This touched the bottom fact of the slug business. After all the theories and "infallible remedies" recommended, experience has demonstrated that the only effective remedy is hand-picking. "A small boy at a penny for fifty" can make his expenses to the Centennial in an ordinary collection of roses, if the season is "favorable"—to the slugs.—*Daily Express.*

Just so; we can indorse the above remedy, for we have "tried it twice," and the last time the most thoroughly and successfully. It is a Franco-German remedy, and we believe the best remedy ever "invented." "Small boys," at a *half penny a hundred*, are of some account in France or Germany, in the destruction of the various kinds of *slugs*, although they might not be able to make much headway against the *Phylloxera*, or our western "Chinch-bugs."

A few years ago our garden was seriously infested with "Rose-slugs," (*Selandria rosæ*,) and our spouse was in a state of corroding anxiety. She did not care about handling poison, and we instructed her in the most practical alternative, namely, "hand-picking," in which we assisted her, and finally conquered them.

In May a small black saw-fly makes its appearance on the rose-bushes, which is easily captured in early cool mornings, but in warm midday it becomes too active for easy capture. These flies may often be seen in pairs—male and female—and the latter deposits her eggs on the under side of the leaf, immediately on or near the margin. In June the young slugs are hatched out, and they are then so small, and so near the color of the leaves, that hundreds of them may be present without attracting attention. As they grow larger a skeletonizing, and finally a browning of the leaves will be perceptible. This it the work of the slugs, and in the protected parts of the bush they will be found on either or both sides of the leaves, but where exposed to the hot sun they usually prefer the lower sides, and for that reason, too, the application of a poison may not reach them all.

When the slugs are fully matured they undergo a change in color, becoming more of a yellowish green, and if you have done nothing to destroy them, they leave the bushes then and go into the ground, and are changed to a small dark brown *pupa*, or chrysalis. If, after the leaves of the bushes appear as if they had been smitten with "fire-blight," and you find no more of the slug-pests on them, you should happen to indulge a happy feeling that now the infestation has ended, don't be too sanguine, because you may have a second brood more numerous and destructive than the first brood. If you don't have them the same season, you surely will the following spring. But if you have been active, vigilant, and persevering, in hand-picking the first brood, the following ones will be light work, and you will finally exterminate them. We know no plant easier kept clean than a rose-bush, from slugs and aphids. Women and their friends visit them daily, half daily or tri-daily, if not hourly; tending them, watering them, cultivating them, watching their progress, and anticipating the expansion of their beautiful and fragrant flowers. All they have to do is to institute an examination every time they visit them, and to say to their lady friends, "now Mrs. Pry, Mrs. Shy or Mrs. Spry, look out for the slugs and aphids." A small pair of wooden forceps with flattened ends, and a simple spring between the handles to keep them open, is a convenient instrument to crush the slugs, if they do not choose to use their dainty fingers, but under no circumstances, is this latter process half as repugnant as disemboweling a chicken or a fish. Where the whole leaf has been skeletonized, it

should be removed and burnt, if any slugs are found upon it. But when only partially destroyed the leaf may be saved by the use of the forceps, or the thumb and finger. Aphids may be dislodged and destroyed by directing a rapid steam of soap-suds, tobacco water, or simply hydrant water against them, through the nozzle of a garden syringe. Indeed, a heavy shower of rain often washes down and destroys thousands of them. They are very delicate little creatures, and may also be easily crushed or removed by the thumb and finger. The best remedy, therefore, in plants so accessible as rose-bushes, is active and persevering hand-picking, whether done by adults, "small boys," or small girls.—Ed.

LATE-KEEPING FRUITS.

The disposition now so generally manifested for the production of very early fruits is commendable so far as it extends to the extension of the season, but when we take into account the very perishable character of these, it becomes a matter worthy of consideration whether our efforts might not be more profitably applied to the production of those which shall prolong the season of fruits into the late fall and winter months; for, as population increases and civilization advances, so will these fruits be considered as among the necessities of food for all who have the means to purchase them. The demand for late fruits for exportation has now become general, and large quantities are sent not only to England, but in our ice-ships to warmer climes, where they are more and more demanded for constant use. In view of these facts it becomes a matter of importance to increase the number of choice late-keeping fruits, not only for our own market, but for foreign demands.

Heretofore there has seemed a want of taste in the community for late pears, shown by the sudden falling off in the demand for this fruit immediately on the setting in of cold weather, but it is my belief that a taste for them will grow—indeed, is already growing up. Most of the very late varieties of pears which we now possess are of medium quality, and we think ourselves fortunate if we can ripen them to even a half-melting texture, and it should be our aim in the improvement of this fruit to produce varieties as fine in quality and texture as the autumn kinds, and possessing the property of keeping through the winter without the aid of special appliances. The want of taste for winter pears is owing, to a great extent, to the want of knowledge by the public generally of the existence of fine varieties ripening in the season of the Beurre d'Anjow, Lawrence, Winter-Nelis, and Dana's Honey.

There is little fear of overstocking the market with very choice late-keeping apples or pears; for just in proportion as the refinements of life and cultivated taste are appreciated, so will these bounties of nature become, as in the beginning, first among the charms of Eden, first among the luxuries of life. I am happy to say that the bequest to this society, which I have already mentioned, has distinct reference to the production of late varieties of fruit.—*Marshall P. Wilder, September*, 1875.

We have long since entertained the view that the taste for certain fruits, vegetables, and even meats of various kinds, are more or less the results of cultivation, and that aversions towards certain things are little else than prejudices. What a strong and almost universal prejudice existed against tomatoes some thirty-five or forty years ago; and yet, at the present day, there is not a more popular and universally used fruit or vegetable cultivated in our entire country, nor one that contributes more to our domestic market. The canning, and otherwise preparing or preserving of tomatoes, constitutes an immense item in our list of culinary preparations. We never shall forget with what suspicion we regarded the first dish of stewed tomatoes we ever saw, and with what reluctance we partook of them. Under any other circumstances we probably would have rejected the dish as so much poison. It was the same, in our boyhood, in regard to turtles and frogs. They were abundant everywhere, and were almost universally loathed. At length a "Frenchy" citizen, with a taste cultivated in that direction elsewhere, offered a pittance for these reptiles, and soon had plenty of them. But he did not remain long the "monarch of all he surveyed." People began to forego their prejudices, and cultivate an opposite taste, and turtles and frogs subsequently became almost extinct in that locality. Of course a taste that is capable of an *upward* cultivation, may also be cultivated *downward*.

ANSWERS TO CORRESPONDENTS.

J. M. N., Oregon, Lanc. co., Pa.—The beautiful golden, tortoise-shaped beetle which you sent us on the 26th of May last, was a specimen of the "Sweet-potato Tortoise Beetle"—*Cassida (coptocycla) aurichalcea*—belonging to the great family *Chrysomelidæ*, and the sub-family CASSIDIDÆ. In the State of New Jersey these beetles are so numerous sometimes, as to very seriously damage the sweet-potato crop of entire districts. It, however, does not confine itself to the sweet-potato vines, but it also feeds on the leaves of the "morning glory" and other species of convolvulous plants. On one occasion, on our own premises, they were particularly destructive to the foliage of a thrifty "medairy vine;" but we have never known them to be either very destructive or very numerous in Lancaster county. The beetle seems to have the power to increase the brilliancy of its golden lustre, to diminish it or to withhold it altogether; and after it dies it vanishes quite, and then its color is a common yellowish drab. The *larvæ* are small, oval, flattish, black, hairy caterpillars, which cast their excretions on the back of the hind end of their bodies. Both the mature beetles and the larvæ feed on the aforenamed plants, and they undergo their pupal and final transformations there. Paris green, white helebore, tobacco decoctions, and saponaceous or carbolic solutions will destroy them; but when easily accessible and not very numerous, they may be destroyed by careful hand picking.

When disturbed, in warm weather, they very rapidly disappear by a precipitate flight. The species are numerous and some of the South American varieties are very beautiful and brilliant in their colors, and they are often set in breastpins, shirt studs, rings and ear-drops, especially in Brazil—indeed there is at this time on exhibition in the "Main Hall" of the Centennial Exposition, at Philadelphia, a collection of most magnificent jewelry and other ornaments, set with beautiful specimens of Brazilian beetles, only equaled in beauty and ingenious execution by the "Feather Flowers" of that interesting and prolific country. This, of course, attaches a commercial value to said beetles; and if our countrymen could succeed in utilizing our insects and securing a money value for them, such is our national love of money, that we possibly might become engaged in their culture, their increase and their improvement, instead of anxieties to find ways and means to exterminate them.

Dr. J. C. B., Litiz, Pa.—Your "Bug," sent to us June 6th, is the same as the one above described. You would not recognize it now; it is dead, and has lost all its gilded brilliancy.

C. B., Lancaster City.—The long, white, thread-like worm, which you found in your garden soil, and which persisted in twisting itself up into a very complicated knot, belongs to the family of "Hair-worms," of which there are a great many species belonging to the genera *Gordius Filaria*, &c., &c. Doubtless the shortest way to open the "Gordian knot," into which these animals tie themselves, would be to adopt the Alexandrian system and cut them through.

J. S., Lancaster, Pa.—The moderately large two-winged fly, with the yellow, hairy thorax and the black, less hairy abdomen, which you captured, with the pupa shell adhering to it, and which seemed to have just emerged from an old decayed apple trunk, on the 26th of May, is a species of *Bombylius*, or nearly allied to it; but we have no work on Dipterology, and therefore are unable to locate it specifically at the present time. The *larva* or maggot of it is parasitic on other insect larvæ.

A. B.—Your white butterfly is *Pieris rapæ*, the great cabbage enemy. We noticed hundreds of them a few days ago along the railroad near the "Gap." Look out for them.

A PAIR OF TEXAS TRAVELERS.

Two "Horned Frogs" Visit Lancaster—They Make an 1,800 Mile Trip by Rail.

The following article introduces a pair of distinguished strangers, the description of which will be read with interest by a large circle of our readers.

Horned Frogs.

We received by mail two living specimens of that singular reptile known in Texas, and other places where it exists, by the common English cognomen of "horned frog;" but surely they look more like *toads* than *frogs*, and not much like either. These were mailed to us by H. A. Rathvon, manager U. S. military telegraph at Fort Griffin, Shackelford county, Texas, and came safely through—a distance of 1,800 miles—in nine days, arriving "sound of wind and limb," and as lively as kittens.

In point of *fact*, however, these animals are neither toads nor frogs; but it is very doubtful whether they will ever be released from their false christening, until the world becomes very much wiser on the subject of natural history and its scientific classification than it is now. Their misnomer has been so long and so persistently insisted on, that popular authors of natural history recognize them under the common name of "Horned Toads." Those received are the *Phrynosoma cornuta* of Gray. They are true Saurians or "lizards," and belong to the family Iguanidæ, which includes several genera and many species, some of which are very large, and a large South American species—*Iguana tuberculata*—lives on trees, and the flesh is esteemed excellent food. The species, however, which is the subject of this paper, is said never to climb trees, but moves with rapidity upon the ground, unless it is benumbed by cold, and is somewhat sluggish in confinement.

Toads and frogs, on the contrary, are *Batrachians* or "amphibians," and are entirely destitute of scales, and, in most cases, lay their numerous eggs in water or in damp places. Some Batrachians also have tails like lizards, but their skin, for the most part, is moist and slimy, and entirely without scales or spines. In toads and some tailed species, the skin is dry, but never scaly.

The Saurians, on the other hand, are distinguished by having scaly skins, sometimes spined or tubercular, but never slimy. The mouth is usually large and armed with teeth, and their feet are generally furnished with nails. They also generally lay their eggs in sand or dry earth, cover them over, and let them hatch by the heat of the sun, and when the young come forth they are nearly as perfect as the parent, differing only in size. The largest Saurian in the United States is the alligator.

The great class *Reptilia* is divided into
First—*Chelonia*, or Turtles.
Second—*Sauria*, or Lizards.
Third—*Ophidia*, or Serpents.
Fourth—*Batrachia*, or Frogs, &c.

These four orders are sub-divided into sub-orders, families, genera and species, in order to facilitate their study; and although there are many different classifications, we have merely given the above outline to illustrate where our little cornuted Texans stand in the column of classification, and from which it will be observed that they belong to the *second* instead of the *fourth* sub-order, as this common name would imply.

These animals are capable of living a long

time without food. On one occasion one was kept in Lancaster three or four months, and during that period it rejected food of every kind, and finally died. On another occasion an individual, sent us by Dr. Boughter, from New Mexico, survived six or eight weeks, and during that period only appropriated half a dozen of the many flies and other insects we gave it; and we observed that it always took the living insects instead of the dead ones. At length it remained several days perfectly inert, and we supposed it to be dead, and immersed it in alcohol, but, to our surprise, it revived and struggled ten minutes, at least, before it died. They are very sensibly affected by cold, but when the weather is warm they are rather lively little creatures.

ABOUT FLIES.

An English chemist has published the results of his observations of flies, with which he has experimented. If what he reports is true, we should be more kind-hearted to these little insects. It is interesting to watch a fly that has just alighted after soaring about the room for some little time. He goes through a series of operations which remind you of a cat licking herself after a meal, or of a bird pluming its feathers. First the hind feet are rubbed together, then each hind leg is passed over a wing, then the fore legs undergo the same treatment; and lastly, if you look sharp, you will see the insect carry his proboscis over his legs and about his body as far as he can reach. The minute trunk is perfectly retractile, and it terminates in two large lobes, which you can see spread out when the insects begin a meal on a lump of sugar. Now, the rubbing together of legs and wings may be a soothing operation, but for what purpose is this carefully going over the body with the trunk, especially when that organ is not fitted for licking, but simply for grasping and sucking up food. On placing a fly under the microscope, to the investigator's disgust, it appeared covered with lice. The chemist concluded that here was something which at once required looking into. Why were flies lousy? The fly seemed to take his position very coolly, and extending his proboscis, began to sweep it over his body as if he had just alighted. A glance through the microscope, however, showed that the operation was not one of self-beautification, for wherever the lice were there the trunk went. The lice disappeared into the trunk and the fly was eating them. He took the paper into the kitchen and waved it around, taking care that no flies touched it, went back to the microscope and there found animalcules, the same as on flies. He had now arrived at something definite; the animalcules were floating in the air, and the quick motions of the flies gathered them on their bodies, and the flies then went into some quiet corner to have their dainty meal. The investigator goes on describing how he continued the experiment in a variety of localities, and how, in dirty and bad smelling quarters, he found the myriads of flies which exist there literally covered with animalcules, while other flies, captured in bedrooms or ventilated, clean apartments, were miserably lean and entirely free from their prey. Wherever filth existed, evolving germs which might generate disease, there were the flies covering themselves with minute organisms and greedily devouring the same.

Whether the above theory, in regard to the renovating quality of flies, is *true* or otherwise, it cannot be successfully denied that these little *dipters* perform no useless function in the economy of nature. We have seen this theory questioned—contradicted—but we cannot say successfully disproved; for, that cutaneous diseases, and infections of different kinds, are communicated by flies, has been generally admitted by eminent medical authorities. But aside from this, there are tangible and visible evidences to the effect that flies are among our greatest—and under some circumstances among our only—means for the removal of putrid and decaying matter, and the purification of the atmosphere during warm summer weather, and therefore, instead of making so much "ado" about their *presence*, it might go very ill with us, if—other conditions remaining the same—they were entirely *absent*. Everybody of any intelligent observation at all, must have noticed, over and over again, from their earliest youth to latest age, that flies are often engaged in rubbing their front feet and their hind feet together, passing the hind pair over their wings, and the front pair over their proboscis, although it may not have been apparent what the purpose of these manipulations may have been. They appeared to be engaged in rubbing off *something*, but whether animalculæ or other accumulations of filth, could not be so easily determined without the aid of a powerful magnifier. But, that they greatly assist in the decomposition and deodorization of putrid animal and vegetable matter, cannot be for a moment questioned, and in that office they are invaluable.

We confess that the sensation they create in settling upon, running over, and lapping up the secretions of the exposed parts of the human body, may not be a pleasant one, neither is it a pleasant operation to have a tooth drawn, or a wound dressed, and yet, our health and future comfort may be only securable by means of these operations. Their redundant existence would not surely be permitted, if they were of no possible use, and if there were no compensations for the many annoyances they inflict upon us. Viewed from *our* standpoint, we have no grievances to be redressed on account of the presence of flies, for we feel that the sanitary condition of that habitation may well be questioned where flies will not voluntarily enter; and where there is a spontaneous mortality among the flies, the proper healthful ventilation of such a place should become the subject of immediate solicitude. It is true, that their redundancy may often be disproportioned to the necessity for them, under special circumstances and in special places, but in such cases the more rational remedy would be in removing the *causes* than in fretfully battling against the *effects*. We have often seen liquid traps set for flies, in which their bloated bodies were permitted to remain from six to ten hours in the hot days of summer, and it has always occurred to us that *ten* dead flies, so immersed, were more offensive and hurtful to a human habitation than *ten hundred* living ones. Spiders, toads, hornets, lizards, and many other animals, live almost exclusively on flies, but unfortunately those who are prejudiced against *flies*, are a thousand times more so against those friendly animals.

WHAT THE COUNTY PAPERS DO.

An exchange combats with considerable vigor the argument that the city papers are cheaper and better than the country papers because they give more columns of reading for the money. Do the city papers, it asks, ever give you any home news? Never. Do they say anything in regard to your own county? Nothing. Do they contain notices of your schools, churches, meetings, improvements, and hundreds of other local matters of interest, which your paper publishes without pay? Not an item. Do they ever say a word calculated to draw attention to your county and its numerous thriving towns, and aid in their progress and enterprise? Not a word. And yet there are men who take such contracted views of this matter, that unless they are getting as many square inches of reading matter in their own paper as they do in a city paper, they think they are not getting the worth of their money. It reminds us of the person who took the largest pair of boots in the box, simply because they cost the same as the pair much smaller that fitted him, whilst the former were entirely too large, and therefore useless to *him*.

The case is the same in regard to country agricultural journals, and many farmers are constantly "dancing to the tune of city fiddlers," when the case ought to be the reverse. The very largest city periodicals in the country often do not contain as much in their columns of a specific local interest as may be found in an ordinary country newspaper. It is true, some of them are largely filled with semi-sentimental, semi-romantic and literary matter, some of which is good and interesting reading, but very little of it illustrates, encourages or is in sympathy with rural life; and the general effect is, to wean the country people from rural occupations, and to engender a hankering after the blandishments of the city. Of course there are many noble exceptions; and perhaps the very best thing a farmer could do, after subscribing to his own local journal, would be to subscribe to one of these, but under no circumstances will he find a city journal so near him in sympathy and special interest as his local journal. If he has anything to ask, or anything to say, he will find none more willing to place his desires before the public in a readable manner than his local editor. We by no means intend to disparage city journals, for they contain much in their columns that is of special interest to the rural citizen, but, outside of market reports, the most useful and interesting matter in them to the rural reader is what they glean from country papers and country contributors. There are no wheat-fields, corn-fields nor rural occupations in a populous city.

A COMPLETE REMEDY FOR TOBACCO FLY.

Dr. Sypert came in last week to have published, for the benefit of the planting community, a complete and perfect remedy for fly, and yet as simple as it is effective. It is simply to stretch over the bed a sheet, made of a thin, cheap domestic, which can be bought at five cents a yard. It is called quilt lining and brown muslin. Five dollars will cover a hundred square yards of bed.

Dr. Sypert has tried it and has preserved the bed on which it was tried, while all the others near are eaten up. He puts it on, with a few small stakes over the bed to raise it above the plants, and pinned down closely around the edge. The plants grow well under it. It admits light and the bugs and flies can't get in. The bed should be swept clear of all bugs and trash. Dr. Sypert has found the experiment so completely successful that he came in to get domestic to put over his other beds where he has plants coming up. The broom with which the bed is swept should be very fine so not to tear the plants. Those who use this may, we are assured, rest in perfect security. Those who know Dr. Sypert will not need to be told that he never speaks until he knows what he says. The doctor is a benefactor, and the wonder is somebody has not thought of so obvious a plan before.—*Clarkville Tobacco Plant.*

The above remedy is a very old one, for we have known it to be in use thirty years ago, in protecting cabbages, radishes, cucumbers and water-melons—in the young stages of those plants—from the attacks of the "flea-beetles," and "striped cucumber-beetles," and with good effect. It is one of those old, simple and effective remedies, which people are liable to ignore or forget, in their intense desire after something that is *new*. Old cheese boxes, and herring boxes, with the tops and bottoms knocked out, and one end, or side covered with mosquito-bar, were used for the purpose, when the vegetables aforenamed were planted out, or in hills. Of course they could not be applied when the plants are large, but then the danger from these insects is past.—ED.

SIMPLE CURE FOR DYSPEPSIA.

Whenever we can aid our fellow men in allaying the ills that flesh is heir to, we feel a pleasurable delight in so doing. We believe that few diseases usurp such a perfect and direful control of the physical and mental system as that of dyspepsia. It produces nervous irritation and mental depression, whilst it inflicts the most exeruciating agony, which causes it to be often mistaken in its character. It arises from a disordered liver, that fails to produce the requisite digestive properties in the stomach; hence a fermentation of the food, producing carbonic acid gas, which by heat so expands as to cause torture to the afflicted, beyond description. It prostrates the sufferer mentally and physically at times, until he prays for death to relieve him. Although not one of the greatest sufferers, yet the writer has been for some time severely afflicted by this disease, and, after being subject to considerable medical treatment, had almost given up the idea of cure. At this moment Mr. F. Kilburn informed us that by taking for a short time a cleansed raw egg, mixed with a little sugar to palate, every morning before breakfast, we should be entirely relieved of the effects of dyspepsia. He constantly, when he met us, insisted on our trying his remedy, and at last, in desperation, we concluded to give the suggestion a trial, and can now say, with many thanks to him, that we find ourselves in as ruddy health as we ever were in our lives. Our object in making this fact known is that others similarly afflicted may have the advantage of our experience. Should any of our readers successfully apply this remedy, we shall be glad to have them testify the fact to us, that we may be able to give more extensive testimony of the good result of the conquest of this terrible disease. We believe that one-half the male portion of the community suffer more or less at times from dyspepsia, and doubtless spend a great deal of money without obtaining relief, in purchasing quack nostrums that are advertised as "dyspepsia cures."—*Daily Express.*

Simple as the foregoing remedy is, we confess we did not know what was meant by a "cleansed egg," until we were informed by the writer that it meant an egg deprived of

the seminal germ of the male bird. How, or to what extent an egg would be damaged by the presence of this germ, as a cure for "dyspepsia," we have not been informed; but that matter is of very little account, compared with the disease intended to be cured, and therefore any one too lazy to *cleanse* his eggs before he swallows them, don't deserve to be cured.

We publish the above because, somewhat to our surprise, we have frequently heard farmers complain that they were troubled with *dyspepsia*, and because the remedy is so simple and so accessible.—Ed.

For The Lancaster Farmer.

TIMELY GARDEN HINTS.

By the time the June number of The Farmer gets to the readers, it will be time to transplant all late cabbages, leeks, egg-plants, peppers and tomatoes, if not already set out. They should all be transplanted in June, and the earlier the better. Plant seeds of cucumbers, muskmelons, squashes, pumpkins, Indian corn and bush beans, for succession crops. Summer radishes may yet be sown. Late potatoes may yet be planted. Early in July sow seeds of Ruta Baga turnips; and even late beets may be sown for fall and winter use. Transplant early in July all the celery crop, endive and fall broccoli; also, sweet and pot herbs. Those who have not all the kinds of plants that need transplanting can purchase them from seedsmen and nurserymen, by the half dozen or hundred.

In the flower garden, all kinds of bedding plants may now be set out, and all the species of annual flowers that need transplanting should be transplanted now, and the same with biennials. Among such annuals are German Quilled Asters, Camellia Balsams, Browallia, Globe Amaranthus, Gailardia, and the large species of Amaranthus, such as Princess Feather, Love-Lies-Bleeding, *Bicolor*, with ornamental leaves of bronzy brown and scarlet; *Tricolor* (Joseph's Coat), leaves brown, yellow and scarlet; *Salicifolia* (Fountain plant), leaves brown, crimson and lemon. These three species are very showy for three months. Cockscomb, Zennia, &c., should also be transplanted now. All transplanting should be done immediately before or after rain, or on cloudy days, or after mid-afternoons on clear, dry days. Some may need watering just after being transplanted.—*Walter Elder, Philadelphia.*

For The Lancaster Farmer.

DOTTINGS FROM LEOLINE.

Dear Editor of The Farmer: You wish to know what has become of me, in your May number, and whether you have in any wise given offence. By no means; you have not offended, and there is nothing on your part to excuse. I would write a great deal more, and much oftener than I do, if my health permitted me to do so. Sometimes after writing two or three pages my arm becomes almost entirely useless. I am suffering from that terrible disease—rheumatism—and it is mostly in the right side.

Elder Bushes.

I have just been reading in The Farmer Benjamin Mifflin's experiences with the elder, and its uses as an insecticide. This much I know, that it is a great breeder of caterpillars, and it stands to reason that the butterflies and moths must alight upon it and deposit their eggs there previous to the advent of the caterpillars, so it cannot be very obnoxious to them. Cut them down, say I.

Old Blankets.

I will give you a new use for old worn out blankets. Cut them up into pieces about the size of a nickel-penny, and make chair cushions, sofa pillows, and so forth out of them. They are almost as good as feathers for that purpose.

Useful Hints.

Your "hints to Centennial visitors" in the May number of The Farmer, have been encouraging to a great many people in this county. They give them some idea of how to proceed, and what amount of money they will need, for any specified time they wish to spend there.

Egg Custard.

Take one quart of sweet milk (no cream) and boil it five minutes; let it stand 'till cold; beat five eggs to a froth; now put three heaping tablespoonfuls of sugar in your cold milk. Stir it well and pour in the beaten eggs, beating it until all is in. Flavor with lemon drops; pour into dishes and bake. You can put paste in your dishes or not, just as you choose. I prefer paste in shallow dishes; but for immediate use none, using deep dishes.

Fried Potatoes.

If you have some cold potatoes left over night, cut them up into small pieces; put them in a pan with a lump of lard proportioned to the quantity of potatoes; (not too much) let them fry to a nice brown. Just before sending them to the table, beat up two or three eggs and pour them over the potatoes; let them fry a very little, stirring them all the time to prevent burning. They have much the taste of mushrooms. Leoline.

Elizabethtown, May 29, 1876.

P. S.—Inclosed please find one dollar for the current volume of The Farmer, asking your kind indulgence for neglecting to send it earlier, and hoping it may be none the less welcome. L.

We sincerely sympathize with our correspondent in her afflictions, and assure her that for some months we have been a fellow-sufferer, although, happily, we have been exempt from *rheumatism*. Our experience is in harmony with hers, in regard to the *virtues* of the American elder. If there is anything in the remedy, the European species must be very different from ours. We *believe* in her "egg custards" and "fried potatoes," especially the latter, for we have had them served thus by experts in cookery, during our Tucquan excursions, and found them very palatable.—Ed.

For The Lancaster Farmer.

MY EXPERIENCE WITH ITALIANS.

Now that "the little busy bee improves each shining hour," I would like to be "busy too," by making a few B notes.

Almost every paper furnishes reports of beekeepers' meetings and conventions. Some writers are lauding "to the skies on flowery beds of ease" the superior qualities of the Italians, so much so that I have grave suspicions that they have a big axe, hatchet, cross-cut and butcher-knife to grind, and are baiting for some novice to take hold of the handle and give a good round turn, or, in other words, that they have Italians or Queens for sale.

More than ten years ago I was seized with a little Shanghai fever, and purchased some pure Italians, at fancy prices, from honorable parties; also paid three, four, five and six dollars each to have black colonies Italianized. Here I had a good *turn*, and great were my expectations. I anticipated that honey—pure virgin white—would now soon be a drug in the market, and middle men to dispose of it must be looked for in time. But disappointments come to all, and I was no exception. I watched, and I looked, and I peeped; I put on one honey-box after another, and removed them as empty as I put them on; and the first two years I did not get even a widow's mite to exhibit to my admiring neighbors, or a teaspoonful to glide over the lively papilla of my tongue, and was happy when once satisfied that they had gathered enough for their winter stores, while the common blacks yielded from twenty-five to thirty-five pounds of surplus.

The hybrid (that is, a mixture of the black and Italian,) has proved itself a better worker than either blacks or Italians pure. Of these I have some colonies that last season yielded fifty, sixty, seventy, eighty, and one over one hundred pounds of surplus, and had a plentiful supply left for winter. I am now speaking of bees in their natural state, without any feeding, save a few quarts of rye meal in early Spring. Almost any colony in good condition will make from seventy-five to one hundred pounds of honey, if you furnish plenty of sugar. The experience of several of my neighbors who represent about one hundred hives, is about the same as mine.

Wintering.—For the six years past my bees were wintered on their summer stand—without a single loss—which is all around the yard and orchard, and consists of two sticks of wood as thick as a man's arm, or four bricks for each. Upon these the hive is placed and all is complete. Snow must be brushed from entrance. These, shaded by trees, had no other protection in summer or winter. But when exposed to the sun, in warm weather, the hive should be shaded with loose boards, or there will be danger of melting the combs of all young colonies. I use the common movable frame hive; glass sides and back, box (in sections) covering, and prefer these to all patent hives. Enough. In my next I will give an incorrect bee story.—Z., *Rock Hill, May* 23, 1876.

For The Lancaster Farmer.

TURNIPS FOR MILCH COWS AND SHEEP.

If there can be a friendly advice given to farmers now, it is to urge them to make immediate preparations for the sowing of Ruta Baga Turnips early in July—yes, many acres of them—for dairy cattle and sheep. Our husbandry cannot be really good without plenty of turnips for winter use; and the fine breeds of cows and sheep cannot be kept up unless the juiciness of their systems are kept up by plenty of esculent vegetable roots, as they contain the very essence which their systems need. Just consider, that *cows* give much milk nine months in the year, and bear young ones every year. *Sheep* bear young ones every year (two at a time) and suckle them until they can eat. Some juicy food should be given them to keep their systems in full repair for the loss of milk they part with. Nature has furnished the esculent roots just for the purpose, and farmers have the lands to grow them upon. Annual reproduction is very weakening, and the parting of milk dries up their systems. Grains, straw and hay are all of a drying nature, but they impart strength; so the juicy roots, and them all fed, just combine to give strength, and maintain the natural juiciness needed to keep milch cows and sheep in thrift. Then they are profitable, well looking and free of ailings.

David Landreth & Sons, seedsmen, of Philadelphia, have published a small pamphlet, giving full details of how to grow turnips and their great value as food to milch cows and sheep. Whoever purchases a pound of turnip seed gets the pamphlet free. Every farmer should get and read it, and practice its teachings. White fleshed turnips are sown the first week in August; they may either be sown in drills or broadcast; they are used first in winter. We advise every farmer to grow plenty of turnips.—*An Old Husbandman.*

For The Lancaster Farmer.

ABOUT GRASSES.

A short time ago quite a discussion was had over specimens presented of the "Hungarian Grass," at a meeting of the Horticultural Society of this city, and various opinions were expressed—some approving; others seemed rather doubtful of its good qualities.

I, unacquainted with the name or quality of "Hungarian Grass," took a specimen home with me to analyze, and found it to be the "Fox-tail Grass"—botanically a *Setaria*, so named from its bristle or *seta*. There are two kinds, or rather simple varieties of the same: The S. italica is known as millet; the S. germanica is cultivated in Hungary as food for horses, for which it is preferred before all other grasses—according to Loudon. The seed may, like the other, be used as millet. Sparrows are remarkably fond of the seeds (especially of S. viridis). I found eleven spe-

cies described out of twenty-four known. Of the Italian Setaria (millet) or Bengal Grass, Dr. Darlington says, in his Agricultural Botany (Ed. 1847): "Some years ago the culture of this plant was introduced into Pennsylvania, and excited considerable interest for a time among the farmers, as affording valuable fodder when the usual hay crop was likely to be deficient. It was soon found, however, not to be as valuable as the usual fallow crop, (of oats or barley) of which it occupied the place; and was, moreover, remarkably liable to damage from rain. The cultivation, therefore, soon declined, and is now generally abandoned. There is another species, (*S. verticillata. Baur.*) with the spike composed of interrupted verticils of spikelets, and the involucre of *retorsely* scabrous bristles, in *pairs*, which is becoming something of a nuisance about gardens in many places." Cattle refuse the herbage, turkeys and poultry are fond of stripping the spikes of their seeds in the latter part of summer. But the Fox-tail and Bottle grass, if not serious nuisances, are, to say the least, questionable grasses to plant or cultivate.

The common name, "Grass," is often perplexing. What is termed the "Buffalo Grass" is a forage plant. It is not true grass, but comes near the clovers. The *Medicago lupulina* and the *M. sativa* are samples of grass found in Green Lake county, Wisconsin, which were there known under the name of Buffalo grass, and which Hon. HARRIS LEWIS, at a meeting of the Utica Farmers' Club, declared "he believed was the most valuable grass for grazing that he had ever seen. He found it growing in tufts like orchard grass, and stock ate it greedily." The article concludes: "The specimen shown of the *M. sativa* no doubt measured seven feet in length." The *M. sativa* is the *Lucern*, upright. The *M. lupulina* is the Black Medick, nonesuch, procumbent. Another—*Buffalo-clover*—is the *Trifolium reflexum*. The clovers, (*Trefoil*) and *Medicago* and *Melilotus*, or sweet clover, and others, belong to the order LEGUMINOSÆ (Tulo family). These are forage plants, but not properly classed among grasses.

The Buffalo grass, known to the travelers over the plains of the West, according to Dr. Englemann, is the *Buchloe dactyloides*, which is quite a different plant; also a synonym of "*Sesteria dactyloides*" is given it. This is a true gramineous plant, but we are told the noted buffalo grass of the region named may be recognized at once, and be distinguished from other species by its low, dense, tufted growth; also by the stalens, from which it rapidly spreads. It never attains the height of over two or three inches, except with its male flower stalks, which sometimes reach two or three inches above the leaf growth. They have at their summit a few flat spikes, of male flowers only. This only requires a shallow soil, and will grow among taller and more deep-rooting plants, like the *Andropogon* and *Sorghum*. Therefore the buffalo plant seven feet long cannot be the *Buchloe dactyloides* of Englemann, nor a Medicago. Then what is it? A full list of the grasses of the plains and eastern slope of the Rocky Mountains will be found on pages 217 to 226, Report of the Com. of Agriculture for the year 1870. About the Hungarian Grass, Hon. A. B. DICKENSON writes to the *Country Gentleman*, 1858, that the Hungarian Grass of last year and the Honey blade-grass of *this* year are nothing more than what *Millet* was forty years ago.

We sometimes get vexed at these new names, to perplex the student of botany by dropping old familiar names and giving them *aliases*. Well, it is often comical, that the farmer who was to present a specimen of all the grasses on his farm had among the lot a bunch of *asparagus*, which belongs to the Liliaceæ; when thrown out he insisted upon it that they were all grasses, and declared that the bunch objected to was "*Sparrow-grass.*" Well, so it was; and why quarrel about it? An article in the Report of the Department of Agriculture, some years ago, treated of clover under the grasses.

This recalls how the mixing up of ideas often causes ludicrous blunders, and the old darkey preacher may be excused when he gave out his text, "In de fust pistol of *Clover*, and ninety-fust werse." "Hold up, Doctor!" shouted one of his hearers, "you've got the wrong book; you mean the fust pistol of *Timothy*, I s'pose." The preacher hesitated, with a very profound look, and said: "Well, I must cave in dis time, tho' I know'd dat de text was somewhere among de *grasses.*" With all deference to those who may make mistakes (as I often do)—for I have been there myself—nevertheless there are proper names, and writers attempting to give information should try to be explicit, if there are different names for the same thing in different localities, which are apt to mislead those who apply that name to something else; but a description of the flower or general appearance would always separate plants to their proper order, and we would not mix plants belonging to the papilionaceous Liliaceous or the carices, with the proper Graminæ or true grasses, as is too often done in common conversation.—*J. Stauffer, Lancaster, May* 30, 1876.

For THE LANCASTER FARMER.

HOW TO STACK GRAIN.

Stacking grain is frequently alluded to by agricultural writers as a "wasteful practice." So far from being "wasteful," there is frequently a great saving in stacking grain. The advantages of stacking are—less danger of fire, greater security against rats and mice, and immunity from barn weevil. Where the crop is a long distance from the barn, there is also a saving of time in storing. The stacks can be hauled in when labor is cheaper. With the Mediterranean and Fultz varieties of wheat, the kinds most generally cultivated in this section, the loss by shelling is scarcely worth notice.

Have your sheaves of even size and well bound. Badly bound and "slobbery" sheaves cannot be tolerated in stacking, and *should* not be tolerated at any time. Select high, dry ground for your stacks, and begin by laying a foundation of rails. Some stackers omit this, but it is much better to have a foundation to cut off the moisture from below.

First, lay down four large rails, spaced equidistant, and across these lay about a dozen rails, and you are ready to begin your stack. Throw two or three sheaves across the centre, and build the tops of your sheaves on these, going "gee" round; that is, with your right hand towards the centre of the stack. Continue your widening circle until you have fully reached the corners of the foundation, letting the butts of the sheaves rest on the ground on the four sides. Now see that your base is round and level, and you have your foundation large enough on which to build from sixty to eighty bushels of wheat. Lay another course or two of sheaves with their butts even with those of the last course on the rails, leaving the stack bottom in the form of a pie-dish. Place another course with their butts about even with the bands of the outside course, and the heads pointing to the centre, and another course inside of this, and so on, until your middle is full. Continue on in this way until your foundation is eight or nine feet high, or as high as you wish your "bulge." The bottom may be built perpendicular, or, better still, a little out from plumb at top. Begin now and raise the centre of your stack very high, making the slope nearly as steep as an ordinary house-roof, and extending well out on to the last course on the bottom. You have now come to the most important part of your job—"laying the eave." Having your centre very high, so as to give your sheaves a good pitch, you begin by taking a sheaf and thrusting the butts downwards and outwards, until they extend a short distance over the last course. You now get on your knees on this sheaf, and another is handed you, which you serve in the same way, until you have completed the circle. Now put some filling in the centre, and lay another "bulge" ring with the butts as far out as the first "breaking joint," like a course of shingles. Be sure and keep the tops of the sheaves well back. They are liable to gain forward, and this will spoil the stack. They should all point to the centre, like spokes in a wheel, and should be closely crowded together. If there is a sheaf-hander, he should stand as nearly as possible in the middle, so as not to move the outside courses. The third course is drawn in a little, and each succeeding course a little more rapidly, until the job is finished. Have a few small sheaves for finishing, and have a stick five or six feet long, made very sharp at one end. Thrust this down the centre of the stack, taking care to have it perpendicular. Fix a band or two around the tops of the last course, and your stack is topped out.

Next morning, when the dew is on, is the best time to rake it off. Pull the butts where there are unsightly holes, and beat down protuberances. Stacks built in this way will stand for months in the wettest seasons, and sustain no injury.

Long stacks or ricks are built on two or more squares of rails placed together. Where there is a large quantity of grain to stack, ricks are economical. The chief objection to this kind of stack is the long row of heads exposed to the weather on top, unless you thatch or cover with boards. Ricks should always be built with their length running east and west. The east sides of stacks and shocks are always more liable to be damaged by rain than any other parts.

The main points to be observed in stacking are:

First. Keep your centres full, thereby giving your outside courses a steep pitch.

Second. Always have the tops of your sheaves point to the centre.

Third. A symmetrical form of stack.

Inexperienced stackers are apt to build too high, and run their stacks up to a spire-like point. This is unnecessary and unsightly, and the tops are liable to be blown off. It is the pitch of the *sheaf*, and not the pitch of the *top*, that makes it water-proof. An egg shape is the best form for a stack.—*J. C. L.*

For THE LANCASTER FARMER.

SOMETHING ABOUT BEES.

Permit me again, through the columns of your valuable journal, to make some remarks on bee-culture, for I have had many years of experience with these insects, and have always had "good luck" with them. With strict attention to their habits and their wants, and a little pride attached to the same, one becomes master of his trade, and therefore he feels able to speak out boldly of what he *knows* to be facts. Writers on bee-culture differ very much. Some say in natural swarming the old workers, as well as the old queens, leave the hive. It seems unnatural that the young bees should drive out their parents. I heard an old bee-keeper say he had a hive fourteen years old, with the self-same queen still living, because he clipped her wings when he put her in with an artificial swarm, and he believes they never leave the hive under any circumstances, except when swarmed or swarming; they have too much ease at home. I have lifted them from the ground after the swarm has come out, being too young to fly, and returned them to the hive again. The swarm will return also, but on the morrow they will come out again, and all will be right. There will also be many workers too young to fly until the sun has strengthened them. They will then mingle with the swarm, or return to the mother-hive. Drones are privileged characters; they go in and out of such hives as they see proper. By this means they cross or hybridize with others, which is an improvement in both.

I have had six natural swarms from five stocks already (May 22), one as early as the first of the month, and I shall have four or six more before the month is out. This will give them ample time to lay up a good store of

honey and of a good quality. The apple blossoms are gone, but white clover is beginning to bloom, and has the appearance of being very plentiful in this locality. During the season they work very hard from early morning until dusk, and come home laden with the sweets of many flowers. In about six weeks they are worked to death, and others of the same family take their places. If their lives were six months instead of six weeks, as some writers contend, what an immense quantity of bees and stock we would have, as they multiply very rapidly—from three to five thousand every eight days during the months of April, May and June. At this rate each stock should produce from three to six swarms. The first swarm contains about fifteen thousand bees, and weighs five pounds. The second from nine to twelve thousand, and weighs three or four pounds. The drone lives during the summer, unless he has fertilized the Queen, after which he immediately dies, and I believe it requires the influence of several drones to impregnate the Queen for a brood of the numbers above mentioned. The eggs are laid against the walls of the cells, about a sixteenth of an inch from the bottom. The bee, when growing in the cell, lies upon its back until it reaches the pollen, which is at the mouth of the cell, when it turns over and feeds upon the pollen, and when it is all consumed it is sufficiently strong to cut through the capping and come out, and will go to work in two days thereafter. They gather honey and also make it. When it is first gathered it is a sweet liquid, and then it passes through a churning process in the body of the bee.

The butter (wax) oozes out from under the first band, or abdominal segment of the bee, on each side, and is very white and transparent. This is used for making the comb. The balance, or buttermilk we may call it, is thrown up into the cells, where it commences to form into honey by extracting from the combits natural sweetness, and by the heat of the bees it goes through a slow "canning" process, and continues so until the virtue of the comb is thoroughly extracted; but without this heat of the bees it would remain the same white clover honey, which would in time become dry like sugar. At the season of its gathering you will see the bees at the pump-troughs and puddles of water, for the purpose of diluting the honey, it being too thick by itself.

The temperature of the hive during the summer months will average about one hundred and twenty degrees in the shade, but when exposed to the sun the heat is still greater. For this reason many stocks are lost by the combs melting off and drowning the bees in their own sweets. We have none among God's creatures more industrious than the honey-bee, working from morning until night, with economy and on scientific principles. The Almighty has made all things in wisdom.

Yours truly, WM. I. PYLE.

West Chester, May 22, 1876.

In the the foregoing article on bee-culture I forgot to mention an experiment which I made on making honey, and as it may be interesting, or perhaps useful to others, I will here give my plan of doing it, and also the result. Last fall, in the month of October, I fed one of my best stocks with white sugar. I used fifteen pounds and made a syrup of it. It required a little more than one pound of warm water to reduce the sugar to a syrup. From a hole in the back part of the hive the bees entered into a tight box, and into this box I placed the syrup, covered with a thin board perforated with small holes, through which the bees could take up the syrup, and the board would settle down as the former exhausted. Over the box I placed a pane of glass, to witness their operations and to see when they required more of the syrup.

At the beginning the box on the top of the hive had one small comb about the size of my hand, but it contained nothing. In preparing and administering this syrup I dissolved the sugar as they needed it, although they took it up very fast, and at the end of twenty days the fifteen pounds of sugar were consumed, and I had twenty pounds of honey in the box, for which I received thirty cents per pound. The sugar cost $1.80, and I realized $9.00 from it, leaving me a clear profit of $7.20, all at the expense of bee-labor. In other words, I got 60 cents per pound for my sugar. The honey was most excellent, and I believe no one could have told the difference between it and the wild-flower honey. I shall try it again next fall, and I will flavor the syrup with a little tea, which I shall make from white clover heads, and also add a little brandy, of which the bees are very fond.

Yours truly, WM. I. PYLE.

West Chester, June 1, 1876.

Our correspondent seems to have a *practical* knowledge of what he is writing about, and is not bound by mere *theories*, as they are elaborated in the closet, and find their way from thence into books. We know nothing practically on the subject of bee-culture and honey-making, but we confess we admire the "ring" of his experience, and the confident manner in which he relates it; and think he would make a "tip-top" member of our "Lancaster County Bee-Keepers' Society." Bee-culture is attracting considerable attention all over our country, and when once the general statistics are all published, the result will astonish the community, especially that part of it which is not looking in that direction.

FROM OVER THE POND.

ERFURT, PRUSSIA, May 1st, 1876.

MR. S. S. RATHVON—*Dear Sir:* Through the "Nurseryman's Directory" I got knowledge of your honored firm, and to-day I take the liberty of addressing you some lines.

As my firm is not known enough yet in the west of America I should feel much obliged if you would have time, occasion and space to spend me some words, perhaps under "miscellaneous," in your journal.

For this purpose I beg to give you herewith a specification of my establishment, etc.

During the season I published eight catalogues, viz.: One wholesale list for Germany. One wholesale list for England and America. One wholesale list for France. One catalogue for private persons in Germany. One catalogue for private persons in Austria. One wholesale list for seed. One catalogue for decorative plants, etc. One catalogue for bulbs.

In our cultivation I have 300 acres with flowers and grasses for dyeing purposes, but I only cultivate the better species, (about one-third of the yearly want,) the other two-thirds I have contracted with gardeners.

I have a large steam-dye for flowers, grasses and moss, in which about 50 persons are engaged. Also, steam engine for a drying-machine, steam dye halls, and large rooms for drying flowers.

In the horticultural establishment and nurseries 75 to 100 men, and 100 to 150 female persons are engaged. For binding bouquets about 150 girls are engaged. Working people in all, 400 to 450 persons.

The department for export contains chiefly fabricates of dyed flowers, grasses etc., of not surpassed color of arrangement. Further, I export all the raw stuff for florists, viz.: Flowers, grasses, mosses, bouquet-papers, pot covers, basketware, elegant straw baskets, fabricates of wire, all sorts of home adornment, plant-stands, vases, flower tables, reservoirs for gold fishes, etc.

The most important part of my establishment is the hot and cold houses, covering more than three acres of space, (one of which is 180 feet long and only contains palms,) the others are for cultivation of Azales, Camellias, etc., and all sorts of plants for cut flowers.

You may be convinced that it would do me great pleasure if you would give me the occasion to render you a service.

Believe me to be, gentlemen,

Your obedient servant,

I. C. SCHMIDT.

Accompanying the above, we received from Mr. Schmidt,* a large and beautifully embellished CARD, 27 inches long and 20 inches wide, illustrating his manufactory and establishment in the town of Erfurt, Germany. His palm-house, 180 feet long; his saleroom of the same length; one of his small hot-houses, 150 feet in length; one of his small camellia-houses of the same size; and his steam dye-house for dried flowers, grasses and mosses; finely engraved from photographic types of K. Festge, of Erfurt; and also the east part of his nurseries, situated outside of the town, from which, including the above descriptive letter, the magnitude and magnificence of his establishment may be fairly inferred, and we give the whole a place in our journal to exhibit to our readers what is being done in the nursery line, and in the floral world beyond the borders of our country.

A view of the dyed foreign flowers and the beautiful grasses now on exhibition at our Centennial Exposition in Fairmount Park, Philadelphia, will illustrate to our people what progress we have yet to make to compete successfully with foreign nations, not only in productions of this character, but also in many other departments of human industry, and in this comparison, we will be, most unquestionably, greatly benefited.—ED.

POISONS IN AGRICULTURE.

Dr. R. C. Kedzie, Professor of Chemistry in the Michigan Agricultural College, has furnished a valuable paper to the transactions of the Board of Health of that State, on the use of poisons in agriculture, and more particularly on the effect of Paris green. He states that there are three forms in which arsenic is used; namely, white arsenic, arsenate of soda, and Paris green. The first has been used to destroy weeds in garden walks, but Dr. K. regards this practice as dangerous, as there is nothing in its appearance to distinguish it from some other substances used as articles of food, and its use is liable to fatal mistakes. Arsenate of soda is still worse, as its appearance and flavor is not unlike common salt, and an unsuspicious housewife might use it for flavoring dishes, and destroy a whole family, if it were brought into the house. Paris green is very widely used for destroying the Colorado potato beetle and the cotton worm. Its brilliant color is likely to prevent accidents, from mistaking it for something else. Dr. Kedzie estimates that more than a hundred tons were used in one year in the State of Michigan. This extensive use brings up the questions: Will it poison the plants, and render crops unsafe as food? Will it poison the soil, and injure succeeding crops? Will it become washed into drains and poison springs and wells? What becomes of it in the soil?

To answer the first question—cabbage plants were watered with a saturated solution of arsenic, and were killed in a week, but the leaves did not contain a trace of the poison, except by a discoloration of the stem near the roots. When the solution was weaker, so as not to injure the plant, the slightest trace could not be discovered anywhere. The experiments were repeated on barley and on turnips. Again they were tried on peas, all with the same results. Dr. Kedzie says: "Four years ago I made a careful investigation to determine whether the potato tuber absorbed arsenic when Paris green was applied to the plants to destroy the potato beetle. I took potatoes raised in the ordinary course, and repeatedly dusted, and others to which all the Paris green had been applied that could be used without killing the plant; but in no instance could I find a trace of arsenic in the tubers. Other chemists have made similiar investigations with the same results."

To determine the very important question, whether the poison applied one year to potatoes would affect the quality of wheat the year after, four square rods of wheat were measured off in March, and two ounces of Paris

*Seedsman and Nurseryman to his Majesty the Emperor of Germany and King of Prussia.

green were applied in water, or at the rate of five pounds per acre—much more than is used for potatoes. The surface of the ground was rendered sensibly green by the application. The wheat was not injured in growth. The grain when ripe was submitted to three of the most rigid tests, but the slightest trace of arsenic could not be discovered. Dr. K. was satisfied that it contained none at all. The poison exerts more influence the first year, and therefore it is very safe to conclude that wheat is not injured in any degree as human food when growing the year after the potatoes.

In another case, cabbages were grown in the college garden after the potatoes which had been dressed with Paris green. Six ounces of the cabbage-head, submitted to the closest examination, failed to indicate any trace.

In answer to the question, What becomes of the Paris Green? Dr. K. remarks, that it is insoluble in pure water, but slightly soluble in ammonia water; and it may be taken up to an extent of one part in 100,000 of rain water which contains traces of ammonia. Water charged with carbonic acid will take up one part in 10,000. The water in the soil containing some carbonic acid, will therefore dissolve a portion of it.

Where then is the remedy? A perfect antidote or safeguard is at hand. Hydrated oxide of iron is the well-known and standard antidote for Paris Green, as it forms an insoluble salt, with arsenious acid, or only soluble in strong mineral acids. Fertile soils contain always a far greater amount of this antidote than is required to neutralize all the arsenic ever applied to it, for one per cent. of the hydrated oxide would be no less than a hundred tons per acre, with a depth of one foot of soil. Dr. Dedzie proved the correctness of his reasoning on this point by actual and repeated experiments. Hence the fear of this poisoning injuring water is entirely groundless.

Several cases are mentioned where the careless use of Paris green, in applying it to potatoes, resulted in poisoning. More than one thousand reports were received from clerks in all parts of the State, only five of which report poisoning to the workmen. In one case, by careless handling, the Paris green was allowed to come in contact with a sore on the hand. "It swelled enormously, but was subdued by vinegar and salt." In another case the dust was inhaled, resulting in much pain in the head and a copious discharge from the nose for two weeks. The operator states that he had been subject to catarrh since childhood, but when the effects of the Paris green had left him, he had not suffered from it since. It proved a powerful medicine. In another case, the poison was permitted to enter a hole in the boot leg, causing some inflammation. Another man narrowly escaped with his life from inhaling the dust, which he had absurdly endeavored to exclude with a veil over his face. He was sick two weeks. Another had his eyes badly inflamed for a long time by the dust entering them, and some children were injured by playing among the dusted potatoes. It seems remarkable that so few cases should occur in more than a thousand reports, when it is remembered how careless many are in the application of the poison. It is much safer, however, to apply the Paris green in water—a moderate spoonful to two or three gallons—care being specially required only at the mixing.

THE CENTENNIAL—HOW TO SEE THE GREAT EXHIBITION.

General Arrangements.

The Exhibition opens at 9 a. m., and closes at 6 p. m. There are special gates distributed at different points, intended for visitors who pay, for exhibitors, for complimentary tickets, for workmen and for wagons. Visitors pay fifty cents each on entering the ground, which entitles them to a free entrance to each and every building, and to remain during the entire day. This also covers admission to the Gilmore Concerts in the Main Building, the Electric Organ Concert in Horticultural Hall, and the special exhibitions of fruit and vegetables in Agricultural Hall. On entering from Belmont Avenue visitors will find, free of charge, all necessary conveniences for washing, dressing, etc., etc; also, barber-shops, bootblacks, etc. At different points in each building water is supplied gratuitously, and restaurants can be found in every direction. Over three thousand seats have already been placed in the grounds, and others are to be added as required. Rolling chairs, a great convenience, can be procured at any of the gates, and visitors carried about from one building to another, and through the buildings, for a moderate charge. A narrow-gauge railroad runs all around the inside of the grounds for the small sum of five cents, so that every facility and convenience is at the service of visitors.

Expenses.

Do not be alarmed at the reports of high charges for board and lodging in Philadelphia; a careful examination of the subject settles the question that good board can be had from $6 per week up to $5 per day. Within sight of the Exhibition there are good accommodations for $1 per day; that is, a comfortable bed-room; breakfast can be had outside the grounds for fifty cents, and a good dinner inside for $1. All that is necessary is that the visitor examines the bill of fare and selects according to the prices given therein. At the dairy good milk, cream, berries, etc., are furnished reasonably. An estimate of expenses for one person should not exceed from $15 to $25 per week, including a daily visit to the Exhibition.

How to Spend a Week Profitably.

Take a room near the grounds, and commence on the first day by entering on Belmont Avenue; turn to the right and you are in the Main Building, with a day's work before you and a trip around the world. Still keeping to the right we enter Chili and the Argentine Republic, which, with Peru and the Orange Free State, form the first section, and contain much that is of interest. Then the old nations of China and Japan, with curious exhibits of bronzes, straw work, silk and matting. Next Denmark, then Turkey and Egypt, followed by the beautiful pavilion of Spain and the exhibits of Russia, Austria, Hungary and the German Empire united, and one-fourth of the day's work has been accomplished. We are now in the centre of the building, and if tired can rest and listen to the music of Gilmore's Band, or push on to the exhibits of our own country, which occupy fully one-fourth of the Main Building. On arriving at the extreme end, go up in the gallery and view the wonderful vista which extends for nearly half a mile before the eye. Now it is time to dine, and as the Restaurant Lafayette is the nearest, we will dine there and spend an hour under the shade of the trees. Returning, we leave the United States, and, passing through Mexico, the Netherlands, Brazil, Belgium and Switzerland, reach France and England, where hours can be spent with pleasure and profit. Then passing through Canada, Australia, Sweden, Norway and Italy, we have reached our starting point, and the bell chimes give notice that it is six o'clock and time to close. Tired, we go to our hotel for a rest, and then, if so inclined, spend the evening at Operti's Garden, or go down in the city and visit Independence Hall, and thus has passed the first day. The second day should be devoted to the Machinery Hall, the Shoe and Leather Building, the Glass Factory, and the buildings in the vicinity. Dine at the French Restaurant, but look at the prices. Bear in mind that two persons can dine comfortably on what is ordered for one. The thied day visit the Art Gallery and its annexes, the Photographic Gallery and the Carriage Building, with a look at Judges' Hall. Dine at the German Restaurant, spend the evening at Thomas' Concert or one of the theatres. The fourth day can be pleasantly spent by a visit to the Government Building, the Woman's Pavilion, the Model of Paris, the State Buildings, and a dinner at the restaurant on George's Hill. The fifth day can be given to the Horticultural and Agricultural Buildings, with a dinner at the grand American Restaurant. Devote the sixth day to an examination of the smaller buildings, and dine at the Southern Restaurant. Then take a boat up the Schuylkill, visit the Zoological Gardens, Fairmount Park, the Wissahickon, and spend the evening at the Academy of Fine Arts, dining at Strawberry Mansion or Proskauer's, and the week has passed with both pleasure and profit.

International Importance.

Sir Charles Reed, of London, in an address delivered to the Judges selected for the exhibition, expressed the great interest taken by foreign nations in its success, and, in closing, addressed General Hawley, President of the Commission, as follows:

"I must congratulate you, sir, in being at the head of an exhibition unparalleled in the history of international displays, so far as my observation has extended. I was upon the jury at the London Exhibition in the year 1851, and have visited every European exhibition held since that time, and I say without hesitation that, so far as I have yet been able to examine it, the display you have made in Fairmount Park eclipses everything I have seen. It may be fitly compared to a great feast—an intellectual feast—and I believe it will greatly advance not only the material position of our countries, but that it will afford to the world a guaranty that in gathering us here together you have the interests of peace at heart, and that this will contribute to cement the good feeling at present existing between the nations represented here."

Locomotion.

The arrangements in the city for travel are most convenient. The horse cars run every direction, and for the small charge of seven cents one can go from end to end of the city, and by a system of exchange tickets cars can be taken crossing the city, so that almost any point can be reached. For small parties wagonettes have been introduced, which can be secured for fifty cents for each person.

The City.

There is much to be seen in Philadelphia. Independence Hall, Carpenter's Hall, Girard College, the Mint, the Clubs, the Public Buildings, Laurel Hill Cemetery, Academy of Science, Academy of Fine Arts, are all worthy of a visit.

Summary.

While enough work has been given a visitor to occupy a week, yet it can all be seen in half that time in a cursory manner, and, of course, at a less expense; but the reader may rest assured, in whatever section of our country he may be, that it will pay him well to save money enough to make one visit to the International Exhibition, and, if possible, to bring his family. The advantages gained will amply pay for all economies in saving, and the writer feels sure that every one influenced to make the visit will never regret it.

THE HAWTHORN.

"'Tis true that I behold no more
The valley where we met,
I do not see that hawthorn tree,
But how can I forget?"

The hawthorns vary much in size, from a low, dwarfy shrub to a tree from ten to fifteen feet in height; and, therefore, without seeing the tree, the fully developed leaf, or the matured fruit, the species would be difficult to determine, except by one very expert in practical botany. Dr. Asa Gray describes twelve native and one introduced species as growing in the United States, but which of the twelve the beautiful branches you sent belongs to, for the reason above stated, I cannot tell. The hawthorns systematically belong to the order *Rosacea*—sub-order *Pomea*, (or pear family) and the genus *Crataegus*—a name derived from a Greek word meaning strength, on account of the hardness of the wood. Generically

they stand between the roses and the apples and pears. Their blossoms are generally white, rarely rose-colored, (according to Gray) and therefore the red and pink ones sent to THE FARMER may be regarded as merely a variety; but a hedge, a copse, or a cluster in full bloom, like those sent by our correspondent, is certainly a "thing of beauty and a joy forever," if only seen once in a lifetime.

In the "language of the flowers," the hawthorn is recognized as a symbol of hope. Few trees exceeds the hawthorn in beauty during the season of its bloom, and they are admired for their abundance and for their delightful fragrance. From the fact that the hawthorn usually blooms in the month of May, it is also sometimes called the May bush, and the country people of England decorate their houses and churches with it in its blooming season just, as they do with the holly at Christmas. The ripened autumn fruit of hawthorn, even after it has shed its leaves, possesses a rich beauty, and we are admonished by the poet to

"Thus let fruit bedeck thy spray,
'Mid age's leafless scene."—*Amateuris.*

THE CROP PROSPECT.

A correspondent of the *Practical Farmer*, who has concluded a ramble through Chester, Lancaster, York and Adams counties, Pa., and Carroll, Frederick, Montgomery and Prince George's counties, Md., says (writing under date of May 23d) that with few exceptions wheat is remarkably fine—farmers say never better. Grass generally good, and will soon be ready for the mower. Oats in the Pennsylvania counties looks fine; but a small area sown in Maryland. Weather has been cool, and much corn is now being planted; yet some farmers have their corn up and have started the cultivator.

Apple trees could not have bloomed more profusely, and prospects good for an abundant crop. In some localities peach trees have a fair crop; in others none at all. Even in the same orchard, on one side the trees are well loaded with fruit; on the other all killed by the cold. From present appearance the crop must be light. Green peas sold this day in market here to the hucksters for $7.00 per barrel; strawberries, 15 cents per quart; tomatoes, $3 to $5 per bushel, according to quality. The farmers' wives and daughters have been very busy with the whitewash-brush on the buildings and fences surrounding them, which certainly renders their homes very inviting to the traveler, by their neat, cosy appearance. In this particular they far excel the rural districts along the lake shore in Ohio.

IMPROVEMENT OF GRASS LAND.

Much is being said in the papers just now about the improvement of grass land. This is all right. Hay, as an agricultural product, has not had near as much attention given to it as other crops have, and as it well deserves. On the other hand, much is said about the improvement of grass lands under a misapprehension. Writers tell us that by a proper treatment of grass land it may be made to last for many years without that continuous plowing up that is customary. A timothy or clover patch, we are told, may be continued for a dozen years.

This is all very well, but we do not always put land in grass merely for the hay or pasture it produces. We are looking to other crops as well. Corn and potatoes do ever so much better in sod ground than in ground that has been kept in clean crops. Indeed, most things do well in a piece of broken sod—better, perhaps, than in a piece of clean ground well manured. There is, indeed, no way to restore the worn-out condition of land so well as to put it in sod; and even where hay or grass is an inferior object, people lay the land down to it as a preparer for other things which to them may be of more importance. So we see it is not a question altogether of how long we may keep a piece of grass in good heart by good treatment, by good manuring, as it is of a proper rotation of crops on the land, and the influence one crop may have on that which succeeds it.

OUR PARIS LETTER.

Farming on the Continent of Europe.

Correspondence of THE LANCASTER FARMER.

PARIS, May 4, 1876.

It is not surprising, the cordial welcome the agricultural community extends to the proposed International Exhibition of 1878. The rural interest reaped incalculable advantages from the exhibition of 1855, but it was almost overlooked in that of 1867. The exhibition of 1855 might be regarded as a "new departure" for French agriculture. It was from the study of the implements there exposed that farmers were compelled to adopt machinery, and since then progress in this respect has become so great, that the village smith has well nigh disappeared—improved machinery inferred. Superiorly tilled land, which in its turn exacted more manure; hence the demand for and the commerce in fertilizers. The London Exhibition of 1862 was full of valuable lessons; several French agriculturists seized the occasion to profoundly study the amelioration of the breed of cattle in point of precocity and feeding. In 1867 the agricultural section of the Paris Exhibition was a failure, because it was separated by several miles from the main building, and to which fatigued visitors felt no inclination to repair. Then the manner of holding intermitted shows of live stock—one week sheep, the next black cattle, then pigs, etc., and each a different species—required six months to follow the details, and the primary object of the exhibition was lost—that of simultaneous contrast. The same fault was repeated at Vienna in 1873, but will be avoided in Paris in 1878.

The question of a steep for seed grain occupies not a little attention; when well prepared it is efficacious against smut and rust, and allows light seeds to be skimmed away. But another object remains to be secured—the uniform and rapid germination of the grain; and to attain this end, a solution of lead is recommended as being superior to lime, Glauber's salts, and weak solutions of vitriol or arsenic. From experiments made with wheat, barley, oats and rye, in solutions of salts of lead, of copper and of ordinary water, the seeds treated with the lead preparation not only germinated more uniformly, but also more rapidly.

Veterinary Surgeon Felizet draws attention to the continued success attending the employment of caustic lime for the foot disease in sheep. It is very laborious to touch the feet of a numerous flock of sheep with the usual astringent solutions of copperas, white vitriol, calcined alum, or spirits of turpentine. Instead, form a species of enclosed "run" fifteen yards long by two wide; make a well-trodden floor, raise a border with puddled clay around the enclosure, so as to secure the uniform depth of nine inches towards the middle of the run; pour into this bath four barrels of water, and distribute over the bottom two cwts. of quick-lime, covering all with a dozen bundles of the refuse fodder from the racks, so as to form a carpet. Drive the sheep into this foot-bath, one hundred at a time, and compel them to well pass and repass from one end to the other. The spread fodder prevents the feet sinking too profoundly, and acts as a brush at the same time for forcing the caustic solution to enter the nails. The bath must be made entirely new once a week, as the lime-absorbing carbonic acid loses its causticity. It is a common practice to wet the straw intended for thatching purposes with a solution of quick-lime; the straw becomes thus more durable, incombustible, along with pressing sanitary advantages.

The cultivation of sugar beet has not made new proselytes this spring in the North of France; the quarrels last autumn between the farmers and the manufacturers have not created confidence in the cultivation of the roots; then the duty is high, and if not unjustly, is vexatiously levied. For the future the base of the purchase will will be the density of the juice, and all parties seem contented with this solution. The point now to secure from the government is, that the impost will be levied according to the richness in sugar, just as alcohol is taxed according to its strength. All parties interested in the raising of beet agree, that the less voluminous the root the more saccharine it will be, and to reduce the volume the plants ought not to be too distant. But no similar axiom can be laid down as to the manure most suitable for the crop, further experience under this head being required. However, it is considered advisable to apply the manure during the tillage of the soil, and before proceeding with the sowings. There is another reason for the pause in the cultivation of beet; since the roots can be perfectly conserved, like chopping green maize and rye, in trenches for spring feeding, farmers are feeling their way as to whether a heavy crop of roots for feeding would not be more profitable than the smaller return necessitated for the sugar manufactory.

The turnips, colza, cabbage, &c., grown in the sandy soils of Belgium are every year more and more attacked by larva, while alluvial and calcareous soils escape. Independent of the period at which any of the plants in question may be sown, as soon as the first leaves appear, the root, if examined, will present an excrescence that increases with time. If this swelling be opened numerous white worms will be discovered. Untouched the wen will enlarge, and the roots cease to penetrate in the soil, becoming in time a simple gall, changing to a putrid mass, and bursting when the insects have attained their last stage of metamorphosis. It is conjectured that the malady is produced from the puncture of an insect, and is more prevalent where the soil is well tilled and abundantly manured. Instead of having an average yield of twenty tons of turnips to the acre not more than ten are obtained. Among the remedies relied upon are, avoiding the use of fresh manure, preferring dissolved guano, urine, and four parts of superphosphate, with two of sulphate of ammonia, and one of sulphate of potash.

Though every effort is directed to combat the depredations of the vine bug, perhaps most attention is given at present to an exhaustive study of the habits of the insect. M. Balbiani seems to devote his life to the watching of the phylloxera, and his indefatigable application has been rewarded by important discoveries. It is now recognized that the insect has four specific forms, and develops its eggs in winter, not only around the roots, but on the shoots; some forms are the result of sexual intercourse, and others not. M. Balbiani has detected the insect leaving the egg during winter, the eggs having been deposited on shoots of the vine; thus the disease is both aerial and subterranean. The Comte de la Vergne coats the stem of the vine with coal tar, and finds the plan prevents the migration of the bug to the branches, and that vines so treated have their leaves, flowers and fruit better than those which have not been tarred; but the process does not ensure immunity from the scourge. The Comte is trying the experiment of steeping green vegetable matter, heath, rushes, &c., in the alkaline sulpho-carbonate, and burying the mass around the vine, thus supplying it with a manure and an insecticide at once.

The culture of the English Chevalier barley, so admirable for malting purposes, has taken this season a great extension in the northeast of France; it yields well and fetches a good price; two pounds of the barley produce about 1¼ pounds of malt, the latter yielding about 53¼ per cent. of extractive matter, a result that brewers applaud. When more acclimatised, the chevalier barley will be tried in Southern France and Algeria, it being the chief grain employed for feeding horses in these regions.

The director of the experimental farm at Lezardeau, draws attention to the neglect extended to the refuse of tan yards as manure. This resuse consists of two kinds, animal and vegetable. The former is derived from the scrapings and trimmings of the hides, more or less fresh, and after undergoing the lime bath it is rich in phosphate of lime and nitrogen, but loses 30 per cent. of the latter after three months fermentation, As a manure it suits well light sandy soils, and can also be stratified with farm-yard manure. It sells at the rate of fr. 3 to 5 the cubic yard. The vegetable refuse is the used tan, the residue of powered oak bark; it is an excellent absorbent, equal to wheaten or oaten straw, and is best employed as bedding for stock. The odor of tan is due to all the tannic acid not having been absorbed, as well as to the production of other acids during the steeping of the hides; urine contains most ammonia when fresh, and the rapidity with which tan loses its acid odor when employed as bedding, is a proof of its efficacy for fixing that alkali.

Pine plantations are being attacked by a very destructive insect, the *lophyre*; near Antwerp over 200 acres of pine trees have been so destroyed. The cocoons pass the winter in the moss at the roots of the trees, becoming perfect insects in April; the insects then breed rapidly; the female dies after depositing her eggs and the fly itself does not live beyond thirty days. The eggs are deposited in the incision made by a saw-like augar possessed by the insect, in the longitudinal section of the needle leaf, and in groups of six or eight; the worms in due time appear and gnaw the leaf upwards, and only the one-half of it. A young worm will consume thus three of the spines in a day and an adult as many as twelve. The trees first attacked are those of a sickly and dwarfish nature, growing on poor soils and on the outskirts of the wood. There is no effectual remedy against this pest, save to shake the caterpillars from the trees and then destroy them.

The new Bossin kidney bean is highly spoken of, and its prolific yield makes it an invaluable addition to the farm garden produce; it is white, easily cultivated, requires a friable soil and watering if the climate be dry. It runs as high as twenty feet and is covered with pods from the base to the summit; it can be sown from the end of March till the close of June. If the pods are allowed to ripen the beans are so tender as to be cooked without difficulty.

The farmers are commencing to be uneasy at the rapid draining of the country of the splendid Percheron horses, mostly to London and not a few to the States. France promises to be exhausted of this breed, as Belgium has been of her draught animals. On the other hand France is largely exporting her famous Durham Charlerris bulls to Germany and Normand-Berkshire pigs to Italy. Germany also is inclined to purchase her crossed merluos.

OUR FARMERS IN COUNCIL.

June Meeting of the Agricultural and Horticultural Society—Report of the Crops, Essays, Discussions, Etc.

A meeting of the Lancaster County Agricultural and Horticultural Society was held in the Athenæum room, on Monday afternoon, June 5th. Members present: Calvin Cooper, (President,) C. L. Hunsecker, (Secretary, *pro tem.*,) Henry M. Engle, Levi W. Groff, Levi S. Reist, Levi Pownall, Peter S. Reist, Martin D. Kendig, Johnson Miller, Samuel Benedict, John Huber, Israel L. Landis, Addison Hershey, Harry Wolf, S. S. Rathvon, Abraham Hostetter, Hiram Brubaker, Henry B. Erb, Ephraim Hoover, Henry Hostetter and Jacob Witmer. The reading of the minutes of the preceding meeting was dispensed with.

Mr. Johnson Miller made the following report of the condition of the crops in Warwick township:

With the blessing of rain for the last few days I am able to report everything in a promising condition. The wheat fields are, as a general thing, better than was expected in the early spring, and we will have a fair average crop. The Fultz wheat looks remarkably well, and in my opinion is the wheat that must take the place of the old Mediterranean, so long raised in this county, and which does not do so well now, at least with some farmers. The oats is now in a fair way of growing. Corn has also been pushing along; however, it will be a little irregular, from its not coming up at first planting, and the remarkable rain of two weeks ago washed out the fields around our neighborhood very much, and there was a good deal of after-planting. Fields were washed out where it was never known to wash. For 25 years we have not had such an amount of water in a short time. Grass is making slow growth. Clover is in heads, while timothy is just pushing the heads, and with some fields poorly set, others ploughed for Hungarian. I think the hay crop will not be much more than half what was harvested two years ago, when we had a full crop. Tobacco is mostly planted. The cut worms were very bad and numerous, and a great deal had to be replanted. Potatoes growing finely, but the bugs are numerous and destructive. Unless properly looked after, they will do more damage than any time heretofore. Apples, peaches, pears, grapes, and all kinds of fruit, never looked more promising, and there are prospects of an abundance of fruit of all kinds. The caterpillars are making their appearance again on fruit trees in large numbers. A timely hint how to best destroy them would not be out of place to be suggested by our society.

A letter was read from Milton B. Eshleman, regretting his inability to be present, having removed from the county.

Mr. C. L. Hunsecker read a lengthy article on "Climatology." The essay elicited a discussion which was participated in by Messrs. Engle, L. S. Reist. Cooper, Hostetter, Benedict, P. S. Reist, Pownall and others. The opinions expressed were at variance with each other, and no definite conclusion was reached.

Mr. Kendig moved that a committee be appointed on the rain gauge question, and Martin Kendig and Johnson Miller were appointed on said committee.

Mr. Engle read the following paper, by Donald G. Mitchell, originally read before the Cincinnati Board of Agriculture:

The Edgewood Farmer on Fences.

Fences, as the name implies, may be considered, 1st, as a barrier for the restraint of cattle; 2d, as giving shelter (under certain modes of construction) against bleak winds; and, 3d, as decorative features about a homestead. In this last view I shall not discuss the topic. For restraining cattle, the usual fences are of boards, or rails crossed in Virginia style, of posts and rails, walls, and in scattered instances, hedges. These last, however, have not met with favor for farm purposes proper. The nice culture essential for the two or three first years, the cost and the time requisite to make them effective, and comparative cheapness of lumber, have forbidden their general introduction. Where determined on for defensive purposes, the best plants are the honey locust, the Osage orange, and the bucktlorn, to which, I think, might be added, as best of all (if it were propagated), our own native white thorn. The Virginia fence involves great waste of timber, and by reason of its entering angles, slovenly culture. It does not belong to Connecticut, and I think should never be seen here except it be around outlying pastures. The post and rail system economizes material, and is durable and substantial, and when put in shape at the mill is not costly.

In respect to posts, three important facts have, I think, been made clear by experience and multiplied observation. First, that the timber should be cut, for best results, between September 1 and last of November. Second, that such timber, after splitting or sawing, should have a year's seasoning before use. Third, that the top end (as the tree grows) should be placed in the ground. As respects durability of different species, I think we may rate locust first, red cedar second, chestnut, well seasoned, third, yellow-bark and white oak fourth. Birch and poplar and spruce and basswood and whitewood—nowhere. The nostrums of applying salt, coal tar, and charring are, I think, justly out of favor, as hardly paying cost. Kyanizing is unquestionably preservative; but a farmer does not want to deal with chemicals, of whose good condition he cannot judge, and of which he wants to keep no large stock on hand. For fruit growers and hop-raisers, in making their stakes and poles durable, the system is worth attention.

Board fences are effective, and stand when pine boards, well nailed, are used. Chestnut, oak, and hemlock boards are inclined to warp and draw the nails. Considered as a shelter for early spring crops, in fruit gardens, the board fence serves an excellent purpose. They have secured gardens, where else gardens have been impossible, on the bleak eastern shores of Massachusetts. But for a family fruit garden no shelter is like that of a close growing hedge of evergreens, either Norway spruce, or arbor vitæ, or hemlock. Its good influence can hardly be overstated. To this end a free growing belt is as good as a clipped hedge, and farmers can spare the room for it. I have never seen better pears and a surer crop, year after year, than where an accidental growth of hemlock has intermingled its boughs with those of the pear tree.

Walls make good fences, provided the stones are proper and bind through, and provided they are laid upon a self-draining subsoil of gravel. On clayey lands, over swales, and through meadows, walls are a dreary resource, except the foundations be placed out of all reach of frost, which in this latitude would be, I should say, some three feet; and having dug thus deep, it were better to make a drain and bury the stones out of sight and forever. Even upon dry upland the walls of fair-looking cobble stones, carefully doubled and capped with broad stones at top, are a nuisance, and will bulge out with their interior and cumulative weight a great deal faster than the pockets of the farmer who builds them. I was reared in the county of stone walls—New London—where over 70 per cent. of the inclosures are of walls; and there are scores of farms there which could be bought to-day four times over for the cost of the walls upon them. I know what it is to bother and worry, and strain teams and break bars, and break—hasty words—over the lifting of a huge boulder, which, when in place, by reason of its huge bulk, will serve only as a stepping-stone for sheep to mount the wall. Better by all odds if much of that grievous labor had been spent in buying the boulders where they lay—by all odds the most economical way of clearing a rough field, and the stones never come up to perplex you.

In old times—before our recollection, and before yours, I dare say—we will say about the year 1250, people built cities with walls, and did not consider them safe to live in if built in any other way. Now, what if some disputatious persons had in that day sent a letter to the newspapers (which they didn't have) setting forth that it was all folly to wall in the towns, and it would be much better and cheaper to let every man look out for his own house, what a stare of wonderment the old people of 1250 would have put on! Well, there have been those who said, and say, that our whole fence system entails an idle waste of money. In 1842 Nicholas Biddle told the people of Pennsylvania that their fences cost $105,600,000, and involved an annual tax of $10,000,000, and advised their abandonment and the adoption of the European herding system. In 1854 the cost of fencing in Vermont was carefully estimated at $4,700,000, and annual tax at $855,000.

In 1862 the cost in New York was estimated by the Hon. Mr. Peters, I believe, at $144,000,000, and annual cost at some $15,000,000. And as late as 1871, from very full reports from intelligent observers in all parts of the Union, Mr. Dodge, the statistician of the Agricultural Department, compiled and tabulated a statement placing the whole cost of farm fences in the United States at no less a sum than $1,700,000,000, and the cost of annual repairs at $198,000,000. These figures are something frightful; and yet, somehow, they do not frighten us. Great masses of figures showing idle spending, I have observed to have very little effect upon the individual spendthrifts. I rather think they enjoy being in so great a company. Zealous reformers, you know, not infrequently get together a great budget of figures, showing the enormous expenditure for alcoholic drinks and tobacco in the country; and the toper listens with lifted eyebrows, and—takes his dram, and the smoker ponders, and—well, he fills his pipe; he must have a smoke on that. So, to the statistics I have given, the farmer listens surprised, wondering, and straightway proceeds to put a new fence around his buckwheat patch.

It looks almost as if fences were good for something. I think they are—in places; but that we have far too many of them. They are not universal. There are very few throughout France; in Belgium still fewer; in Lombardy and through all of Northern Italy they are scarcely known. In New Mexico there are none; in many of the southern counties of Illinois they are abandoning them, as also in many parts of Virginia, under provision of express enactment with reference to the "no-fence" system. Our highways in Connecticut ought to be safe, and all adjoining fields. There is a good law against strolling cattle, whether with or without keepers; but the people do not work sharply enough to its enforcement. I blush to say that in my own town the selectmen are the principal offenders—turning out the cattle of the town farm upon the highways. There are few Connecticut farms on which there are not far more division fences than a sound economy or sound farm practice would point. To this point I have already alluded. Unfortunately, the cost of their removal will probably keep many of them a long time in place. But I am glad to observe year by year a more general clearing up and sweeping away of the cumbersome and useless and numberless yard palings and pickets which once incumbered the ground about every country homestead.

It is an augury of the day, it is to be hoped, when the inhabitants of our country villages will discard and tear away the multitudinous lumber devices with which upon their little lots they now barricade themselves, each man against his neighbor. They keep out no thieves, for thieves can climb them; they keep out no cattle, for cattle do not come there; they keep out no scandal, for scandal loves fences better than the open country. This is not fancy. A beginning, and more than one, has been made. There is a village in the suburbs of Cincinnati with not a fence from border to border. Its aspect charms and delights every stranger who passes through. In the thriving town of Greeley, in Colorado, there are no fences whatever. In the pleasant town of South Manchester, where the Messrs. Cheney have established their great silk works, these enterprising gentlemen, by their influence and example, have worked the abandonment of fences throughout the village. The result is a charming, park-like effect, which attracts the visitor, and in which every inhabitant feels an honest pride.

The summing up of the whole matter is: In respect to farm divisions, lay out your land for easiest and most economic working; make the most of any protection your woodlands may afford; give no land to permanent pasture which will pay better by tillage; make access easy to every field you own; order your homestead and surroundings so that your children may love it and hate to leave it. With respect to fences, abandon them as fast and as far as you can; if you will make them, make them good; watch your State legislation; see to it that it aids you, and, when laws are made, see to it that they are kept. And when the barriers are down, and the great tax of their cost lifted, learn to trust your neighbor, and to live so that he may trust you.

Mr. Hostetter stated, that in Cleveland, Ohio, there are some streets in which no fences are built, and Mr. Levi S. Reist also said, that in Akron, Ohio, the same custom is observed.

Mr. Ephraim Hoover said, this question should earnestly engage every farmer's attention, for we will eventually be driven to it. He came in contact with a German one and a half years ago, who told him that they had no fences in that part of Germany where he was from. We must be gradually educated to it. He believed the day would come when Pennsylvania and every other State will do away with fences, particularly inside fences. In the point of dollars and cents, it would pay to do away with inside fences.

Mr. C. L. Hunsecker said if the expense of fencing amounts to one thousand seven hundred millions yearly, in the United States, and if it is as great as statisticians state it is, it would be policy to dispense with fences as much as possible. A writer has said, that if the amount expended in a few years were husbanded, the national debt could be paid. He wondered why farmers did not get up a petition and have legislation on the subject.

Mr. Johnson Miller said that it costs him from $60 to $75 a year to keep in repair the fences on a farm of 100 acres. He believed that $50 is about the average. He had kept an account for about ten years. It costs this county about three hundred thousand dollars annually.

Mr. Engle said that when the law compels you to take care of the cattle, and keep them fenced in, this subject will be very easily settled.

Mr. Reist said that the law was well enough when forests were plenty, to compel you to keep your cattle in or out of the fields, but now you must haul the material from far away. The time was when you could let swine run at large, and the result was that they became so lean that it took two to make a shadow. He believed that the result of this discussion would be that one-half of the fences would be put away. They have been diminished to a great extent already.

Mr. Johnson Miller explained how he kept fences repaired at the price already stated. He bought rails at $10 per hundred, posts at 25 cents a piece, and paid 15 cents for having them made. He bought chestnut posts, not locust, and for the interest of the money saved on locust posts he could again buy chestnut posts. Fifty pannels a year, at the rate of 90 cents a pannel, would cost $45. There is great economy in fences, if understood.

On motion, the subject was continued for discussion at the next meeting.

Mr. Johnson Miller presented two essays to the

secretary, which were not read. One on the subject of "How can we best improve the appearance of our farms," and the other on "What is the best method of taking care of our boys and girls on the farm, so as to make them happy and contented." The subjects will be discussed at the next meeting.

On motion the society adjourned.

DOMESTIC ECONOMY.

Meat Safes or Closets.

As the season advances, many housewives will feel the necessity of a meat safe, wherein various kinds of food can be kept from the flies, and also receive a good supply of fresh air, and not be so damp as to promote mould. Any ingenious man or boy, who possesses suitable tools, can construct a box which will answer a good purpose, in a short time. The lower box can be made of any dimensions desired, and square in form. The framework can be from three to four inches in depth, and sawed from boards of three-quarters of an inch thickness. They can be nailed together, or a neater way would be to dovetail them at the angles, after they have been smoothly planed. Then the cover must be constructed, and it should be made in a curved shape. To do this either osier or cane split longitudinally, will be required. A wooden frame must be made to fit closely over the inner box, and at the four corners the pieces of cane must be fastened. To do this advantageously, it will be needful to bore a small hole through the cane, taking care not to split it, and then it can be attached to the corners by a small screw. In the centre, where the supports meet, a screw with a brass ring attached can be made to fasten them, and it will make a good handle by which to lift the safe, if its dimensions are so small that it can be readily moved.

When the framework is prepared, wirework can be fastened all over it by means of small upholsterers' tacks or tinned tacks. Then take small strips of wood and nail them along the edges of the box to secure the covering tightly. Mosquito netting or strainer cloth can be substituted for the wirework if it can not be easily obtained. Such a meat safe will be found of great use in excluding insects, and more than one will frequently be desirable to the housewife, to whom small portable safes are always acceptable.

The one described above is of a square or oblong shape, as best suits its maker, but a round one will often be useful, and the hoop of an old sieve can be made with a curved roof by glueing the covered steels of old hoop-skirts over it, and covering them tightly with musquito netting.

But a sizable closet fitted up with shelves and enclosed with wirework frames and doors, will be of greater utility during the oppressive heat of the summer, and if it can be kept in a cool, northern exposure it will be of much service. Such a closet or meat safe can be built out of doors, but care must be taken to place it where the sun's rays do not strike it, and it should be built upon stones or bricks at least three feet from the ground. It can then be made of inch boards smoothly planed, and the roof must have a sufficient inclination to shed the rain, and also project over the sides for better protection. The boards for the floor and the roof should be matched and fastened tightly together, and the roof can be covered with felting or zinc. The back part of the frame should be of the same boards as the floor and roof. Then a frame work must be made to fit closely into the other sides, and covered with wirework.

The front should be made with doors, hinged at the two ends and rabbeted at the centre. A stout strip of wood must be nailed to the side supports, upon which to hang the doors. Their covering, and that of the sides also, may be of coarse canvas, but it would not be as desirable as the wirework. Zinc, perforated with holes, could also be used, and it has the advantage of never rusting, nor needing to be painted, while the wirework must either be painted or galvanized.

When the "safe" is made, some shelves and hooks must be added to it. The hooks can be inserted from the roof, and all fresh meat can be hung from them. A safe four feet in length and three feet in height, would be of a convenient size for family use, and it would be found to have more than paid for its cost in the saving of various articles of food during the first summer of its use.—*Daisy Eyebright.*

Care of Canary Birds.

During the summer season you should have both a drinking cup and a bathing dish in the cage, and should wash them well twice a day and fill with fresh water. The seed cup should be filled every morning.

The room in which the bird is kept should never be warmer than 60 degrees.

Feed plain food. Now and then a lump of sugar does no harm; but, as a general rule, avoid sweets. Keep the cuttle-fish dry and clean, and feed only fresh and dry seed.

Never place a cage where a draft can strike the bird.

Never smoke, nor allow any one to smoke, in a room where your bird is kept, as the odor of a cigar is fatal to canaries.

As a general rule never keep the bird in a painted cage, for the bird will peck at the wires, and it will lead to disease.

When your bird is shedding feathers, which is generally styled moulting, avoid drafts of air.

By obeying these simple directions, you can keep your birds in excellent health for years.—*Country Gentleman.*

Household Recipes.

To Remove Scorches.—Scorches made by overheated flatirons can be removed from linen by spreading over the cloth a paste made of the juice pressed from two onions, one-half ounce white soap, two ounces fuller's earth, and one-half pint vinegar. Mix it, boil well, and cool before using.

Solid Syllabub.—Take a pint of thick cream, half a pint of white wine, and, sweetening to your taste, put in the juice of one lemon and half the rind grated. Whip it up the eve of the day when you design it for use, but do not fill your glasses or garnish with it until the day after it is made, if you wish it to be solid and stand.

Hominy Fritters.—Two full teacups of cold boiled hominy; add to it one scant teacup of sweet milk and a little salt; stir till smooth, then add four tablespoonfuls of flour and one egg; beat the yolk and white separately, adding the white last. Have a pan of hot butter and lard ready, (half of each) drop the batter in by spoonfuls and fry them to a light brown.

To Make Fine Pancakes.—Take a pint of cream, six eggs, three tablespoonfuls of flour, three of wine, one of rose-water, a quarter of a pound of sugar, half a pound of melted butter, almost cold, and half a nutmeg grated. Mix these well together. You need butter your pan only for the first time you fry. Just let them become delicately brown. Let the batter be as thin as possible.

A Custard Pudding.—Take a pint and a half of cream and mix with it six eggs well beaten, two spoonfuls of corn-starch, flour, or pounded cracker, and half a nutmeg grated, a little pinch of salt, and half a pound of sugar. Have a very thick cloth buttered and floured, pour in the batter, and put the pudding into a pot of boiling water. Boil it half an hour. Serve it with sauce.

Orange Cake.—Mix two cups of sugar with the yokes of two eggs, then add the whites beaten to a froth; next add a large tablespoonful of butter, then one cup of milk, with two tablespoonfuls of baking powder dissolved in it, and last of all flour; flavor with lemon extract, bake in jelly pans. Filling: Two oranges and one lemon; grate the rinds and add the juice, one cup of water, one cup of sugar, one tablespoonful of corn-starch; boil until smooth; cool before putting between cakes.

A Fine Egg Pudding.—Beat three eggs very well, and put in as much sifted flour as will make them very thick. Set a quart of milk and half a pound of butter over the fire; then beat two eggs, and stir them into the milk, continuing to stir till it boils; then add the three eggs, and let it boil until it is quite smooth and thick. Take it off the fire, and season it to your taste with sugar, salt and nutmeg. Currants will improve it. Bake the pudding for half an hour. To be eaten with wine sauce.

Holiday Pudding.—Take two large lemons, and grate off the peel of both. Use only the juice of one, unless you like quite a tart flavor. Add to the lemon half a pound of fine white sugar, the yolks of twelve and the whites of eight eggs, well beaten; melt half a pound of butter in four or five tablespoonfuls of cream. Stir all together, and set the mixture over the fire, stirring it until it begins to be pretty thick. Take it off, and when cold fill your dish a little more than half full, having previously lined its bottom with fine puff paste.

Boiled Apple Dumplings.—One pound of suet, one pound of flour, heaping teaspoonful of salt; chop the suet into a little flour to prevent its caking, chop very fine—as fine as meal; then add flour and mix thoroughly; then add cold water enough to make a paste; roll as thin as pie crust; pare a dozen large apples, quarter and core them; keep each apple by itself, place the quarters together again, and cut the paste in a square to cover the apple; tie each dumpling in a square cloth, leaving a very little room to swell. Boil them an hour, putting them into boiling water; serve with hard sauce.

Heyday Pudding.—Lay a thin puff paste in the bottom of your dish, or rather pie-plate, taking care to lay a thicker strip around the outer edge, moistening the bottom piece with a little cold water to make the layers stick together. Then take of candied orange peel, lemon peel and citron, each an ounce; slice them very thin and lay them on the paste. Beat the yolks of eight eggs and the whites of two; add a light half-pound of melted butter, a good half-pound of sugar, and blend all the ingredients smoothly and thoroughly together. When you are sure that your oven is properly heated for baking pastry, pour the pudding mixture into the plates prepared, and bake carefully, not letting the puddings brown too much.

To Make Cheese-Cakes without Curds.—Take a pint of sweet cream and put it into a skillet on the fire; beat up two eggs very well, and then add to them enough flour to make them into a very thick batter. Do not stir the eggs and flour into the cream until it is boiling hot; but when arrived at that point stir them gradually into it, and let them boil together afterwards for a few minutes. Then remove them from the fire, and while warm stir in half a pound of butter. In the meantime have ready three eggs more, well beaten; these must be added, together with half a pound of sugar, a little salt and nutmeg. Put in a few currants, and bake in little tin patty-pans lined with pastry.

Try It.—Here is an article for housekeepers: The *Scientific American* asserts that a little soap lather mixed with the starch will prevent the flatiron from sticking to the linen, and gives the gloss so conspicuously absent in the home laundry article. Easily tried.

In washing calicoes in which the colors are not fast, be careful not to boil them; but wash in the usual way with soap, and rinse in hard water. For dark-colored goods add a little salt to the water; for light, a little vinegar.

Experiments have been made at Halle and Leipsic, showing the superiority of large-sized seeds for garden vegetables. Beans and peas were tried with large and small seed side by side. The plant from the large seeds were earlier and grew more rapidly, and there was about one-tenth in the difference of the crops in favor of the larger seed. The large seeds also germinated with much greater certainty.

The Taste of Turnips in Milk and Butter.

It is stated, upon German authority, that the unpleasant taste imparted to milk and butter by feeding turnips, &c., may be removed by simply throwing into each pan of milk of four or five quarts as much saltpetre as will lie on the point of a knife, when a gelatinous mass will separate from the milk and settle to the bottom.

Horse-Radish Sauce.

Clean and grate one stick of horse-radish, place in a sauce-pan, and a cupful of soup, two tablespoonfuls of dried currants, a little sugar, a teaspoonful of vinegar, and some salt; place over the fire, let it come to a boil, and serve. This sauce is very popular among the Germans, by whom it is much eaten with soup meat, and is good with other boiled meats.

Drumstick Asparagus.

To obtain asparagus white, all but quite to the point, nothing more is needed, so soon as the point of a shoot appears above the surface, than to cut it as low beneath the surface as a knife can be thrust. Such white-stalked shoots are almost tasteless. Let the shoots grow until 3 or 4 inches above the surface are quite green. Those inches are all eatable and high flavored. The sun is needed to give them flavor.

GENERAL MISCELLANY.

Have Faith in Your Business.

All great accomplishments have resulted from confidence in the business pursued. And this confidence must not be a blind faith, but founded upon an intimate practical knowledge of your occupation. When Mechi bought a London bog for the purpose of transforming it into the most fruitful farm in England, and saw, in advance, the transformations he proposed to make, laid his plans as carefully as an engineer would have done to tunnel a mountain, proceeded upon scientific and practical principles combined to carry out the work of improvement, step by step, regardless of the jeers of the routine farmers around him, he had faith in his business. And that faith enabled him to spend a greater amount per acre in reclaiming and improving his land than had ever before or since been expended upon land for agricultural purposes, and yet his balance sheet, for years, has shown a liberal net return for his investment.

Let us take the case of Mr. Dalrymple, of Minnesota, who, after studying the business, entered on the great scheme of raising 2,000 acres of wheat per year, and so completely had he calculated the means required to accomplish this end, that it was all plowed, cultivated and sown in season, and his crop, some twenty per cent. above the average among small farmers, harvested in good order, threshed and sent to market, with an average profit of ten to fifteen thousand dollars per annum. This was not a single year, and accidental good luck, but continued for years in succession. He had faith in his business.

John Johnson, of Geneva, N. Y., came to this country with little more means than to plant him on his American farm. He saw the needs of his soil, and commenced draining off its surplus water, and the jeers of his neighbors at his folly were soon turned to astonishment at the crops he produced. They

saw him reap a wheat crop double the average of the State, raise cattle and feed sheep at a profit, while others reported only loss. He proceeded, with the calm confidence of knowledge, to tile drain his 300 acres, at an expense much greater than he paid for his farm; but for some years, in relief of his old age, he has been able to rent portions of it at $25 per acre. He had faith in his business.

There is no occupation of man that requires for its successful prosecution, more careful study, more confidence based upon knowledge, than agriculture. We see the want of faith in the conduct of a large class of farmers, who never seem to have hit upon the right line of business. Now they are dairying, having gone into it when dairy stock was high, costing a large sum to start, but the product having been depressed for a few months, all confidence is gone in the future of the dairy industry, and their cows are sold at a heavy loss. Next they take to sheep, but wool soon has its turn of depression, and confidence is lost in this industry, and its abandonment follows. Hops now become their hobby. Fifty cents a pound is quite too alluring; but when their crop comes, a season of plenty has returned and down goes the price to ten cents. Woe meets them here—they turn in disgust from their thrifty vines and seek their neighbors to whom they sold their cows. And now begins the dairy again—this business of battledoor and shuttlecock, "everything by turns and nothing long." These are the farmers that talk loudest that farming does not pay. They do not give it time to pay in any one direction. They are to be pitied. They have no faith in anything—they float with the current.

How strange that they should not see that every great agricultural industry is founded on the wants of society, and that these needs continue ever the same, the price of the product being governed entirely by demand and supply. Each branch must have its fluctuation in price, and the only true way to determine the profit is to take the average of ten years. This average will show fair prices for dairy products, for wool, for beef or mutton, for grain, for hops, for fruit and for every product of the farm. The mole-eyed man who can only see one year's returns, and tries to govern his actions by that, will always find himself in the ebb of the tide.

It matters but little what branch of farming you follow, provided it be adapted to your location, but, before you choose it, study all its details, and get the experience of those of long practice, and be sure that you comprehend the difficulties to be encountered, ground yourself in a faith based upon knowledge, and when you undertake it, let no croaking, no depression in price, swerve you from its prosecution—have faith in your business.

Management of Horses.

The following is the regimen employed by a Cincinnati Express Company in the care of their horses:

The urinary is a novelty and shows good manners in the horse. The grooming is excellent, and the quality of ration is not bad, but a good authority suggests that the quantity is quite too small for 1,200 to 1,400 pound horses. Probably the peck and a half of chopped and ground feed given at evening is underestimated. Such horses should have at least ten pounds of oats, either ground or unground, and then the rest of the ration would answer.

The number of horses kept at the stables is fifty-four. Four hostlers attend to these. Promptly at 4 o'clock A. M. the watchman of the stables gives to each horse eight ears of corn. Then, about 5 o'clock, the hostlers commence their duties. Of those under the care of each, one by one is led to the watering trough and then to the urinary. This consists of a pit sunken ten or twelve inches below the level of the basement ground floor, and kept compactly filled with sawdust and short shavings. And it is a remarkable fact that a horse in this stable scarcely urinates excepting at this place, especially prepared for him. When horses come in from their work, the harnesses are removed, and they are at once led to the urinary. When a fresh or green horse comes to the stable, by being driven with some old "stager" that knows the rules of the stable, the new comer soon learns to conform to the habits of the older inmates.

From 5 to 7 o'clock, then each horse is taken in hand and thoroughly curried, brushed and cleaned; ten minutes being spent by a hostler upon each horse. A damp woolen cloth is always rubbed over the coat of each horse after being curried and brushed. This removes all loose dandruff, gives a fine, glossy, sleek appearance.

The horses are fed nothing in the morning, excepting the eight ears of corn. After being led back to stalls when cleansed, they are then ready for work. The same process of currying, brushing and cleaning is also gone through with at noon and at night, at the close of their forenoon's and afternoon's work. At noon each horse is fed with half a peck of oats. At night chopped feed is given. This is composed of sheaf oats or rye straw passed through a straw cutter, and then, when wet, ground oats and corn and bran is mixed up with it. A peck and a half of this is given to each horse. In addition to the chopped feed the rack is supplied with eight or nine pounds of bright timothy hay, this being the total amount of hay that is fed. And, perhaps, of this supply, the horse will not eat more than five pounds during the night, finishing up the balance during the next day. About once a week a peck of oil-cake meal is mixed up with the chopped feed, being equal to about a third of a pint to a horse. This promotes the uniform good condition of the animals. And if at any time the urine is cloudy and thickened, a tablespoonful of pulverized resin mixed up with chopped feed is given him. This acts upon the kidneys, and the difficulty is at once removed.

The horses are freely given what water they want as they come in from their work, unless they are "green," and then water and feed until they are thoroughly cool.

A very marked feature connected with the stables is that the air is so sweet and fresh. And probably this is owing to the fact that scarcely ever any urinating takes place in the several stables, and that the saturated sawdust and shavings are removed from the stables every third day.

Potatoes and Potato Growing.

A correspondent of the *Prairie Farmer* says: As I have been raising several acres of potatoes each year for several years, I thought a few facts which have been gained might be of interest to some of your readers.

As I did not like the Peachblow on account of taking so long a season in which to mature, often being killed by the frost before being ripe, and also being so hard to dig, besides not yielding as well as usual, rotting in places, I commenced three years ago to experiment with several of the new kinds sent out by Eastern seed firms. After testing many of them, I have selected the following varieties, one of which at least, is far better than our old favorite, the Peachblow.

Five years ago I received one-half peck of Excelsior potatoes and have raised them ever since, believing it to be the very best potato grown. It is round and smooth, growing to a good size, ripening early in September, growing compactly in the hill, making it easy to dig. It is a great cropper, yielding nearly double as much as the Peachblow on the same ground; it is the best of a shipper, always getting to market in the best of shape, and will keep, with a little care, for fully ten months, retaining its excellent eating qualities until the last. The most promising potato is the Brownell's Beauty, a round, red potato, good cropper and keeper, and excellent for the table.

Breese's Peerless is also worthy of a place, although not first-class; but will give a good crop, in spite of bugs and drought, when others fail. The Early Rose is still king among the early sorts.

HOW TO GROW THEM.

Select a rich, sandy loam; if not so naturally, make it so by good well rotted manure and an application of lime. Select a northern exposure, and run the rows east and west. By so doing, the tops of one shade the roots of the next. Cut your seed, one eye to a piece, commencing at the stem end and cutting alternate eyes until you finish at the seed end. Plant in drills three feet apart and sixteen to eighteen inches in row, one eye in a place. In this way it takes from three to five bushels to an acre, according to size and number of eyes to the potato. Open the drills with a stirring plow or single shovel, and cover with a two horse corn cultivator, and soon as they get well through the ground, harrow, and again when about four inches high. This keeps the weeds out of the row, and also keeps the ground level, which is highly important in the West. Cultivate at least twice after with any cultivator that will kill the weeds and leave the ground nearly level.

In this way they get what rain falls, will not sun scald, and will give a good crop almost any year.

Milk from Holstein Cows.

It is often remarked that the milk of cows giving so much as the Holsteins do, must be lacking in quality. That this is an incorrect conclusion we have an abundance of proof. Holland is a dairy country exclusively—not for the sale of milk, but for the manufacture of butter and cheese, the quality of which has a world-wide reputation. I have had but little opportunity to test the milk for butter-making, but for general purposes I know it is excelled by none, and rarely equaled. For nearly two years I furnished one of the largest retailers in Boston, and he expressed much regret when I found a better market. He assured me that he never sold milk that gave such general satisfaction. He said it was particularly even in quality, and that it surpassed all other milk in keeping—two qualities quite essential in the manufacture of butter.

Holstein milk has more body than Jersey; consequently requires more time for the cream to separate. It is not claimed that Holstein milk will produce a larger percentage of cream than the Jersey, but the advantage is in the greater yield of milk. I have unfortunately mislaid some valuable statistics and records of butter produced by Holsteins, but reports are numerous of cows making from 12 to 18 pounds per week. Mr. Chenery's Texelaar made 17 lbs. 14 oz. in six days. Mr. Miller's Crown Prince made from 12 to 15 lbs. per week. The Shaker family, Pittsfield, Mass., report 14 lbs. per week.

Texelaar's milk afforded 22.72 per cent. cream.

Col. Hoffman writes: "I made a careful test every month of each of my cows, separate, together with the milk of about 120 other dairies, and find in almost every case the Holsteins run ahead in percentage of cream, and the lactometer standard also."

F. W. Wright, of this place, made careful experiments with his Holstein milk, and found he made one pound of butter from fourteen pounds of milk. It is a remarkable record, but no one who knows this gentleman will doubt it. He tells me that he is satisfied he can, under favorable circumstances, make 21 lbs., per week from one of his cows. This cow has recently dropped a calf, and has made a winter record (without forcing) of 53 lbs. of milk per day.

As a cheese cow, the Holstein stands at the head of the list, but after all, her great advantage is in her wonderful combination of qualities. I acknowledge my inability to do her justice, and will be pleased to have some one qualified to go on with the subject—what I have said was merely to provoke some one else to do so.—*National Live Stock Journal.*

Culture of the Yam.

A correspondent of the *Inter-Ocean* writes as follows about the cultivation of the Chinese Yam. He says: "Get the ground properly prepared, plant the tubers, and the greatest portion of the work is done. The first year the ground should be kept loose and free of weeds; afterwards keep weeds from going to seed. They then have a start that the weeds don't hurt them much if they do grow, but it is not advisable to let any do so if one has the time to keep them out. Once planted they will grow for years, each year bringing larger yams, and are as good as one-year-old roots. And this is why they are so valuable. A man can plant enough at one time to do his family for years, and the ground that is occupied with them is so small, being so very productive. No insect as yet discovered ever injures them, and drought affects their growth only while it lasts. They require no winter protection, and could, in my opinion, be profitably cultivated anywhere in the United States.

I have now been acquainted with their growth about twelve or fifteen years, and I have during that time found them very profitable. At times, when potatoes were scarce and high-priced, we always had our yams to help us through. In taste and appearance, after being cooked, they resemble the Irish potato, and should be cooked the same way. Planted near the window or door, the vine may be trained about it, and presents a beautiful appearance, as the leaves are heart-shaped, trimmed with scarlet. It grows rapidly, and could be used upon screens and arbors to good advantage. When grown for the table only, the vines may run on the ground, and do not require stakes. The soil for best results should be deep; if it is not, dig out a trench two or two and a half feet deep, and fill up with good soil and well-rotted manure. In the bottom of the ditch a plank or flat stones may be laid to prevent their going any deeper, which will cause them to increase their diameter. Commence to dig at one end of the row, digging only what is wanted for present use, as they are suitable for the table any time in the year. Put the soil back, leaving a hole to commence at where you wish to dig again. In the spring plant tubers where you dug the year before, thereby leaving no ground idle. They should be more generally cultivated, and will be when more thoroughly introduced and their many good qualities are known.

Convenient Barns.

A correspondent of the Stanstead (P. Q.) *Journal* gives that paper a minute description of the barn lately erected by Mr. A. P. Ball, whose name is familiar to our readers as a breeder of fine horses and cattle. The barn is 100 feet by 50; two stories high, with a basement. The basement has six pens for mares and colts, a root cellar, 42 by 17 feet, and a manure cellar 42 by 33 feet. It is 8 feet high, divided lengthwise into three rows for cattle and horses, first row consisting of stabling for 8 horses and 12 head of large cattle; the centre row has tying up room for 28 head; the third row is divided into pens for calves, with room for 32, the whole giving a capacity for 72 head of cattle, large and small, and 8 horses. Above is the storage for hay and grain, 15 feet high, having a floor through the centre 16 feet wide, with bays on each side 17 feet wide, access to which is had by an approach on the east end 60 feet long for entrance; on the west end to be 40 feet long for exit. Ventilation is obtained through 4 ventilators from the cellar to the cupola; also by windows on the cattle floor, one being in each bent, not only on the sides but also in the ends. The hay loft has four large windows in the gables, with windows over the barn doors. The barn is very light and well ventilated, and is so warm that manure does not freeze. The hay is conveniently put down through trap doors, so arranged that it falls in front of the place where required for use. Equally good is the arrangement for putting down straw for the bedding, as it falls directly behind the cattle. Through another set of

traps the hay is put down for the horses in the basement, and the manure is put through traps into the cellar, except the horse manure, which is utilized by being used for bedding under one row of cattle before it is put below. The barn is double-boarded and battened, and will be painted with mineral paint.

It was built to accommodate his herds of Short-Horns, Ayrshires and Jerseys, and his fine horses. He has 9 Short-Horns, 40 Ayrshires (several of which are imported) and 10 Jerseys. His horses are principally of noted trotting families, excepting a few Clydes. He also keeps a few Berkshires, and some sheep.

How Plants Feed on Ammonia.

The odorous element in manure, and which gives manure its smell, is ammonia, the chief component of which is nitrogen. It is quite certain that plants require nitrogen among the essential articles of food. But for many years there has been a discussion as to whether the plants absorb nitrogen, or whether it is only taken up by the roots. It is said that M. Mayer, of Heidelberg, has concluded his experiments as to the absorbtion of ammonia from the air by the leaves of the plants; theoretically, it is possible to do so, but the air as a source of ammonia, is of little practical importance. Besides, it is next to impossible to make plants live in an atmosphere artificially enriched with ammonia; the soil is the real source, and the roots the real agents, by means of which vegetation receives its supply of ammonia.

It is by no means certain, however, that the roots are the only medium through which the plant receives its nitrogen. If the curious statement concerning carnivorous plants be true—if there are plants which have the power of catching insects by their leaves, and in a certain sense eating them, it is equivalent to saying that a plant can take in nitrogen by its leaves, and there is no reason why this power may not be extended. Indeed, those who are known as evolutionists, will probably contend that the power to absorb nitrogen was possessed before insect eating commenced, the latter process being but a developed power dependent on the first. The proof, however, that plants do eat insects, is not yet regarded as absolutely certain. They catch them. This is undoubted; but why or wherefore is by no means clear; nor is it, indeed, made manifest that any good whatever results to the plant, although there is much that favors the insectiverous views being developed. —*Weekly Press.*

About Cheese.

The *Western Rural* has been looking up the figures in relation to the cheese interests of our country.

The past five or six years have witnessed a perfect revolution in the cheese trade of this country. Prior to 1870 our exports of this staple were insignificant, and for that year they amounted to only about 7,000,000 pounds. Since then cheese factories have sprung up all over the country, and the manufacture has been greatly increased and correspondingly improved. New York has taken the lead in its production; Ohio comes next, closely followed by Michigan, Illinois and Wisconsin. The production of cheese increased so rapidly that it became a problem of much importance whether they would find a market, but this problem was quickly solved by the demand from Europe, and in 1872 we exported 66,000,000 pounds. Since then there has been a rapid increase in the production, but the foreign, as well as the home demand, has increased as rapidly, and in 1874 the exports exceeded 100,000,000 pounds, while from May 1, 1875 to March 1, 1876, only ten months, the exports amounted to 107,550,000 pounds. The total production of the United States last year is estimated at about 150,000,000 pounds.

We "beat the Dutch" in cheese, says a contemporary, "for Holland, which was formerly the largest producing and exporting country in the world, now falls far below the United States in quality and quantity. The average annual production of cheese from one cow is 320 pounds, and in a fine grazing country there is, perhaps, nothing which pays the farmer better as as adjunct to farming operations. There seems to be no danger of overstocking the markets, for Europe will take all we can make, and pay a fair profit for it.

Worms in Fowls.

Some years ago I had several fowls drooping about with all the symptoms of cholera, except that they lingered for a longer period. After experimenting with almost every known remedy, I at length determined to make a *post mortem* examination, and, if possible, determine the cause. Accordingly I proceeded carefully, that nothing should escape my notice. Arriving at the intestines, I found that the entire lining was apparently removed, and they contained no less than fifty worms, about two inches in length and as thick as an ordinary knitting-needle, both ends coming to a point like a pin. They were white in color and as tough as sinews. I then gave the remaining fowls close attention, and frequently saw that as soon as they passed from one fowl another would hastily swallow them, and, I doubt not, would soon become affected. At length I hit on the following remedy: After they had gone to roost I made a strong tea of common worm seed, and gave each one about three tablespoonfuls.

Early next morning, before they had left the perches, I removed the dropping from beneath them, and found it literally alive with worms. I again dosed them on the following evening; this time they did not expel so large a quantity. I then began feeding them wheat shorts and bran, adding a little stimulant, and carefully avoiding anything that had a tendency to irritate the intestines. In the course of a week they were seemingly as lively as ever. Since then I have found, on several occasions, small, conical worms in turkeys in great numbers, and am of the opinion that thousands die from this cause, while it is attributed to cholera. The symptoms from which I detect it are from their slow, stiff, crampish movements, and disorderly, sorrowful appearance.—*Ex.*

Good Thing About Rye.

A writer in the Chicago *Times* says: "Rye will grow and produce fine crops far north of the degree of latitude where wheat will fail. It is, indeed, one of the most hardy crops that is cultivated. In regions where fall-sown wheat is almost sure to be killed, fall-sown rye is almost sure to survive and do well. Throughout the prairie regions of Illinois very little wheat went through last winter without injury, but rye came out all right and generally produced good crops. In many places where wheat was ploughed up last spring, rye yielded twenty-five or thirty bushels to the acre. Rye will grow and produce very fair crops on soils so poor that little else will yield enough to pay for harvesting. It delights in dry, sandy soils, and will yield a return for the labor and seed, on land that will produce little but white beans. There are many thousands of acres of land in different parts of the west, that yield hardly anything, that would produce paying crops of rye if it was sowed. Southwest of this city rye is grown on land that will produce no paying crops of any other grains. Rye is one of the best grains to sow where it is desired to seed the land down to timothy, clover or other grasses. It has little foliage as compared with oats and wheat, and accordingly does not shade the ground so much. It allows sufficient sunshine to reach the soil to cause the young grass to grow very well. After the crop of rye is harvested the young grass is not likely to be burned up, as is the case when wheat and oats are cut, and often the young grass is entirely lost.

Mulching Recently Planted Trees.

To prevent recently planted trees from suffering for want of moisture, there is no cheaper or more effective method than mulching the soil above the roots with some coarse, fibrous material, such as hay, straw or coarse manure from the barnyard. Tan-bark, saw-dust or leaves of any kind will answer the purpose, and in regions where long droughts are likely to occur in summer, the mulching should never be omitted, but considered a part of the operation of transplanting the trees. If the ground for the space of four or five feet above the stems of trees is covered with a mulch as soon as they are set out, it will often prevent their dying, and insure a vigorous growth. The soil under the mulch holds moisture much longer than when exposed to the direct rays of the sun, and it never becomes so hard that the most gentle rains fail to penetrate it, or so hot as to rapidly expel moisture. Those who have experienced more or less difficulty in making evergreen or deciduous trees live when transplanted would do well to try mulching, and see if they do not have better luck. We think it is far preferable to watering, which so many persons practice in order to save their trees. If water is applied it should be given in abundance at certain stated periods, and not a little at a time, which frequently does more harm than good by rendering the surface of the soil compact and hard, and preventing the admission of either heat or air.—*Sun.*

The Peach Crop.

Everybody is interested in the peach crop, and its success or failure affects all lovers of this luscious fruit. Generally at this time of the year we are favored with a dissertation on the prospect, and so forth, of its growth, and as a rule these reports are of the most discouraging character, while it often turns out that they are falsified by a prosperous crop. It was so last year. In the early season it was predicted that the buds were blighted and there would be no peaches. The yield, however, proved extraordinarily large, and now we are told again that the prospects are poor; that because there was a large yield last year, the trees were so full of fruit as to break the boughs and bend the limbs out of all shape, as well as to exhaust the strength of the trees. Thus exhausted by last year's abundance the trees will scarcely bear this year, and so we are to have a peach famine this year. Peaches, it is said, will, therefore, be very dear this year, and this will in some measure compensate peach growers who growled last year because the market was glutted with the fruit. Let us have peaches.

Be Sociable with Your Cattle.

Said a farmer to me last spring: "When we were drawing out manure I let the boys drive to the lot, and I stayed in the yard, because I could put on better loads. And the cows commenced to give more milk right off." Now, this man is an active, industrious, intelligent, experienced farmer, and yet when he is piling manure in the yards his cows give perceptible increase in their milk. Why? One of his handsome grade short-horns, that he is so proud of, seeing him around, goes up to him and says as plain as a cow can say, "Give me a lock of hay," and he gives it to her. Another says, "Mr. Stevens, don't you think that rack wants cleaning out? and on looking he finds to his surprise that there is a lot of dirt and wet hay seed and rubbish at the bottom. He scrapes it all out and rubs it clean with some straw, and as soon as his load is filled, and while he is waiting for the next wagon, he gets a little feed and puts it in the rack, and the cows eat it and feel grateful. Between the next loads he takes the curry-comb and brush and gives one of the cows a good cleaning. The other cows come around him. He is a gentleman, and his presence has a soothing effect. They chew the cud of contentment and peace. As he goes past the pump he asks the cows whether they want a little fresh water. They had not thought about it, but they drank a little to please him; and so he goes on all day. No wonder the cows give more milk at night. —*American Agriculturist.*

Improvement of Grass Land.

Much is being said in the papers just now about the improvement of grass land. This is all right. Hay, as an agricultural product, has not had near as much attention given to it as other crops have, and as it well deserves. On the other hand, much is said about the improvement of grass lands under a misapprehension. Writers tell us that by a proper treatment of grass land it may be made to last for many years without that continuous plowing up that is customary. A timothy or clover patch, we are told, may be continued for a dozen years.

This is all very well, but we do not always put land in grass merely for the hay or pasture it produces. We are looking to other crops as well. Corn and potatoes do ever so much better in sod ground than in ground that has been kept in clean crops. Indeed, most things do well in a piece of broken sod, better, perhaps, than in a piece of clean ground well manured. There is, indeed, no way to restore the worn-out condition of land so well as to put it in sod, and even where hay or grass is an inferior object, people lay the land down to it as a preparer for other things which to them may be of more importance. So we see it is not a question altogether of how long we may keep a piece of grass in good heart by good treatment, by good manuring, as it is by a proper rotation of crops on the land, and the influence one crop may have on that which succeeds it.

Ashes for Crops.

Unleached ashes are more valuable than leached, but both or either are valuable applied directly to the soil from which any crop is to be taken, whether grain, vegetables or fruits, whether on fallow or grass lands, on strawberry plantations or in orchards. Ashes contain essential components of all crops. They should not be mixed with composts—that is, there is no gain in mixing them—but applied broadcast directly to the soil, whether it is grass land or land that is to be plowed. We never knew a farmer who could get more ashes than it was profitable to apply to his land. One hundred bushels per acre is not too much to apply to old cultivated lands. Any man who asserts that wood ashes applied to orchards is death to trees, either does not know what he is talking about, or has a selfish purpose in lying. Especially are ashes excellent for orchards. They should not be heaped right about the bodies of trees, but spread over the roots, which extend as far from the bodies of the trees as the branches do. Ashes are especially valuable as top dressing on old grass lands, or on lands cropped with grain. For root crops they are equally important; indeed, as we say above, there is no crop grown and no land cultivated that is not benefited in a greater or less degree by the application of leached or unleached ashes—the latter being the most valuable.

The Feeding of Horses.

The Michigan *Farmer* says: Almost of more importance than the form in which food is given, is the frequency and regularity of meals. The horse's digestive organs are not constructed for long fasts. Long intervals without food produce hunger, and hunger begets voracity, food is bolted, and indigestion and colic follow. This is doubly true and dangerous with horses doing hard work. They come to their long-deferred meal not only hungry, but exhausted; not only is the food bolted, but the stomach is in such a state as to be incapable of thoroughly active digestion, and is overpowered by half the amount of food it could otherwise digest. The prevention of waste is almost attained when we give a

proper form; but there are two points to which it is right to devote some attention—the form of the mangers and attention to the wants of the individual animals. The mangers should not be less than three feet long, eighteen inches wide, and twelve inches deep. They should have an upper border of wood projecting inwards for two inches, and a traverse bar of half-inch from across the middle. A piece of two-inch hoop-iron on the top of the manger protects it from damage by the horse's teeth. This simple arrangement prevents the horse from throwing out his corn, and the provender is not set in so thick a layer as in the ordinary narrow and shallow manger.

Transplanting Evergreens.

Each spring there come numerous inquiries about transplanting evergreens, and many think success depends upon choosing exactly the proper time. In our experience we have not found the *when* so important as the *how*, having removed the trees in the fall, and early and late in the spring. If one can have his choice of times, no doubt that the period when the swelling of the buds shows that vegetation is active would be preferable, but we have succeeded with much earlier and much later planting. The one great and all essential point is to keep the roots from becoming dry. If these are dry, send the tree to the brush-heap, as that will be its ultimate destination. If the trees are to be brought from a great distance a dull day can be waited for, otherwise the roots must be packed in wet moss, be puddled, or some protection be given them; they had better be kept soaking wet than dry at all. Some ask what manure to use. Probably guano would kill them the quickest, but fresh stable manure will be pretty sure. *Never* manure an evergreen at planting. When well established, well decomposed manure will be of use. The top affords such an obstacle to the wind that all trees over two or three feet high should be staked.—*American Agriculturist.*

Application of Lime.

Soils rich in organic matter, even though they already contain it in considerable quantities, drain peat swamps, stiff clays, and coarse heavy soil, and especially those destitute of it, are all benefited by an application of lime. Good results also follow its use on light soil after an incorporation of organic matter, as green manure, muck, or a thick sod or green crop plowed under. Sterile soils are rapidly rendered more sterile by its application. Wet lands show least effect from treatment of lime. Hence such lands must either be drained or receive an extra amount. Clays should always have organic matter applied in connection with lime. It acts most effectually near the surface. The apparent effect is greater the second season than the first, so the most satisfactory results are obtained by sowing broadcast in the early fall with at most only a light harrowing or brushing. It should be applied in an air-slacked, fine mechanical condition. The most profitable quantity to apply depends much on the land; wet soils, those well filled with organic matter, and clay, taking most—from ten to forty bushels being recommended, according to circumstances.—*Scientific Farmer.*

Mellow Soil Around Trees.

Unless the surface of the soil is mulched around young trees over an area of six feet in diameter, the ground should be kept clean and mellow. Every farmer knows that a hill of corn or potatoes will not amount to much unless cultivated, and yet there are many who will neglect to give the same care to a tree which is worth a hundred of either of the former. In rich soil trees may grow rapidly without cultivation, and no amount of grass or weeds retard them; but there are other things beside the growth to be looked after. If the weeds and grass are allowed to grow up around the stems of apple, peach or quince trees, the bark will become soft near their base by being shaded, and thereby be in a suitable condition for the reception of the eggs which will eventually become peach or apple borers. Take any dozen young apple trees in the section where the apple borer is abundant, and allow a portion to be choked with weeds, while the remainder are well cultivated, and then watch the result. From our own experience, we believe that the chances are nine to one in favor of those cultivated being exempt from this pest.—*Western Farmer.*

Which Ways Should Drills Run?

An erroneous impression seems to prevail in regard to the proper direction in which to place drills, for plants cultivated in that manner. They are usually laid off north and south, in order to get the greatest benefit from the direct rays of the sun. Instead of north and south, the rows should run east and west. Suppose a piece of ground, planted in drills two feet apart, running north and south. The plants, by the middle of July, having attained to the height of four feet, each row will be shaded by the one east of it until about the middle of the forenoon; then from the middle of the afternoon till night, the shade of each row will fall on its next eastern neighbor.

If the drills run east and west, the distance apart and the height being the same, the shadow of any row will not reach another row, excepting when the sun is near the horizon, early in the morning or late in the afternoon. In latitude 40° north the shadow of a plant four feet high will not reach two feet north from its base until about the 10th of August.

Bees on a Small Scale.

There are many householders whose means will not enable them to buy a cow, or provide keeping for her were they in possession of one. But they may be equal to the purchase of a colony of bees and provide the hives for the swarms resulting therefrom. Bees, like other stock, require pasturage, but, unlike horses, cattle and sheep, they are free commoners, ranging at will in search of stores, nor can they be arrested and punished for their intrusion on premises not their owner's. A single colony of bees, in good condition in the spring, may be counted upon to double or treble their numbers in a single season, securing ample stores for winter consumption, while supplying a gratifying surplus each autumn for household uses. This accumulation will prove most acceptable in families, especially while the price of butter rules so high as to place it beyond the reach of those not blessed with elongated and plethoric purses. Try a colony of bees as an experiment.—*Farmer's Union.*

Harnessing Colts.

The utmost gentleness should be exercised in harnessing the colt for the first time. Any undue roughness, as, for instance, throwing the harness over his back, the tugs and straps slapping against his sides, may forever render him exceedingly shy, restive, and consequently dangerous to approach. First, detach the harness from the pad, closely tying up the tugs. Then take them in both hands and place them gently over the collar, buckling below without jerking at the straps—the too common practice of grooms—after this, with both hands place the pad over the back, buckling just tight enough to prevent the pad from moving out of place. When this is done the tugs may then be drawn through the support straps and tied snugly up to them. The collar must be carefully adjusted to the animal's neck so as to prevent both scalding and chafing.

Cutting Off Lower Limbs.

It is a very common error, and a very injurious one, to cut off large limbs near the body of a tree. We meet with mutilated fruit trees all over the country which have suffered in this way from the use of axe or saw. Forest trees that are hollow, furnishing habitations in their trunks for squirrels and other animals and birds, should teach a lesson, showing the danger and folly of removing large limbs from the tree's trunk. Rotting is almost certain to follow, for the wound is too large to heal over, and sufficient care is seldom taken to cover the surface with sufficient protection to keep out moisture in the atmosphere; and, besides, the growing tree itself keeps the wound moist. The consequence is, decay sets in and eventually the tree becomes rotten at the heart, and the whole becomes injured and loses much of its vitality.

Scaly Legs on Fowls.

Scaly leg is caused by a parasitic insect, which may be seen by the aid of a microscope, in a little furrow under the scales. It is contagious. To cure it, clean up the legs of the fowls by washing with carbolic soap. An ointment made of coal tar and lard, sulphur and lard, or the various preparations of carbolic acid, applied two or three times, will usually effect a cure. Give the fowls sulphur once a week, mixed with their food and do not neglect to thoroughly clean the whole hennery, by washing with lime-water or some disinfectant. The disease is not hereditary, but scaly legged fowls should not be used for setting.

New Stock Yards.

There are about to be established extensive stock yards in the northern part of Philadelphia, on the North Pennsylvania Railroad. A company have purchased eight acres of land, lying north of Luzerne street and between Second and Sixth streets. The capital stock is 4,000 shares, at a par value of $50 per share. The stock will reach Philadelphia over the North Pennsylvania, Lehigh Valley, and New York and Erie Railroads, and stock cars will be built to accommodate the gauge of the Lehigh Valley raod, there being a third rail on the New York and Erie road, which makes a through route to the West.

A HEN never has a regular meal—she always gets a picked-up dinner.—*Commercial Bulletin.* And she has to scratch around considerably to get it, too. But then it doesn't cost anything. She has it all put down in the bill.—*Boston Advertiser.*

To Prevent Splitting of Handles.

All carpenters know how soon the butt ends of chisels split, when daily exposed to the blows of a mallet or hammer. A remedy, suggested by a Brooklyn man, consists simply in sawing or cutting off the round end of the handle so as to make it flat, and attaching, by a few small nails at the top of it, two round discs of sole leather, so that the end becomes similar to the heel of a boot. The two thicknesses of leather will prevent all further splitting, and if, in the course of time, they expand and overlap the wood of the handle they are simply trimmed off all around.

Buckwheat as a Poultry Food.

Buckwheat is one of the most staple articles of poultry food. It is very fattening, an excellent egg producer, and very much relished by the poultry. It is not, perhaps, used as extensively here as in Europe. In England, France, and especially in Germany, it forms not only an important part of poultry food, but is much used for culinary purposes. The great value which it has over other cereals is, that it thrives luxuriantly even on the poorest soil.

The Crops.

The reports of the farmers are very encouraging concerning the crops of the present season. The fears that the open winter and unprotected ground might prove disastrous to fruits and cereals do not, happily, seem likely to be realized. The reports from the great grain and fruit regions of this State are very favorable. It looks as if we might expect a year of abundance. If this shall prove the case, it will be the gladdest celebration of our centennial year.

Heaves in Horses.

The following is a good remedy for heaves and a cough in horses: One pound ground ginger, one quart of salt, four ounces hard wood ashes, two ounces black pepper, and one ounce each of pounded rosin and saltpetre. Mix thoroughly, and give a tablespoonful in the horse's feed twice a day. This compound is beneficial in all cases of difficulty in breathing before the animal's lungs become affected.

Labels.

Durable labels are very useful in gardens to name varieties of plants, shrubbery and fruits. They can be bought at a low price at seed stores in large towns and cities. A coat of white paint should be put on one side of them, and when the names are written on the painted sides with a lead pencil, they will be legible for several years. They should be attached with fine wire, and renewed as often as necessary.

Peas among Potatoes.

When potatoes are planted, if a few peas be dropped in every other hill in every second row, a fine crop of green peas will be produced, supported by the potato vines. The black-eyed marrowfats are best for planting, as they grow freely and quickly; and the crop of potatoes will not be diminished in the least.

A Fact for Farmers.

It may not be generally known that the seed of the sunflower is the most infallible remedy yet discovered for the speedy cure of founder in horses. Immediately on discovering that your horse is foundered, mix about a pint of the whole seed in his food, and it will work a perfect cure.

ON a farm at the Gap, Lancaster county, there are chestnut fence rails, well preserved, which were made in 1760—116 years ago.

A BERKS county farmer has mowed with the same scythe for thirty-five years, it is said, and he expects to use it until he is no mower.—*Norristown Herald.*

THE Granger movement has lost considerable ground within a year past, and the indications are, that as an order the Patrons of Husbandry will be short-lived.

AN agricultural journal advertises a new washing machine under the heading "Every man his own washerwoman," and in its culinary department says that "potatoes should always be boiled in cold water."

THE San Francisco *Call* publishes a collection of despatches from the leading wheat growing sections of California, nearly all of which agree in stating that the crop prospects were never so good as now.

THE *Prairie Farmer* says: "Fifty fowls will make, in the roosting house alone, one-half ton per annum of the best manure in the world, or more than enough to manure an acre of land, 700 pounds of guano being the usual quantity applied per acre, and poultry manure is known to be still richer in ammonia and fertilizing salts. No other stock will give an equal return in this way; and the figures will demand careful attention from the farmer."

HONEY CAKE: 1 cup sugar, 1 cup sour cream, 1 egg, ½ teaspoonful soda, 2 cups flour, flavor to taste, bake ½ hour, eat warm.

UNITED STATES CENTENNIAL COMMISSION.

Bureau of Agriculture.

PHILADELPHIA, June 1st, 1876.

SIR: The American Dairymen's Association has erected, in close proximity to the Agricultural Building of the Centennial International Exhibition, a model Chhese and Butter Factory, with rooms for an extensive display of Dairy Products, and the Apparatus and Appliances used in the manufacture of the same.

The Dairy House is in the form of a double L, the front portion being 116 feet long by 28 feet wide, and comprising three apartments: the centre one illustrative in its appointments of the American Cheese Factory, and Creamery System; the end rooms being fitted-up for the exhibition of Butter and Fancy Cheese. The wings are 64 feet in length by 30 feet in width, and appropriated, one for the display of Foreign Cheese, the other for American.

Beneath the building is a cellar of 864 square feet, for the storage of products not ready for exhibition.

The whole structure is of two stories in height, the upper floor being fitted-up with reception-rooms, offices for Committees, rooms for the storage and the preparation of products, and for restaurant purposes, it being designed to establish a Farmers' Lunch-Room in the building. Access to the interior of the exhibition-rooms will be closed to visitors, ample opportunity being given to view the display through numerous windows opening upon the veranda, which surrounds the whole structure.

Cheese and Butter will be displayed on benches, or low tables, provided free of charge.

Producers may themselves assume the charge of their goods, or can place them in the care of a thoroughly capable custodian, selected by the Bureau, and paid by the Exhibitors according to a scale of prices to be established by the Dairymen's Association.

The Dairy Building will be ready for the reception of Exhibits continuously from June 7th to November 1st, it being designed to have a *constant* Exhibition, a feature commending itself to the fullest support of Dairymen. To afford, however, opportunity for more active competition, it has been decided to have two Grand Exhibitions, one of Spring Butter and Cheese, June 26th to July 6th; and one of Autumn Butter and Cheese, October 17th to 21st. For the guidance of Producers, the Bureau of Agriculture has devised the following regulations:

Butter will be judged upon the relative merits as to the make, color, flavor, texture, solidity, and keeping quality. Parties exhibiting for Competition must be prepared to furnish full statements as to the making of the Butter, upon printed blanks, which will be supplied.

Butter offered for Competition will be in most acceptable form, if made under the following classification, applicable respectively to the Manufacture of Creameries and Dairies.

Best sample of 200 or more pounds, made at any time.

Best package of 35 lbs. or over, made at any time.

Best package of 35 lbs. or over, made in each month respectively.

Best package of 35 lbs. or over, of oldest make.

Best sample of 5 lbs. in 1 lb. prints.

Best samples of 5 lbs. or more, made respectively from the produce of the various breeds of cattle.

Cheese will be judged upon the relative merits as to quality, make, texture, keeping, flavor, and color. Parties exhibiting for competition must be prepared to furnish, upon printed blanks, which will be supplied, full statements as to the method of making and curing of the Cheese, and the preparation of the rennet.

Cheeses must not be cut, bored, or tried in any way before being exhibited, or they will be disqualified for competition. Awards will be made upon the various established appellations, both of Foreign and Home production.

Cheese entered for Competition will be divided into Classes, respectively, of Factory Manufacture and Dairy Production of that made previous to the year 1876, and that made during the year 1876.

Cheese offered for Competition will be in most acceptable form if made under the following Classifications:

Heaviest Cheese of good quality.

Best Cheese of 5,000 lbs. or over.

Best three Cheeses of each brand respectively, between 3 and 10 lbs., between 10 and 30 lbs., between 30 and 50 lbs., and between 50 and 70 lbs.

Best three Cheeses in each Class Artificially Colored.

Best three Cheeses in each Class Artificially Flavored.

Best Cheese in each Class of Natural Color.

Best three Cheeses for Special Display in October, of not less than 40 lbs., made on the American Factory plan, in the second and third week respectively, in June, July, August and September, 1876.

Best three Cheeses for Special Display in October, of not less than 20 lbs., Dairy production, made in the second and third week respectively, in June, July, August and September, 1876.

Best Cheese of oldest make, of each appellation.

Best lot of three Preserved Rennets.

Best sample of Coloring for Dairy Products.

Entries for Exhibition, either continuously or at the periods of Stated Displays, can be made free of charge, upon forms which will be furnished upon application. Producers who apply for room will receive permits for space, and official labels to be attached to the packages. Freight must be paid at point of shipment, which will secure the delivery of goods in the factory.

Blank forms for the entry of products, and any further information desired, may be had upon application.

BURNET LANDRETH,
Chief of Bureau of Agriculture.

D. L. POPE, *Special Sup't of Dairy Section.*

OUR FENCE CORNERS

"Wipe off your Chin."

She had several of the neighbors in to look at a new bureau, and very naturally drifted off into an exposition of bureaus she had had herself, and which her mother had had. Her son was doing his level best to conquer the intricacies of a new work on Indian scouting. Finally he whispered to her—

"Mother, wipe off your chin."

She made a hurried movement over that part of her features, flushing slightly as she did so. And then she went on with the discourse.

"Mother," he whispered again, wife off your chin."

With a nervous twitch of her apron she sought to remove the offensive particle, nervously wondering what it could be. Just as she got well to going again he whispered for the third time—

"Mother, wipe off your chin."

"Land'a sake, child," she sepulchrally howled, "what is there on my chin?" and she rubbed it with a vehemence painfully suggestive of combustion.

"Wipe off your chin," he hastened to advise the instant she ceased the movement.

She flew at that feature again, and rubbed with all her might, while the water gathered in her eyes, and her face grew red with mortification.

"There," she gasped, "it's off now, I guess."

He was almost consumed with smouldered laughter but he managed to suggest for the fifth time—

"Wipe off your chin."

"Mercy in heaven! what is the matter with my chin?" she yelled right out, losing all control of herself, and staring at her visitors in an agony of suffering.

Then she plunged into another room to consult a glass, and he disbursed himself out of the back door. When she came back the ladies were exchanging significant smiles and looks with each other, and pretty soon they left, leaving her in a very uncomfortable state of mind. It was some time before she learned what was the trouble with her chin, and then she did not feel any better,—*Danbury News.*

THE phrase, "acknowledged the corn" is variously accounted for, but the following is the true history of its origin: In 1828, Andrew Stewart, M. C., said in a speech, that Ohio, Indiana and Kentucky, sent their hay-stacks, corn-fields and fodder to New York and Philadelphia for sale. Wickliffe, of Kentucky, called him to order, declaring that those States did not send hay-stacks or corn-fields to New York for sale. "Well," asked Stuart, "what do you send?" "Why, horses, mules, cattle and hogs?" "Well, what makes your horses, mules, cattles and hogs?" You feed $100 worth of hay to a horse, you just animate and get upon the top of your hay-stack and ride off to market. How is it with your cattle? You make one of them carry fifty dollars' worth of hay and grass to the Eastern market; how much corn does it take at thirty-three cents a bushel to fatten it?" "Why, thirty bushels." "Then you put that thirty bushels into the shape of a hog and make it walk off to the Eastern market." Then Wickliffe jumped up and said: "Mr. Speaker, *I acknowledge the corn.*"

THIS sample of poetry of science gives us the offspring of a chemical wedding:

Messrs. Water and Oil
One day had a boil,
As down in the glass they were dropping.
And would not unite,
But continued to fight,
Without any prospects of stopping.

Mr. Pearlash o'erheard,
And quick as a word,
He jumped into the midst of the clashing;
When all three agreed,
And united with speed,
And soap came out ready for washing.

A LONG EEL.—When Matthews, the elder, was a boy, and lived with his father, a bookseller in the Strand, a short, muscular fellow daily cried eels with guttural voice—"three pence a pound e-e-e-e-e-e-els," elongating the word from Craven street to Hungerford street, till people used to say, "What a long eel!" Matthews having imitated him to the great satisfaction of many auditors, one day looked out for the original, and saluted him with the imitation; but he had no taste for such ingenuity, and placing his eel-basket deliberately on the ground, he hunted the boy into his father's shop, and felled him with a heavy blow. "Next time," said the eel-vender, "as you twists your little wry mouth about, and cuts your mugs at a respectable tradesman, I'll skin you like an e-e—" and snatching up his basket finished the monosyllable about nine doors off.

"IF we have any tender regard for the dumb animals, who do so much to make life pleasant to us, we would have our children educated to have a still deeper regard and kindness for them."—*Governor Washburne, of Massachusetts.*

PENNSYLVANIA RAILROAD SCHEDULE.

Trains LEAVE the Depot in this city, as follows:

WESTWARD.	Leave Lancaster.	Arrive Harrisburg.
Pacific Express*	2:40 a. m.	4:05 a. m.
Way Passenger†	4:50 a. m.	7:50 a. m.
Limited Mail*	9:25 a. m.	10:30 a. m.
Hanover Accommodation	9:30 a. m.	Col. 10:00 a. m.
Mail train via Mt. Joy	11:20 a. m.	1:00 p. m.
No. 2 via Columbia	11:20 a. m.	1:20 p. m.
Sunday Mail	11:59 a. m.	2:00 p. m.
Fast Line	3:25 p. m.	4:50 p. m.
Frederick Accommodation	3:35 p. m.	Col. 4:15 p. m.
Harrisburg Accom	6:10 p. m.	8:10 p. m.
Lancaster train	7:35 p. m.	Col. 8:10 p. m.
Harrisburg Express	7:40 p. m.	9:00 p. m.
Pittsburg Express	9:10 p. m.	10:35 p. m.
Cincinnati Express*	11:30 p. m.	12:45 a. m.
EASTWARD.	**Lancaster.**	**Philadelphia.**
Atlantic Express*	12:40 a. m.	3:10 a. m.
Philadelphia Express†	4:10 a. m.	7:00 a. m.
Harrisburg Express	7:50 a. m.	10:30 a. m.
Lancaster train	9:28 a. m.	12:30 p. m.
Pacific Express*	1:10 p. m.	3:30 p. m.
Johnstown Express	3:05 p. m.	6:00 p. m.
Harrisburg Accom	5:50 p. m.	9:00 p. m.

The Hanover Accommodation, west, connects at Lancaster with Limited Mail, west, at 9:25 a. m., and will run through to Hanover without change of cars.

The Frederick Accommodation, west, connects at Lancaster with Fast Line, west, at 3:25 p. m., and runs through to Frederick without change of cars.

The Frederick Accommodation, east, leaves Columbia at 12:30 p. m., arriving at Lancaster at 1 p. m., connecting with Pacific Express at 1:10 p. m.

The Dillerville Accommodation leaves Harrisburg at 5 a. m., coming via Mt. Joy, and arriving at Lancaster at 9:05, connecting with Lancaster train.

The York Accommodation, leaving York at 6:32 a. m., connects at Columbia, at 7:18, with the train leaving Marietta at 6:52 a. m., at Lancaster with the Harrisburg Express at 7:50 a. m.

The Marietta train leaves Columbia at 6:30 a. m., and returning, leaves Marietta at 6:52, connecting at Columbia with the York Accommodation, and at Lancaster with the Harrisburg Express at 7:50 a. m.

The Pacific Express, east, on Sunday, will make the following stops, when flagged, viz: Middletown, Elizabethtown, Mt. Joy, Landisville, Bird-in-Hand, Gordonville, Leaman Place, Kinzers, Gap, Christiana, Penningtonville, Parkesburg, Pomeroy, Coatesville, Oakland, Glen Loch, Malvern, Paoli, Eagle, Radnor, Upton, Villa Nova, Rosemont, Haverford College, Ardmore, Wynnewood, Elm, Merion, Overbrook, Hestonville and Mantua; Lancaster and Downingtown being regular stations.

*The only trains which run daily.

†Runs daily, except Monday.

$1 a Year { To subscribers in the county. SINGLE COPIES 10 CENTS. To subscribers out of the county. } $1.25.

Prof. S. S. RATHVON, Editor. LANCASTER, JULY 15, 1876. PEARSOL & GEIST, Publishers.

THE FARMERS HOME ORGAN.

The Lancaster Farmer;

A MONTHLY NEWSPAPER,

DEVOTED TO AGRICULTURE, HORTICULTURE, DOMESTIC ECONOMY AND MISCELLANY.

PRACTICAL ENTOMOLOGY

Made a prominent feature, with special reference to the wants of the Farmer, the Gardener and Fruit-Grower.

Founded under the auspices of the Lancaster County Agricultural and Horticultural Society.

Edited by Prof. S. S. RATHVON.

THE LANCASTER FARMER has now completed its seventh year—the last having been under the auspices of the undersigned as publishers. When we assumed the responsibility of the publication one year ago, it was with a determination to make such improvements during the year as would place the Farmers' Organ of this great agricultural county in the very front rank of publications of its class. That we have done so, our readers will bear cheerful testimony. But our work of improvement is only fairly begun. We propose to make the volume for the Centennial year still more interesting and valuable than its predecessor for 1875. In this, however, we need the co-operation of every friend of the enterprise. To make it a success, every one who now reads THE FARMER should at once send us at least one new subscriber.

The contributions of our able editor, Prof. RATHVON, on subjects connected with the science of farming, and particularly that specialty of which he is so thoroughly a master—entomological science—some knowledge of which has become a necessity to the successful farmer, are alone worth much more than the price of this publication.

THE FARMER will be published on the 15th of every month, printed on good paper with clear type, in convenient form for reading and binding, and mailed to subscribers on the following

TERMS:

To subscribers residing within the county—

One copy, one year,	$1.00
Six copies, one year,	5.00
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One copy, one year,	$1.25
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All subscriptions will commence with the January number unless otherwise ordered.

All communications intended for publication should be addressed to the Editor, and, to secure insertion, should be in his hands by the first of the month of publication.

All business letters, containing subscriptions and advertisements, should be addressed to the publishers.

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CONTENTS OF THIS NUMBER.

OUR FENCE CORNER.

MR. PEDUNCLE AND HIS COW.—Mr. Peduncle went out to milk the other day. Now if there is one thing Mr. Peduncle prides himself upon, it is his perfect command of a cow. With his bucket on the ground he milks with both hands, and sings meanwhile, occasionally bestowing a word of warning upon the cow if she whisks her tail at him, or tries to scratch her back with her hind foot. On this occasion he had nearly finished and was singing cheerfully:

"My soul (so now!) be on thy guard—(what in Egyptian sand-hill ails this cow?)"

"Ten thousand (thunder and borax! stand still!) foes arise—"

And as Mr. Peduncle raised himself up from the barn-floor and wiped the milk out of his ears and nose, he saw up in the loft, the wife of his bosom with a long switch in her hand, with which she had been tickling the gentle animal's nose, and she said in an awful voice:

"Oliver Peduncle, I reckon you'll wrap your old tobacco box in my handkerchief again next Sunday, won't ye?—and have me take it to church and sling it on the floor—hey?"

When he milks now, Mr. Peduncle sings very softly, indeed, and keeps one eye on the loft.—*Chicago Courier.*

IN a pamphlet entitled "Reminiscences," by W. H. Sumner, among other curious items is the following, which will be of interest to our readers in connection with the biographical sketch of Sam Adams given in the July number of this Magazine:

In 1853, Mr. W. H. Sumner, by invitation of Lady Abingdon, lunched at Wytham, the seat of the Earl of Abingdon, four miles from Oxford. Lord Abingdon's first wife was a daughter of General Gage, and cousin to Mrs. Sumner. While awaiting the arrival of the host, Mr. Sumner was examining the family portraits that hung upon the walls, and was much struck by one that extremely resembled the Revolutionary patriot, Samuel Adams. When his lordship appeared, Mrs. Sumner remarked that it seemed strange to see in his house a picture so like one of the so-denominated Revolutionary patriots proscribed by his father.

"Why," answered Lord A., "singular as it may seem, that is the portrait of General Gage, the very man who proscribed him."

It is quite possible, with this clue, to trace a resemblance even in the ordinary wood-cuts of the two men, so unlike in temperament, disposition, and circumstances—a curious problem for the phrenologist and physiognomist.

IT was the last night but one of a protracted meeting in a little place called Webster, in the southeastern part of Missouri. A large crowd had gathered in the old one-room log-cabin where the services were held. The rickety seats were nothing but strips of board resting on small blocks, and were getting uncomfortably filled. To make more space for the ladies, half a dozen or so of the best-looking men in the room voluntarily stood up at one side, and as they were all six feet and over, they made a goodly show. It is just possible they knew this, seeing there were so many pretty girls present. The services began by reading, singing and a prayer. No words could describe that supplication, shouted out at the highest pitch of the minister's voice. One sentence alone remains as a legend in the place: "Bless us all in these last ends of the earth. And, Oh! our heavenly Father, help us—Oh! help us now to pray for the *tall sinners* of Webster!" Down like shot went those sinful men, and the maidens tittered.

WHAT diabolical beings those London cabmen are, to be sure! An elderly lady was recently observed hovering on the side of the pavement, vainly endeavoring to get across the street; but the stream of cabs, busses, and vehicles of all descriptions went flowing on, and somehow she never seemed to be able to venture over in safety. At last she made a start, when a Hansom-cab driver, crawling along, saw her, made a sudden spurt; and nearly succeeded in knocking her over. Happily, however, for the old woman, she escaped, and the driver said, as he drove on, "Missed her, by Jove!" just as if she had been a bird.

THIS, now, is straightforward and business-like:

A applied to B for a loan of $100. B replied, "My dear A, nothing would please me more than to oblige you, and I'll do it. I haven't $100 by me; but make a note, and I'll endorse it, and you can get the money from the bank." A proceeded to write the note. "Stay," said B; "make it $200. I want $100 myself." A did so, B indorsed the paper, the bank discounted it, and the money was divided. When the note became due, B was in California, and A had to meet the payment. What he is unable to cipher out is, whether he borrowed $100 of B, or B borrowed $100 of him.

The Lancaster Farmer.

Prof. S. S. RATHVON, Editor. LANCASTER, PA., JULY, 1876. Vol. VIII. No. 7.

OUR CENTENNIAL ANNIVERSARY.

Our National Year of Jubilee.

Never before on any public occasion has Lancaster city and county manifested the zeal and energy that they did on the late anniversary of our natal day of freedom. Everything seemed to be propitious, and the opening of the day was heralded by firing of cannon, ringing of bells and lighting of bonfires, fully up to the spirit of John Adams' prophecy one hundred years ago.

The city, the towns, the villages and hamlets, as well as many private mansions were profusely decked out in bunting and appropriate devices, and most of them had their private celebrations; but, in this connection, we can only briefly notice the patriotic demonstrations of the city. A grand procession paraded our streets in the forenoon, composed of the city police in a body, the Grand Army of the Republic, the Mayor and Councils, the Odd Fellows, the Knights of Pythias, the Sons of America, the American Mechanics, seniors and juniors, the Brotherhood of the Union, the Red Men, the Druids, the Seven Wise Men, the St. Michael's, St. Joseph's, St. Peter's and St. Anthony's Catholic Associations; the fire companies with their steamers and hose carriages, the School Board and reporters, and many citizens, all bearing appropriate banners and decked with flags and badges and patriotic emblems. Interspersed along the line were the City Cornet band, the Quarryville band, the Ironville band, the Liberty band, and the Keystone Drum Corps, alternately discoursing martial and soul-cheering music. At the close of the parade a great concourse gathered around the soldiers' monument in Penn Square where the great historical ceremonies of the day were held, according to a previous arranged programme, consisting of music, odes, addresses, historical sketches, oration, and the reading of our great *Magna Charta* of freedom, the ever-memorable *Declaration of Independence*, the whole preluded by patriotic and religious invocations and prayers, and interluded with vocal and instrumental music. The parade was under the command of Chief Marshal Edw. Edgerley, assisted by Division Marshals G. W. Eaby, John Deiker, J. M. Amweg and their Aids; and the vocal music in the square was under the conduct of the Choral, Mendelssohn, Liederkrantz and Maennerchor societies—the instrumental by the bands. As this number of THE FARMER, and indeed the entire Centennial volume, will be often referred to in future years, we have assumed the responsibility of crowding out some of our usual matter to record succinctly some of the doings of our ever memorable Centennial Anniversary and feel that we have done well.

The exercises at the grand stand in the square were opened by Rev. Dr. Greenwald, with the following appeal to the Throne of Grace:

The Centennial Invocation.

Almighty God, who art the Lord of heaven and earth, the Ruler of nations, and the Father of Thy people, we, Thine unworthy servants, come before Thee on this day, together with all the people of this land, to acknowledge the manifold temporal and spiritual blessings which we, as a nation, have received from Thy hand.

ADORATION.

To render to Thee our heartfelt adoration. Thou art the King of kings, and the Lord of all lords. Thou sittest on the throne judging aright. Thou art the Lord God omnipotent, and reignest in righteousness over the Kingdoms of the earth. Thou doest Thy will in the armies of heaven; and among the inhabitants of this our lower world there is none that can stay Thy hand. Thine, O Lord, is the greatness, and the power, and the glory, and the victory, and the majesty, for all that is in heaven and in the earth is Thine; Thine is the Kingdom, O Lord, and Thou art exalted as Head above all. Thou alone art the governor of the nation, and all Thy creatures on earth and in heaven bow with reverence before Thy throne, and acknowledge Thee to be the Lord.

CONFESSION.

We appear with humility, and confess our sins before Thee. We are not righteous. Thy holy laws we have not kept. We are sinners in Thy sight. Our individual transgressions cannot be numbered, and the sins of the nation are many and great. We have rebelled against Thy rightful authority over us. We have taken other gods before Thee. We have chosen our own way, and followed our own will, and preferred our own pleasure. We have not always enquired after Thy will, nor made Thy law our delight. We have lived in unbelief and impenitence; we have resisted Thy grace, refused Thy calls, misimproved our opportunities. We have not duly honored Thy church, nor loved Thy word, nor valued Thy gospel. We have, in many ways, heaped reproach upon Thy dear Son, our Saviour, and we have not reverently accepted the way of salvation which he has provided for us. Iniquity prevails in high and in low places. Hypocrisy, self-righteousness and pride—covetousness, dishonesty and corruption—envy, ill-will, malice, and all other sins abound. We are not as distinguished among the nations for holy obedience as we are for our great blessings. O Lord, have mercy upon us, have mercy upon us, and cast us not away from Thy presence, on account of our sins.

THANKSGIVING.

We render to Thee our hearty thanks that notwithstanding our sins, Thy mercies have followed us, as a nation, from the beginning to this day. Thou wast with our fathers as they left the graves of their ancestors in the old world, to seek a home for themselves and for their children, in the new. Out of a little one Thou didst make a great nation. Thou didst give to the fathers of our nation wisdom to found free institutions of government, by which the lives, the liberties, and the happiness of the people are secured. In times of war, Thou didst give victory over our enemies, and security to the nation. Thou hast enlarged our boundary, and hast multiplied the people, so that as a mighty host, they stretch from sea to sea. Thou hast blessed the labor of our hands, so that industry has been rewarded, and riches have greatly increased. Thou hast blessed our schools and teachers that give instruction in them, so that our children and youth have made progress in education and knowledge. Thou hast blessed us with the light of Thy Holy Gospel, hast bestowed upon us the knowledge of Thy word, and hast made known to us the way of salvation through Thy Son, Jesus Christ. Thou has preserved Thy church among us, and hast greatly multiplied the number of Thy faithful people. For all these things we praise Thee, we bless Thee, we worship Thee, we glorify Thee, we give thanks to Thee, for by Thy grace and favor, they have been vouchsafed unto us.

PRAYER.

To our thanksgivings, we join our fervent prayers, that by Thy favor, the future of our country may be still more prosperous than the past has been. Do still better things for us in the second century of our national life, than Thou hast done for us in the first. May our free institutions remain pure and uncorrupt, and be handed down from generation to generation. May the President of the United States, the Governors of all the States, the National Congress, and the State Legislatures, and all our Judges and magistrates, have wisdom from above to direct them, so that wholesome laws may be enacted and faithfully executed, to the furtherance of righteousness and good order, to the suppression of sin and crime, everywhere among us. May all true business interests be prospered, labor be duly rewarded, competence be enjoyed, and may all classes of men live a peaceable and quiet life in all godliness and honesty. Bless the families of our land, and may piety and peace dwell under every roof. May our children and youth be reared in the fear of the Lord, so that, cherishing the principles of true Christianity and sound virtue, they may be well fitted to carry on in private and in public life, what the pious zeal of their parents has so well begun. May education be promoted, religion fostered, and good morals be practiced, by all men everywhere. May the nation be defended from bloody wars, from sectional divisions, and from local strifes, and may all the people of this land in the North and the South, in the East and the West, always dwell together in harmony and peace, as brethren of the same national family. As we are a peculiar people in our privileges, may we be equally distinguished for Christian faith, Christian virtue, Christian order, Christian character, Christian living, and for the prosperity and happiness that flow therefrom, to the praise of Thy glorious grace, through Thy Son, Jesus Christ, to whom with Thee, and the Holy Ghost, one God, be all honor and glory, world without end. *Amen.*

At the conclusion of this prayer, Hon. W. D. Stauffer, Mayor of Lancaster, delivered

The Introductory Address.

FELLOW CITIZENS: We are assembled here to-day as citizens of Lancaster to commemorate the one hundredth anniversary of American Independence. One hundred years ago our city was a small provincial town, on the outer edge, as it were, of civilization. To-day it is the lovely inland city of the great Keystone State, the center of the most populous and wealthy agricultural county in the United States. Patriotic and almost sacred memories cluster around us. Here the Continental Congress met, when driven from Philadelphia by the invading armies of Great Britain. Here was the capital of the State, whence all legislation for the commonwealth emanated. Here sojourned Fulton, the illustrious inventor, the results of whose genius have been felt in the commerce of the world, and whose fame is co-extensive with the use of steam a marine motor. Here the hospitality of our frugal fathers and mothers was extended to the great artist Benjamin West, and many other distinguished men representing the genius and patriotism of a century ago.

We, as citizens of the great city and county of Lancaster, have much to be grateful for, as we assemble to-day to celebrate the Centennial of our existence as a nation. Our growth has not been marked by that rapid, magical increase which has characterized many of the cities of the country, and especially those of the younger States; but it has been steady and substantial. Settled and laid out as a borough in 1730, the first census of which we have any record, was taken in 1790, and showed a population of 3,373, which was the growth of the first sixty years. The census taken a few days ago shows a population of 25,441, a growth in little over an equal period, of 22,068. In no city are there more comfortable homes owned by the industrious laboring classes of moderate means. Thrift and honest industry, prudence and economy, and not speculation and spasmodic grasping after sudden wealth, have made Lancaster the solid and substantial city she is to-day.

Our people possess in marked degree those sturdy and conservative elements of American character which are the true strength of our form of Republican Government, and in which we see the guarantee of our growth and stability as a free people. As a class our people do not look with favor upon the extravagance and love of display which are seen in other communities, but which are not the proper characteristics of a republic, such as ours, founded as it was in the self-denial, suffering and bloodshed of our

patriotic fathers. It must be admitted that one of the most serious evils which have sprung up with our marvelous growth in the last half of the century of our existence, has been a fondness for display, the eager desire for the rapid accumulation of wealth and the love of luxury. It was these which bred decay in the old nations of the Eastern continent. Let us then as citizens of a city whose prosperity, solid wealth, and quiet conservatism are guarantees of its future prosperity, still more assidnously cultivate the habit of thrift, prudence and sturdy honesty, as the highest and noblest traits of true Americanism. Let us rejoice to-day with Americans everywhere assembled, that, under a kind Providence, our country has been permitted to reach and fitly celebrate its Centennial Fourth of July. Let us educate our children in those principles which shall fit them for the discharge of the duties of citizenship which they must assume in the coming years of our second century. Profiting by the experience of the past, correcting abuses in every form of government, national, State and municipal, we can in the coming years not only perpetuate but improve and strengthen our institutions.

Lancaster, during the last decade, has steadily kept pace with the progress of the country, and standing to-day where the first century of our nation passes into history and the new century dawns upon us full of bright hopes and promises, we feel safe in predicting that Lancaster has within herself those elements which shall make her always a lovely queen enthroned amid the green fields and fertile valleys of our matchless county.

Hon. S. H. Reynolds read the Declaration of Independence, prefacing the reading with the following patriotic

Prologue.

My Fellow Citizens: I have been chosen by your committee to read to you on this Centennial Anniversary of American Independence, the *Declaration* which announced to the world *the birth of a Republic*, "*the coming sovereignty of the people*," and the establishment of a *National Government*, *free* and *independent*, absolved from all allegiance to kings, princes, and potentates. A paper which one hundred years ago *as now* was "the genuine effusion of the soul of the country," promulgating a bill of rights older than human institutions, not *conceded by monarchs*, but drawn fresh from the fount of eternal justice as *the rightful, the exalted heritage of man*; expressing sentiments and ideas in *unison* with *all humanity*, raising millions to a new sense of freedom which has pressed onward toward the goal of liberty until the whole world is nearly free.

Before I read, let us contemplate for a moment the disinterested and heroic forgetfulness of self which characterized its authors, the founders of our republic on the 4th day of July, 1776, that *dark and perilous day*, when the foundation was laid, the superstructure of which was to be the home for the persecuted of every land—a terror to tyrants, and the barrier between liberty and European bondage.

The efforts of a life, nay not even the beautiful rhetoric nor the elegant diction of the distinguished orator who is to follow me, can paint out this picture in all its astonishing incidents, "in all its mingled colors of sublimity and woe, of agony and triumph." On that day our fathers began a great and arduous adventure, of which they were to encounter the risk, and we to enjoy the benefits. They well knew the toil and blood and treasure it would cost to maintain independence and defend the States. Yet on that memorable day no one faltered. Hope filled every breast, and, in the very front of tyranny, a revengeful army, war inevitable, *and a doubtful future*, the patriots of Seventy-Six assumed the responsibility. They felt that Providence had assigned to them the task; that they were elected to strike the blow for which the friends of freedom for two centuries had been making slow but sure preparation, and with a singular unanimity, "which was the *aurora* of their enduring fame," *they declared*, that "When," etc—

[Here followed reading the Declaration.]

He was frequently applauded during the reading, and at its conclusion made the following fine

Peroration.

How nobly they did their work, a nation's joy expressed in sweetest strains of patriotic song, the wild huzza, the booming gun, and the appropriate festivities here and everywhere, on this 100th anniversary, attest. Well may we sing loud anthems of exultation, well may we raise our voices to pay fitting honors to the memory of the illustrious dead, and celebrate with grateful hearts the anniversary of their sacrifice.

We need not erect monuments carved by the artist's chisel to perpetuate their glory. The principle of free government, our liberty achieved by hard-fought battles, this great family of States which they bound together in fraternal confederacy, our most exquisite political fabric, the unexampled prosperity of our country—these, my fellow-citizens, proclaim in language more emphatic than monumental granite or sculptured marble, the worth and the memory of men,

'Who sowed in weakness the harvest we raise in power."

Dr. Thomas C. Porter, Professor of Natural Sciences at Lafayette College, Easton, then read the following historical sketch of the city and county of Lancaster:

Historical Sketch of Lancaster.

Citizens of Lancaster City and County—I had almost said *Fellow Citizens*; for, although it is well nigh ten years since I had a right to use that word, as I stand here to-day and see around me so many familiar faces, changed somewhat, perchance, by the touch of time, but still the same, old memories revive, and I feel as if I had just returned from a long exile and were breathing again the atmosphere of home. And I am proud to know that you do not regard me as an alien or a stranger. The Mayor and Councils of your city, in obedience to a general call from the Chief Magistrate of the Commonwealth, have honored me with an invitation to prepare a summary of the history of the county for the past century, reaching down from the year 1776 to the present year of grace, 1876—this summary, when completed, to be deposited in the Archives of this county, State and nation. The task, which might have been entrusted to abler but not more willing hands, is not an easy one, and cannot be performed without the collection of material, research and careful study. And as scarcely six weeks have passed since the invitation was received and accepted, all I can now do is to offer some desultory thoughts upon the subject in the shape of a brief address.

Going back one hundred years, beyond the recollection of your most aged patriarch, we come to the birthday of the nation, the memorable epoch when the tie which bound the American colonies to the mother country was broken forever. The rupture was sudden. The war, begun at Lexington and Concord, had raged for a year before separation was seriously dreamed of. At length the idea entered the minds of some of the heroic statesman in Congress, and in a few short months the world was startled by the Declaration of Independence. The act was both bold and wise, for the fullness of time had come. With the rapidity of wild-fire the tidings traveled to the remotest corners of the land, and was hailed with joy by the shouts of gathered multitudes, the pealing of bells and the blazing of bonfires. Never, since then, has the popular heart been so widely and so deeply stirred by any event, save the lowering of the nation's flag on the ramparts of Fort Sumter. And there was good reason for it. Every patriot saw and felt that the struggle had undergone a radical change. No longer merely defensive, a revolt against oppression, it had become from that moment aggressive, revolutionary—a contest for complete deliverance from foreign rule.

The noble part which your forefathers played in the mighty struggle is best told by the statement of a few facts of special interest. Even before the outbreak of the war the people of Lancaster stood in full sympathy with the movement. In this ancient borough the prohibition against the sale of *tea*, which had paid duty to the British Government, was rightly enforced, and several merchants were required to answer the charge of having violated the ordinance. When the harbor of Boston was closed by the Port Bill, considerable sums of money were raised here for the relief of the inhabitants of that city. A single incident shows in a clear but amusing light the earnest spirit of the period. A dancing-master who had opened a school in a room perhaps not far from this very square, was compelled by the authorities to abandon his vocation. The time to dance had gone by; the time to fight had come. The instruction needed by the young men was not how to "trip it on the light, fantastic toe," but how to handle the musket and march in the ranks. Powder, lead and firearms were gathered together from all quarters. Military organizations went on vigorously.

On the 4th of July, 1776, a crowded convention of delegates from the so-called "associators," or militia, of the counties of Northampton, Bucks, Philadelphia, Chester, Berks, Lancaster, York, Cumberland, Northumberland and Westmoreland, assembled in this city in order to elect two brigadier-generals to command the forces of Pennsylvania. The resolution was adopted "*to march to the assistance of all or any of the free and independent States of America.*" The president of the convention was Col. Geo. Ross, of Lancaster, who was also member of Congress from the district and a signer of the Declaration of Independence. His presence here on that day is thus explained: The instrument at first bore only the names of John Hancock and Charles Thomson, the president and secretary of Congress, and the other names were added on the second of August following.

Lancaster county raised no less than nine regiments of troops for the Continental Army, and her sons behaved with distinguished valor in some of the bloodiest battles of the war. By an examination of the records it appears that a goodly proportion of the officers and soldiers were of German descent, notwithstanding so many of the German farmers, then as now, were non-resistants from religious principle. Yet these men were far from being tories. They accepted the new government, obeyed its decrees in all things, except in the matter of personal military service, and gave neither aid nor comfort to the enemy. Tories existed here, it is true, as they did everywhere; but their number was so small and the common sentiment of loyalty to the new-born Republic so strong, that they were able to work no serious mischief. And I may now say that the magnitude of the service rendered by the Pennsylvania Germans at home, in the public councils, and in the field during the great war of Independence, has been strangely overlooked. It deserves to be rescued from oblivion and set forth in its true colors. The forces of the State were largely composed of this element, and Washington recognized its value.

The last of the veterans who made the starry banner a glory in the world has been laid in the grave, but some of us have seen and talked with them before they descended into the land of shadows. The venerable form of one whom I met years ago, rises to memory. In which of these eastern counties he was born I know not, but his home then was Harrisburg, and there he died and was buried with military honors, and there his descendants still live. His name was Leonard Dubbs. My grandfather drew his pension for him, and I used to visit him, and loved to listen to his tales of the olden time. He was a drummer under Gen. Wayne, at the battle of Stony Point, and here is the story, which I have no doubt is true to the letter, as it fell from his own lips: "That night when the boys climbed the hill we was in front, but dares'nt tap a drum-head, till we got inside of the fort, and then we rattled away all together. After some days Gen. Washington came, and he and Gen. Wayne rode along the line, and they stopped where I was, and Gen. Wayne ordered me forward. I stepped out, took off my cap, and gave the salute, and Gen. Washington said—'Make that honest Dutch boy drum-major,' and I'll be bound I was sassy."

After the disastrous battle of Brandywine, 500 wounded American soldiers were carried in wagons to Ephrata and put in charge of the Society of the Seventh Day Baptists, at that place; but, in spite of all the care bestowed on them, 150 died and were buried on a little eminence called Mount Zion. In 1845 a plain sandstone monument was erected on the spot, as a memorial to these forgotten patriots, mainly through the exertions of the late Joseph Konigmacher. In the gloomy winter of 1877-78, while Washington lay at Valley Forge with his suffering troops, two Pennsylvania brigades, commanded by Gen. Wayne, endured like hardships, encamped near the village of Mount Joy. When the British under Howe took possession of Philadelphia, Congress fled hither, sat here for a single day, and then passed on to the borough of York.

During the war many prisoners were quartered in barracks here and in other towns of the county. One incident in this connection is worthy of note. The unfortunate Major Andre, whose sad fate still awakens pity in the hearts of the youthful reader, was captured in Canada by General Montgomery, on the 3d of November, 1775, and brought to Lancaster with several other English officers. He became an inmate of the house of Mr. Caleb Cope, (who prior to the Revolution had filled the post of Burgess), and employed his leisure in giving lessons in drawing to the eldest son of Mr. Cope, a lad of 13 years, and in playing marbles and juvenile games with the two younger brothers. But, perhaps, the crowning gem in this wreath of historical reminiscences is the fact that your city was honored by the presence of the illustrious Father of his Country, and as his stately charger bore him along these streets, no doubt the eyes of multitudes of spectators who thronged the sidewalks and filled the windows of the houses, gazed upon him with admiration and reverence, which found expression in the waving of handkerchiefs and in loud and hearty huzzas.

Thirty years later, in the nation's second conflict with her ancient foe beyond the seas, the patriotic spirit of the people of Lancaster was again displayed. And what shall I say of the still mightier and more recent struggle which drenched the land with fraternal blood? In those dark and trying days I was with you, and one of you, and well remember how sensitively the pulse of the entire community throbbed in responsive sympathy with the varying fortunes of the armies of the Union—now depressed by chilling rumors of defeat and anon beating high at the joyful news of victory. Here is neither the place nor the time to attempt even a sketch of all that was then said and done. To prove that in loyalty to the old flag, we of the present generation are no degenerate sons of Revolutionary sires, it is enough to remind you of the number of our friends and kindred who marched forth from these peaceful scenes to distant fields of strife, many, to return, alas! no more; of the untiring and devoted labors of the Patriot Daughters, whose worthy deeds deserve a fuller meed of praise than they have yet received; of the universal grief which followed the remains of the gallant Reynolds to their last resting-place, just 13 years ago this day; of the cordial welcome home extended to the war-worn remnant of the Reserves in yonder court house; of the brave and cheering words uttered by the press in seasons of sorrow and despondency; and if you ask for further evidence, it stands there before you in the grand, imperishable monument, which speaks alike for the living and the dead.

Having thus paid due tribute to the day, let me now ask you to turn your eyes in quite another direction. Wars, battles, heroic exploits, adventures, political measures, the sayings and doings of the prominent actors on the world's stage, are not the sole staple of history, as many seem to imagine. Important and attractive as they may be, they are only means to an end—of value only as they affect the welfare and mould the character of *the mass of the people*, or as they serve to illustrate their character. And other factors of equal or even greater importance and not to be ignored, enter into the account. From this point of view, the real, distinctive history of Lancaster county for the past hundred years lies mainly with the rural population as a whole. What they are and the causes and circumstances which have combined to make them what they are, what they have accomplished, the modifying influences at work amongst them and their outlook for the future, are topics of a most interesting chapter from the pen of an able writer. They occupy the central position, and all other things should be studied in their relation to and bearing upon them.

If an intelligent traveler, who has landed on our shores during this year of jubilee, should visit the county, and journey through it from border to border, with full leisure and opportunity for the best use of his powers of observation, he would behold a centennial exhibition, which, if rightly apprehended, though widely different, is grander than that in Fairmount Park. He would behold a body of people, the like of whom are not to be found anywhere else on the face of the globe, except in the neighboring counties of eastern Pennsylvania—a vast body of independent farmers, who are not peasants or serfs or ignorant hirelings, but free-born owners of the soil which they cultivate, as their fathers did before them, by their own toil, and with the rarest skill and success. He would note the capacious barns, the substantial homesteads, the trim gardens not devoid of flowers, the broad acres covered with waving harvests, the stout, well-fed horses and cattle, the excellent roads, the abundant signs of industry, thrift, frugality and economy everywhere visible, and of wealth and comfort not confined to a few individuals, but generally diffused. On closer inquiry he would discover a people plain in their habits and speech, honest in their dealings, quiet, contented, loyal—good neighbors and good citizens—faithful to their customs and traditions, and yet wise enough to advance with the progress of the age—supporters of the church and school, and well-informed in public affairs. He would be struck by the absence of social inequality and the rarity of poverty and crime. In a word, he would behold that which would compel him to exclaim: "Happy is the Republic that can produce children like these!"

This result of the peaceful working of one hundred years was beautifully and prophetically symbolized in the coat-of-arms adopted by the State. Above, is seen the national eagle with outstretched wings over a ship under full sail, in the centre, occupying the place of honor, the plough—lower down, three sheaves of wheat, on each side, a horse rampant, and beneath, the sterling motto, VIRTUE, LIBERTY, INDEPENDENCE.

In conclusion, Dr. Porter remarked that, while Lancaster county must be awarded a first place in agriculture, it would not do to disparage other pursuits. She occupies an enviable position in mining and manufacturing pursuits, and a pleasant feature is, that unlike many other counties, there is no antagonism between city and county. All feel a common interest, and work for a common cause. The learned speaker closed with a glowing tribute to our public schools and advancement in all material and intellectual things, and was rapturously applauded.

During the delivery he was frequently interrupted with applause, and about ten minutes before the close the canvas above him was blown off by a heavy gust of wind, and he stood under the unrelenting rays of the noon-day sun. All attempts to replace the canvas were in vain, and the Doctor resumed, remarking, "I'll fight it out in the sun." [Loud and prolonged applause.]

The Centennial Oration

Was delivered by MARRIOTT BROSIUS, Esq., who had been complimented with the honor of the position of orator of the day. It was a masterly production, worthy the head and heart of this rising young lawyer and orator, and we regret that its great length prevents us from giving it a place in the columns of THE FARMER. It was published in full in the daily and weekly *Express*.

SAVING SEEDS.

In the article on "Cabbages," in our June number, allusion was made to "saving seeds," and in a foot-note we stated that in a "timely subsequent number" we would publish a paper, from the same source, on this important subject, and as we think that time has now arrived, we will proceed to redeem that promise, especially since it is becoming more apparent every year, that if the farmer and gardener expect to secure good crops, next after the proper cultivation of the soil, in importance, is the selection of good seeds. Of course, in the beginning of their labors, they must apply to some neighbor or well-known seedsman; but, subsequently, they should endeavor to supply themselves, with some few exceptions, from their own premises.

It is a well attested fact, that if two different varieties of a vegetable are permitted to blossom at the same time, within a short distance of each other, they intermix, and produce a hybrid, partaking of the character of both parents. The fertilizing dust of stamens in the flowers of one plant is conveyed, by the wind or insects, to the pistils in the flowers of the other. The distinctive features of each are thereby lost, while the new variety may possess not a single point to make it worthy of cultivation. It is seldom that such a chance hybrid proves of much real value. The origination in this way of any choice esculent is almost ever the result of study and long experiment.

A knowledge of this fact is of peculiar importance to the gardener, whose object is to raise several different varieties of the same vegetable upon a small piece of ground. It is by this only that he can satisfactorily account for the rapid deterioration of the choicest sorts. Where, for example, he cultivates the melon, the cucumber and the pumpkin in close companionship, but a few seasons will elapse before he finds the juiciness, perfume and delicate flavor of the first named exchanged for the coarse flesh of the last; and the celebrated *Brassica* tribe, among which are our cabbage, cauliflower, etc., are supposed to number several hundreds, produced by intentional or chance intermixture. We therefore consider it as dangerous to allow plants of a particular family to run to seed in the vicinity of each other as to turn a rough, scrubby, "native" bull among a herd of thoroughbred Durhams.

You will now very naturally inquire, good reader, how you are to raise seed, and yet preserve the several varieties distinct. We first answer, that you ought to reduce the number of varieties to the very choicest—such as are desirable for being early or late, or of unusual size, or having a fine flavor, or distinguished for great productiveness—instead of keeping a selection large enough for a seedsman. They are in reality very few, for the majority of the fine-sounding names in catalogues are given to plants of an inferior character.

Such as you select for seeding should be located as far apart as the extent of your territory will admit, so as to lessen the chances of intermixture; and where the vitality of the seed will remain unimpaired for two or three years, you may allow only a part of the varieties to blossom in each year. Thus, by reference to the table at the end of this article, it will appear that cabbage seed preserves its germinating power for four years, and by permitting only one kind to perfect itself in a season, you may have four distinct kinds in perfect purity. This rule is good as far as it goes, but you will perceive that it is not of general application. Where you are obliged to have two or more kinds in flower at the same time, as with members of the cucumber family, place them as far asunder as possible. We think it better to raise only one valuable sort of seed, and depend upon a responsible seedsmen for the balance, than to run the risk of getting mongrels.

Of such varieties as you select for seeding, choose the best plants only—those which are healthy, and have their peculiar characteristics most perfectly developed. To insure earliness, only the most forward plants should be taken. Let the soil be rich and well cultivated, allowing plenty of room to the roots. Attend carefully to the subsequent growth, for the leaves and shoots are very apt to be injured by insects, and are very often choked by rank weeds. It will be the best policy to look at the plants at least once a week, and, when the weather gets very dry, it becomes advisable to apply water in moderate quantities. The seed stalks will be thrown up in the early part of summer; being high, and having many branches, they are liable to be broken down by heavy rains or strong winds. The labor of tying them up to stakes is trifling, and ought on no account to be neglected.

When the seeds are ripe gather them without unnecessary delay; otherwise the pods will split open, and their contents be scattered upon the ground. Do not gather indiscriminately, but take only the finest looking heads. By this selection of the best plants and the best seed, good varieties may be even improved, and they certainly will not deteriorate. In this way many of our choice vegetables have been obtained. The practical stock-breeder's motto is, that "like produces like," and he breeds from those animals only which possess the points he wishes perpetuated. Thus, if you select the earliest peas from the earliest vines, for a number of seasons, you can obtain a variety ripening several days earlier than that with which you commenced. It has been done once, and may be done again.

Place the seed vessels, as soon as gathered, upon a cloth in the shade, so that they may become perfectly dry, at which time thresh out the seed by means of a small stick. Winnow out the chaff and small or defective seed, and put the remainder in drawers or small paper bags. Every kind should be labeled with its name and the year when raised—in this manner: "*Early Salmon Radish*, 1850." This will prevent all possibility of the inexperienced cultivator mistaking beet for cabbage seed, or sowing that which by the lapse of time has lost its power of germination. Keep these drawers or bags in a cool, dry apartment, where no injury may be apprehended from moisture or the attacks of mice. With care, seeds may be preserved for several years, according to the annexed table.

THE VITALITY OF SEEDS, under favorable circumstances, can be depended upon for the following periods:

Parsnip, Rhubarb, and other thin, scaly seeds, for *one year*.

Balm, Basil, Beans, Cardoon Carrot, Cress, Indian Cress, Lavender, Leek, Okra, Onion, Peas, Pepper, Rampion, Sage, Savory, Scorzonera, Thyme, Tomato, Wormwood, and small herbs generally, for *two years*.

Artichoke, Asparagus, Corn Salad, Egg-plant, Endive, Indian Corn, Lettuce, Marigold, Marjoram, Mustard, Parsley, Rosemary, Rue, Skirret, Spinach, and Tansey, for *three years*.

Borage, Borecole, Broccoli, Brussels Sprouts, Cabbage, Cauliflower, Radish, Sea-Kale, Tarragon and Turnip, for *four years*.

Beet, Burnet, Celery, Chervil, Cucumber, Dill, Fennel, Hyssop, Melon, Pumpkin, Sorrel and Squash, from *five to eight or ten years*. —*Gardeners' Text Book*.

"OUR FARMERS IN COUNCIL."

Agricultural and Horticultural Society.

The farmers and fruit-growers of our county thought it more wise, the present month, to hold their councils in the hay and wheat fields than to come to town and spend their precious time in a city meeting. There is "a time to talk and a time to work," and when the wheat harvest comes so close upon the heels of the hay harvest, the time for talk has passed, and stern necessity suggests that the time to work has come. We wended our way to the council chamber but found it vacant. The secretary had just retired and announced "no quorum." Even if the foregoing had not been the case, we could hardly expect the farmers of Lancaster county to come into Lancaster city on the 3d, 4th or 5th of July, and subject themselves to the noise, confusion and dangers of the "Glorious Fourth," especially when the reserved patroitism of a hundred years was likely to have a noisy and boisterous manifestation on those days. Patriotism would not have the physical energy to ultimate

itself if it were not for the aliment afforded by the products of the patient, persevering and farseeing farmer. Their functions during the Revolution of 1776 was to sustain the soldier in the field with that which is more essential than powder, balls, guns, and generalship, and they are doing nothing less in 1876.

On the whole, the crop outlook for the present year seems to be one that will add additional lustre to our "Grand Centennial," and although there is a dearth of employment in many of the occupations of our countrymen, still there is a reasonable prospect for an average reward to the farmer—a compensation for his days of toil and an assurance to the masses of the people.

Many, if not all, of our farmers will avail themselves of the opportunity to visit the *International Exposition*, now being held in Fairmount Park, Philadelphia, and if, for the time being, they are not so attentive to their local meetings, they will be gathering ideas for future development in their honorable occupation. Such an occasion will never be presented again to those who are now the "bone and sinew" of this country. The information we gather this year from the various sources now concentrated in the Centennial enclosure will last for many generations. It will constitute a great epoch in the material history of our country, and the lessons that may be drawn from it will serve as texts and landmarks for many years to come, whether it may result in good or evil, therefore in any event it may be profitable.

Meeting of the Millers' Association.

The Millers' Association held its regularly monthly meeting in the rooms of the Board of Trade on Monday afternoon, July 10th, the President, John Strohm, jr., in the chair. The attendance was fair and the interest considerable. Several new members were elected. Reports were received from all parts of the county concerning the wheat crop. This year's crop is superior to any we have had for several years. The wheat is well-filled, and most of it has been harvested in good condition.

Considerable difference exists in quality especially in "rakings," which owing to the lodged condition of the grain will be unusually abundant. The crop is more satisfactory in the southern part of the county than in the northern. Advices from Ohio indicate a poor yield, while the northwest is reported as having a very full crop. Foreign advices indicate a fair crop. The general feeling was that there is little encouragement to buy beyond actual needs. Choice new wheat was reported from commission sources as abundant in Philadelphia at $1.25 and no buyers. But late new wheat seems to have changed hand in this county and at prices ranging widely.

Opinions differed somewhat as to the probabilities of the market in the future. It was conceded that little upward change could be expected except in case of war in Europe, when prices might rise a little. Most of the members felt that there would be a little change, while a few predicted a fall of not less than 10 to 15 cents per bushel.

The following prices were reported by the committee as current: wheat (old), $1.25 to $1.30; wheat (new), $1.15 to $1.25; rakings, $1.05 to $1.20; corn 50 cents; oats 32 to 35 cents; rye, 62 to 70 cents.

Lancaster being a "border county," and many subjects of the vegetable kingdom thriving equally well with those of other localities we believe that the following from the *Commercial*, of Baltimore, will be useful to the readers of THE FARMER, especially those in the southern portion of Lancaster county.

Maryland Fruits.

The advantages of Maryland and portions of the adjacent States of Delaware and Virginia for fruit growing are becoming daily more apparent, and it is being acknowledged that this central locality of this country must render it the garden spot of the world. In addition to the climate and soil for the successful growing of fruit, especially of the peach, the pear and the smaller varieties, the facilities for transportation which the central port of Baltimore presents, in its numerous lines of railroads and steamboats to all sections of our own country, and the admirable facilities afforded by our ocean steamers to Europe, must render our city and State the great emporium for the dissemination of the horticultural productions of the country, as they are fast becoming of the cereal crops which now find an outlet to Europe from the great granaries of the West.

It is evident in every direction that the taste for horticulture and the propagation of fine fruits is daily increasing, and the efforts of the admirable Horticultural Society of Maryland to encourage and extend this taste is bringing forth corresponding results by the beautiful display which from time to time is made in our city under its auspices. The last monthly exhibition was indeed a triumphant success, and the show produced specimens of flowers and fruits which it would be difficult to surpass.

The Society last year sent a deputation to the biennial meeting of the American Pomological Society, who secured the adoption of Baltimore as the place for holding the next meeting of the National Society in 1877, the arrangements for which will be made under the auspices of the Maryland Society; and from the well-known energy and efficiency of its officers, a success will no doubt be secured, which will redound to the honor of the amateur and professional gardeners of our State.

At the meeting in, 1875, of the American Pomological Association, Mr. W. D. Brackenridge, a delegate from Maryland, made a report upon the "Fruits of Maryland," in which he says that "Maryland, in her geographical position, the fertility of her soil, mildness and uniformity of climate, embraces one of the finest fruit-growing regions of our whole country. By this we refer more particularly to what is known as our Eastern Shore counties, bounded on one side by the Chesapeake Bay and on the other by part of the State of Delaware, where the peach and the pear may be said to have found their homes. The soil of this Maryland tract is generally what may be termed a light loam, and therefore easy to work. It is computed that about sixty thousand acres of this is planted in peach trees, and the remarkable yield the present year of this fruit is estimated at five millions of bushels. The fruit begins to ripen about the middle of July, and continues until the first of October. Some of these orchards are over twenty years old, and still continue in a healthy condition. The stimulants used thus to maintain the trees are liberal applications of barnyard manure, or to the extent of one thousand pounds of ground bones to the acre. Sometimes muriate of potash and other fertilizers are applied, while the surface of the ground is kept open by frequent plowing and harrowing during each season; judicious pruning and shortening-in being considered essential to the healthy condition of the orchard."

Mr. Brackenridge says that the usual remedy for the peach borer or worm is to use the knife freely, and then apply a shovelful of slacked lime on the surface in close contact with the tree.

Some seasons the curculio does great damage to the fruit. To prevent this no remedy has yet been found. With regard to what is called the "Yellows," a few of the more intelligent growers attribute it to the action of an aphis on the roots, and is considered by some to be the Grape-Vine Phylloxera, although some entomologists call it the Aphis Persica. These insects, though small, make sad havoc on the roots, and their presence underground is made very evident by the yellow and sickly appearance of the leaves, and on the few that have been examined by myself the insects were found following out and destroying the healthy bark to the extreme points of the rootlets. Our intelligent and most extensive peach-grower, Col. Edward Wilkins, of Kent county, is now carefully investigating the character and habits of this destructive pest, and from him we expect such information as may lead to measures calculated to put a stop to its ravages. An opinion prevails almost universally among our orchardists that of late years the season of ripening of many kinds has materially changed. Those peaches which used to ripen late now come in with earlier varieties, thereby occasioning frequently a glutting of the market. Some attribute the cause to an indiscriminate use of seed for stocks got from the preserving establishments, or to the small and weak hog or natural seed procured in Virginia, and my friend, Col. E. Wilkins, thinks this evil can be obviated by budding "Early Yorks on Early Yorks and Smocks on Smock stock."

A list of fruits that have proved to be well adapted for this State and vicinity, arranged in accordance with the Society's programme and the report of Mr. Brackenridge, is found in the published proceedings of the National Association:

PEACHES—*One Star*—Early Troths, profitable as a market fruit; Stump the World, large, of medium quality. Pineapple, White Heath, Cling, Salway.

Two Stars—Early York, good for table and marketing; Early Crawfords, one of the most profitable; Reeve's Favorite; Old Mixon Free, much sought for preserving; Crawford's Late, in high esteem for marketing; Silver Medal, popular here and in Delaware; Keyport White; Beers' Smock, the most profitable grown.

Dagger—Early Beatrice, promises well. Early Louise, Early Rivers, flavor high.

PEARS—*One Star*—Manning's Elizabeth, a great bearer, fruit small, yet profitable. Clapp's Favorite, a fine grower and good bearer, but fruit inclined to rot at the core. Flemish Beauty, rots at the core and sheds its leaves before the fruit is ripe, still it is worth growing. Vicar of Wakefield, good bearer on both Dwarf and Standard, much grown.

Two Stars—Tyson; one of the very best, but tree long in coming into bearing. Beurre Giffard; in some localities the fruit is liable to crack. Bloodgood; high flavored, and much esteemed. Bartlett; the most popular of all pears. Howell; an early and good bearer on Dwarf or Standard. Beurre d'Anjou one of the very best pears, grows, bears and eats well. Sheldon; is all that can be desired. Bergen; this is gradually growing in favor. Duchess d'Angouleme; on dwarf very reliable. Seckle; good everwhere. Lawrence; does well all over our State.

Dagger—Andrews; promises so far to do well here. Mount Vernon; this, so far, promises well. Triomphe de Jodoigne; a fine grower, fruit of high flavor. British Queen; fruit large, flavor high, keeps well, tree rather a poor grower. Dana's Hovey; tree a fine grower and coming into bearing early—fruit high-flavored.

Note—The Doyenne Boussock and Swan's Orange do well in some localities, and we think the last when better known will become a popular market fruit.

APPLES—*One Star*—Early Harvest; a moderate bearer, fruit excellent. English Russet; does well on warm land. Long Island Russet; an early and abundant bearer. Peck's Pleasant; flavor good, requires to be more generally known. Robertson's White; an abundant bearer. Summer Rose; a delicate fruit for table, not much grown.

Two Stars—Astrachan Red; bears well only on aged trees. Drap d'Or; the only objection to it, the trees grow slowly. Jefferis; in some counties does well. Rawles' Genet; a good bearer and keeps well. Summer Pippin; one of our best early apples. Smith's Cider; the most profitable sort grown here. Smokehouse, highly esteemed and widely disseminated. Tulpehocken Pippin (Fallawater); tree good bearer, fruit large—much grown by our farmers. Tewsbury Winter Blush; a good bearer and keeps long. York Imperial; this and Smith's Cider are the two leading apples of Maryland.

Dagger—Alexander; so far this promises to suit here.

As the peach is the most important of all our fruits in this State, we may be permitted to copy from the remarks of Mr. Edward Allen, of New Jersey, which we find in the published proceedings of the New Jersey Horticultural Society, kindly forwarded us, on the "New Fruits of Promise," which will doubtless be found useful to our readers. Mr. Allen says that the distinguished French cultivator and writer, Duhamel, states that he planted the seeds of the best table pears for fifty years without producing a good variety, but that since the art or hybridizing and crossing has become better understood, man has learned so to control and direct the processes of nature in producing varieties as, in a measure, to predetermine the result, and thus originate good fruits almost at will.

Of recent productions, adds Mr. Allen, none, perhaps, are of more importance to us of New Jersey, than the additions made to the list of peaches, and some of these from Thomas Rivers, of England, are worthy of special notice. The Early Rivers, I look upon as one of the best of its season; very early, ripening before Hale's Early; medium size, with a delicate pink cheek upon a ground of clear pale straw; flesh melting, sweet and rich.

Early Louise, another from Rivers, of excellent character, about the same size, and ripening a few days earlier. Early Beatrice, from the same source, still earlier, ripening ten days or two weeks before Hale's and unlike that variety, it hangs long upon the tree, free from rot, coloring beautifully. I think this peach worthy of all the popularity it has gained as an extra early market fruit. The seeming modest trait of this distinguished cultivator, of not over-estimating his own productions (a trait worthy of emulation) and the fact that large a portion of our peaches of the best quality have originated in England, leads me to speak of these peaches with greater confidence. I name from among them Alexander Noblesse, from the old Noblesse, but much larger, and equally rich and excellent, which, if it proves so with us, is good enough.

Comet; large, orange with crimson cheek, flesh yellow, melting, sweet and good; ripening a week before its parent, the Salway, which has proved a valuable addition to the list of late peaches. While foreign cultivators have been successfully at work, American enterprise has not been lacking. We have an American Comet, correctly Billyeu's Comet, a very large, white fleshed, freestone peach, ripening a half a month later than the Smock. It originated in Maryland, where it has obtained popularity, and is promising as a very late peach. Steadly; another very late and extremely large freestone peach, white to the pit, and of a very delicious flavor; origin Missouri. The description is that of Mr. Hussmann, of that State, than whom I know of no better authority; he adds, "it is ten days later than the La Grange, and by far the best very late peach I know of." The Alexander and Amsden's June are American peaches, competitors for earliness, ripening two weeks before Hale's; very handsome, and much larger than Beatrice. They are very promising, worthy at least of general trial.

The Downing, from Pennsylvania, a good peach, ripening long before Hale's, and quite juicy for so early a peach. The Col. Wilder, from the same source, of excellent quality, ripening, too, before Hale's. The Honeywell, from Ohio, is another extremely early, resembling Alexander, but earlier. There are others of promise; several not yet named, said to be extra early and good, but time is required to determine their true character and position. I might say the same of some others I have named.

The additions made to the list of peaches within a very short period have been wonderful in extending the season. We may now have this delicious fruit from the open ground, upon our table four months in the year.

I will add, although this fruit admits of distant carriage, and will I doubt not yet be placed in the markets of England by our enterprising fruit growers, he who would enjoy it in its highest excellence must eat it in his own garden.

WHITE CRESTED BLACK POLISH.

All writers seem to agree that Polish or Poland fowls did not derive their name from the country of that name. One writer—Dr. Horner—according to Wright's Book of Poultry, suggests that the name probably had reference rather to the very peculiar crest or *poll* of these birds. "We have what is known as the 'polled' breed of cattle; and Dr. Horner's view of the matter has at least so far found acceptance, that the name of Polands—once very common for these fowls—is now nearly abolished, and Birmingham and most other shows have adopted that of Polish as preferable." The American standard of excellence uses only the designation of Polish. The Polish is remarkable not only on account of the crest—which, indeed, is possessed by some other fowls—but more particularly on account of very peculiar craniological conformation. The larger the crest of the Polish the larger and more prominent will be the elevated rounded protuberance, of the skull. The varieties of Polish fowls are: White Crested Black, Golden, Silver White, Bearded Golden, Bearded Silver, and Bearded White. Of these,

the W. C. Black and W. C. Whites are the most popular and beautiful. None can rival the former in beauty and striking contrast of plumage. The crest of snowy whiteness furnishes a most vivid and pleasing contrast with the intense, bright black of the remaining plumage.

They are also fair table fowls, being plump and palatable, although of small size. In egg-producing, however, is their strong point, and here they hold their own with nearly any breed, unless it is the Leghorns. The eggs are of good, rich flavor. One objection to the White Crested Black Polish is, that they are adapted only to dry land, being almost sure to sicken and die on low, damp grounds. Here again the Leghorns have a decided advantage. One further objection as a table fowl may be urged on account of their dark legs; but this is only a matter of appearance and fashion. For a gentleman's park, to supply the family with a full share of good fresh eggs, and as an ever-pleasing attraction, this breed certainly has strong and indisputable claims. They *are non-sitters.*—*W. Atlee Burpee, Phila., Pa.*

ANSWERS TO CORRESPONDENTS.

Scale Insects.

J. M. G., Mountville, Lanc. co., Pa.—The maple branches you left at my residence a few days ago, and the twigs and leaves of which were infested by a number of scale-like insects having a white cotton-like tuft attached to each, are the "maple bark louse" or "scale insect" (*Lecanium acerella*). There are many species of them, and they infest the maple, the linden, the osage orange, the grape vines, roses, and also other kinds of trees, vines and shrubbery, but I have found them most abundant on those named, except, perhaps, only the roses, on which they occur rarely. Of course, they are injurious to the thrift of the trees they infest, and about twenty years ago a species marred the beauty of a row of linden trees then standing in front of the court house, which was then in process of construction. These trees became so unsightly that they were subsequently removed, although, perhaps, not for that cause alone. They have been in Lancaster ever since, some seasons becoming very abundant and at others almost disappearing. When they occur in great numbers for several years in succession, the trees they infest become so much enervated and depleted that they do not recover their lost vigor for a long time, if ever. These insects are endowed with extraordinary powers of prolification and endurance. Each of these cotton-like tufts contains from three to five hundred, or more, eggs, and under favorable circumstances each egg will produce an insect. On one occasion, I counted five hundred and thirty eggs in one tuft, and there were twenty tufts on a linden branch about a foot in length; and, the whole limb from which it was taken was infested in a like manner, all the laterals of which would have measured forty or fifty feet in length. Now taking five hundred as an average, and this branch would have produced 10,000 insects, and the whole limb 500,000; but this limb was only the one-hundredth part of a single tree and there were six or eight of them in the infested row. This would have given 50,000,000 for a single tree, and if there were seven of them, the product of the whole row would have been about 350,000,000, and there is not a doubt in my mind, there were fully that number hatched from the scales on those trees; but they were cut down, and the insects were of course destroyed. The eggs and insects when first evolved, cannot be perceived by the naked eye, unless the sight is very sharp, but under a common magnifier, they are plainly visible. The eggs are small yellowish pellets, resembling minute fish roes, and the young are delicate little animals of a whitish color, oval form, six-legged, having medium lengthened feelers (*antennæ*) in front, and two long bristle-like appendages at the hind end of the body. Perhaps nineteen-twentieths of them, or more, are females, and are without wings. The males have wings which lie flat (not closed together with the edges raised up on the back as in the *Aphids* to which they are remotely allied) and sometimes stand at right angles—or nearly so—to the body. It is fortunate when a heavy shower of rain occurs immediately after they emerge from the eggs, for then millions are washed down from the trees and perish, and this is why their increase is sometimes checked and why they do not occur uniformly numerous every year. How, or exactly when, the female becomes fertile is not yet fully known; but after they issue from the eggs they scatter over the trees, and the females insert their beaks into the tender bark of the branches or buds, and live on the sap. They then lose their antennæ, feet and seta, and become degraded into a mere "scale" or "scab," and remain stationary until the following spring. Early in the spring they begin to secrete the cotton-like substance at the hind end of their bodies, into which they deposit their eggs, and then die. The eggs are hatched in the month of June. The proper time to destroy them is before the leafing or blooming of the trees, or as soon as the white cotton begins to appear. This makes them plainly visible, otherwise they are the color of the bark, and without close inspection cannot be seen. The scales may be destroyed with oil or carbolic soap, but, where accessible, they may be easily rubbed off with the hand. We published an illustrated paper on these insects twenty years ago in the *Pennsylvania Farm Journal*, then issued by Mr. Darlington, at West Chester, whither it had been removed from Lancaster city, but, as is usual, very few, perhaps, thought the *Journal* of sufficient value to preserve. There were also short articles on the subject published in our city papers, one of which was copied by the *Public Ledger*. Where the insects are located out of reach, and the tree is deemed of sufficient value to preserve, a swab

smeared with tar or any other sticky subtance, and attached to a long pole, is a good instrument to remove them after the cotton first appears. If, however, this work is put off until the first of July, it will then be too late for that year because, then all the injury for that season is already done, the whereabouts of the young not being "comeatable"

An Enemy of the Potato Beetle.

E. K., esq., Manheim township.—The "bottled bug" accompanying the *larvæ* of the Colorado potato-beetle, which you left at our store on the 22d inst., is called, in plain English, the "Spined Soldier Bug," but technically it is called *Arma Spinosa*. It is one of the recognized enemies of the potato pest, and therefore people should carefully discriminate in its favor. I have noticed this insect in Lancaster county for more than thirty years, and have found it with other insects impaled on its piercer and engaged in sucking out the juices of their bodies. The fact that your son found it with its piercer plunged into the body of a young potato beetle ought to be a sufficient guarantee of its beneficial qualities. *Happily*, this insect increases as its hosts increase, but *unhappily*, its increase is not as rapid as its host's. This specimen is immature, although the fully developed bug is very little larger than the specimen under consideration. It is really a *bug*, in the true sense of the word, and it belongs to the same order as the "squash-bug," "bed-bug," and a number of various other kinds of bugs. It has no jaws (*mandibles*), and therefore does not masticate its food. Instead thereof, however, it is provided with a "piercer" (*haustellum*), "lance," "straight sword," or whatever else you may be pleased to call it. When this instrument is not in use, it is closed in on the breast—"shuts up like a knife"—but when the animal is hungry and the larvæ of a potato-beetle is encountered, then it will stick, cut, thrust, penetrate and wound, sufficiently skillful to vanquish the *larvæ* of a goodly number of its host; but cannot do much with the hard shell of the beetle after it has matured. For further specific particulars the reader is referred to the May number of the LANCASTER FARMER for 1875, pp. 65, 66, where he will find the insect illustrated, and a record of evidence from a reliable and intelligent source, corresponding with the above. It affords us additional gratification to find that farmers are daily making observations confirming what has been written on the subject of insect life, otherwise they might only regard it as a mere fancy sketch, written to amuse, alarm, or to advance some personal end, not connected with the interests of the people.—*R.*

Mr. L. F., South Prince street, Lancaster.—You are exceedingly unfortunate with your "gooseberry bushes." On the small quantity of leaves you sent us we have detected three different species of *larvæ* which are known to prey upon the leaves of the gooseberry and currant. The *first* and most conspicuously marked is what is known under the common name of the "Imported Currant-worm," (*Nematus ventricosus*) which was introduced into this country from Europe about twenty years ago. These worms are of a green color, with black heads, and covered all over with black dots, at this time, (July 11) but at the last moult they lose these dots, and the color becomes lighter. The *second* is the "Native Currant-worm," (*Pristiophora grassularia*) which is of a uniformly green color without the black dots; these are the most numerous, although usually the imported species are the most numerous and destructive. These two different species of currant and gooseberry worms are of the same size and form, and produce two broods in a season. They belong to what are termed "Sawflies," (*Tenthredo* Family) at the head of the order HYMENOPTERA, or clear-winged insects. The *third* is a *Geometre* or "Looper," almost too young to determine; but as they are also feeding on your gooseberry leaves, they are very probably the "Gooseberry Span-worm," (*Ellopia ribearia*). It is written that there is but one brood of these worms in a year, and that the larva attains its full growth about the 15th of June, when it goes into the ground and changes to a pupa, from whence it issues in the perfect moth state about the first of July, a pale-yellow fly, mottled with light lead-color, and expanding nearly one and a half inches; and that after the female is fertilized, she lays her eggs on the twigs of the gooseberry or currant, where they remain exposed to the summer's heat and winter's cold until early the following spring, before they are hatched. These little span-worms now (July 11) seem to be about a week old, a quarter of an inch in length, about the thickness of a knitting-needle, of a dark color, with whitish spots along the sides, not visible from above. This is either a retarded brood, a different species or a second brood of the same insect, prematurely produced by the unexampled warm weather which has prevailed since the first of July. They have the same habit of suspending themselves by a silken cord, that we observe in the genuine Currant-moth, to which we have provisionally referred them. They belong to the order LEPIDOPTERA, which includes the butterflies and moths of various kinds.

The remedy for these insects is powdered hellebore or quick-lime, sprinkled on the bushes while they are wet with dew, or first sprinkling them with water; diluted carbolic acid, tobacco decoctions, or soap solutions, thrown upon them through a garden syringe, are sometimes used to exterminate them. It is almost impossible to destroy them by hand-picking, especially the first and second named, on account of their great numbers, small size, and their color being so near that of the leaves they infest. But if you want to save your gooseberries, you must do *something*.

C. W., Lancaster City.—The large worm, about five inches in length, which you charge with cutting off your bunches of green grapes, seems to be an immature specimen of a species of *Philampelis;* but as it differs considerably from the mature *larvæ* of both *Satellitia* and *Achemon*, we are not prepared to determine its species; and as it was dead at the time we received it, it left no margin for future development. The fact that you observed "something" cutting off your grapes for some time, and then finding this individual, together with a cluster of grapes, in your rain stand, is strong circumstantial evidence against him. He must have met with the fatal accident the man did who, in sawing off a limb of a tree which hung over a brook, stood upon the limb instead of upon the stump, until suddenly both man and limb came down into the brook together. Or perhaps more poetically speaking:

> "An envious sliver broke,
> When down his *vitian* trophies and himself,
> Fell in the treacherous brook."

Many of our grape wines, the present season, are hanging too full of fruit, therefore the limited pruning that they are likely to receive from these worms will not be very harmful. It is however their defoliations of the vines, that has been the chief count in the indictment against them; and should they be very numerous (which rarely happens) they might prove very destructive to the thrift of both the vines and the fruit. This larva also goes into the ground and assumes the *pupa* form, and the moth makes its appearance early in the month of June. It expands nearly five inches. The colors are light olive grey and dark olive green, and on the whole, is a "pretty moth." Hand-picking is the most feasable and efficient remedy.

L. R., Lancaster, Pa.—The beautiful caterpillar you sent is specifically new to us. It is of light chestnut-brown in color, and is fully three inches long. The head and first segment are a pale green in color, with two light brown longitudinal stripes passing from the mouth over the front of the head and on the top of the segment aforesaid, and extending over the third segment, where they terminate at each end of a transverse oblong pea-green patch on the top of said segment. On the eight next succeeding segments there are the same number of large pea-green patches, oblong in front, but becoming almost circular in the middle and towards the posterior end. On next to the last segment there is a polished deep brown convexed eye-like disk, surrounded by three dark and light-brown rings, and beyond the disk, and on the two terminal segments, are two crescent-shaped patches of pea-green. There are lateral rows of irregularly shaped spots of the same pea-green, one on each segment, small in front, but increasing in size to the end. The six pectoral feet are light-brown, but the prolegs are dark-brown, except the anal pair, which are light. It belongs to the "Grape-sphinxes," and is probably a species of *Thyreus* or *Sesia*.

F. L.—The small, yellowish, green and black spotted caterpillar, on your grape leaves and which, when small, only destroy the surface, leaving the nervures remaining, but when larger, move in a compact column and destroy the whole leaf, except the midrib; are the *larva* of the "American grape-leaf codling" (*Procris Americana*). When mature, it is about half an inch in length and of a yellow color dotted with black. The *larvæ* then spin themselves into small whitish silken cocoons, on the leaves of the grape—often side by side, in the manner they had been feeding, and in about ten days—more or less—a small black moth is evolved, having an orange colored ring or collar, and from the fact that we have bred these handsome little moths late in September, we infer that there are at least two broods in a season. Pluck off the infested leaves, and crush, burn or scald the insects, is the cheapest and best advice we have to give.

E. K., Manheim Twp.—The "worms" that have been destroying the heads of your "Timothy grass" are the "white-lined army-worm" (*Lucania albilinca*). When young they are green in color, and the stripes are only faint; but as they increase in size, and at their subsequent moultings, they gradually change in color, and become more distinct in lineation, until the last moult, when they are nearly the color of the ripened straw. They then go into the ground and change to a brown *chrysalis*, and the moth appears about the first of August. Until we can procure good cuts of this insect in its various states, we must refer the reader to page 165 Vol. IX. of the proceedings of the "Penn'a Agricultural Society."

We have not heard that they were very numerous the present season, except in a few of the timothy fields. As they are all now in their *pupa* sleep in the ground, when their destruction becomes an object, perhaps burning off the stubble would produce heat sufficient to effect that object.

L. F., Lancaster, City.—The large mottled worms which you found on the leaves of your grape vines, and which, when at rest, lie stretched along the branches, are the *larvæ* of the "Abbott Sphinx" or "Abbott Grape Moth" (*Thyreus Abbotti*). The round shiny spot on the top of the back next to the last segment of the body, is not the eye, as you supposed, those organs being *two* in number and at the other end of the body. They never occur very numerous, and therefore, the best plan to destroy them is by hand picking, although while at rest they may be a little difficult to find, as, unless you have a close view of them you may easily confound them with the woody branch. When the worms are done feeding they go into the ground, and, in this locality, the moth comes forth in April, expands about three and a half inches, and is of a variegated chocolate brown and yellow color.

M. R. R., Lancaster, Pa.—Your large black beetle with the narrowed "waist," and the rows of bright copper-colored spots on its wing covers, is what in general terms is called

a "ground-beetle;" we believe it is more specifically called the "Fiery Ground-beetle," but perhaps not more than one in five thousand knows it even by that name—so difficult is it to teach entomology to the masses. Scientifically this insect is called *Calosoma calidum*. We esteem it a great friend to the husbandman, and therefore we admonish all who may recognize it to spare it if possible. It does not feed on vegetation in any of its stages of development, but is entirely carniverous in its habits, and we believe it has been detected feeding on the *larva* of the "Colorado potato-beetle."

C. F. R., Lancaster, Pa.—The large grey insect with the coiled up tongue and the "queer, lustrous eyes," is one of the common "Hawk-moths"—the *Sphinx quinquemaculata* or "Five-spotted Sphinx" of entomologists, although it is now referred to a new genus, (*Macrosylla*). It is the common enemy of the tobacco plant and is the parent of those large "green worms" which infest the plants after they have escaped the ordeal of the "cut-worms" and other pests and hindrances to tobacco culture.

F. K., Lancaster, Pa.—The large grey four-winged fly you sent us is the "Horned Corydalis" or "Helgramite," (*Corydallis cornutus*). It is a male specimen, the female being without those long horn-like "mandibles." Formidable as they appear, they are entirely harmless, and in their matured state feed on *nothing*. The *larvæ* are aqueous in their habits, and they feed on any little water animal they can catch, and we presume would not reject the "fry" of fish.

Omni.—Your several drab-colored beetles, with the six black dots on the wing covers, are the "Large Grape-leaf Beetle, (*Pelindota punctata*) and the best thing you can do is to kill all that are "comeatable" on a venture.

METEOROLOGICAL DIARY AT PHILADELPHIA, FOR JUNE, 1776.

DAYS.	HOURS.	THER.	WINDS.	WEATHER.
1	8 A. M	65	S. W	Fair and Windy.
2	8 A. M	71	S. W	Windy & Cloudy.
3	8 A. M	62	N. E	Cloudy.
4	8 A. M	56	N.	Fair.
5	8 A. M	61	S. E.	Fair.
6	8 A. M	61	S. W	Cloudy.
7	8 A. M	65	S. W.	Cloudy.
8	8 A. M	65	N. W.	Fair.
9	8 A. M	68	W.	Fair.
10	8 A. M	67	S. W	Fair.
11	8 A. M	68	N. E.	Cloudy.
12	8 A. M	66	N. E.	Fair.
13	8 A. M	68	N. W.	Fair.
14	8 A. M	72	S. W	Fair.
15	8 A. M	73	S. W.	Fair.
16	No Observations.			
17	No Observations.			
18	8 A. M	67	N.	Fair.
19	8 A. M	63	N. W	Fair.
20	8 A. M	68	N. W	Fair.
21	8 A. M	70	N. E.	Fair.
22	8 A. M	71	W.	Cloudy.
23	No Observations.			
24	8 A. M	73	S. W.	Cloudy.
25	8 A. M	69	S. E.	Foggy.
26	8 A. M	71	S. W.	Foggy.
27	8 A. M	72	S. W.	Fair.
28	8 A. M	75	N. E.	Cloudy.
29	8 A. M	73	S. W.	Cloudy.
30	No Observations.			

On the 16th, 17th, 23d and 30th no observations were made, according to the tabular statement above, which is taken from the *Pennsylvania Magazine* for July, 1776. But taking the temperature of the 16th, 23d and 30th to be the same as the days next preceding them, and the 17th to be that of the day next succeeding it, would make the average temperature for the month, at 8 A. M., a very small fraction over 68°.

According to the observations made by Mr. Spera, at Ephrata, for the month of June, 1876, the average temperature is a small fraction less than 71°, and from the fact that his observations were made one hour earlier in the day than those of 1776, the average was probably greater at 8 A. M. Under any circumstances it will be perceived that the mean temperature for June, 1876, was about three degrees higher than for the same month in 1776.

During that month, our forefathers were engaged in elaborating the *Declaration of Independence*, and when we peruse the legislation previous to the promulgation of the great event, we may suppose they had a warm and anxious time of it. Their posterity occupied the month of June, 1876, in elaborating *Platforms* and *Standard Bearers* to save and perpetuate what their ancestry established one hundred years ago.

Thermometer, June, 1876.

Date.	7. a. m.	2 p. m.	9. p. m.	Mean.	Min.	Max.	Rain In.
1	62	74	68	68.0			
2	69	84	70	73.2			
3	74	86	76	78.0			
4	76	77	68	72.2		82	1.70
5	74	76	70	72.5			
6	63	70	38	62.2	52		
7	68	76	67	69.5			
8	65	84	70	72.2			
9	70	84	72	74.5			
10	70	87	76	72.2		62	
11	76	88	70	76.0		90	
12	75	82	70	74.2	65		
13	68	82	66	70.5			1.35
14	68	78	64	68.5		81	.15
15	69	81	70	72.5	61		
16	66	79	66	69.2			
17	68	79	68	70.7			
18	70	70	68	69.0	67		1.00
19	74	83	71	74.2	65		
20	76	80	68	73.0	64		.35
21	70	73	60	65.7			
22	65	74	64	66.7	57		
23	60	78	68	68.5	54		
24	76	84	70	75.0	64		
25	80	89	73	78.7	68		
26	72	88	73	76.5	68	90	
27	78	88	74	78.5	68	92	.30
28	78	93	70	77.2	70		.06
29	76	89	70	76.2			.03
30	74	83	69	73.7			

Observations made by Wm. H. Spera, Esq., at Ephrata, Lancaster county, Pa.

Hygrometrical Diary at Philadelphia for June, 1776.

DAYS.	HOURS. 9 A. M.	HYGROM. 3 P. M.	DAYS.	HOURS. 9 A. M.	HYGROM. 3 A. M.
1	100	110	16	No Obs.	
2	No observation.		17	96	98
3	90	80	18	80	75
4	40	50	19	95	100
5	35	50	20	75	80
6	50	55	21	60	65
7	100	110	22	90	75
8	80	90	23	50	60
9	No Obs.		24	75	80
10	65	70	25	100	110
11	74	80	26	75	80
12	80	85	27	90	84
13	90	110	28	50	65
14	40	55	29	70	75
15	60	75	30	90	110

Barometrical Diary at Ephrata, Pa., for June 1876.

DAYS.	7 A. M.	2 P. M.	9 P. M.
1	28.908	28.854	28.857
2	28.839	28.779	28.769
3	28.754	28.737	28.789
4	28.794	28.779	28.754
5	28.764	28.784	28.829
6	28.849	28.857	28.897
7	28.982	28.962	28.977
8	28.992	28.909	29.042
9	29.027	28.976	29.002
10	29.012	28.986	29.004
11	29.007	28.981	29.042
12	29.029	29.016	29.030
13	29.030	29.017	29.037
14	29.027	28.989	29.032
15	29.027	29.042	29.062
16	29.071	29.029	29.048
17	28.980	28.897	28.892
18	28.730	28.802	28.814
19	28.829	28.826	28.839
20	28.839	28.799	28.834
21	28.836	28.834	28.803
22	28.929	28.871	28.925
23	28.912	28.829	28.814
24	28.739	28.754	28.757
25	28.721	28.631	28.667
26	28.674	28.691	28.739
27	28.749	28.734	28.734
28	29.022	29.004	29.040
29	28.922	28.906	28.920
30	27.912	28.817	28.951

Mr. Spera writes: "I am going away this morning to take barometrical measurements and heights in the western end of this county. Any observations you may at any time desire, will be most cheerfully furnished"—for all of which we feel exceedingly thankful, and shall avail ourself in the future of his kind offer. As the observations of 1776 are hygrometrical and those of 1876 barometrical, (for difference in which see pp. 50–57 of our April number). Our readers cannot make the same comparison as they can in the thermometrical observations.

THE CURRANT (Ribes).

We are not acquainted with any fruit which is more generally disseminated through the Northern States, than the one now under notice. In some sections it would be a difficult matter to find a respectable farm house that is without a few currant bushes either disposed along the path which leads to the front door, or planted by the fence of the vegetable garden. It is true, that in nine cases out of ten they receive little or no cultivation—being seldom relieved of the old, barren wood, and not manured from one year's end to another. Still the good wife places a high estimate upon the fruit, and would not willingly be deprived of it. There are many reasons by which to account for this, such as the hardy character of the shrub, its free growth and great productiveness, in addition to the excellent qualities of the fruit, both when freshly picked and in its preserved state.

There are several species to be found growing wild in this country, but those of our gardens came originally from the northern parts of Europe and Asia, and are largely indebted to the skill of the Dutch horticulturists. In Siberia, the berry of the black species, the *R. nigrum*, frequently attains the size of a hazel nut. Botanists aver that the white currant which by some has been considered a distinct species, the *R. album*, is nothing but a variety of the red species, the *R. rubrum*. When the shrub is found in its natural state, the berry is either black or red, of small size and poor flavor. The name of the fruit is said to have been derived from the resemblance of the berries to the little Corinth grapes or raisins, which have long been known in commerce as currants—the word evidently being a corruption of Corinth.

It seems strange that so little attention should be paid to the selection of the best varieties for culture when they can be obtained so easily and at such trifling cost. They are not only more profitable than the common kinds, in a pecuniary point of view, but their fruit is infinitely superior for domestic uses. Of the popular red species, the following varieties may be considered chiefly worthy of notice, viz: the *Red Dutch*, *May's Victoria*, and *Knight's Sweet Red*. Of the white variety the *White Dutch* and the *White Grape* are undoubtedly the best sorts for the garden. The *Champagne* is of a light pink color, between the *Red* and *White Dutch;* it is acid, and cultivated by many as a curiosity. Of the black species, the *Common Black* is much inferior to the *Black Naples*.

CULTURE.—An idea appears to have become prevalent, that currant bushes require neither high culture nor attention of any kind. They are generally choked with grass and weeds, of a stunted, inferior growth, full of dead wood, and producing fruit of the poorest description. Experience has demonstrated, however, that no inmate of the garden can be more improved by a rich soil and careful cultivation.

New bushes are easily obtained by planting cuttings of the last year's growth. They should be taken from the most vigorous shoots and with a sharp knife, so as to leave no rough or jagged edges to the bark. They ought to be about 10 or 12 inches in length, and, when they are to be trained as standards, to have the buds on the lower half smoothly cut out, in order to prevent the appearance of troublesome suckers. Plant the cuttings, after being thus prepared, about six inches deep, and at least, two feet apart, in early spring or just before winter sets in.

It is best to have them in rather a shaded situation, so that they will not suffer from the heat of noon-day. The application of a little water at intervals will encourage the speedy formation of roots. In the second spring thereafter remove the bushes to the spot in the garden where they are to stand permanently. They are sometimes placed in the border, but more commonly on the sides of the principal walks. They will thrive in almost every soil, although they have a decided preference for one that is strong, rich, deep and somewhat moist. They succeed well in a free, open exposure; but to secure their general health, a partially shaded location is undoubtedly best. The gardener should, however, have bushes in both situations, as those having the full benefit of the sun's rays will ripen their fruit earliest in the season, but it will be smaller and less delicately flavored than that which has been perfected in the shade. They are to be set out in rows, four feet apart each way.

It has become common of late years, to recommend training currant bushes in the shape of trees, with the main stems running up from twelve to thirty-six inches high, before the side shoots are permitted to branch out. These standards have a very respectable appearance and are rather more easily cultivated than the shrubs, where suckers are allowed to grow up at will. But, Mr. Cole, a distinguished authority on the subject, says that if they are permitted to sucker moderately, under a regular system of pruning, they will be longer lived and produce more abundantly than where the whole nourishment of the top passes through a single channel.

Nevertheless, the shape of the bush is not of as much importance as the other details of management. A due regard to pruning is very necessary to the production of fruit, which is borne mostly by two-year-old wood. In some leisure hour of autumn or winter, all the old and stinted branches should be removed and the shoots of the preceding year's growth shortened some five or six inches. By such a course the sap, instead of being wasted upon barren wood, is confined within a small compass, and is permitted to form short, fertile spurs. Care must be taken to prevent too dense a growth; the branches should be few, spreading out widely, and not crossing or interfering with one another, so as to admit the sun and air to every leaf.

When there is a convenient opportunity in the latter part of summer, the soil ought to be enriched by the addition of a little good manure dug in among the roots. Omitting this until winter, or the following spring, has been aptly compared to cramming an animal with food just before it is slaughtered. The roots require their food whilst they are getting in readiness for the next summer's crop, and not after their growth is suspended for the season. At all times of the year the soil should be kept light and free of weeds, so that the roots may have no cause to complain of inattention on that score. Fruit of the very finest quality may be expected, attractive for its size, rich color and delicious flavor. It can easily be kept on the bushes until the middle of autumn by covering it with mats, cloths or anything to shield it from the sun. Should the reader be disposed to think such particular care in the cultivation of the currant unnecessary, we advise him to manage at least one bush in the manner above described, while he permits the remainder of the plantation to take care of itself in the good old-fashioned way; and, if we mistake not, he will ere long be convinced of the justice of our remarks. The borer, which in some districts occasions a good deal of injury, is produced by a blue-black moth appearing about the middle of June. Every stem that is affected should be burned. As a preventive, apply to the bushes, before the season of the moth, lye or potash-water, or some other offensive wash. Various insects and worms that are among the foliage may be repelled by the application of lime, or whale-oil soap suds.

Use.—The reputation of the currant has long been established as one of the most wholesome and grateful fruits for the dessert. The cool acid flavor is peculiarly agreeable in the summer season, and has led to several different preparations of the fruit for winter use. The expressed juice is made into shrub, wine and jelly. The shrub makes a pleasant summer drink; the wine was formerly very popular among our agricultural community; while the jelly is an indispensable accompaniment to many dishes. The fruit of the black species is chiefly used for making a jam, which is thought valuable as a remedy for various disorders of the throat. The young leaves have been dried and used as a substitute for green tea, from which it is said that it can scarcely be distinguished. All kinds of currants are much esteemed in cases of sickness, for quenching thirst, and having a cooling influence upon the stomach.

To Preserve the Green Fruit.—Pick it when fully grown, dry the surface well without shriveling, and cork it tight in glass bottles—covering the cork with sealing wax. Then bury the bottles to the neck in a box of sand or earth, placed in a cool cellar. The fruit may thus be kept for almost any length of time, in as good condition as when gathered from the bushes.

Currant Pudding.—Put a layer of pastry in a dish, fill it with ripe currants, and cover them with a top crust. Boil for one hour, at the end of which time you are to remove the top crust, for the purpose of putting in butter, sugar, nutmeg and cloves. The pudding is to be eaten with hard sauce.

Currant Shrub.—To one pint of strained currant juice, put one pound of sugar. Boil together gently for eight or ten minutes, and then set the syrup in a place where it will cool. When lukewarm, add to every pint a wine-glass full of French brandy. Bottle tight, and keep in a cool apartment. A little of this shrub, mixed with water, makes a very refreshing drink for hot weather.

Currant Jelly.—The best way of extracting the juice, is to put the ripe fruit into a glass or earthen jar which is suspended in a kettle of boiling water, and cook it partially. Then put it into a flannel bag, and let the juice strain through without squeezing. To every quart add two and a-half pounds of white sugar, with the beaten white of an egg. Boil the syrup very gently, skimming it all the while until it becomes clear and thick. The proper time for taking it from the fire will be indicated by its dropping in a solid lump to the bottom of a tumbler of cold water. Fill the glasses, and let the jelly be exposed to the sun for a few days, as it will thereby be much improved. There are a great number of receipts for making currant jelly, and this one is believed to be among the very best.

Currant Wine.—Gather the ripe fruit, when it is perfectly dry, and extract the juice by pressure, or in the manner above indicated. For every gallon of juice allow one gallon of water and three pounds of good, clean sugar. Dissolve the sugar in the water and, after removing all scum which may rise, add the liquid to the currant juice. Mix them well together in a keg or cask, but do not close it tight until fermentation has ceased, which will not be under a week. Then add one gill of French brandy to every two gallons of the liquor, and close the cask tight. In three or four weeks the wine will be fit for bottling. In six months time it will be good for use, but its quality is improved by age.—*From the Gardener's Text-book.*

A VALUABLE DISCOVERY.

"Dear Sir: I think I have (accidentally) made rather a valuable discovery—which, though it relates more directly to benefiting the agricultural rather than the poultry interests of this country, I send you the first account of, because it pertains particularly to the specialty for which your poultry paper caters. And I am very confident, if further experiments with this article (now being tried) shall prove as wonderfully effective as those I have already made have resulted, that we have upon the premises of every poultry-breeder in America a certain and simple remedy against the *depredations of destructive garden and flower insects*, that we have as yet never appreciated!

"As you are aware, gardeners who raise early market vegetables—such as squashes, cucumbers, melons, etc., as well as small fruits, currants, raspberries, and even grapes—have always been put to their wits' ends to devise ways and means to preserve their vines and bushes from the ravages of spring bugs and worms that assail the tender plants as soon as they get fairly growing. And various applications of plaster, gypsum, ashes, lime, hellebore, Paris green and other poisons have been used freely to kill or drive away these pests—often without avail, until half or two-thirds of these plants have been killed or eaten up by these numerous varieties of marauders.

I had tried these 'cures' for currant-worms, tomato-flies, cucumber and squash vines, etc., as well as for the dispersion of rose-bugs, often without success. And two years ago I made use of a preparation of liquid raw hen-manure upon a few cucumber hills, when the bugs had fairly taken possession of the vines. I applied this morning and evening for a week, and saved every one of my vines. Then I saved my squashes similarly with entire success. I then washed our rose-bushes with it daily for four or five days, and 'cleaned out' every bug on them effectually! The currant bushes came next, and not a currant-worm have I seen *this* season in my garden. I have used it this spring, and my cucumbers, squashes, currants, etc., (as they were last year) are entirely free from the pests that have quite destroyed the first planting of my neighbors.

I believe the pungent, peculiar odor of this preparation is a complete protection against the attacks of these insects. They will not approach the vines or leaves saturated with it. And at the same time, I find this a most admirable fertilizer to the plants. I have no doubt it will destroy or keep at a distance the villainous "potato-bug," too. Why not? At all events, I shall try it the present season, as I notice in the papers that this depredator is about this year in New England.

"I throw into a common bucket-full of water, a heaped spade-full of fresh manure, taken from beneath the hen-house roosts. Mix well, and apply from a watering-pot. A little goes a great way. It is thus sufficiently strong, and the effect will be discovered immediately. On rose-bushes and currants it should be thrown *under* the leaves with a large syringe. Upon ground vines it may be applied easily.

"I have found this so singularly beneficial that I now make the fact known in the interest of poultry keepers, that they may save the hen manure carefully. If they don't wish to use it on their own premises, there will be a market for it as soon as their neighbors try it, if they succeed with it as I have. And if it will destroy the *potato* bug (as I sincerely believe it will) there must surely be a lively demand for this often wasted article, should the 'Colorado beetle' really show itself in this region.

"If you think this 'discovery' worth recording in your columns, I have no doubt it will meet the eye of some poultry men or gardeners who are more or less annoyed as I have been, who will thank you and me for this hint. It is a simple method, practical, certain, not poisonous, and worthy a trial.

Yours, &c., Helper.

"P. S.—I suggest that this liquid be used *not too strong*. The proportions I give above are sufficiently powerful. If applied too strong it will burn the vines and leaves, or even the stalks, of tender plants."

The foregoing from the *Funciers' Journal* of June 19th, 1876, if as affective as represented, surely suggests an *insecticide* that must ultimately surpass all others, on account of its simplicity, safety, and cheapness; and because the only condition necessary for its production is the ownership of a few fowls, and a proper roosting place for them. If this remedy effectually *tans* them, *we* think they are justly *tanned*.—Ed.

ADAMSTOWN AND BILLINGFELT.

The borough of Adamstown and the name of Hon. Esaias Billingfelt are inseparable, for the latter is so identified with everything tending to benefit the former that the borough could not well get along without him. An Adamstown correspondent of the Reading *Eagle* says this of the man: He owns a farm at Adamstown, and an *Eagle* reporter interviewed him on the subject of manufacture and farming, in reference to unemployed labor. He said:

There are too many persons depending upon manufacturing establishments for a living. The people ought to be distributed more throughout the country, following farming, and there would be plenty of work for all. After twenty-five years of experience, I find that the most economical and pleasant way to earn a livelihood is to attend to the cultivation of the soil. Make it rich, though it be but one acre, and the product you cannot sell at market, use yourself. Look at the crops of Sebastian Miller and the Regar brothers, of Adamstown, and you can see what a small farm can produce. All of us must subsist upon the cultivation of the soil, whatever we may be engaged in.

Our farms are not on an average one-tenth as productive as they could be made. The richer the soil the easier the farming and the less liability to drouth. As a general thing the farms are too large. Large tracts ought to be divided into small parcels, and this would be the means of distributing labor and place our money in more general circulation. There is money enough but the manufacturing establishments either cannot get it or they do not want it, as it does not pay during these times to run manufactories. Show me an industrious man who owns but one acre of ground and he can borrow money. Show me a man who works in a factory and is idle half the year, and he can get no credit. If 100 acre farms were divided into ten acre tracts, and the soil brought to a high state of cultivation, the 100 acres so divided would sustain ten families instead of only one, as now.

The above are the sentiments of a man of intelligence and experience, and it seems to us, not less of reason and common sense. As to *fact*, there are millions in the country that are as able to judge as we are, if they will but curb their impulses and think soberly on the subject. These experiences would be more heeded if the community could get the better of its prejudices and separate the man from the subject, and base their opinions on the real merits of the case. While we believe Mr. B. is fully competent to advise in the premises, yet we fear there are many who feel disposed to hoot at such advice, only because "they like not the man." The entire country is sadly realizing at this moment the baneful results of deserting the farms and depending upon the offices and the shops. And even those who do not, or who do not *intend* to desert the farm would do well to study his suggestions in reference to smaller farms, and a higher and more thorough state of culture. What a pity it is that we cannot get men to think and act upon these things while they are young and in the prime of life. What homes and comforts might be carved out for the gratification of enervated and advancing age.

STRAWBERRIES.

Strawberries are giving place to raspberries, and the latter are now beginning to come into market. Blackberries are also appearing in small quantities. The strawberry season has been a little longer than last year, and has been of some profit to the growers. There have gone into the market from the Delaware Peninsula, over the Delaware Railroad, about 4,710,000 quarts of strawberries since the opening of the season on May 29. In the transportation of these berries three daily trains were required the greater part of the season. Of car loads there were about 785, of which 552 were consigned to Jersey City, 35 to Boston, and 198 to Philadelphia, the latter being estimated. The others are official. Reduced to quarts, the quantities delivered to these cities were: To Jersey City, 3,312,000; to Boston, 210,000; to Philadelphia, 1,188,000. New York was also largely supplied by the Old Dominion Steamship Company from Lewes, which carried probably not less than 1,000,000 quarts, giving 5,710,000 quarts as the entire marketable product of the peninsula, exclusive of the quantities sold in the local markets. Seven cents per quart is thought to be a fair average of the prices obtained, and if we deduct from this four cents as the estimated cost of the cultivation and marketing of the crop, we have left a margin of three cents as the net profit to the growers. Applying this figure to the quantity shipped, we have as the net profit of the strawberry yield for the season now closing $171,300. In other words, the strawberries have brought to the peninsula farmers this quantity of money, the effect of which has been perceptibly felt in all the rural districts, as the crop was abundant everywhere. —*Wilmington Commercial.*

We clip the following from a cotemporary journal just to faintly illustrate to the fruit growers of Lancaster county the "money" there may be in strawberries, if they ever condescends to cultivate them in mass.

We call attention to the subject from the fact that in a life of more than three-score years, we have never known a season to pass in Lancaster county, in which there was anything like half enough of strawberries.

We heard a practical cultivator of strawberries once declare that he could raise as many of these berries, "bushel for bushel," on the same quantity of ground, as any other man could potatoes. Now why don't we have more strawberries in Lancaster county?

If the same liberality and labor was bestowed upon them that is upon the tobacco crop, we would have the berries in abundance, and need not fear there will be no demand.

FAIRY RINGS "IN PASTURES GREEN."

The attention of Mr. C. B. Grubb was recently arrested by what he considered a great natural curiosity in the lawn in the rear of his mansion. It consisted of a distinct brownish ring, averaging about four inches in width, and about eight feet in diameter. The grass within the ring was fresh, healthy and of a lively green color, while the portion outside the ring retains its normal color. The attention of our botanist, Mr. Jacob Stauffer, having been called to it, he at once pronounced it a "Fairy Ring," the term by which these phenomena are popularly known, and of which our most popular scientific dictionary (Brande & Cox) thus speaks:

FAIRY RINGS: The green circles or parts of circles sometimes seen in pastures. They are produced by certain fungi, chiefly species of *Agaricus*, in this way: A patch of spawn spreads in every direction, and produces at its edge a crop of its particular fungus; the spawn exhausts the inner portion of soil, so that the spawn there dies, but the crop of fungi meanwhile perishes, and supplies a rich manure to the grass, which in consequence becomes of a vivid green. The spawn progresses outwards, and the process of exhaustion and renewal goes on, so that the ring increases in diameter year after year, till it is sometimes several yards across. *Agaricus oreades, gambosus and arvensis*, are some of the principal species which give rise to these mysterious-looking rings.

The reader is then referred to a paper on the subject by Dr. Wollaston, in the Philosophical Transactions for 1807, p. 133. This paper is found in substance in Rees' Encyclopedia, with that of articles and opinions from Drs. Priestly, Price, Withering and others—adding another fungus to the list—that of *Lycoperdon bovisti*, as the most common. This latter, Mr. Stauffer informs us he saw in a field some fifteen years ago. He further writes us:

"We have here what seems to me to be quite a different species. It is true, it comes close to the *Lycoperdon pratense* figured in London's Encyclopedia. Of this genus he says: 'Sporangium globose, Peridium single, membraneous, scaly, with warts or soft spines, bursting irregularly at the apex, and containing a mass of sporules and filaments.' Of the species he says: 'white, soft, hemispherical, subsessile, somewhat smooth, warts scattered.' These, we are told, are roundish tuber-like plants, when ripe exploding and smiting the sporules in the form of smoke, whence country people call the species 'puff-balls.' In order to describe this in Mr. Grubb's yard, to the naked eye, the blades of grass constituting the fungoid ring are thickly incrusted with minute granular bodies variously conglomerated or scattered. These I found on the leaves of a dandelion plant, as also on the oxalis or other plants growing in the circle of the ring. These granules, under the lens, are found globula-oval, oblong and moniliform, like beads strung together—in short, there seems to be no special order in their arrangement or form. Solitary ones look to me like spores on the front of fern leaves, externally whitish, rough, of a kind of indusium, which opens centrally, and exposes the minute sporules. They appear to be sessile, and would be taken at first sight for the egg of an insect.

"Those I witnessed before were in the soil, the inner fresh grass leaving a sterile space of four inches or more wide of the decaying fungi to form or constitute the ring. In this case the ring is distinguished by the parasitic invasion of the fungus upon the blades of grass to form the circle. Subsequently Mr. Grubb showed an irregular segment of a circle infested in like manner, perhaps ten feet from the main circle. We want more information upon this subject. I find no account that accords with the facts in this case. I shall be pleased to hear of other circles of this nature."

We have on several occasions witnessed these "Fairy Rings," and among the rest the one alluded to in the above—which we have taken from the *Daily Express*—but in no instance have we examined them as minutely as we did the one on Mr. Grubb's premises the present season, and which has been sufficiently described in the foregoing by Mr. Stauffer. We have no special theory to offer for the cause of the phenomena, but the theories suggested by others do not seem to be entirely satisfactory, nor yet cover the whole ground.

These rings are attributed to a rapid fungoid growth, which is no doubt the fact, according to the best observations made; but why they should always appear in circles, is not so clear in all of them. In speaking of *Fungi* in general, RIND says: "These substances sometimes grow in a singular manner, a remarkable instance of which is furnished in the *Fairy Rings*, which are found chiefly upon the downs, and which are circles perfectly regular when the surface is uniform, but vanish when they come to gravel or marsh. On those rings an innumerable array of fungi spring up in the latter end of summer. When the fungi are in progress the grass withers and the ring has the appearance of being trodden with invisible feet; hence its name. The distinction, however, is only temporary, for by the time that the rest of the grass is withered that in the path becomes green and vigorous, and a new circle is formed next season immediately outside. When two rings meet they do not cross each other, but unite, and gradually become an oval; but if a circle be interrupted by any small obstacle, such as a tree or a stone, it will unite again on the other side. These rings are formed by various species of mushrooms, and also by some of the *Lycoperdons*, or puff-balls; but the *cause* of the circular formation has not been satisfactorily explained. It would seem that the ground which has produced one crop of fungi is not immediately fit for the production of another, and, thus the annual sowing is outward. It also appears that the decayed matter of the fungi is favorable to the grass by which it is succeeded." This explanation seems to cover one circle which we saw many years ago, the grass within which, nearly up to the edge of the circle, was much greener and more luxuriant than that outside of it. But this does not appear to account for the circle on Mr. Grubb's lawn. This appeared in *early* summer, under the shade of a large tree, and none of the fungi spring up from the ground. They are parasitic, on the tops of the grasses and other plants in their course; and although the circle is from eight to ten feet in diameter, if we understand the matter rightly, its presence was not noticed until the present season. The grass within the circle is very healthy looking, but, except the presence of the fungi, not much more so than that immediately *in* the circle.—ED.

For THE LANCASTER FARMER.

ON BEE CULTURE.

I have often seen it asserted that Italian bees are more profitable than the common black bees, and the reason generally given is that the former, on account of their larger size, are able to gather honey from red clover. This is all taken on the supposition that the larger bee has a larger proboscis, and can therefore reach down the tube of the florets of which a head of clover is composed. This reaching down the tube of red clover may be the case in second crop, (after-math) where the florets are quite short in comparison with the first crop, but I do not believe there ever was a honey bee, Italian or other, that could reach down the tube to where the nectar is stored in the first crop of red clover. If you observe bees on white or on alsike clover, you will see it on the outside of the head, reaching down the tube, and only a part of the head buried out of sight. In this case it certainly reaches down the tube.

I often had my suspicion of the way bees gathered honey from red clover, but always put it aside and thought that people that made honey-bees and honey their business,

would know for certain, and thus contented, I never made an examination until within a short time and this is what I found to be the case:

If you watch bees on red clover, you will find their actions entirely different from what they are on the white, for they will bury nearly half the body in the head of clover; they certainly do not try to get at the nectar by probing the calyx, for the corolla and the calyx are united, and the nectar is in the lower part of the tube of the corolla. After a few days I found that wherever a bee alighted on red clover, the tube of the corolla was pierced right above the calyx, and from this point the much coveted nectar could easily be reached, and, in fact, on sucking at such tubes no sweet taste could be discerned, while it was very apparent in those not so pierced.

Another thing I observed in connection with the above, and that is, that black bees will go at red clover, but the majority of them I found to be the yellow Italian.

The piercing of flowers I found to be the case a few years ago on a honeysuckle, and I think I read an account of it in a paper of last summer.

I believe that bees sometimes will not gather pollen when it can be obtained in large quantities. I have found this spring, that wherever there was a poison ivy (*Rhus Toxicodendron* or *radicans*) of rather large size, a loud humming at the time of the flowers opening, but the noise is chiefly made by bumble bees, wood bees, &c., and have found in my observation, only one bee (an Italian) that gathered the pollen, which is of a deep reddish orange (annatto) color and produced very abundantly. It may be that the bees consider the white clover honey-harvest of more importance because the two come into bloom at the same time, and as pollen can be gathered nearly any time during warm weather, they leave the gathering of pollen for more important affairs.

I have been told by some persons, and I think I have seen it in print, that when bees commence on a certain kind of flower they gather from that kind only until they are loaded. That this is *not* the case I know to be true, for this spring I have seen bees pass from flowers of false flax (*Crurelina sativa*) to those of turnip (*Brassica rapa*). In clover I have usually found the bees to remain on the red when they commenced on that, and if on white they would stay on the white and never pass on to the red, though they would go from the white to the alsike. From this I take it that some bees do not know anything about the manner of getting honey from red clover and for this reason only do they not pass from one to the other. I think, too, that if certain flowers are very abundant, that the bees may keep to that particular kind, though there may be three or four different kinds as plenty as the one on which it happens to alight at first. This may have originated the delusion that the bee will only gather from one kind of flower, but I am certain that in a time of scarcity they take them as they come.—*A. B. K.*

For The Lancaster Farmer

HINTS FOR NEW BEGINNERS IN RURAL LIFE.

The cropping in the kitchen garden may now take place, if required. Sow seeds of white-fleshed turnips (the red top is still the best). Sow fall radishes and spinach for fall use. Transplant broccoli, endive, celery, and late cabbages of all sorts, peppers, &c. Plant seeds of cucumbers and bush beans for late fall use and for pickling. Drills should be made for all transplanted plants as deep as are made for bush beans. The weather in August is generally hot and dry; transplanted plants require waterings frequently until they make new fibres to sustain themselves, and if set in shallow drills, the waterings are more expeditiously applied, and the waters lodge more about the roots and benefit them more. Flat lands bordering upon the sea coast and large rivers and lakes, will naturally be more moist than high inlands, and the atmosphere will also be moist, so that the night dews will benefit the plants; therefore less artificial waterings are needed; and most of the crops may be transplanted upon the flat surface; so the practice in one location would fail in another. [It takes two years to grow full onions at Philadelphia and southward, whereas at New York and northward very large onions are produced from seeds in seven months; so much for difference of atmosphere, soil and climate.

Insects and weeds will be plenty this month, so a perpetual war must be kept up to exterminate them. Where there is not time to hoe weeds up, cut them down with a scythe or grass hook, to prevent them from bearing seeds, and destroy insects' nests to prevent propagation.

In the pleasure grounds the lawn grass should not be often mowed in hot, dry weather. All erect-growing flowers show to better advantage when tied up to neat sticks. Climbers should be trained to trellises. Let creeping plants spread over the surface; nip off their outer ends, and they will branch and bloom more freely. Coleus and silver-leaved plants and Alternanthera should be cropped in, occasionally, by cutting off the points of the shoots, to make them grow more massy, and thereby prevent them from making flower-stalks, as their foliage is their beauty. Fading blooms upon all kinds of plants should be cut off, as the plants will thus the better enlarge their growths and bloom more profusely in their usual seasons. Gladiolus, lily, tigridia and other roots grow larger if the fading blooms are cut off, to prevent them from bearing seeds, and many of the fibrous-rooted flowers may be made to bloom nearly the whole growing season if prevented from bearing seeds. Most of the ever-blooming roses will be kept in perpetual bloom by cutting off the fading flowers. Artificial waterings are necessary in hot, dry weather, and more especially lately transplated trees, shrubs, etc., if a large cask is half sunk in the ground and filled with water, and a few pounds of guano put into it and well stirred, the water will be fertilizing as well as refreshing.—*W. E.*

ARTIFICIAL TOBACCO.

The *Scientific American* has the following statements which are illustrative of the progress of invention in imitating the products of nature. If we are to eat oleomargarine butter, we do not know why we should not be satisfied with paper cigars:

Tobacco leaves for the manufacture of Havana cigars are now being produced in New York, thanks to the industry of some of our citizens, aided by the progress of chemical science. The material used is a kind of brown wrapping paper, made of straw especially for this purpose. The paper, after coming from the mill, is saturated with the juice pressed from the tobacco stems and other offal; then the sheets are rolled through a machine, which gives them the perfect appearance of the tobacco leaf, and the peculiar spots are printed on them as on calico. The paper thus prepared is especially adapted for wrappers around the cigars, and is such an improvement on the natural tobacco leaf (being much stronger, more economical, and easier of manipulation) that the Havana cigarmakers desire no other wrapping for cigars, and import it largely from New York; and no Havana steamer leaves here at present without taking out quantities of it. These figure up, according to some authorities, to 5,000 reams in one cargo, and occasionally as much as 30,000 reams of this artificial tobacco leaf has been exported.

It is stated that this tobacco flavored straw-paper makes also a filling superior to the genuine leaf; and it is impossible to detect the delicate film of paper interlapped with some broken leaves of real tobacco in the finished cigar, which the paper so very neatly holds in form. Besides this, the paper leaves no residuum other than a pure light gray or nearly white ash, just like that of the best quality of tobacco.

APPLES.

There is scarcely an article of vegetable food more widely useful and more universally liked than the apple. Why every farmer has not an apple orchard where the trees will grow at all is one of the mysteries. Let every family, in autumn, lay in from two to ten, or more, barrels, and it will be to them the most economical investment in the whole range of culinaries. *A raw, mellow apple is digested in an hour and a half*, whilst boiled cabbage requires five hours. The most healthful desert which can be placed on the table is a *baked apple*. If taken freely at breakfast, with coarse bread and butter, without meat or flesh of any kind, it has an admirable effect on the general system, often removing constipation, correcting acidities, and cooling off febrile conditions more effectually than the most approved medicines. If families could be induced to substitute the apple—sound, ripe and luscious—for the pies, cakes, candies and other sweetmeats with which their children are too often indiscreetly *stuffed*, there would be a diminution of doctor's bills, sufficient in a single year, to lay in a stock of this delicious fruit for a whole season's use.

This was the opinion of Prof. Farraday as to the use of this fine fruit; and from a poet scribbler of his era, we produce a portfolio sentiment, which we designate "A Fragment," on the love-memorial tree which produces them:

THE OLD APPLE TREE.

A FRAGMENT.

Yes! it was very beautiful, even in the brick-red city; for the swallows had come back again, and the air was filled with the song of birds and with the laughter of children, and with the many household noises that came through the once-more-opened windows; for it was the Spring time, and lovely thoughts and fancies that had lain, like the flower roots, buried under the frost and snow, sprang up, all blossoming in people's hearts, and looked out lovingly from their eyes.

And there was a great old apple tree that stood in a little yard, stretching out its long arm into the street, so loaded with rose-white blossoms that one could scarcely see the delicate green leaves that were unfolding themselves in the seeming moonlight of the blooming boughs. Old men looked up as they passed under it, and smiled, with an unconscious blessing, for it recalled their far-off boyhood; and little children danced around it, and clapped their hands in glee; and when the sun shone each little flower-leaf was like a crystal mirror, to throw its warm beams down upon the green bud that lay almost hidden in the bottom of its tremulous cup; and the birds came there and built their nests, and the filmy spider-webs in the early morning were all braided with pearls and diamonds, so that with the bloom, and the fragrance, and the melody, there was nothing more lovely in the whole city. But the little green bud grew larger and larger, until at last the flower-cup could no longer hide it. And then the rose-white leaves fell off, and the wind carried them away on its soft wings, until the air was so filled with them that the children shouted out, "the snow! the snow!" Then, as the summer came on, the sun looked, day after day, with a more beaming eye upon the old tree in its beautiful adorning of green, until the young apples blushed, for they were no longer hidden by the bridal veils of the white flower leaves.

Yet it was still very beautiful; for the light and shade came there to play a hide-and-seek, and the winds chased each other over and around, and through the emerald-leaved branches that swayed here and there, weaving flickering and fantastic shadows on the grass beneath; and myriad insects, all gleaming with crimson and gold, soared above it in the bright sunlight, and ever and anon some bird, from within his green-roofed home, poured out his soul in such gushing melody, that those who heard were carried afar among the purple

hills, and so went on their daily cares with a lighter heart and a more hopeful spirit. But when the summer was gone, and the brown, withered leaves fell dead upon the earth, they stored away the ripe fruit, and the songs of birds were hushed, and the beauty and the gladness were no more! But an artist poet, who loved whatever was brightly akin to his own glowing visions, painted a basket of the golden apples, with their cheeks flushed like the crimson sunset, and whoever looked upon the artist's work with the heart's true love of nature, saw therein the blossoming tree, with the sunlight shimmering through its branches, and heard once more the voices of the birds, and the evening breezes, and the sporting of the happy little children. Then, deep in their inmost souls, they thanked God for the perfecting of the beautiful prophecy of the Spring time, and also for the revealing of the truth that whatever is lovely passes away only to give place to something nobler and more enduring: "First the blade, then the ear, then the ripe corn in the ear."

BARNYARD MANURE AND CHEMICAL FERTILIZERS.

Prof. Stockbridge, of the Massachusetts Agricultural College, who is, by the by, an interested witness, being a patentee of some chemical formulas for fertilizers, thus writes in relation to chemical fertilizing:

"Plants are not nourished by the soil or the manures we mingle with it as such, but by certain substances contained in soils and manures after they have been freed from those compounds by chemical change. On an undecomposed soil, in the presence of undecomposed manures, the plant waits or starves for nutrition, until the 'weather' develops it. If, now, the season is cold and wet, and the interspaces of the soil closed with water, so that the air, with its warm influence to give vigor to roots, with its carbonic acid, ammonia, oxygen and ozone to hasten decomposition, cannot penetrate it; or if, by severe drought, water in sufficient quantity for the same purpose is not present, we have just the condition of weather and results of which the farmers complain, though it is such that if absolute plant food were present, the plant would grow on unimpeded by the influence. [The Professor might explain how the plants could appropriate the food in the absence of water to dissolve it.] Cannot the farmer, to a great extent, manure his land with plant-food, rather than the raw, coarse, undecomposed compounds more generally used? If he can, and does not, he should cease complaining, and acknowledge that his ordinary 'weather' crops are the result of his omission. His course of action should be controlled by the rule that only decomposed fertilizers, whether stable manures or the substances used in these experiments, feed plants.

"Now, allow me to draw some conclusions; and I would draw no conclusion any further than my experiments have gone. I would stand exactly on them; I would be taught by them; I would advance no theory that the facts do not sustain. The first conclusion at which I arrive, as the result of these experiments, is this: that it is impossible to make these poor, worn-out fields of old Massachusetts flourish with waving grain, corn and grass, by the use of the chemical elements of plant nutrition. My next conclusion is this: that in order to do this it is absolutely necessary—and I want to put it stronger than that—it is not *desirable*, to keep cattle for the sake of making barn-yard manure to do that work with. Now some men will dissent from this. I say that it is not desirable to keep cattle *for the express purpose*—mark the language—of making barn-yard manure to renovate these fields with. I know some of my brother farmers will say: 'Well, you are going back on the barn-yard manure, ain't you? You are going to say barn-yard manure isn't worth having; that you wouldn't cart barn-yard manure a mile if anybody would give it to you.' Not at all, gentlemen. I tell you this: barn-yard manure is the waste product of certain industries.

"There are horn and bone waste, the waste of the woolen manufactories, and the waste of every kind of manufactures that have elements of fertility in them. Never waste them. Barn-yard manure is simply a waste product, for we must keep cattle and horses to do our work on our farms. We must make milk and butter and cheese; and in this business of making butter and cheese, and in keeping stock of any kind to run our farms, we must make barn-yard manure. Then you commit a sin if you waste it. Husband your resources of every kind; husband your waste material, whether barn-yard manure, wool, waste horn, waste hair, or whatever it is, because they all contain elements of nutrition; but I venture to prophesy that the commercial value of barn-yard manure in future is to be determined by the commercial value of the chemical elements of plant nutrition. But do not understand me as saying that barn-yard manure is not valuable, and should not be saved, or that all your resources of this kind should not be husbanded the same as ever."

KEEPING UP THE FERTILITY.

It is well known to every observing man who has reached middle age, that our soil has deteriorated in fertility, very much, within the last thirty or forty years. People are awakening to this fact, and the subject of restoring and keeping up the fertility now occupies a prominent place in agricultural discussions. It can't be too fully discussed, for the welfare of the farmer.

Barnyard manure seems to be sufficient when the stock is large enough. But with many of us it falls short of the object to be accomplished. The question is, how shall we augment the manure heap, or find a substitute? Some resort to lime, plaster, etc., and for a time, with marked benefit, but they soon awaken to the fact that they are only increasing the crop without benefiting the land. Hence, this mode is not reliable. We must keep up the fertility of land, or find, in a few years, that we have sold our capital. We must adopt some other method than simply applying substances that develop and utilize the plant food already in the soil, for this will eventually impoverish it.

The profits of farming depend largely on the labor performed in producing a given amount of products. If we have to turn over two to five times the soil to produce twenty-five or thirty bushels of wheat, the profits decrease in a corresponding ratio. The solution of both problems—fertility and profit—is found just here. We have been farming too much. We have been plowing and sowing and overstocking for years, until we find that fertility and profit are disappearing together. The remedy is plain. Concentrate our operations, do well what is done. We must sow less grain and produce more to the acre; keep less stock, and make one steer weigh as much as two; let more grass grow and turn under more of it than we have been doing. This is the way to supply the deficiency of barnyard manure. Let those who are incredulous about the great fertilizing qualities of grass, observe the difference between the growth of vegetation on old fence rows that have been undisturbed for years, and that on fields that have long been cropped. The fact is, sod is the cream of our soil, and by permitting it to attain some growth and then plowing it under, we are placing something there that will add to the fertility. We can do this by cropping less, keeping less stock, and doing everything thoroughly.

A neighboring farmer had a field that was hopelessly worn out, almost. He got it seeded to English clover and let it lay two years without removing anything. He then plowed it and planted in corn, and the crop was an excellent one. It hardly seems necessary for land to remain poor, even in the absence of barnyard manure, when nature has furnished us so cheap a fertilizer; and it need not, were it not for the mistaken greed of the cultivator.

A system of rotation is too common among us. It is about as follows: Corn, frequently two and three crops; oats, wheat, grass, which is mowed or pastured for a year or two, all the growth removed clean until the roots are destroyed and the grass run out. Then it is plowed up again and the draining process repeated. It is a mistake to suppose grass can enrich land when not a spire is left to grow or sod to form.

When we learn to add as much to our soil as we abstract from it in crops, we shall hear less complain about hard times—less about quitting the business and going at something else—less about selling our farms and moving West to find a virgin soil that cannot be exhausted.—*Correspondence Practical Farmer.*

SURFACE-STIRRING THE SOIL.

Everyone knows by this time that wet soil is a great injury to growing crops. And yet a regular supply of moisture in the soil during the season, is one of the most important objects to accomplish. If soil, especially wet soil, is left undisturbed, it becomes hard; technically it "bakes," and the moisture escapes with marvelous rapidity. It is therefore an object to keep the surface loose. Moisture does not escape as rapidly through a loose surface as through a compact solid one.

In pursuit of this object, however, cultivators often make a great mistake, and much injury results to corn, potatoes, and other things. The cultivator is kept running all summer, the teeth often penetrating several inches deep, exposing the upturned surface to the sun, and in this way a vast amount of moisture evaporates that is really needed by the plants. It is of course much better than to have a baked surface; but there is a loss for all, and a loss that might be easily saved by a little thought.

The first stirring in spring should be deep, in order to break up the compact earth, especially if the ground was plowed in the fall; but after this the working should be as shallow as possible. Firm soil—soil crushed and pressed when dry—holds moisture better than in any other condition, and is a very different thing to a merely loose soil through which the external air easily goes, and dries the moisture out. The more such partially dried soil is pressed, the firmer therefore it becomes, and the more moisture it contains. This is the principle on which the good effects of the roller depends, and which has so often been explained in the *Telegraph*. Rolling and pressing while the soil is somewhat dry is indeed the whole science of pulverization, the good effects of which are so well known.

While, therefore, the first stirring should be done with deep and narrow teeth, so as to penetrate as deeply as possible, all subsequent workings should be with cultivators having short and broad teeth, just skimming the surface and cutting off instead of tearing out the weeds; and this advice is good for the one who uses the hoe in the garden, as for he who uses a horse-cultivator in the fields.

In any case the hoe should be started early. Hoeing and cultivating has now become among the most laborious of farm and garden tasks; and, if the weeds once get ahead, it is terribly hard work to keep them down. The best farmers do not wait for the weeds to appear, if they can possibly spare the time from other work; but put the cultivator through as soon as the first spring sun cakes a little the exposed earth. The sprouting weeds are thus destroyed in the germ, and the work is comparatively easy all the season afterwards. Spring work is generally so pressing that it is not often that one can be so forehanded in the matter of early weeding. Happy is the man who can do it; all should aim to get as near this happiness as possible.—*Germantown Telegraph.*

The surplus of wheat in California for shipment this season, is stated to be 750,000 short tons, exceeding by 200,000 the surplus of 1875.

THE CENTENNIAL LIVE STOCK DISPLAY.

The Bureau of Agriculture, International Exhibition, is receiving applications for the assignments of stalls for the display of horses, neat cattle, sheep and swine. The live stock show will be made in serial order, commencing with horses, Sept. 1st to 14th; dogs, Sept. 4th to 8th; neat cattle, Sept. 21st to Oct. 4th; sheep and swine, Oct. 10th to 18th; poultry, Oct. 27th to Nov. 6th. No charge will be made as entry fee, nor for the use of the stalls, which will be of first-class character in all respects. The stock yard is of sufficient area to allow the construction of 700 box stalls for horses, each fourteen feet square, these to be afterward divided for cattle by longitudinal partitions into 1,400 stalls, each seven by fourteen, all of ample elevation and security. The stock yard is immediately alongside of the track of the Pennsylvania railroad, which, by its connections, is able to transport animals from almost any part of the Union direct to the Exposition grounds.

The stock yard will be thoroughly well watered and lighted by gas, and under the constant charge of a company of Centennial guards. All the prominent transportation companies agree to return free of freights, animals sent for exhibition upon which full rates were paid in the first instance. Exhibitors or their agents will be required to assume the entire charge of horses, neat cattle, sheep and swine, and be alone responsible, although the Commission will do all in its power to provide for the comfort and safety of the animals. Attendants upon stock may sleep in the stalls, or can find ample room at the numerous hotels in the immediate vicinity. Hay and straw will be furnished by the Centennial Commission free of charge.

Roots and grains will be sold at the depots upon the ground in the stock yard, the prices charged being simply those of actual cost, the attendants upon the stock drawing the daily supplies upon coupon tickets, which will be sold from the office and furnished to the attendants by their employers.

Each breed of well established character in the various families of live stock, will constitute a distinct class, under which awards will be made as provided for in classifications.

Though it is not proposed by the officers of the Bureau of Agriculture to have competition between immature animals, still young animals may be stalled with their dams, that the transmission of valuable qualities may be seen. Breeders are particularly requested to make exhibition of succeeding generations of animals in direct genealogy.

Single animals and herds entered for competition in any class must be the *bona fide* property of the individual in whose name they are entered. This rule does not, however, prevent State Centennial Boards and Associations from entering for display flocks and herds made up from the stocks of various owners.

Every animal in its class, as to breed, sex and age, possessing points of excellence will be reported upon more or less fully according to its inherent and comparative merit. Exhibitors whose stock receives the commendation of the judges will be presented with a diploma, specifying the typical features of each animal, and supplementary to the diploma will be given the uniform bronze medal of the commission. Of more value than either the diploma or medal will be the special report over the signatures of the judges, presented to each exhibitor of meritorious animals, stating fully the reasons why they awarded him a diploma and a medal; thus a feature will be developed never before attempted.

The judges on each class will also make a general report upon the characteristics of each breed, especial reference being made to animals exhibited of superlative merit. These reports will be embodied with the reports of judges on the other groups, and be highly valuable for reference in the future. Numbers alone will distinguish animals in the show yard, preceding the inspection by the judges; afterward full opportunity will be given to exhibitors to display their cards and trophies.

Animals may be sold at private or public sale during the exhibition, and within the yard, but no animal will be allowed to be removed prior to the evening of the closing day.

Special premiums from societies or individuals must be awarded through the hands of the Centennial Commission.

During the season of the display of cattle, opportunity will be given, if desired, to exhibit the butter characteristics of the various milking breeds. Churns can be readily had and a room secured for the exhibition of the processes of butter-making, and the qualities produced.

During the display of sheep a room will be provided for the exhibition of fleeces, to which it is trusted breeders will not fail to contribute. Classification lists and entry forms will be forwarded on application to the Bureau of Agriculture, Centennial Commission.

Entries will close on the first day of August.

CROP RETURNS FOR JUNE.

The returns to the Department of Agriculture for June, indicate that Michigan alone, of the entire Northern States that grow winter wheat, will come up to an average. The crop on the ground is generally thrifty, but the injury done by the winter makes it thin. New York averages about 18 below good condition. The average in Pennsylvania is 93, Delaware stands 105; Maryland 108; Virginia 112; North Carolina 104; Georgia 16 below average—rust being the cause; Alabama 12 below; Mississippi 25 below; Arkansas 27 below, all from the same cause, rust. In Texas the rust and the fly brings the condition down to 21 below average. West Virginia raises 6 per cent. above average; Kentucky, from dry weather, falls 8 below. Ohio and Indiana stand 66, and Illinois 88. Missouri falls 2 per cent. below average; Kansas reports extraordinarily good condition, many counties running from 110 to 200. The average for the State is 108, and for Nebraska 110. California runs a little below average; Oregon reports 104. The average condition for the entire country is 87.

Spring Wheat.—The States reporting a decrease of acreage, compared with the previous crop, are Vermont, 6 per cent.; New York, 13; Kentucky, 15; Illinois, 12; Wisconsin, 5; Iowa, 11; Kansas, 4, and Oregon, 3. The States reporting an increase are Pennsylvania and Nebraska, 4 per cent.; Texas (which reported an increase of 21 per cent. last year) and Ohio, 16; Arkansas, 7; Michigan, 5; Indiana and Minnesota, 10; Missouri, 12; and California, 6. In the latter State, there being no distinct dividing line between winter and spring wheat, the variations in acreage are affected by a somewhat capricious classification. The returns indicate about the same acreage as last year.

Among the Eastern and Middle States the condition is lowest in New York, being 94; it is 100 in Maine, Connecticut and Pennsylvania. In the Northwest, while it is 1 per cent. above in Wisconsin and Minnesota, it falls 3 per cent. below in Iowa. The reduction is ascribed mainly to drouth, though ravages of grasshoppers are specified in one county. Missouri falls 8 per cent. below; Kansas raises to 98, and Nebraska to 100.

Oats.—The entire acreage is slightly increased over last year. The condition is above average in the New England States, average Pa., a little below in N. Y. and N. J., average in Mich., above average in States west of the Mississippi, except Ark., Mo. and Oregon, 15 per cent. below in Ky., about 7 per cent. below on south Atlantic coast, and about average in W. Va., and the States in the Ohio Valley, except Ky. Texas reports a yield of about 40 bushels per acre.

Destructive insects, with a few exceptions, have not been as abundant this season as usual. Has the intense heat anything to do with it?

FARMERS AND THE CENTENNIAL.

The farmer who fails to visit the Centennial Exposition, in Fairmount Park, will miss the opportunity of his life. On no other occasion during his life, be he young or old, will he again have the chance of seeing so many things collected together to interest and instruct him, as in this wonderful aggregation of the world's progress. It is not unusual for the casual visitor to look at almost everything there except Agricultural Hall, the impression being that there is nothing there to interest anybody but farmers. This is a great mistake. The interior of the building itself is a spectacle of beauty, worth ten times the price of admission to see, while among the exhibits there is something to interest everybody. These are made up not only of all kinds of the most improved agricultural implements, but there may be seen almost everything which grows and almost everything which is manufactured from the products of the earth. Thus, every kind of grain, all the brands of flour, and every variety of bread and biscuit made from it, may be studied. Some of these displays are a curiosity to the novice. The displays of pickles even, are a wonder. And so on through every department. Any person can spend a day profitably in this wonderful collection, and the farmer can here find subjects for a week's study. Then the Kansas and Colorado building contains the most complete exhibit of the resources of Kansas and Colorado made by any State, though what is to be seen in the Arkansas and other buildings is well worth a visit. The Pomological Annex, near Agricultural Hall, will be a great show when the fruit season arrives, and the butter and cheese exhibit, near by, in a special building erected by the Dairymen's Association, is already an object of great interest to those who wish to study this important industry. Nor should the farmer fail to visit the Carriage Annex to the Main Building, the Wagon Annex to Agricultural Hall, and the Shoe and Leather building, south of Machinery Hall. In all these he will find a thousand objects to interest and expand the mind. We trust that no reader of The Farmer will fail to see the great exhibition.

OUR PARIS LETTER.

Farming on the Continent of Europe.

Correspondence of The Lancaster Farmer.

Paris, June 1, 1876.

There is no subject in continental farming receiving so much profound attention as the fattening of animals, involving as it does directly their breeding and rearing. In the case of beef fat, it can be converted into *margarine*, which resembles butter in one particular, that of appearance. The fat of mutton is not at all relished by the consumer, and yet it is to produce a superabundance of fat, that, oil cake and meals, so rich in nitrogen, and so costly, too, are extensively patronized. There is not a little truth in the remark, that it is for the benefit of the cook that this excessive fat is manufactured; she insists on the fattest joints at the butcher's, to enjoy the better the fattest perquisites. It has been shown that the more a sheep, for example, is fat, that is, surpasses the rational mean average, the less it repays the aliments required to produce that excessive obesity, and which, be it observed in passing, is the most onerous of the whole process. It is held then to be more profitable to produce two sheep, ordinarily fattened, than one—a phenomenon of fat. The same principle applies to breeding; reproduction is injured, and perhaps a race becomes degenerated when the male is obese. Barn-door fowls are not reproduced by first enclosing the cock in a coop and fattening him with the expedition of a Strasburg goose. French farmers on tying stock up for fattening, devote about ten days to a preliminary gradual increase of rations, which are distributed four times per day in summer and three in winter. As much of our contentment in this life depends on the stomach, so with farm animals; punctuality in serving meals, and no short commons, will be found to best promote repose and sleep, two grand agents in the process of fattening. The litter ought to be renewed every morning and the bed made for the night. A dark, rather than a well-lighted shed, is preferable, having a temperature not disagreeably high, and an atmosphere humid rather than dry. Some, to secure the latter, water the alleys of the shed pending warm weather.

Prof. Sauson, the leading zootechnist in this country, after an exhaustive examination of the question, concludes that the public health runs no danger by

consuming meat, the produce of animals affected with the pest *charbon*. The blood of animals afflicted with this malady, only becomes virulent during the last moments of life. It is very rare that blood, taken from the external tumors, can inoculate a healthy beast with the disease. When an animal has been suffocated with carbonic acid, or slaughtered, it is not the blood in the general circulation which is venomous, but that in the vein and its divisions which convey the blood from the viscera to the liver. Professor Sanson then recommends farmers to kill the animal at the commencement of the disease, and rapidly prepare the carcass for the market: by so doing they will lessen their loss, while not depriving consumers of a food supply as essential as it is costly.

The regional agricultural shows are putting forth strenuous efforts to encourage agriculturists to rely on preserved green food, as a security against cold springs, like the present, or dry summers, which are very general, and that compromise forage crops. M. Goffart invited, a fortnight ago, the leading agriculturists of France, to be present at the opening of his pits, wherein had been placed, in October last, twenty tons of chopped green maize. Three points were conclusively established: the perfect preservation of the green food, after seven months residence in the trenches, without elevation of temperature and the absence of all fermentation, the rapidity with which this food acquired an alcoholic odor, the avidity with which the animals consumed it, even when freshly mown fodder was presented to them. 2. The satisfactory condition of twenty tons of green chopped rye, after several months enclosure in pits; and 3, the excellent state of the stock. For soiling purposes several varieties of maize are in favor, following climate and land; the latter is prepared as for an ordinary root crop, receiving from fifteen to thirty tons of farm-yard manure, with a supplemental dose of guano or chemical fertilizers. Maize requires an energetic manure, the giant species exacting almost double the quantity given to the others. Experience has found that chemical manures are superior to guano for maize, but the superphosphate and sulphate of ammonia can be advantageously replaced by three or ten cuts of dissolved guano. The plant is a great consumer of phosphate. The seed is ordinarily steeped for one or two days before sowing, and the latter never takes place till a period when the spring frosts are not to be feared attacking the young plant.

Every year the government endows a series of regional shows—some ten in number—so that in the course of eight years all the departments benefit by these important agricultural competitions, and the wonders that time works can be thus accurately estimated. It is, however, strange that at these shows no prizes are offered for horses, and France is actively occupied to discover the means of improving the breed, as well as their number. The State alleges its own breeding schools are sufficient for all wants, which is a view not at all ratified by public opinion. Another desirable end to be obtained is, that Frenchmen ought to learn how to ride. History proves that at one period they could bewitch the world with their noble horsemanship. Farmers who formerly traveled on horseback now do so in vehicles or by rail; hence the decadency of an accomplishment now more than ever a necessity. At the regional shows carousals take place, where the troopers perform several feats of skill; the public feels interested only in how they sit in the saddle when charging an imaginary enemy. Since all able-bodied men in France must now perform military service, the wish is that farmers' sons become habituated to the most complicated evolutions of horses.

Some agricultural schools have recently added equitation to their subjects taught. At Carcassone regional show a novelty was introduced—that of giving prizes to the best pupils of the farm schools; the teachers selected their most advanced boys, and the examination, public, oral and written, was conducted by the managing committee of the show. The subjects chosen were a description of the show itself, the advantages of a machine, of a special breed of stock, or a peculiar system of culture, all having a local application and interest. There is a marked tendency to impart to farming studies a decidedly practical character, and the growing fashion of selecting the blue ribbons of the agricultural colleges, and sending them to travel and take notes in foreign countries of agricultural practices—expenses being defrayed by the State—is excellent.

The Saxon Government has purchased M. Stecher's well-known experimental farm, near Dresden, which, readers and visitors may remember, has received no other manures since thirty years but feeble doses of guano and bone-dust, while being submitted to an eight-course rotation of cropping, wherein not only wheat figures, but where flax and clover are cultivated for their seeds. The soil is derived from gneiss rocks, and is consequently tenacious. At present all the crops are luxurious, and surpass in a marked manner those in the vicinity that receive the ordinary supply of animal manures.

Prof. Roloff has been investigating the cause of rachitis, or rickets, in animals, owing to which the bones become swollen, soft and deformed. The disease appears always when the animal is young, and is due to a kind of stoppage in the development of the skeleton; the organism has want of chalk. In the case of aged animals this chalk is furnished by the greater supply of food they take, finding all the lime, and more even than they require. If the disease has acquired an intensity, it is rarely that the skeleton—the bones—resumes development, and consequently the animal remains impotent and sorry-looking. For pigs, till six months old, and cattle and horses during their first year, it is essential to supply them with fodder rich in lime or employing phosphate of lime. Bone-dust is commonly mixed up with the young animal's food, and is besides very easily digested—a quarter of an ounce daily for pigs and the double for stock. The chief point is to apply the remedy in time. Acid food is said to promote the disease; it does so in the case of pigs nourished on sour milk; the lactic acid, uniting with the lime in the rations, is expelled from the system in the form of a chemical salt.

Patience and expectation describe the present condition of the phylloxera question; one has to wait for the results of new experiments. M. Boiteau has detected the insects marching out of the very buds of the vine. The opinions are quite contradictory as to the efficacy of the sulphuret of carbon remedy. The French Consul, at Canton, has expedited some specimens of the *dzwococca*, a shrub that the Chinese plant to keep away a destructive white ant. It will be tried—as is every remedy suggested.

At Landshut, in Bavaria, and in other parts of that kingdom, also a great mortality, a veritable epidemic, carried off hundreds of young horses; the foals were allowed their ordinary life in paddocks; from several *post mortem* examinations it was discovered that the animals presented the same symptoms as when persons succumb from typhus fever; and it was found that the horses had been virtually poisoned from the emanations from neighboring fields, that had been top-dressed with night soil from the cities.

A new churn has appeared; its principle is to maintain the cream at a uniform temperature; this the inventor alleges to secure, by inserting a layer of felt between the cavity formed by two walls of plated iron, the material of which the churn is composed.

The First of July has been definitely fixed upon by French farmers for taking an inventory of their stock—dead and alive.

GENERAL MISCELLANY.

Castile Soap and its Counterfeits.

In our correspondence columns we publish a communication from a reader of the *American Grocer*, who evidently feels that in purchasing an article he has not received what he wanted and what he asked for. To give a rule by which domestic castile soap can be distinguished from imported is, probably impossible, while all authorities here, even the importers themselves, admit that the bulk of the domestic mottled castile soap is fully as good an article if not a better than the imported.

There are four descriptions of imported known in this market. First and at the head of the list in reputation is the Italian, white castile, known as the "Conti" soap. The jobbing price of this at present ranges from 16@16½c currency. It is claimed that oil only is used instead of fats in its manufacture, either olive oil that is left after the best is bottled, or sometimes cocoanut oil. The next brand in reputation and claimed to be equal in quality and healing properties is the "White Horse," also a white soap, imported from Marseilles. This at present is selling at 12@12½c. gold. These two brands, it is said, are never counterfeited here, and are claimed to be free from all adulteration. Tests made by us have failed to show any adulteration or addition of substances to add to the weight, as is the case in mottled soaps. These white soaps come in boxes of 35@37 lbs., gross weight, and a tare of 4 lbs. is allowed.

Next in order come the Marseilles and the Leghorn mottled, the former claimed to be the better of the two. The importation of these soaps is rapidly falling off, owing to the competition of the domestic article, which, as a rule, is claimed to be the best and purest. Some of the largest importers inform us that they are gradually dropping this article off their list of importations.

"In making castile soap, olive or cocoanut oil is supposed to be the material used and this gives it its healing properties. Of late years, however, other and cheaper oils are said to have been substituted, such as linseed and cotton seed, but the fact of the latter being used can be detected, it is claimed by experts, from the darker color of the soap. Within the past five years, in order to meet the competition of buyers and to furnish an article within the views of buyers, it has become the custom to adulterate both Marseilles and Leghorn mottled soap with terra alba or chalk. Some samples which we have seen tested showed thirty-five per cent. of this, added to increase the weight and cheapen the article. There is, of course, some of the genuine article imported, but a buyer had better depend on the reputation of his wholesaler and even then the wholesaler himself may possibly be imposed upon. These soaps come in boxes of 45@47 lbs. and a tare of 8 lbs. is allowed. The loss in weight on castile soap is very large according to the length of time it is carried, the loss in four or five months being as much, in some cases, as 20 per cent. When sold it is reweighed, and by some dealers the actual tare at time of sale is allowed, and by some the original tare, but the price is advanced accordingly, the price having to be made so much higher as to meet the loss in weight. This mottled soap is also largely made here. Boxes are shipped here from Marseilles in the form of shooks and put together here. These boxes when put on the market often bear all the marks of imported soap. The soft and wet appearance of the soap mentioned by our correspondent is no guide as to whether it is foreign or domestic, as the former often reaches here in that state, the soap containing a large proportion of water to increase the weight, but it should be made in bars and not look as if cut with a wire.

To test castile soap, weigh out a certain portion, cut in small pieces, add alcohol until dissolved; the chalk, if there be chalk in it, will settle at the bottom and the weight will determine the quantity of adulteration.—*American Grocer*.

The Language of Fowls.

Is there any one who keeps fowls who has not noticed the great variety of sounds they make, expressive of their feelings? It amounts almost, if not quite, to a language; probably more so than any other creature except man. Even the modulation of noises made is very significant of meaning. First, there is the piping of the little chick, calling for the care of its stately mother who continually keeps answering with the assuring "cluck, cluck." As the chick grows a little older, the piping is succeeded by a chirrup; then there is the thrilling song of pleasure they make under their mother's wing when sitting down to rest; but just put your hand under the mother and pull out one of the little chicks, and hear its cry of terror, mingled with the defiance and abuse of its parent. Throw a large beetle into their coop, and hear the consternation uttered by all the little family, mingled with the warning voice of their matron. Now, throw them some dainty bit, and hear how soon her voice changes; her children understand there is something extra nice for them by her peculiar declamation, which brings in all stragglers in a great hurry. How well the little things comprehend the peculiar cry of their mother in case of danger, such as the approach of cats or hawks; or let a little straggling waif peep into the coop, and hear her timely warning to keep out. In the course of time the mother tires of her charge, and gives her children the slip, who express their forlorn feeling by a whining cry, while hunting around for her. In due time the young gentleman chick tries his voice at a crow. Could any one ever believe that such stammering, such straining and croaking would ever reach the clear, rich song, that has been celebrated in the history and the poetry of all the great nations of the earth, and caused so many great "awakenings" in all classes of Society? Soon he begins to feel gallant, and if, by chance, he finds some rare bit, he calls some of the nearest belles to partake of it, but they frequently arrive just in time to see him bolt it himself. One of the next musical strains is the prating of pullets when they feel happy and well; then there is the alarm when startled by anything strange; also the shrill cry raised by all, should a hawk appear. Another peculiar noise is made when you approach their roosts at night, uttered and answered all round—a slight, thrilling noise, as much as to say, hark! what's that strange noise!—which is deepened into a sharp tut-tut, if danger is suspected, and into a shrill, piercing cry, if taken from their perches, evidently suspecting that you may be thinking of chicken pot-pie? I think there is no domestic animal that has a less offensive voice than the domestic fowl. It will compare favorably with the voice of the duck, turkey, guinea fowl, goose, or pea fowl. Their loudest noise has a charm for many a faucier, when they set up the cry, "Come! Come! Come! Take the egg."—*Henry Hales, in Poultry Bulletin.*

How to Keep Your Wife's Love.

Gale Forrest gives the following advice. She practices, morally, on the allopathic principle of "opposites:"

Resolve firmly, from the start, that you'll never coax your wife to love you—as you would a child—with sugar-plums.

In society, treat her—no! don't treat her at all; pay no attention to her, but devote yourself, with exclusive zeal, to the entertainment of the young ladies present, and leave her to take care of herself. This course will win you not only their respect and hers, but undoubtedly that of the entire company, for only fools in these days expect a man to play lover to his wife.

Should your wife receive a show of attention from some other masculine, become a fiend of jealousy at once, and make her life miserable at home by unjust accusations and violent expostulations against

such unseemly conduct in your wife. Or, if you are a different sort of man, act the part of "dog in the manger," never take your wife anywhere yourself, nor allow her, if you can help it—and I hope you can't—to go with any one else. Should her love not appear to increase under such persuasive treatment, be still more demonstrative; catch up the carving knife, occasionally, and flourish it, threateningly, over her shrinking head; or practice violent "laying on of hands" upon her—nothing more effective than a man's main strength for holding a woman's love.

Never give up a single one of your bachelor habits; smoke your dozen or more cigars every day; go to your club; treat all the "fellows" you meet; belong to your half dozen lodges, and continue all your other pet vices; and then never fail to remark, as you hand your wife her "weakly" allowance, which, of course, you have scrimped down to the last penny, as becomes your manly generosity, that at this rate of extravagance on *her* part you shall be ruined in less than a year; and add, as you bring your clenched fist in contact with the table in a way to make your wife and the dishes shiver in concert, "Economy, madam, economy must be the rule and not the exception in this house hereafter," (as if it hadn't been heretofore.)

Should she dare to remonstrate, ask her, in quelling tones, "Who earns the money?" And then triumphantly march away to settle a few of your own little debts, and respond to a call for charity preferred by Beauty in "purple and fine linen." You will doubtless leave your wife meditating, with swelling heart, on your magnanimity.

Make a practice of dragging your business into the house, and worrying about it morning, noon and night, but at no other time, or—

While you are at home be deaf, dumb and blind to your wife and family, sparing all your brilliancy for outsiders.

Cultivate the charming habit of praising, in glowing terms, the beauties and virtues of other women, which you are conscious are most strikingly different rom those possessed by your wife. This rule, faithfully carried out, will effect wonders.

Never allow yourself to forget that your wife's mother means your mother-in-law, "with all that the name implies."

Be sure that you never mistake your wife for any other woman. This is a very important rule, and should be studiously followed, as, by disregarding it, you might, at some time or another, give your wife a pleasant word or look, which would, doubtless, be exceedingly mortifying to you, and might prove fatal to the attainment of the object you have in view.

After wearing your wife's life out trying, by these means, to keep her love, discover the fact that she is not your "affinity," and endeavor to impress the fact upon her mind. Upon earnestly trying it, you'll have her love or its opposite, forever.

Experience with Bees.

Julia M. Wheelock, in writing to the *Patron's Helper* on her experience with bees, says:

"Many persons who have kept bees on the old plan have a strong impression that they should not be meddled with, and think that the little workers can and will do all their 'house-cleaning' in spring, attend to all their family matters, increase at their own pleasure, and lay up stores for future need, better without any assistance than with it. A case of this kind came under my observation this season, the relation of which may be of benefit to some of your readers. Neighbor A. had, by the advice and success of his friends, who were controlling their bees advantageously, been induced to adopt such hives as were convenient for examining bees, and really seemed to feel that he was trying the 'new way' of bee-keeping, but for some reason he had not visited them this year, and it was then near the middle of June. He had walked near the hives, and discovered that some of them were not so busy as were some others; and mistrusted that there might be one hive at least without a queen, in which case, as apiarians well know, the whole family must, sooner or later, die.

"At this time we were induced to examine neighbor A.'s bees—some less than fifteen swarms—and found many swarms apparently doing well as to honey, and raising brood, but having never 'cleaned house' this spring. The dead bees were from one to two inches thick on the bottom of most of the hives, in the midst of which were brown moths, cockroaches, ants and some other insects, drawing sustenance from this filthy mass, which the bees had not been able to remove. The hives were then carefully cleaned. But this is not the object I had in telling this, but simply to urge upon those who think that bees should never be disturbed the importance of ascertaining whether they need assistance or not. In the case referred to the bees could not have removed the rubbish, however annoying it must have been to the little laborers, whose strength is limited, except in self-defense. They undoubtedly, in some cases, throw dead bees and other filth from the hives, but they do not always do it, even when they are strong in numbers and rich in stores. I have seen many colonies this year which had dead bees still clinging in the comb, where they had died last winter or spring, and, contrary to our general supposition, had not been removed by the living bees. Whether the honey came earlier in flowers, and they considered their time demanded in the field or not, we cannot tell, but suppose the labor requisite for house-keeping must have been beyond their abilities, as they are supposed to have a just estimate of what they can perform. In raising broods, they have such correct estimates of their strength and capacities, that the increase of honey will cause the queen to lay more eggs, or a decrease of honey will cause her to diminish the quantity. And in cases where dearth of honey comes suddenly, from drouth, or grasshoppers, or other cause, bees have been known so destroy some of their brood, where they had more than they could feed and take good care of.

"The bee-keeper should always carefully examine his bees in spring, and remove all dead bees (or anything else which may become offensive) from the hives. Sometimes it is best to remove moldy combs as worthless, although the bees sometimes clean such combs; but it is a question whether they could not build a new comb nearly as quick, and with more safety to themselves, as mold is known to be very poisonous, and must have a deleterious effect on the bees, while removing it from their combs."

Sale of Short-Horns—Over Twenty-Three Thousand Dollars for a Cow.

The sale of choice short-horns from the herds of Hon. M. H. Cochrane, Simon Beattie and John Hope, which took place at the Crystal Palace Grounds, Toronto, recently, attracted a large number of buyers from all parts of Ontario and the United States. The whole number of animals sold was fifty-four, and the total proceeds were $92,270. There were thirty-eight cows, the average price brought being $3,213.68, and sixteen bulls, which brought an average of $509.37. The animals are reported to have been in various stages of condition, some being in high exhibition order, while others were only in breeding condition, and yet others were quite poor. The chief interest of the sale was centered in two "Duchesses." The *Mail* thus describes the scene: "The great event of the day was witnessed when the representatives of the patrician blood of the Duchesses were led into the ring. Breeders were too much absorbed in looking at the splendid animals before them to talk to one another, and a hush fell upon the whole assemblage as Mr. Cochrane's splendid roan heifer, Airdrie Duchess Third emerged from the crowd at the entrance of the ring. It would be difficult to imagine a more perfect animal of her kind. Fine head, beautifully formed, full chest, smooth round barrel, heavy massive hind-quarters, fine, symmetrical, and, in short, all that the stock fancier could wish for. In answer to Mr. Page's first call, "How much for Airdrie Duchess Third?" came the response, "Ten thousand dollars," from Mr. Emery Cobb, of Kankakee, Ill. "Eleven thousand" was the next bid, and then they came thick and fast, Col. Cannon, Dr. Sumner, Mr. Thornton and Albert Crane being among the most distinguished of the bidders. Mr. Thornton was bidding for some parties in England, went up to $20,000 and left the contest to the Americans, who kept the ball rolling till Mr. Crane's bid of $23,600 carried off the prize amid the cheers of the breeders, who seemed warmly to appreciate the pluck of the Kansas man. Subjoined is the pedigree of this famous animal:

Airdrie Duchess Third, roan; calved June 20, 1863; sire, eleventh Duke of Geneva, (16,784).

Dam Airdrie Duchess, by fourteenth Duke of Thorndale, (28,459.)

Gr. d. tenth Duchess of Airdrie, by Royal Oxford, (18,744.)

Next came another beautiful light roan, Mr. Cochrane's Airdrie Duchess Second. Again Mr. Cobb bid $10,000, and again the gentlemen already mentioned, competed in the most spirited manner, the second bid being $15,000; Mr. Thornton once more dropped in at $20,000, and the Kansas breeder once more outbid all competitors, buying Airdrie Duchess Second for $21,000. Subjoined is the pedigree: "Airdrie Duchess Second, roan; calved Dec. 2, 1871; sire fourteenth Duke of Thorndale, (28,459); dam, tenth Duchess of Airdrie, by Royal Oxford; (16,744). Remainder of pedigree as above." As might be expected, the sale of these two animals created considerable excitement, and not a few were heard to make such exclamations as, "Well, I never expected to see two cows sell for $44,000!" This, however, is considerably short of the price paid at Campbell's New York Mills sale, held Sep. 10, 1873, when Lord Dunmore paid $35,000 for tenth Duchess of Geneva, and Lord Skelmersdal bought eighth Duchess of Oneida for $40,600.

Seasonable Hints.

New sown lawns are liable to be crowded with weeds. There seems no better remedy than to hand-weed, filling the holes made with earth in those cases where the roots are large. In some cases this hand-weeding will have to be done for two or three successive years. The seeds of the common Plantain, for instance, do not all germinate at first. It is often three years before they all grow. The greatest labor is during the first year of sowing, however. The increased encouragement of the grass helps to keep down weeds.

Ornamental hedges that are thin at the base receive much encouragement from cutting back the strong top shoots. Indeed, this applies to all growths, trees and shrubs, evergreens included. Any check to the more vigorous shoots, while growing encourages the weaker ones. Remarkably beautiful specimens of anything may be had by noting this. The branches are rendered uniform in vigor by this sort of watchfulness, and can be made regular from bottom to top.

Plants set against walls and piazzas frequently suffer from want of water at this season, when even ground near them is quite wet. Draw away the soil around each plant so as to form a basin; fill in with a bucketful of water, allowing it time to soak gradually away, and when the surface has dried a little, draw in loosely the soil over it, and it will do without water for some weeks. This applies to all plants wanting water through the season. If water is merely poured on the surface, it is made more compact by the weight of water, and the harder the soil becomes the easier it dries; and the result is, the more water you give the more is wanted.

It must, however, be borne in mind that much injury often results to the newly-planted trees from summer watering. The cold water cools the ground, and we need some warmth in the soil to encourage new roots to push. Still, trees must have some water when the ground is dry, but it must be used with caution.

Amateurs may have some rare or choice shrub they may desire to increase. They may now be propagated by layers. This is done by taking a strong and vigorous shoot of the present season's growth, slitting the shoot a few inches from its base, and burying it a few inches under the soil, or into a pot of soil prepared for the purpose. The young growing point of the shoot should be taken out in the operation. By the English mode of making the slit, a great number of the shoots will be broken and spoiled. Anything can be propagated by layers; and it is an excellent mode of raising rare things that can be, but with difficulty, increased by any other.—*Gardener's Monthly.*

Gun-Barrel Budding.

This kind of budding is now much practiced by rosarians. In all rose gardens where the amateur buds his own roses there will be found many strong suckers rising from the roots of dead briars. On account of the severe frosts last winter, many fine, strong suckers may be found at the present time. Take a strong sucker, about three feet high, dress all the spines and side shoots off for about two feet from the ground, the young wood will be found in about the same state of greenness and ripeness as the side shoot of the briers which you are budding on the top part of the stock. Instead of waiting till next season, bud at once, just above one of the leaf rings, gun-barrel fashion—put the point of the knife in just above a bud, draw it upwards gently for about an inch in length. Here you have the incision which must receive the bud, at the top of which make your cross cut. Use good, strong, plump buds, which can always be obtained in abundance during August, which is the best time for gun-barrel budding. About two eyes above or below you may insert another bud. There is such an immense flow of sap in these shoots from the root that, when tying up the bud, the sap flows out and runs down the stem. The briar and the bud are thus both of one age, and may be said to begin the world together. The junction is rapid and complete. All below the inserted buds must be cut away, but all growth above must be suffered to remain until about the middle of November. The reader will naturally ask, "How do you get this sucker up when the head is formed? How do you separate it from the parent stock?" I let it grow for two seasons, after which a good head is formed, and the sucker has become as thick as the thumb. In November, grub up the whole of the old root, and separate the stem from it; it is generally full of fibres, and may be removed to its proper quarters with safety. On this plan, instead of suckers being a nuisance, they may be turned to good account, and your roses multiplied into dwarfs and standards at pleasure. I generally bud these suckers last, and they have often been of the greatest service to me when a friend has sent me some buds of very choice new sorts late in the season; all my briers having been worked, I should have had no stocks to bud them into, had I not preserved these suckers. Gentlemen occupying land can bud into the suckers arising from old roots growing in the hedgerows; but, before inserting the buds, the sucker must be carefully examined at its base, in order to see whether it can be taken up when the head is formed, and removed to the rose garden.—*Garden.*

Food For Young Pigs.

The value of skimmed milk from the diary for feeding young pigs has hardly been estimated high enough by the majority of farmers. Corn meal is

selling now at only about a cent and a third per pound. Milk is sometimes estimated to be worth about half a cent a pound for feeding to hogs. We have not found it worth that, and yet, if we should sell all our milk and buy meal instead, it is doubtful if the pigs would make as much pork for the money as if a portion of the milk had been retained. A dollar's worth of meal, at the above price, may feed a pig a longer time than the milk would have done, and yet it does not follow that the meal is on the whole, the cheapest or best food.

Cow's milk, after most of the cream has been removed, seems to come very near supplying the pig with the best substitute for its natural food, while corn meal, although rich in fat and heat, is so concentrated and so wanting in the elements which are especially needed by very young or growing animals, that it is worth really less than many would suppose. Cornmeal, besides being wanting in the elements of growth, packs and becomes hard and indigestible in the stomachs of young animals, unless it is mixed with milk, bran or some other less concentrated food, that may act as a divider in keeping the particles separate, so that the fluids of the stomach can come in contact with all parts of it at once.

It requires but a moment's consideration to see that a solid ball of cornmeal in the stomach of a young pig or other animal, cannot be acted upon by the gastric juice, except at the outside. Digestion, in such a case, must go on like the melting of a cube of ice, and as the stomach was not arranged for doing its work in that way, it breaks down after a short time. Indigestion follows such feeding, and, as a consequence, the food that is taken is not fully utilized, and of course, does not give an amount of growth corresponding with its nutritive value when properly prepared or judiciously mingled with other food that is less concentrated.

Farmers know that milk is good for pigs. They know, too, that skimmed milk is a waste product of the diary, and unless fed to animals would generally be wasted. They feed the milk because they happen to have it, but would not buy it instead of cornmeal. We believe that at a cent a quart it would be cheap food to buy to mix with meal for feeding pigs for the first few weeks after weaning. Many pigs have been spoiled by being confined to a cornmeal diet while young. In feeding your pigs or calves, growth and not fat should be the object sought.—*New England Farmer.*

Berries for Birds.

I would urge the planting of evergreens about the homegrounds to afford shelter to the birds in winter. In addition to trees and shrubs for shelter, there are many kinds which produce food very acceptable to birds, although of no especial value to man, and these should not be overlooked in laying out and planting new grounds and improving old ones. The sassafras produces a fruit greedily eaten by several of our larger kinds of birds. A closely allied species known as the spice of fever bush, found in all our Northern swamps, bears brilliant scarlet berries, which are not only ornamental, but much sought for by birds. The Highland cranberry is another handsome, ornamental shrub, bearing a profusion of light, crimson-colored fruit, ripening very late in autumn. In fact, all of our native species of viburnums produce edible fruit much relished by birds. The buffalo berry (shepherdia), silver thorn (elæagnus), and scores of other native shrubs might well be introduced into our gardens, if for no other purpose than to supply the birds with food. We have driven away the birds, our natural protectors from insects, enemies, by destroying the trees and shrubs among which they found a safe retreat, as well as food for sustaining life. In addition to this, we allow every scalawag whose highest ambition is to burn powder and kill something, to prowl over our fields and destroy the harvest birds. In the face of all this interference with natural laws, our fruit growers and farmers ask what shall be done to save the products of their fields from insect depredations? Alas! wisdom is a slow coach, carrying few passengers at a time.—*Moore's Rural.*

What Will Pay.

Year after year crops are moved off without returning anything to the soil. Manures are put under the rains and the dropping of eaves until they are drained of their best material and rendered nearly useless. This could be obviated by building cheap sheds to cover the manure as thrown from the stables. This can be done at a small cost and will pay. Winter is not a good time to build, but for such a purpose as this it is better to build now than not at all. Plaster should also be used in the stables to prevent the escape of ammonia, and care should be taken to keep it in as good condition as possible. If the barns and yards are so situated that the wastings are carried off by every rain, a little time with a team, plow and scraper will make a ditch (a broad, open one it should be (around the barn on three sides, then at all times keep this filled with the trash and litter which naturally accumulates about the barn. The ditch will hold the water, etc., from the yard and cause the straw to rot rapidly and will afford a large quantity of good manure. When the manure is removed in the spring, the ditch can be filled by wheat straw, upon which a few bushels of lime had been scattered; then as fast as it rots pile it up in the ditch and fill the spaces between each pile with straw and so on. In the fall there will be a fine pile of manure, which will renovate the worn out field; or to scatter on the exposed knolls on the wheat fields, preventing winter killing. Another great waste is the large crop of weeds, which each year is allowed to go to seed, and spread all over adjoining farms.

Using too much hard labor is another way of wasting on the farm. Many machines can now be used to save much of this labor. More horse-powers must be used. And after we have raised our crops they should largely be fed out on the farm. It is much cheaper to ship corn, oats, &c., in the form of meat than to send it in the bulk as raised; besides, the soil is made richer, instead of constantly reducing its producing capacity.—*Prairie Farmer.*

Boys, Do Something.

We want to say just a word to the boys of the farm. We have no sermon to deliver, no lecture—just a bare suggestion—and we hope every farmers' boy will heed it. Make a beginning for yourselves this Centennial year. The time will finally come when you must look to your own exertions for a living. It is your wisest course to fit yourselves early for the battle of life. Solicit from your father the right to plant and cultivate some certain plot of ground, be it ever so small, the product from which shall be your own. Prepare it most thoroughly, plant it with care, keep it clean of weeds, harvest the crop and sell it, putting the proceeds at a fair rate of interest, so that when you "become of age;" you will be able to begin your business career as independent, well-to-do citizens. Suppose you are ten, or twelve, or fourteen years of age. Just sit down and figure up what the mere trifle you may earn for yourself this year, at compound interest, will amount to by the time you are twenty-one years old! Then if you add to it each year, in a proportion to your efficiency as farmers, you will be astonished at the result. Do not fear that your parents will not second your every effort. Nothing will please them so much as to realize that you are really a young *farmer*, with great hopes of the future and a great ambition to excel. They know that the farm house is the real home of happiness and comfort, if within it are found contentment and high aspirations. The time has fully come when the lords of the soil are lords of the country. With careful lives, with good education, with even fair ability, the farm boy may hold any and all positions, when in manhood's prime, and it is to him that the nation, in these days of corruption, must look for true manhood and true patriotism. The beginning of all this future brilliant career is dependent upon early self-exertion more than upon all other things. Whether your parents are rich or poor, does not matter; it is individuality that wins. Strive to have and be something, while the bright sun of youth lights the way.—*Prairie Farmer.*

Stick to Your Farms.

The New York *Observer* gives the following timely advice in its issue for May 4th:

The life of a farmer is not an easy one; but when he looks around and sees the wrecks of fortune made on every hand by men engaged in other pursuits, the farmer has cause to be thankful if he can support his family and give his children a good common education. It has been stated that during the last half century only four merchants in the city of New York, out of every hundred, have succeeded in making their business profitable. The unsuccessful ones have managed in many cases, to continue in business for years after they had become bankrupt according to their books; but, of course, finally had to succumb to their fate. These men, while living in good style, and many luxuriously, have carried continually a load of care that no farmer ever experienced; and when the time came that their business must be wound up, their condition generally has been one of poverty, and utterly broken down in spirits. A few recover and resume business again; but the majority are pushed aside to make room for others, eventually to follow in their footsteps and end their lives in misery and despair.

Farmers, be contented. You may not be able to lay up money; but if you can pay for your farms and live comfortable, envy not the condition of those engaged in other pursuits. To those farmers who are out of debt, and own good farms, need I say that apparently wealthy bankers of Wall street might well envy your lot. Nearly every week some one of these firms, owing millions of dollars, explodes, and its members sink into poverty and obscurity; but the farmer who is out of debt owns a bank that can never fail, inasmuch as seed-time and harvest are promised unto the end of time.

A word to farmers' sons. If your fathers own good farms which are not mortgaged, don't all abandon your homes. One of you, at least, should remain to carry on the farm when your father's lease of life has expired. You might possibly do better in some other business, but you had better not risk a change.

Labor Necessary to Happiness.

Almost every man sets out with a determination when a certain sum has been accumulated to retire from the cares of business, and enjoy the balance of his days in retirement on some sunny farm or rural retreat his vision has planned. This is wrong. You should commence the business of life with the determination to work as long as you live, and you can do this if you obey the laws of health as related to your physical and spiritual nature. Your business, if fitted to your capabilities, will in the doing and right management of it be to you a great pleasure, an intense happiness, and therefore should be continued as long as you live in this world. Commencing business with this end in view will prevent you from falling into the feverish, exciting, unhappy and short-lived results that belong to the men who wish to rapidly accumulate a fortune and retire to enjoy it. These men are not happy while counting their profits and certainly cannot be happy when they retire to enjoy them, for it is an established law of nature that in no wise can be slighted, that labor is a necessity to perfect growth and pure unalloyed happiness. A wise man will never rust out as long as he breathes the breath of life; he will be doing something for himself, his country, or posterity. Howard, Franklin, Newton, and scores of other famous men all were at work almost to the last hours of their existence. It is a foolish thing to believe that we must lie down and die simply because we are old. The man of hope and energy is not old, it is only he who suffers his energies to waste away, and permits the springs of his life to become motionless, on whose hands the hours hang heavily, and to whom all things wear the vestments of gloom. Work while you live, is God's requirement, and in the doing of which only is perfect success attainable.

Holding on for Higher Prices.

The question often comes up, whether it is best to sell a crop as soon as it is ready for market or to hold on for higher prices. It is a question which cannot be decided by newspaper articles. There are so many temporary or local circumstances which largely enter into the question and on which every one must decide for himself. But in a general way there is no doubt that it is best to sell as soon as ready, and this is the advice we have frequently given in these columns.

Even though prices be low, and there is the reasonable prospect of a rise in a short time, there are the losses from shrinking and waste, which in a large number of cases are quite as much as any average increase in price would be. In the articles which we have before given, and to which we have alluded, we have presented this fact particularly; and we remember referring to the case of a friend who put one hundred bushels of potatoes in the cellar in the fall, and which only turned out eighty when sold in the spring. Here the loss was twenty per cent., and with interest on the receipts, if they had been sold in the fall, requires a good advance to make it worth while to hold under such circumstances.

We refer to the matter now because we believe that this figure, twenty per cent., even by those who are conscious of a loss by keeping, is generally believed to be as much as is lost; but we have recently seen some figures which show that it is often much greater than this. Twenty per cent. is given as about the loss by shrinkage in corn; but as much as thirty-three per cent. is claimed as the loss in potatoes if kept till late in the season, say June. This is a strong argument against the general principle of holding on. —*Germantown Telegraph.*

Hunger.

When the system begins to need nutriment, it sends a fluid from every portion of the body towards the stomach, where it accumulates in little reservoirs, the distension of which causes the sensation of hunger; the fuller they become, the more hungry are we.

This fluid not only gives notice that food is needed, but it has the power to dissolve it, as water dissolves sugar, and thus prepares it for yielding its nutriment to the system. If, therefore, a person eats without an appetite, without being hungry, there being none of this dissolving fluid in the stomach, the food is not dissolved, does not undergo any healthy change; on the contrary, being kept up to the stomach heat of about one hundred degrees, it soon begins to ferment, to decay, to rot; if meat, it literally becomes carrion; if vegetable, it sours; in either case, generating gas and wind, causing unseemly belly belchings and noisome eructations; or these gases, being confined, distend the stomach, causing pressure against the nerves, originating various pains and discomforts more or less distressing, to last sometimes for hours or half a night, preventing refreshing sleep, to be followed by a day of general discomfort and unfitness for business. Sometimes the stomach becomes so distended with wind that it crowds up against the lungs, preventing them from receiving their proper amount of air, and there follows a distressing feeling of impending suffocation. These same effects follow when too much food is eaten—more than there is fluid in the stomach to dissolve.—*Dr. Hall.*

Watercresses.

In the vegetable kingdom there are several substances that possess the double quality of food and medicine, and as such might be usefully employed in therapeutics. Among the vegetables that possess the valuable property referred to, watercress may be mentioned. According to an analysis by Mr. Chatin, Director of the School of Pharmacy of Paris, and present President of the Academy of Medicine, watercress contains: 1. A sulpho-nitrogenous essential oil; 2. A bitter extract; 3. Iodine; 4. Iron; 5. Phosphates water, and some other salts. As medicine the watercress has been vaunted for its efficacy in all cases in which all the digestive organs are weak, in cachexia, in scurvy, in scrofula and lymphatism; it has ever been prescribed as a cure for phthisis. The medical principles which it contains are more or less abundant, according to the culture or maturity of the plant. Thus when the plant is in flower they are in greater quantity in the plant than before that condition; the essential oil increases according to the quantity of the sun's rays it receives. The proper culture of the plant developes in it the bitter and tonic principles, and the phosphates will be found in proportion to the manure employed. Finally, the quantity of iron will depend upon the richness of the water in which the cress is planted. As food, watercress ought to be used in its green or uncooked state, in the form of salad or without any seasoning. Watercress enters largely into the composition of the "sirop antiscorbutique," of the French Pharmacopœia, which is commonly prescribed in scrofulous and scorbutic affections.—*British Medical Journal.*

A Cure for Colds in the Head.

It would seem as if the cure for those worst of small nuisances, colds in the head, which Dr. Ferrier, of King's College, suggested in the *Lancet*, might prove to be a remedy of very great value. It is a snuff—a white powder—composed of the following ingredients: Hydrochlorate of morphia, two grains; acacia powder, two drachms; trisnitrate of bismuth, six drachms—the whole making up a quantity of powder, of which from one-quarter to one-half may be safely taken, if necessary, in the course of twenty-four hours.

Dr. Ferrier says that with this snuff he has twice cured himself of very violent colds, once, indeed, by taking trisnitrate of bismuth alone, which is a very powerful remedy for catarrh of the mucous membrane, and is the most important ingredient in this snuff. Dr. Ferrier mentions two other persons who were cured of violent colds by the same snuff, and to these instances we may add that of the present writer, who, having a very violent cold coming on, with the same sensation of weight in the temples, and the usual disagreeable feeling in the throat, as well as ordinary catarrh, made trial of Dr. Ferrier's remedy one evening, and got up on the following morning completely free from cold, which has not since returned. The snuff, instead of increasing the tendency to sneeze, almost immediately begins to diminish it.—*London Spectator.*

Economy.

The Springfield (Mass.) *Republican* gives the following account of household economy, as practised by the common people of France. It contains a moral that we might well profit by:

"The French butcher separates the bones from his steaks, and places them where they will do the most good. The housewife orders just enough for each person, and no more, even to the coffee. If a chance visitor drops in, somebody quietly retires, and the extra cup is provided, but nothing extra by carelessness of intention. When the pot has boiled the handful of charcoal in the little range is extinguished, and waits for another time. No roaring cook stove and red hot covers all day long for no purpose than waste. The egg laid to-day costs a little more than the one laid last week. Values are nicely estimated, and the smallest surplus is carefully saved. A thousand little economies are practiced, and it is respectable to practice them. Cooking is an economical as well as a sanitary and gustatory science. A French cook will make a franc go as far as an American housewife will make three, and how much farther than the American Bridget nobody knows. We should be greatly astonished, could the computation be made, how much of the financial recuperative power of France is owing to her cheap food; better living, after all, than the heavy bread and greasy failures of our culinary ignorance.

The Grain Movement.

While the foreign demand for breadstuffs was less active in 1875 than in 1874, the present year opened with marked activity in the movement of cereals to the seaboard cities. Since January 1, 1876, there has been exported from New York, of wheat alone, 10,000,000 bushels, against less than 6,400,000 bushels during the coresponding period last year. The Liverpool market for breadstuffs is firm. An active export demand has induced a lively business in the way of ocean freight at generally advancing prices. On Saturday, June 10th, the grain chartering movement was the most extensive reported in any single day for a long time past, amounting in the aggregate to 1,102,000 bushels, divided as follows: From New York, 790,000 bushels; from Philadelphia, 190,000; from Baltimore, 32,000 bushels. The increased grain movement is still further shown by the shipment from lake ports during the two weeks ending May 7, 1876—8,445,311 bushels against 4,217,378 bushels for the corresponding two weeks in 1875. Since Mr. Vanderbilt's withdrawal from the compact of March 2d, by which the freights on east bound freight were fixed on a mileage basis, there has been a sharp competition between rival carrying interests, causing lower transportation charges between the interior and the seaboard cities than have ever before prevailed.

How to Keep Eggs.

The following is an extract from an article on the subject published editorially in the *London* (England) *Farmer*:

For storing eggs a very good plan is to have a large board pierced with holes in regular rows. Many breeders keep them in bran, and this latter method is, perhaps, best for those meant only to be eaten; but for setting hens the pierced board has many conveniences. They should always be kept with the large end downward. This direction being contrary to that usually given, we should state our attention was first called specially to the subject by a most intelligent lady who advocated the plan. Keeping eggs on the small end appears to me to cause the air bubble to spread, detaching it from the shell, or rather from its membraneous lining; after being kept so for a fortnight, the air bubble will be found to be much spread, and the eggs will have lost much vitality, though still very good eating.

She then described her success the other way, adding:

Owing to this method of storing, such a thing as a stale egg has never been known in my house; and, as regards success in hatching, for several seasons, when I have been able to attend to my poultry myself, of many eggs set every egg produced a chick.

The Care of Canaries.

Don't put them in a painted cage; most birds will peck the wires, and, if they do, they die, and with extreme suffering. Give them fresh seed, pure water, both for drinking and bathing, cuttlefish, and, in their season, fresh lettuce and chickweed, but no cake. Keep the cage clean with brown paper covering over the bottom, not newspapers, because they may peck it. Let them wash in the morning if they will; then take out the bath. Keep the perches clean by rubbing them with sand. Draw them out and replace them gently, and always be careful not to frighten the birds in any way. They do not like to be touched. Give them a little fresh sand every day. Give them fresh air and plenty of sunshine; but guard them from drafts and excess of heat. The noon sunshine should not fall directly on the cage. With such preparations, and in a roomy walnut cage, canaries will live, and be healthy and happy. That is, provided no cat comes near. You cannot be too careful on this point. Cats have been known to draw a bird between the cage wires without leaving as much as a feather.

How to Make Old Horses Appear Well.

The horses are often prevented from throwing their weight into the collar, by a *tight check rein*—a useless and painful encumbrance introduced by vanity, and retained by thoughtlessness amounting to cruelty. Ask horse keepers why they use it, and hardly any one will give the same answer, though it is supposed to be a great safeguard in case of stumbling. The real object with which it was introduced was, to make every horse to which it was applied, however weak, or old, or poor, assume the lofty carriage of the thoroughbred horse; and the tossing of the head, the foam at the mouth, and the restless agitation of the body (mute, but expressive signs of pain and suffering) came, in a little while, not only to be disregarded, but even looked at with approbation. Fortunately, this vitiated taste is rapidly going out of fashion as better information is diffused. Few of the London cab-drivers use check reins, knowing them to be inconsistent with proper work; and when it is observed, it will invariably be found to be on some poor animal, whose wearied and haggard appearance is attempted to be disguised by the implement of torture.

Raising Chickens.

In an article on "Care of young chickens," the *Practical Farmer* says: It may be asked, what is the best feed for young chickens? There is some difference of opinion on this point. Breeders of fancy and exhibition stock are very careful and particular in feeding, using hard-boiled eggs, cooked meat cut into small pieces, bread, rice, etc., but the average farmer will not—nor need he go to so much trouble. As good feed as we want is sour thick milk mixed with corn meal and bran; the mess should not be too wet when given to the chickens. Curd is very good food once a day, and as soon as they are two weeks old a little good wheat at night will be found excellent. Some condiments, as Cayenne or black pepper, a little salt, etc., may be given once or twice a week, but only a little at a time. Only good hens should be selected for mothers for the early broods. A nervous, fidgety hen will not cover and nourish her chicks, and without this on her part, they will not grow and thrive with the best of care on the part of the owner.

Quidding Horses.

The habit of "quidding," or dropping the food after chewing it, is due to several reasons. The horse may suffer from a sore throat or difficulty of swallowing from other causes; some of the teeth may be carious or diseased, or they may be worn sharp on their edges and cut the mouth. It will be necessary to examine the mouth and throat as far as possible, both by sight and by pressure. If there is a hollow or diseased tooth, it should be extracted; if any are sharp upon their edges they should be filed down with a flat file; if the throat is sore or any part of the mouth, a wash of chlorate of potash should be used with a sponge fastened to a piece of whalebone or rattan; or embrocations of mustard should be applied to the throat outwardly. It might be well to cut the feed fine and scald it, feeding it when only slightly warm.—*New York Tribune.*

Something for the Sick.

A correspondent writes: Frequently we have sick people whose stomachs reject all kind of nourishment until condition follows that in many instances terminate fatally. In twenty instances in which I have heard the popular sick-bed nourishment prescribed and rejected by the invalid's enfeebled stomach, I have not known the simple saucer of parched corn pudding or gruel refused. The corn is roasted brown, precisely as we roast coffee, ground as fine as meal in a coffee mill, and make either into mush, gruel, or thin cakes, baked lightly brown, and given warm or cold, clear or with whatever dressing the stomach will retain. Parched corn meal, boiled in skim milk, and fed frequently to children suffering from summer diarrhœa, will almost always cure, as it will dysentery in adults, and I believe the cholera in its earliest stages.—*Our Friend.*

Good Farm Roads.

It is much cheaper and more pleasant for farmers to have good roads on the place than bad ones. Teams can haul larger loads, with more safety and comfort over good roads, from the distant fields and the woods lot, than if there be no roads. Let the stones and roots be gotten out of the way, the rough places be smoothed down, holes filled up, soft places hardened with stones and solid earth, and the teams will haul enough more, with less breakage, in a single year, to pay the trouble of making a good road. And besides, the farm looks better; there is more pleasure and less vexation in the work to both man and team. We have seen horses and oxen so bothered and vexed by the cart or wagon getting into a hole, or in the mud where they could not haul out, and then whipped and scolded till they lost all courage and kindness and became baulky—confirmed in the habit, so that ever afterward they would not draw loads out of difficult places—all from bad roads on the farm.

Asparagus.

In reply to a correspondent, Mr. J. J. Thomas says, in the *Country Gentleman*: For home use only make asparagus beds about five feet wide by deep spading and work in manure. It has been the practice to make these beds very deep—two and a-half or three feet—but we regard this as needless labor and expense. Two spits of the spade (equivilant to thorough soil and trench plowing for the field cure of this plant), with a very copious application of fine manure, will be deep enough. Then give the plants plenty of room, and they will grow larger than in a deeper bed and crowded. Three rows in the five feet bed, and a foot apart in the row, will give fine crops. Plant in trenches, made by a line, so that the crowns will be about two inches under the surface. Keep the bed perfectly clean by going over the whole surface at least once a week with a steel rake before the weeds come up.

Horse Management.

Horses should not be stinted in their feed. Work horses should be put out to pasture at night, but they should have their usual allowance of other feed. They have some lost flesh to make up. Scrape off the eggs of the botfly from their fore legs and shoulders with a sharp knife, or wash them off with warm water every evening. Three hour's rest is not too much at noon while plowing. The lost time may be made up at morning and night. This arrangement is not a bad one for the driver as well. Give water often, and don't forget the handful of cornmeal stirred into it. Colts may be taught to eat a little meal or bran, and to be handled freely. Careful attention and the gentlest possible treatment should be given to all young stock at this season.—*Western Farmer.*

Domestic Decorations.

An exquisite transparency may be made by arranging pressed ferns, grasses and autumn leaves on a pane of window glass, laying another pane of the same size over it, and binding the edge with ribbon, leaving the group imprisoned between. Use gum tragacanth in putting on the binding. It is well to secure a narrow strip of paper under the ribbon. The binding should be gummed all around the edge of the first pane, and dried before the leaves, ferns, etc. are arranged; then it can be neatly folded over the second pane without difficulty. To form the loop for hanging the transparency, paste a binding of galloon along the edges, leaving a two-inch loop free in the centre, afterward to be pulled through a little slit in the binding. These transparencies may be either hung before a window, or if preferred, secured against a pane in the sash. In halls a beautiful effect is produced by placing them against the side lights of the hall door.

POTATOES MIXING.—We had supposed, says *Moore's Rural*, that this question of whether potatoes ever do become mixed by either growing in the same field or hill, had long ago been settled in the negative. Of course we know that there are farmers who still adhere to their settled belief that potatoes do frequently mix in the hill and wheat turn to chess, but it is seldom nowadays that a man of intelligence who has given these subjects careful consideration and examination will stand up and declare his faith in either. But it seems to be very difficult to eradicate prejudice or the influence of early training out of the human cranium, and although few may believe in lucky signs, still they had a little rather see the new moon over their right shoulder than over the left.

The Use of Machinery.

The use of machinery upon a farm is doubly beneficial. It not only reduces the labor, lessens the cost of products, saves time, and enables a larger surface to be cultivated, but it actually necessitates better and more careful work. To plant corn successfully, it is necessary that the sod be well turned over, and covered, and no trash left upon the surface to interfere with the regular dropping of the seed; nor must loose stones be left in the way. It is the same with all other machinery, and this indirect benefit is not the least by any means of those that we gain by the use of farm machines.

A CORRESPONDENT of the *Country Gentleman* writes: "I tried hellebore, Paris green, and various things, with indifferent success, but have found nothing that will so thoroughly destroy rose slugs as wood-ashes. The ashes may be sifted on early in the morning while the leaves are damp, the branches being turned over carefully, so that the under side of the leaves, to which the young slugs cling, may get their fair share of the siftings.

LITERARY NOTICES.

MONTHLY REPORT OF THE DEPARTMENT OF AGRICULTURE for May and June, 1876, with an index of contents, from page 133 to page 214 inclusive, and eight charts, in colors, illustrating the various subjects treated in the work, besides a full page illustration in "microscopic observations" on "Animal and Vegetable Cellulose and Starch."

We regret that we received it too late to make much use of it in the present number of THE FARMER: for, terminating as it does the last fiscal year, there is much in it of a statistical character that would be interesting to our agricultural readers. We quote from page 154 the aggregate value of our principal crops for the eight years from 1866 to 1874, and their relations to each other, in the entire country: Corn, $549,228,907; hay, $343,111,450; wheat, $308,983,272; cotton, $308,590,811; oats, $123,867,426; Potatoes, $76,856,914; tobacco, $34,439,809; barley, $23,374,788; rye, $18,695,826; buckwheat, $12,943,913. This shows that corn leads all our crops by far, and that hay is next on the list, whilst tobacco is only the seventh, large as it seems. We will prepare a synopsis for the August number.

AMERICAN JOURNAL OF PHARMACY, published by authority of the *Philadelphia College of Pharmacy*, and edited by John M. Maisch, at $3.00 per annum. The June number, now before us, contains among many other good things, an abstract from an inaugural essay on "Tobacco Culture in Pennsylvania," and especially in Lancaster county, by our young friend JOHN ALFRED WITMER, Ph. G., of Lancaster county, who recently graduated with honor in the above named college. Judging from the abstract before us, we consider the essay a valuable contribution to the local agricultural literature of the county of Lancaster, as well as the State of Pennsylvania. Although it may contain nothing especially new to veteran cultivators, yet, as every year brings inexperienced hands into this increasing field of culture in our county, we believe their progress might be facilitated by giving the essay a wider publication than it will receive in the columns of a *journal of pharmacy* alone.

OUR FENCE CORNERS

God's Acre.

I like that ancient Saxon phrase, which calls
The burial ground God's acre! It is just;
It consecrates each grave within its walls,
And breathes a benison on the sleeping dust.

God's acre! Yes, that blessed name imparts
Comfort to those who in the grave have sown
The seed that they had garnered in their hearts,
Their bread of life, alas! no more their own.

Into its furrows shall we all be cast,
In the sure faith that we shall rise again
At the great harvest; when the archangel's blast
Shall winnow, like a fan, the chaff and grain.

Then shall the good stand in immortal bloom,
In the fair gardens of that second birth;
And each bright blossom mingle its perfume
With that of flowers which never bloom on earth.

With thy rude ploughshare, Death, turn up the sod,
And spread the furrow for the seed we sow;
This is the field and acre of our God,
This is the place where human harvests grow.

—*Longfellow.*

TALKING of babies and servants, these two from auld Scotia are rather neat:

A baby was out with the nurse, who walked it up and down the garden.

"Is't a laddie or a lassie?" said the gardener.

"A laddie," said the maid.

"Weel," says he, "I'm glad o' that, for there's ower mony women in the world."

"Hech, mon," said the girl, "div ye no ken there's aye maist sawn o' the best crap?"

AN Irishman who professed to be a great sportsman, but who in reality had never loaded or fired a gun, went out with a party on a gunning expedition. By some mistake he had managed to get a double charge of powder in his fowling-piece; and seeing a young squirrel within range, he aimed at it and pulled trigger. The same moment he found himself lying flat upon the ground, his shoulder aching from the recoil of the gun. Looking around to find the squirrel, which he supposed he had demolished, he spied him skipping about on the rail of a fence as chirk and lively as ever. Rubbing his shoulder, the sportsman apostrophized his would-be victim as follows: "Bad luck till ye, ye varmint! Ye're chipper enough now; but if ye had been at *this* end of the gun, ye'd not be goin' chip, chipper on the fence there by this time, ye villain ye!"

AN eccentric poet of Newark, New Jersey, well known to the last generation as Matt Ward, was the author of the following epitaph on a dog named "Spring:"

On brute and monarch death alike will call;
Dogs have their day, and Spring hath had his fall.
Doctors by barking, lawyers biting, thrive;
Spring could do both—both could not make him live.

From human puppies he had gifts apart;
They heartless souls, but he a soulless heart;
They, doomed to future life, meet death with fear,
But he, more happy, sleeps forever here.

CONCERNING the Centennial, this is not bad:

At a colored church in Greencastle, Pennsylvania, a few days ago, a colored woman brought up an ebony youngster for baptism.

"What is the child's name?" asked the minister.

"Thomas Centennial Middleton," said the mother.

This being apparently too lengthy for the minister, he concluded to abbreviate it, which he did in this wise: "Thomas *S.* Middleton, I baptize you," etc.

THE DIFFERENCE.—The following little anecdote teaches a lesson effectually, if not elegantly:

A market gardener near Boston had a very fine cow that was milked week and week by two hired men. He observed that the amount of butter he carried to market weighed about a pound more on each alternate week. He watched the men and tried the cow after they had finished milking, but always found that there was no milk in the teats. He finally asked the Scotch girl, who took care of the milk, if she could account for the difference? "Why, yes," said she, "when Jim milks, he says to the old cow, 'So, my pretty little muly, so;' but when Sam milks, he hits her on the hip with the edge of the pail, and says: 'Hist, you d—n brute.'"

THIS, from Nevada, speaks for itself: An Irishman in Virginia City, being tried for assault and battery, when asked if he had anything to say by way of defense, replied, "Well, your honor, I saw but little of the fight, as I was underneath most of the time."

PENNSYLVANIA RAILROAD SCHEDULE.

Trains LEAVE the Depot in this city, as follows:

WESTWARD.	Leave Lancaster.	Arrive Harrisburg.
Pacific Express*	2:40 a. m.	4:05 a. m.
Way Passenger†	4:50 a. m.	7:50 a. m.
Limited Mail*	9:25 a. m.	10:30 a. m.
Hanover Accommodation.	9:30 a. m.	Col. 10:00 a. m.
Mail train via Mt. Joy	11:20 a. m.	1:00 p. m.
No. 2 via Columbia	11:20 a. m.	1:20 p. m.
Sunday Mail	11:29 a. m.	1:20 p. m.
Fast Line	3:25 p. m.	4:50 p. m.
Frederick Accommodation.	3:35 p. m.	Col. 4:15 p. m.
Harrisburg Accom	6:10 p. m.	8:10 p. m.
Columbia Accommodation	7:32 p. m.	8:10 p. m.
Lancaster Express	7:40 p. m.	8:10 p. m.
Harrisburg Express	7:45 p. m.	9:05 p. m.
Pittsburg Express	9:10 p. m.	10:35 p. m.
Cincinnati Express*	11:30 p. m.	12:45 a. m.

EASTWARD.	Lancaster.	Philadelphia.
Atlantic Express*	12:40 a. m.	3:10 a. m.
Philadelphia Express†	4:10 a. m.	7:00 a. m.
Harrisburg Express	7:25 a. m.	9:25 a. m.
Lancaster Express	7:50 a. m.	10:30 p. m.
Columbia Accommodation	9.28 a. m.	12:30 p. m.
Pacific Express*	1:10 p. m.	3:30 p. m.
Johnstown Express	3:05 p. m.	6:00 p. m.
Harrisburg Accom	5:50 p. m.	9:00 p. m.

The Hanover Accommodation, west, connects at Lancaster with Limited Mail, west, at 9:25 a. m., and will run through to Hanover without change of cars.

The Frederick Accommodation, west, connects at Lancaster with Fast Line, west, at 3:25 p. m., and runs through to Frederick without change of cars.

The Frederick Accommodation, east, leaves Columbia at 12:30 p. m., arriving at Lancaster at 1 p. m., connecting with Pacific Express at 1:10 p. m.

The Dillerville Accommodation leaves Harrisburg at 5 a. m., coming via Mt. Joy, and arriving at Lancaster at 9:05, connecting with Lancaster train.

The York Accommodation, leaving York at 6:22 a. m., connects at Columbia, at 7:25, with the train leaving Marietta at 6:52 a. m., at Lancaster with the Harrisburg Express at 7:25 a. m.

The Marietta train leaves Columbia at 6:05 a. m., and returning, leaves Marietta at 6:25, connecting at Columbia with the York Accommodation, and at Lancaster with the Harrisburg Express at 7:25 a. m.

On Sunday there will be two sections of Pacific Express, east, the second section starting from Columbia at 12:30 p. m., making all the stops between Columbia and Lancaster, and the Johnstown Express stops from Lancaster to West Philadelphia.

The first section of Pacific Express, east, on Sunday, when flagged, will stops at Middletown, Elizabethtown, Mt. Joy, and Landisville.

*The only trains which run daily.

†Runs daily, except Monday.

$1 a Year (To subscribers in the county.) SINGLE COPIES 10 CENTS. (To subscribers out of the county.) $1.25.

Prof. S. S. RATHVON, Editor. LANCASTER, AUGUST 15, 1876. PEARSOL & GEIST, Publishers.

THE FARMERS HOME ORGAN.

The Lancaster Farmer;

A MONTHLY NEWSPAPER,

DEVOTED TO AGRICULTURE, HORTICULTURE, DOMESTIC ECONOMY AND MISCELLANY.

PRACTICAL ENTOMOLOGY

Made a prominent feature, with special reference to the wants of the Farmer, the Gardener and Fruit-Grower.

Founded under the auspices of the Lancaster County Agricultural and Horticultural Society.

Edited by Prof. S. S. RATHVON.

THE LANCASTER FARMER has now completed its seventh year—the last having been under the auspices of the undersigned as publishers. When we assumed the responsibility of the publication one year ago, it was with a determination to make such improvements during the year as would place the Farmers' Organ of this great agricultural county in the very front rank of publications of its class. That we have done so, our readers will bear cheerful testimony. But our work of improvement is only fairly begun. We propose to make the volume for the Centennial year still more interesting and valuable than its predecessor for 1875. In this, however, we need the co-operation of every friend of the enterprise. To make it a success, every one who now reads THE FARMER should at once send us at least one new subscriber.

The contributions of our able editor, Prof. RATHVON, on subjects connected with the science of farming, and particularly that specialty of which he is so thoroughly a master—entomological science—some knowledge of which has become a necessity to the successful farmer, are alone worth much more than the price of this publication.

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OUR FENCE CORNERS

A Knowing Cat.

The Wilmington (N. C.) *Journal* of the 16th inst., has the following veracious narrative. Persons doubting the truth of it can be shown the cat, and, if that is not sufficient, the car also. It says: "A friend tells us the story of a cat, every word of which can be unquestionably established by an abundance of the most reliable testimony. A part of the story our friend himself can vouch for. In 1872, a family of people named Davants moved to Columbia from Fort Mills, situated on the Columbia and Charlotte railroad, 100 miles from Columbia. Previous to and at the time of removal, the family owned an unusually large Maltese cat, which was the pet of each member of the household. The cat not only knew his own name, but seemed to know the name of each one of the family, of which he probably considered himself an honored member. When the removal to Columbia was made, of course Tom went along, and seemed to enjoy the ride on the railway train beyond his limited powers of expression. He was first in the lap of *mater familias*, then on the knees of the head of the family, then he would cross over to the seat occupied by his young mistress, all the while purring and curling his long tail, as much as to say, "Isn't this fine fun, this fast traveling, and we all so snugly seated in a warm car on this cold December day?" Arrived at Columbia, Tom went along with the rest of the family to the new domicile, following readily when called to leave the car and take his place in the carriage, and when the carriage stopped in front of the new home, Tom entered it alongside of the first one who crossed the threshold, still purring and curling his tail in the ecstasy of his delight at the change which was being made, and at the new scenes which it was then his privilege for the first time to behold. And thus Tom seemed contented and happy in his new home for the space of ten days. The only change noticed in his conduct was the fact that he was perhaps a trifle more affectionate in his manners to the rest of the household. But when ten days had passed by Tom was missing. He could nowhere be found. There was a vacant place in the family circle that caused heartfelt sorrow until a telegram was received from Fort Mills bringing the intelligence that Tom had returned to his old haunts 100 miles away. He had taken passage on a frieght train, and was safely back at Fort Mills, mourning the absence of the rest of the family. Only one freight car is switched off at Fort Mill, and in this identical car Tom secreted himself before the departure from Columbia, and before it was locked up by the agent; so that when the car was unlocked on its arrival at Fort Mills, out walked Tom, showing no evidence of his being ashamed at having stolen a ride on the train. But then Tom went to the depot at Columbia to take passage, how did he know precisely which was the car that was to be switched off at Fort Mill? Of course he must have noticed the directions on the packages of freight, and went with the freight that was marked Fort Mills. No other way could he have known."

A Tramp at a Lunch Counter.

A tramp saw a sign of "Free Lunch," and he went in, walked unostentatiously up to a plate, and commenced operations with a sandwich; then the barkeeper walked up and said:

"Men who eat here are expected to pay for a drink."

"I know it," said the tramp.

"Well, then, why don't you live up to the rules?".

"'Cause I go in for health, and don't drink till I'm through eating."

The barkeeper turned his back for a moment, and the tramp slipped three sandwiches into his coat pocket, and devoured four, then he walked up to the bar, and to the dispenser of stimulants huskily whispered:

"Gimme a glass o' water, will ye?"

"What! water after four sandwiches?" bellowed the barkeeper, angrily.

"Yes'r, water," replied the tramp. "I've been a drinking o' it nigh onter forty years, and it's just the healthiest stuff agoin."

He was kicked clear into the gutter.

SMITH and Brown, running opposite ways around a corner, struck each other. "Oh, dear! how you made my head ring," said Smith. "That's a sign its hollow," said Brown. "But didn't your's ring?" "No." "That's a sign its cracked," replied his friend.

MARK TWAIN, speaking of a new mosquito netting, writes: "The day is coming when we shall sit under our nets in church and slumber peacefully, while the discomfited flies club together and take it out of the minister."

OYSTERS.—As long ago as 1599, Butler, in *Dyet's Dry Dinner*, wrote: "It is unreasonable and unwholesome, in all months that have not an R in their name to eat oysters."

The Lancaster Farmer.

Prof. S. S. RATHVON, Editor. LANCASTER, PA., AUGUST, 1876. Vol. VIII. No. 8.

INSECTS NEVER GROW.

Many fancy that a little fly is only little because it is young, and that it will grow up in process of time to be as big as a blue-bottle. Now this is entirely wrong, for when an insect has once attained to its winged state it grows no more. All the growing, and most part of the eating is done in its previous state of life, and indeed there are many insects, such as the silk worm moth, which do not eat at all from the time that they assume the chrysalis state to the time they die.—*Church Union.*

"That's so"—and yet it is only so in a qualified sense, for there are some insects that never attain to a winged state; that is, they are either totally wingless, or are so seldom seen in that state, that most persons never know otherwise than that they are wingless always. Especially is this the case with ants, fleas, spring-tails, and the females of some bugs, grasshoppers, crickets, beetles, moths, flies, and all lice, as well as many others. Although it is not strictly true that "insects never grow," yet it is true that they never grow after that stage of development when the large body of the insect world attain to a winged state; but there are some *orders* of insects to which the rule may be applied almost universally. There is nothing that is more likely to leave a false impression upon the minds of the superficial on this subject than the *appearance* that insects do grow without any qualification whatever—indeed we often meet persons thoroughly informed on many other subjects, who suppose that the different sizes in insects of apparently the same kinds, are indications of different ages. Practically there are four more or less directly marked periods in the life of insects, and are the *ova*, or egg state; the *larva*, or worm state; the *pupa*, or intermediate state, and *imago*, or adult state; and in one or the other of these states the species are perpetuated, or carried over from one season to another. In beetles, butterflies, moths, bees, wasps, hornets, flies, dragon-flies, and some others, these states, as a general rule, are very distinctly marked; but they are not so in bugs, cockroaches, locusts, earwings, grasshoppers, treehoppers, crickets, and a number of others. In this latitude, perhaps, the one particular species (except the common house-fly) which impresses itself earliest and the most indelibly upon the minds of youth or adult age, is the common "tumble-bug" or "tumble-dung," from its habit of forming a ball out of animal excretions, and rolling it for some distance before burying it in the earth. This is the *Canthon lævis* of entomologists, although there are various species of them. Now, from more than fifty years ago, when we made the first observation, down to five and thirty years ago, we were under the impression that the various sizes of these insects, found in the droppings of cattle, were the young and the old of the same species. For, had we not over and over again deprived the industrious and persevering owners of these balls, opened them, and found therein a small black beetle, approximating in form to the former possessors of the ball, and what else, we thought, could they possibly be if they were not their legitimate offspring? These little black beetles, we subsequently learned, were not only different species, but belonged to different genera, *Aphodius*, *Onthophagus* and others. Nor did the fact that we sometimes found within these balls little beetles that were not entirely black—the hinder half of the body being mottled with clay yellow—astonish us any more than that we should occasionally see a robin, a catbird, or a mouse, that was altogether or nearly white.

But since then it has been demonstrated to us a thousand times, clear as the light of the living day, that these beetles do not grow or acquire any new beauty after they have assumed the beetle form—nor any other species belonging to the same order—and that all the different sizes indicate different species, or varieties of the same species. The eggs, however, of some insects do very perceptibly increase in size, and the *larva* or grub grows, and sometimes grows very rapidly, in all of them. But there is as much difference in the size of the *larva* as there is in the size of the beetles into which they are subsequently transformed. As a general thing the mature beetles, if they feed on anything at all, it is on a different substance from which the larva fed upon. We may except the carniverous species, and some of the CHRYSOMELANS—the "Colorado potato beetles," the "Tortoise beetles," &c., &c., for instance; under any circumstances, however, it is while they are in the larva state that they increase in size, or grow, and it is during that state that the destructive kinds are the most destructive. Like active and hungry boys, they are always hungry and can always eat. Indeed, childhood and youth may be appropriately regarded as the larval period of manhood, and the future perfection of the insect depends as much upon a plentiful supply of healthy food as the physical perfection of manhood depends upon proper food and physical training whilst in the boy state. During the *pupa* or intermediate state, beetles eat nothing. Some eat nothing, or next to nothing, in the *imago* state; but others eat fruit, foliage, pollen, flowers, and the predaceous kinds feed on carrion or other small insects, grubs, water animals, or fishes, &c., &c.

The *larva* of butterflies and moths, which are known under the names of caterpillars, cut-worms, sphinxes, or simply worms, all grow; and in many instances grow very rapidly; and during that period feed very ravenously, eating their own bulk and weight in a single day; but after they have assumed the butterfly and moth forms they never grow any. They not only do not grow, but they acquire no new beauties, but rather lose their original beauty the older they get, and we often see them awkwardly flitting about in faded and tattered garments, dilapidated caricatures of their former selves. The best specimens obtained by entomologists, are those which are bred under their own personal supervision. Therefore, all the different sizes of these insects we see, are indications of different species, except, as before stated, the different varieties or sizes in the same species, which may have been caused by contingencies beyond the control of the insects, such as stinted food, inferior quality of the food, or unfriendly weather and surroundings. In no other *order* of insects, universally considered, is there a more marked distinction in form and habits—between the *larva*, the *pupa*, and the *imago*—than there is in that which includes the butterflies and moths. The *larvæ* are masticating animals, the *pupæ* are quiescent and fixed, and the *imagæ* are suctorial in their feeding habits. In the order *Diptera*, or two-winged flies, the case is the same, that is, they do not grow after they have assumed the form of a fly, notwithstanding the great variety in the sizes of the masses that are sometimes found congregated together, may appear as if they were young and old, but it is only an *appearance*, for, in reality, the smallest fly may happen to be the oldest, and *vice versa*. It is the same in others mentioned and unmentioned, after they have acquired wings, namely, they *do not grow*. It will be remembered that in the foregoing the larvæ are excluded from the eggs in the form of grubs, worms, caterpillars, maggots, &c., some entirely footless, and others having from six to twenty-two feet; but in those which follow, the *larva* come from the eggs in the form of the mature insects—or nearly so—lacking only the wings; having the usual six feet, the mandibulated or suctorial mouths the same, in all their states of transition, and feed throughout the entire periods of their lives; and consequently have no quiescent period, but are as active and destructive in one state as they are in the other. In these it may appear to the novice that insects *do grow*, from the fact that he may not be able to distinguish between larva, pupa and imago, but even in these they do not grow after they get wings, although some of them never attain those appendages, whether they are males or females, or whether they are old or young.

Grasshoppers (*true*), locusts, and crickets, for instance, have the same number and the same formed limbs when young they ever have, and can hop from the moment they leave the eggs. This is the same in regard to the true bugs; the tree-hoppers, the false locusts, and approximately many others that do not hop. Therefore, to say that "Insects do not grow," without any qualification whatever, would not be credited by those who may have the demonstration before their eyes daily, that they *do* grow; so little are the masses of the people accustomed to observe and consider insects with reference to the different stages of their development. But, it nevertheless is strictly true, that insects do not grow after they have emerged from the intermediate or pupa state, whether they have wings or not. They not only do not increase in size, but they acquire no new instinets, nor do they acquire any new colors or new beauties; but, on the contrary, many of them almost immediately after their final transformation, begin to lose the colors and beauties they originally had.

In conclusion, we may state that where we have used the terms locust and *true* locust, we do not allude to the insect which has wrongly received the popular name of *locust* in the United States, and which we have denominated a *false* locust. We allude to what is popularly called a grasshopper. There seems, however, little use now in explaining the distinction between true and false locusts, because the minds of the masses seem set in a wrong direction on that subject, and it is questionable whether they will ever get right on it. If a knowledge of the distinction and compliance therewith were made the basis of salvation in this Union, hardly one in a thousand could possibly be saved.—ED.

A NEW PEST.

A new enemy of the farmer's has made its appearance in the shape of a small worm, which infests the clover blossoms, eating them off, and thus preventing the production of seed. Mr. Paul Balliet, of Ballietsville, Pa., brought a lot of clover to town, which he had gathered on his way hither. Some of the blossoms were entirely filled with these worms, and the others more or less so. These worms are a much greater pest and more dangerous than the potato bug, from the fact that they are so small as to be hardly discernible, and complete their ravages before they can be discovered. It is said that in Berks county acres of clover fields have been visited by these worms, and that fears are entertained of a total failure of the clover crop.—*Easton Free Press.*

The above paragraph has appeared in several papers in the eastern part of Pennsylvania; but if the insect referred to has made its appearance in Lancaster county, it has thus far not come to our knowledge. There is something very indefinite, however, in stating that an insect "in the shape of a small worm" is destroying the clover, especially since there are so many thousands of worms, of different

shapes and sizes, which depredate upon vegetation. We regret, therefore, that we are unable to suggest with any kind of certainty what the insect may be, and what would be the best remedy to destroy it.

It has just occurred to us, however, that possibly this may be the earlier stage of the "clover-worm," which is so destructive to hay when it is in the mow or stacked. According to Walsh, in the *Practical Entomologist*, Vol. 1, pp. 82—83, a "clover-worm" had appeared in the West as early as Dec. 25, 1861; and Harris also referred to a similar insect, at an earlier period, in various parts of the country, (*Inj. In.* p. 456). Neither Harris, Walsh, or any other writer, up to 1866 seemed to know to what *order* the *clover worm* to which they alluded, belonged, for it appears that most, if not all, of their knowledge was gathered from casual observers, or from newspaper paragraphs similar to the above.

Prof. Riley, however, succeeded in breeding the "fly" of the clover worms sent to him in 1868 or 1869, and he accordingly published a brief notice of the insects, and also most excellent illustrations of all their stages of development, *larva*, *pupa*, *cocoon* and *imago*, on p. 226 of the *American Entomologist*, Vol. 1, (July, 1869).

And on pp. 102 to 107 in his "Sixth Annual Report on the Noxious, Beneficial and other Insects of the State of Missouri," he repeats the illustrations, with a more extended history of "THE CLOVER HAY WORM—*Asopia costalis*—(Fab)," but still not illustrating entirely satisfactorily when and where the eggs are deposited, and the infant state of the larvæ is passed. The above extract from the *Free Press* does not contain the first intimation of the size, form and color of the "small worms" infesting the clover in the fields while it was green; but, unfortunately, so superficial are the observations that are usually made, and so indifferent are even those who suffer, that it is rarely they will take the trouble to collect specimens and send them to those who are supposed to know something about them, and therefore, we have not yet been fortunate enough to receive any of them, hence our observations on this occasion must be more or less conjectural.

Neither was a hay-worm new to us in Harris' and Walsh's time, for as early as the winter of 1826, when we were a boy-of-all-work on a farm, we knew of a case where the hay in the lower part of a mow was altogether unfit for feed on account of worms, their webs, and their fæces. Again, in 1844 or '45 we happened to be present in the month of February or March, where a small stack of hay was removed and the lower layers were rejected on account of the worms and debris they contained.

But as we were then only coleopterally inclined, and said worms were not *beetles*, we paid no special attention to them. We, however, are impressed that the stack was composed of clover-hay.

In regard to the remedy, we do not think the precaution of not using an old foundation or an old mow for a new stack, or a new mow of hay would make any difference, for by the time these were made all the larvæ of the previous season would have been transformed to the moth state, and have abandoned the premises. It would be less difficult for us to believe that the larvæ had been carried to the stack or the mow from the field while they were yet young and too small to be readily observed, and then to have worked themselves down through the interstices into the lower layers of the hay where the conditions for their development would be longest continued, than for the winged moths to creep in and deposit their eggs in the very centre of the mass. If we could have obtained specimens of these larvæ on the green clover heads, and ascertained that they were Lepidopterous, it would have gone far to confirm us in this view; as it is, we can only throw out these suggestions for the assistance of further observations.

Moreover, it is not unusual for larvæ in their earlier stages to feed on tender substances, and afterwards to appropriate that which is more rigid. We have seen this illustrated on several occasions with the "White lined army worm" (*Lucania albilinea*) which certainly feeds on the blades of the wheat and other plants, early in the season, and when the heads appear, to mount the stalk and feed on them, even after the grains are ripe, and as hard as rice, where they needed it to fully develop their larval condition.

Mr. Linville informed us that last year when he removed his wheat shocks to haul them to the stack, he could have gathered up the debris, composed of chaff, pellets, and broken grains of wheat, by the quart, at each shock.

Not *knowing* the classic *status* of the insect alluded to in our extract, we refrain from offering a remedy at this time.—ED.

A NEW ENEMY IN THE CORN CROP.

"A new enemy to the growing crop of corn has been discovered this spring, which is committing considerable destruction in some sections in the neighborhood of Reading, Pa. It is a peculiar black worm which can scarcely be crushed on the loose earth, as it is encased in a suit of armor difficult to break. They operate in the corn hills by eating off the young plants. As many as ten or twelve worms are found in one hill. The cut-worm has hitherto been a great annoyance, but this new pest is said to be even more destructive. In some townships farmers are busy replanting cornfields that have been thus devastated. Paris green has been found to be as efficacious in exterminating these worms as it is in destroying the potato bug. Powdered white hellebore also is said to be very effectual."—*Christian at Work.*

From the peculiar texture of the worm alluded to in the above paragraph, we infer the writer refers to a species of "click-beetle" (ELATERIDÆ) in its larval condition. This is, however, not a *new* enemy by any means, for we have, years ago, both heard of, and seen it, so engaged—not only destroying the young corn, but also the young wheat.

This is probably a species of *Zabrus*, although from the above vague description, it would be impossible for us to locate it specifically. According to Curtis there are several species of Elateridans which depredate upon the growing crops, and especially the wheat crop; and on the continent of Europe and in England, have produced serious mischief. It appears that these insects are usually hidden during the day, and come forth and attack the corn and wheat during the night, and it is alleged that where crows and blackbirds are charged with destroying the corn while it is in the ground, it is these insects that they are in pursuit of. From this it will be perceived how important it is for farmers to make thorough and practical observations on the habits of the insects which attack their growing crops.

Quite as often have we had a black species of "snout-beetle" (*Curculionidæ*) sent to us, which it had been stated were detected preying upon the roots of the grain and the corn. This is the *Sphenophorus zea*, of naturalists, which, however, has been known to only attack the grain while the insect was in its perfect state. The *larvæ* of that genus are usually found in dead and decaying wood. None of these insects, so far as we have been able to learn, have yet been very destructive to the crops of Lancaster county, but we see no reason why they may not be eventually, unless some means are discovered to destroy them.

WHERE THE POTATO BUGS GO.

Now that the potato bug is disappearing from Lancaster county, the following item may be of interest: A day or two ago a party of gentlemen fishing near the middle of Long Island Sound, saw great quantities of potato bugs covering the surface of the water as far as the eye could reach. Every floating article, as well as the water, was packed with them, and many were clinging to eel grass and seaweed under the water. The wind was blowing from the south, and had probably carried them from the island, and they were being wafted toward the Connecticut shore. Inland on the island the bugs appear to be increasing in numbers, and the potato vines being dry, they have attacked the egg plants, pepper plants, and tomato vines.

The above is near akin to our own observation and experience, as to "Where the Potato Bugs Go." We spent the last week in July, 1875, on a fishing excursion to the "Delaware Breakwater," in the lower end of the State of Delaware, and while there, we took occasional strolls along the beach in search of objects of *vertu*. On one occasion our stroll was prolonged to some six or seven miles along the Atlantic beach—from the Light-House to the "Beacon," on the extreme point of Cape Henlopen. Among other things, we picked up many specimens of Coleopterous, Neuropterous, and Hymenopterous insects, that had been cast in a waved line on the beach for nearly the whole distance, and among these insects, by far the most numerous, were the "Colorado potato-beetles." We are quite sure there was not a potato field within three miles of the farthest outward point, nor was there any intervening spot that exhibited any thing but sand, pebbles, and weather-worn shells—except here and there tufts and patches of tough and wiry grass, but no beetles were found upon them. Some of these beetles were still alive, but most of them were dead, and every succeeding wave that lashed the beach brought in scores of insects. There were twice as many potato-beetles as all other kinds put together. They evidently had been eastward bound, dropped into the ocean, and were brought back by the returning waves. We may infer also that many never reached the shore again from which they had made their departure, but were gobbled up by the fishes that sometimes plentifully inhabit those waters. Nor is this all: some distance up the Bay, and nearer the town of "Lewes," there is a trussel work—called the "Pier"—which extends a quarter of a mile out into Delaware Bay, upon which is a railroad track, upon which the cars of the Junction Railroad daily run to discharge their cargoes into sailing vessels and steamboats that periodically leave the outer end of the pier for New York, Philadelphia, Boston, Baltimore and other points. In the morning and the evening, when less commercial activity reigns, the pier is esteemed a capital place to fish. Well, all along this pier, from the shore to the extreme outer end, the ubiquitous potato-beetle was present, and at the outer end far more numerous than nearer shore. The State of Delaware at the time was full of these beetles, from one end to the other. The fruit-growers were shipping their peaches to market, and every cargo brought down from the interior also brought down a goodly number of the beetles, and it is not at all surprising that they should be carried aboard of the waiting vessels and transported to other parts of this country, if not to Europe. Still, the Atlantic coast is their eastern limit, except the few that may effect a clandestine passage to other localities on board of the coasting vessels. They seem to be all eastward bound; therefore, the farmers occupying a belt of a few miles wide, running parallel with the Atlantic coast, are likely to have their hands, eventually, full of them, unless they wage a vigilant and exterminating war against them. They do not seem to be content with this belt, hence they drop into the ocean and perish.

Although the Colorado potato-beetle appeared in greater numbers early last spring than they did at any former period since their advent into the county of Lancaster, yet the general crop has suffered very little, comparatively, either in quantity or quality. Early vigorous hand-picking, and later applications of Paris green, proved effective extinguishers of them. When farmers, heretofore defiant or indifferent, came into town and purchased ten to twenty pounds of the best Paris green at a time, we felt that their action "meant business," and the result has been a satisfactory one, and no doubt *pays*. Perhaps when the beetles find that they cannot get any farther eastward than the Atlantic coast, and when they have eaten up all that is suited to

their taste there—unless they are drowned in the ocean, or greened to death by the farmers in that part of the country—they may take a notion to return to the fertile parts of Pennsylvania; but let them come, our farmers have learned something, and will know how to meet them, if they profit by the *lessons* they have already learned. Under any circumstances, the potato-beetle is coming to be regarded as a permanent condition or fixture in agriculture, that must be provided for as essentially as plowing, planting and cultivating, in order to secure a crop. They are no longer regarded as a mere incidental, that may or may not occur, or can be with impunity neglected. It is sometimes astonishing what importance the subject has assumed, and with what interest the beetles are inquired about—fully as much as that which attaches to the state of the weather, or any other contingency, present or prospective.

Potato Beetle Progress.

Reports show that the Colorado potato beetle is committing very serious injury along the Atlantic ocean. The farmers of Long Island more particularly have suffered severely, the insects getting into hot-beds and destroying tomato and egg plants. Last fall, before going into winter quarters, the beetles swarmed on Coney Island and other portions of the coast. Meeting the Atlantic, the first serious obstacle to its eastward march since it left its Rocky Mountain home, this insect will naturally accumulate along the coast, and for a few years will probably be more injurious for 200 or 300 miles north and south of New York, than it has been in any part of the country. It will be well, therefore, for gardeners and potato growers to prepare for it, and to endeavor to co-operate in their work against it. The Paris green mixture (one part of pure green to twenty-five or thirty of some dilutent) is the best and cheapest antidote against its ravages, and experience and experiment have proven it a perfectly safe remedy where cautiously used. Concerted and persistent effort at this season to destroy the first beetles will render subsequent work all the easier.

THE VEGETABLE CATERPILLAR.

"The moth from whose eggs are produced this caterpillar, is of the genus *Sphinx*, and is named by the New Zealanders, *Pepe*. Its period of life is from November to December—the commencement of summer in this country. About the end of the eighth or the beginning of the ninth month, this caterpillar buries itself in the ground to the depth of five or six inches, previous to assuming the chrysalis form; and it is a singular fact, that the insect descends into its subterranean hiding-place with its hindpart downwards. In the second month of the following year small reed-like plants about three or four inches high, may be seen growing in great numbers from the ground under the shade of the *rata* trees; this plant being dug up carefully is found to grow out of the head of the caterpillar just described, which, however, no longer possesses any vitality; for, cutting into its body, it is found to consist of a tough, whitish substance, similar to a fungus. In the tenth month the reed-like plant dies away, but springs up again the following year, dying away again in the tenth month, and sending out a fresh shoot yearly for three or four years, probably till all the animal matter supplied by the caterpillar has been consumed."—*I. M. McCann, in Fam. Jour.*

Time was when records of the foregoing character were regarded by the learned with indifference, ridicule, or "laughed to scorn," although there must have been some data for their record, and some faith in their truthfulness; notwithstanding they may have been much exaggerated. No phenomena of the kind have ever come under our own observation, but several printed accounts of them have. The first that we can recall is a case where a sort of a fungus plant was said to have grown out of the limb of a patient—somewhere between the knee and the heel—in the eastern part of this county. This account, with an accompanying illustration, was published in a local journal, about thirty-five years ago, but it seemed to be so much of a tax upon our credulity then, that we suffered it to pass entirely unheeded. We think the plant, in two branches, was said to have grown to the height of about three inches, and as thick as a clay pipe-stem. The second account which came to our notice, was published in a magazine issued in Cincinnati about the year 1850, as near as we can recollect, but we saw it in 1863, and for the same reason we could not attach any credit to it—namely, it seemed too preposterous. We ranked it with the famous "Goose-tree," of two hundred years ago, and recently reproduced in "Practical Science," as a relic of the superstitions of England in "ye olden times." In this Cincinnati account the phenomenon was said to have occurred in or near Covington, Ky., and the plant was said to have grown out of the body of an insect, shaped something like a grasshopper; and insects of the same kind were produced by the plant, dropped into the soil, and from these other plants grew up like the parent. We returned the volume containing the account to the owner, without making any use of it, who has since died, and the work has become inaccessible. With all these seemingly extravagant narrations there may have been the shadow of truth as the foundation for them.

On pages 77, 91, 186 and 207 of the *American Entomologist*, vol. 1, are "replies to correspondents," giving accounts of a "*White Grub Fungus*," or "a plant growing out of an insect," by the editors, Messrs. Walsh and Riley, and as these white grubs were sent to the office by different correspondents, and from different localities, and moreover by persons entitled to credit, the cases seem unquestionable. Prof. Riley has also an article on the same subject commencing on page 158 of his first annual report on the "Noxious, Beneficial and other Insects" of the State of Missouri, 1869. This article and those on pp. 186 and 207 of the *Entomologist* are illustrated; in one instance, exhibiting a "white grub worm" (the larva of *Lachnosterna quercina*) with two fungus plants growing out of its head fully five inches in length; and while this phenomenon was yet new to white people, according to Wm. H. Edwards, the well-known Lepidopterist, it was very familiar to the Virginia negroes, who dug them up by dozens right before their masters' eyes. Some of these fungi were of a greenish and others of a whitish color, but all growing in two sprouts out of the heads of the above named grubs, or allied species, and they are all too well authenticated to admit of a doubt. It is well known that the eggs of these insects are deposited in the ground, by what is popularly known as the brown "May-beetle," or "June-bug," but how it happens that the fungus grows just under such circumstances, or how it further propagates itself, is not clearly known. It appears from the accounts given, that Prof. Riley had subsequently some of them growing in his garden, but the final result, so far as we know, has not been published. But *there* were the grubs, their yellowish heads, their six feet, their segmental divisions, and their large terminal segment, so characteristic of the larva of the Melolonthons. The spores of the fungus seem to have taken root in the grubs (but why always growing from the head is not known) and after they are properly grown the whole body of the worm becomes of the consistence of the plant, and has the fungus smell. Doubtless the fatty matter of this grub is favorable to the germination and growth of this kind of fungus. Is it not wonderful?

ANSWERS TO CORRESPONDENTS.

Mr. R., Lancaster.—Your fish probably belongs to the SCLERODERMI, a family of fishes with hard or granulated skins. We have neither an illustration nor a specific description of it, and therefore cannot locate it, except on the merest probability. It makes some approach to the "Trunk-fishes," (*Ostracion*). We found a specimen at the Delaware Breakwater about a year ago, some distance in from the beach, less in size, and darker in color than yours, which the local fishermen called an "Oyster-cracker," others called it a "Sea-porcupine," and others a "Lump-fish." As we have not access to a scientific description of it at this time, therefore this must suffice.

J. M. W., Lancaster, Pa.—The large pale green moth, with the white downy body, the feathered *antenna*, the long swallow-tails, and the moon-shaped spots on its front and hind wings, expanding about five and a half inches, is the "American Lunar Moth" (*Attacus luna.*) It is very pretty, and although never abundant yet it is not rare—indeed, rather common in this locality.

S. A., Lancaster, Pa.—The grape leaf which you sent us (Clinton, we think,) and which is covered all over on the under side with tubercular galls, is infested with the great French plague *Phylloxera vastatrix*—or "Grape leaf Phylloxera," and as each little gall contains a number of eggs we would recommend you to pluck off every infested leaf on your vines, and scald them, or burn them immediately. This same insect also infests the roots of the grape vines, and it is there where it has done so much damage to the vineyards of Europe and especially those of France. For a more detailed history of it look over some of the volumes of THE FARMER previous to 1875.

F. D., Lancaster, Pa.—The very singular ash-gray worm, with brushes of diverging hairs along the sides, and the black velvety stripe across the forepart of the body, is the *larvæ* of a rare species of *Catocala*, one of the moths commonly called the red, yellow, blue or black "Underwings." You say you found it adhering to the branch of a peach tree, but we are not prepared to say that it feeds upon the foliage of the peach. We have found it but rarely, and then on the apple and quince, but some how we did not succeed in breeding the moth, and yet we may have it in our limited collection of this family. It occurs too rarely, however, to create any anxieties about its destructiveness.

J. S. R., Lancaster, Pa.—The "strange bird" you called our attention to, is a young "Turkey-Buzzard" (*Cathartes aura*), about one-third grown; a *carnivorous* bird belonging to the family of "Vultures" (VULTURIDÆ). After it reaches maturity, and even before it reaches that period, it will have shed all the white downy feathers on its neck, breast, and under-parts of the body, and be a black or swarthy black, all over. Turkey Buzzards breed in Lancaster county, and in the collection of the Linnæan Society is a stuffed specimen about the age and size of the one in your possession. These birds are regarded as such good scavengers, that they are especially protected by law in many places, and we think this is the case in some of the Southern States. Two years ago, while at Lewes, in the State of Delaware, we found them very abundant there; and on one occasion we saw half-a-dozen of them sitting on the top rail of a fence in the suburbs of the town. They are certainly useful there, in preying upon the many dead animals that are thrown up by the waves and perish upon the beach, which otherwise would create an intolerable stench.

DEAR EDITOR.—Yours of August 1st, in regard to chicken cholera came duly to hand. I should have written you sooner, but thought perhaps I could get some information from parties that had suffered in their flocks from the cholera, that might be of some use to your inquiring friends; but find that there is but one point that they appear to agree upon, and that is that the chickens die. So far as remedies or preventatives are concerned they are at sea. I have kept chickens for twenty-seven years, yet have not had a single case of cholera on my yards. Have therefore had no practical experience in the matter, and will not attempt to recommend any of the many sure cures for the disease. Three or four years ago I had two broods of chicks running on a farm. The farmer sent me word that they were dying with cholera. I brought nine chicks, my share of the broods, home, put them on a yard by themselves, and they did finely. One week later I saw the farmer; he said of the nine chicks, (his share) seven were dead. I do think that filth has much to do with chicken

cholera, yet in the above case everything looked clean and right, as the farmer said, save that he had a flock of ducks that were constantly making their drinking water filthy. Yours truly, J. W.

MARIETTA, Aug. 7, 1876.

Inquiries have frequently been made of us in reference to chicken cholera, and a remedy for its abatement or cure; but, as we have never been in the "chicken business," we addressed a note of inquiry to one who has had much experience in that field of culture, and above we give his reply. It will be perceived that there is very little of a positive character in it, but negatively it may suggest something useful, and is entirely in harmony with the sanitary conditions recommended by the highest authorities in reference to cholera among human beings, namely: general and particular *cleanliness*, and wholesome food and drink. We value it more than if we had rushed into print with some half digested cure not worth the paper on which it has been written. Better "wait-a-bit," we may yet *see*.

THE CENTENNIAL HEAT.

The Temperature for the Last Half Century.

The following table shows the maximum, minimum and mean temperature of the months of June and July for every year since 1825, compiled from the records of the Pennsylvania Hospital, Philadelphia:

	June.			July.		
	Max.	Min.	Mean.	Max.	Min.	Mean.
1825	98	55	75	100	62	79.32
1826	96	59	74	95	59	73
1827	88	50	71	95	59	76
1828	94	62	77	95	60	75
1829	90	62	73	94	64	75
1830	92	62	72	97	66	79.50
1831	94	58	77	94	60	78
1832	91	52	71	90	67	74
1833	80	57	71.33	86	68	71
1834	92	58	69	95	67	79
1835	89	51	71	90	64	76
1836	91	51	66	92	65	72
1837	85	55	69	87	63	74
1838	87	53.50	72.94	59	94	78.81
1839	85	46	66.28	88	57.50	75.20
1840	88	48	69.36	91	58	73.92
1841	93	52	72	94	56	74.95
1842	89	45	68.03	92	59	75.80
1843	89	40	71	97	57	74.40
1844	90	52	69,50	82.90	67.46	75.16
1845	95	46	71.50	96	55	76
1846	80	52	68.71	97	56	74.65
1847	93	50	70.52	92.50	57	76.44
1848	96	52	73.43	91	59	74.82
1849	97	53	73.50	95	59	74.66
1850	90	52	71.93	91	61	77.36
1851	92	50	70.40	92	60	76.82
1852	94	52	71.78	92	64	77.04
1853	94	52	73.77	91	62	75.50
1854	96	51	71.86	98	64	78.83
1855	95	53	70.19	95	60	78.50
1856	98	48	74.44	98	64	79.86
1857	89	63	69.53	90	54	74.96
1858	94	54	75.19	60	60	78.11
1859	94	42	69.14	94	55	75
1860	93	57	72.28	94	59	76.49
1861	89.50	53	72.55	93.58	58	75 63
1862	87.50	50	69.14	93.50	57	75.23
1863	91	55	68.67	90.50	64	77.75
1864	99	54.50	72	93.50	60	76.08
1865	93	64	76.73	96	60.50	77.82
1866	95	57	73 02	99.25	65	80.37
1867	88.50	53	72.19	92.50	62	76.48
1868	90	54.50	71.99	98	69	80.94
1869	92	54	73.62	97.50	62	76.54
1870	95.50	61	77.21	97	61	80.61
1871	90.50	60	74.51	97	60	76.68
1872	94	65	76.28	98	69	82.30
1873	95	51	74.09	96.50	62	79.46
1874	97.50	55	75.53	94	64	78.48
1875	94.50	53	72	91.50	60	75.50
1876	99.50	55	76.60	103	69	80.57

On July 26, 1825, the thermometer at the Pennsylvania Hospital marked 100 degrees, since which time it has not risen to 100 during either June or July until this 1876, when the maximum temperature on the 2d was 101 degrees; 8th, 103 degrees; 9th, 102 degrees, and 10th, 100 degrees.

June, 1826.—Mean temperature, 74, and "in consequence of the great heat and dryness of the last month and the early part of this, all the crops are in a state of great forwardness. So early as the 15th of the month the greater part of the rye and wheat was fit for harvesting."

The following table gives the maximum and minimum temperature, and also the temperature at 9 o'clock a. m. for each day of the month of July, 1876, also taken from the Pennsylvania Hospital record:

JULY.	MAX.	MIN.	9 A. M.
1	98	70	81
2	101	76	85½
3	95	76½	86
4	99	71	86
5	98	71	83
6	93	72	77½
7	94	69	80
8	103	72	85
9	102	79½	87½
10	100	73	83
11	98	71	83
12	98	72	83
13	93	76	86
14	94	72	80
15	96	74	84
16	92	71	79
17	91	69	81
18	91½	71	81
19	94	72	82
20	98	76	87
21	88	70	79
22	86	70	75
23	86	66	70
24	79	59	69
25	80	59	70
26	82	59	70
27	87	60	71
28	92	63	77
29	88	65	76
30	70	65	70
31	71	62	65

The mean temperature for the month of July, according to the above table, was 80.572 degrees. Since 1825 there have been only five years in which the mean temperature of the month of July reached as high as 80 degrees, viz., 1866, when the mean temperature of July was 80.37 degrees; 1868, when it was 60.94 degrees; 1870 when it was 80.61 degrees; 1872, when it was 82.30 degrees, and 1876, (the present year,) when it was 80.572 degrees. The early part of last month was very hot, and the mean temperature for the first 14 days was 82.215 degrees. This high average was reduced, however, by the large quantity of cool and pleasant weather since that time; so that notwithstanding the two weeks of intensely hot weather early in the month, the average of heat was higher in 1868, 1870 and 1872 during July than it was during July of this year.

Meteorological Diary at Philadelphia, for July, 1776.

Very unfortunately our thermometrical record of a hundred years ago comes suddenly to a close by the loss of a leaf, and anxious as we were to place the result in comparison with the extraordinary temperature of the same month in 1876, we are compelled to forego it. Our readers, however, may be able to make some approximation to the average temperature of the month, by the imperfect or partial record we give below:

DAYS.	HOURS.	THER.	WINDS.	WEATHER.
1				
2				
3	8 A. M.	69	N. W.	Fair and Windy.
4	8 A. M.	67	N. W.	Fair.
5	8 A. M.	73	S. W.	Cloudy.
6	8 A. M.	69	N. W.	Fair, Rain 5 P. M.
7				
8				
9	8 A. M.	74	N.	Cloudy.
10	8 A. M.	75	S. W.	Cloudy and Rain.
11	8 A. M.	74	W.	Fair.
12	8 A. M.	66	N. W.	Fair.
13	8 A. M.	72	S. W.	Cloudy.
14	8 A. M.	73	S. W.	Much rain.
15	8 A. M.	63	N. W.	Fair, much rain previous night.
16				
17				
18				
19	8 A. M.	73	N. W.	Fair.

It will be seen that even so far as it goes, no observations are recorded of the 1st, 2d, 7th, 8th, 16th, 17th and 18th of the month, whatever the lost record may have been.

The average temperature of the twelve days given, was a fraction less than 65, which probably would have been the average of the whole month, had the record not been mutilated.

From this it will be perceived that our forefathers must have had, comparatively, a cool time, in ultimating the birth of the nation; and as the matter had been hanging in doubt as to whether the "man child" would come forth living or "still-born," who can tell now what effect such a "heated term" as we had in July, 1876, might have had upon the event? There is a difference of at least 15 degrees on the monthly average, and therefore the month of July, 1776, so far as temperature is concerned, must have been delightfully pleasant and agreeable.

It often has transpired that important events or enterprises have been defeated or failed through some incidental circumstance of a trivial character in itself—such, for instance, as a swollen stream, a drifting snow-bank, a broken telegraph wire, a late train, a hungry chief, or maternal pleadings, and these incidents may also, in some cases, contribute to a success.

Had the silent pleadings of Washington's mother not prevailed, he might have become a sea captain, and never have been the "First in peace, first in war, and first in the hearts of his fellow-countrymen." Napoleon was defeated and utterly overthrown at Waterloo by heavy rains, and the failure of Grouchy in "coming to time." So also it might have been in reference to the "glory of America."

ADVANCE OF THE PEAR-BLIGHT.

We made a note of the fact recently that the virulent form of fire-blight, long the dread of pear cultivators in other regions, had at length made its appearance here. We now see by our exchange papers that it has manifested its dire presence in many places from New England south to Virginia, in sections where it had never been known, or known but slightly before. The cause of this sudden incursion is not very clear. It is, however, a matter of interest to note the singular opinions which prevail in regard to its appearance; and how remarkable it is that any intelligent person should hold such opinions in view of the facts before them.

First one says it is "lightning." Now we have had lightning since the world began, and certainly since the first pear, perhaps two hundred years ago at least, was set out in Germantown. It is rather late in the day for lightning to commence to play such pranks. And then there is this curious fact: if we cut out every particle of diseased wood that we can see, we may cut out more next week; and so on through the whole season after the blight has once begun. It is absurd to look to lightning to produce a continuous effect like this.

Then there are those who fancy the trouble comes from the effect of the "frost" either on unripe wood, or in some other way. But as in the lightning case, why should the frost remain quiet till the year of our Lord 1876 before rising to this mighty work? But irrespective of this, any one who looks can see that it is not unripe wood, unsound wood, weak wood, or any wood deficient in vitality, but often the soundest and best that is attacked.

And then there are others who are sure that it is some lack of important elements in the soil, or some disease at the roots that has extended to the tree, and produced the fatal results. But my practical fruit-grower knows that anything that affects the roots affects the whole tree. Even a borer in the collar of an apple tree makes that tree have yellow leaves in every part of it. There is not any part but is more or less influenced by what may happen to the roots. But a tree affected with fire blight is often in perfect health. Every one who is familiar with fruit trees knows at a glance what perfect health is, and he can say positively that in a vast number of cases a blight struck pear is in perfect health. And then the upper part of a pair tree will be destroyed, though all below is good and sound.

Now we may not be able to say what the cause of pear-blight is; but from what we have said it is clear that it is not any general cause that would affect the whole tree. It must be local; that is, a cause which operates on the parts destroyed and nowhere else. We may not yet see to the bottom of the trouble, but surely it is a gain to see this far.

Fire-Blight.

This dire malady, the great foe to pear-culture, has singularly enough let Germantown out of its travels to a great extent in the past. There may have been isolated and insignificant cases, but the pear as a general thing has been among the healthiest of trees. In surrounding districts there have been cases of serious trouble. To the northeast of Philadelphia, as well as on the west, there have been serious visits of the enemy; but even there it has been in a measure desultory, and season after season of perfect health have followed seasons of serious attacks.

This season, however, the fire-blight has made its

appearance to a serious extent in the old borough, and the "old stagers" who still travel by the coach and know nothing of the railroad, are asking what it all means. They have had in the past one hundred and fifty years of extensive Germantown pear-culture, cold seasons and warm seasons, high temperature and low temperature, long hot and cold "spells," and rapid and wide changes, dry seasons and wet seasons, high culture, low culture, and no culture, dwarf tree and standard trees, while in varieties they have had Vicars and Seckels, and all the kinds known in the books, but no fire-blight ever came here before. They are, therefore, quite sure that the predisposing cause is one that never existed before, and can be none of those suggested in the list above and which are so often referred to. What the cause is must be left to the philosophers, and no doubt they will make it clear in time.

One thing seems clear—and that is one that concerns us most—that is a preventive. Our old correspondent, Mr. William Saunders, of Washington, was once seriously troubled with the disease in the Experimental Garden; and he took to washing the stems of the trees with lime and sulphur in the winter season, and since then he has not been troubled.

Now, there is a possibility that this is but a coincidence, for we have seen that in the outlying districts of Philadelphia the disease has disappeared for some years after being serious, and yet nothing has been done. But in Mr. Saunders' case we hardly think it is of this character, for all of us who know of the devotion of the famous old fruit-growers to their pursuits know how they used to wash trees with lime and other articles, and how healthy trees always were under this treatment. There is no doubt but judiciously washing the bark is conducive to health, and this fact favors the practice of Mr. Saunders.

But this can only be done when the trees are not in leaf; at this season all that can be done is to cut away and burn all the diseased branches as fast as they seemed injured, for whatever may be the cause of the disease it seems quite likely that diseased matter will communicate the trouble to healthy trees.

We have taken both of the foregoing articles on "blight" from the editorial columns of the *Germantown Telegraph*, and we find that the veteran editor of that ancient and ably conducted sheet is about as much in the dark on the subject of *blight* as we, and the rest of the world are. We opine, however, that the phenomenon of fire-blight is not as recent a thing as seems to be implied in the above extracts, for we are quite certain we have seen it, or something analogous to it, as much as five and forty years ago, and at many different periods since that time. We allude to the subject now because at the July meeting of the Lancaster Linnæan Society, one of the members exhibited a blighted pear branch, and felt quite certain that it was caused by an insect, the *Tomicus pyri;* but a critical examination demonstrated that it could not have been caused by said insect, or any other. True, there *is* a species of blight produced by the borings of the insect above named, but it does not take place so suddenly as the fire-blight, and, moreover, it is confined to that part of the twig or branchlet that is above the point of perforation, and it follows down the branch as far as the insect penetrates.

There are various species of these little blight beetles, all of which bore into different sorts of trees both living and dead. Some years ago a piece of a peach branch, three inches long and about half an inch in diameter was sent to us from Maryland, which was seriously infested by blight beetles, which the sender alleged were killing his trees. We inclosed the piece in a close box, and in due time bred out a dozen or more of a small black species of *Bostrichus or Tomicus*, which we specially referred to *persica*.

But these insects are by no means the cause of what is popularly known under the name of "fire-blight," or "pear-blight." Rind, in his "Vegetable Kingdom," says: "*Blight* is one of the most common diseases which affect vegetables, and yet on the nature of which the greatest difference of opinion prevails. The disease seems to have been observed by, and to have been familiar to the ancient Greeks. They regarded it as a scourge from heaven, or from their enraged deities; and therefore did not trouble themselves in the investigation of its nature and cause. It was also familiar to the Romans, under the name of *Rubigo* or rust. Dr. Kieth has endeavored to point out at least three species: 1st, blight arising from cold and frosty winds; 2d, from a peculiar vapour, perhaps originating in certain electric conditions of the atmosphere, and 3d, from the presence of small parasitical *fungi*." And, while these relate more particularly to plants, yet they produce the same effects on trees and shrubbery. But old and authoritative as these views are, and injurious as the effects arising from these causes may be, they do not explain the cause of our modern fire-blight, which often comes suddenly—in one night—affecting a single tree, or a single branch of a tree, whilst all else is healthful and untouched. In the specimen exhibited at the meeting of the society above alluded to, although the leaves were a dark brown—almost a black—the wood was green and apparently healthful, and another member stated that he had seen early blighted branches drop their leaves, and push out fresh leaves in the same season.—Ed.

THE BIRDS AND THEIR USES.

The subject of birds and their relation to agriculture has an importance which is not generally appreciated, but which is being enforced by havoc which is being worked by insects where birds have been destroyed. A Richmond (Va.) paper recently stated that bad news came from every tobacco growing district of the State, the plants being eaten by the fly. Thus, in the opinion of the paper, the chief staple of a large part of Virginia was in danger. This special peril to the Virginia tobacco crop has grown within the last twenty years. It is believed that one of the chief causes is the destruction wrought of late years upon the birds. With the end of the war an indiscriminate hunt for birds has begun and ever since has been continued. The greatest enemy of insect life is the bird, and as the birds have been destroyed in Virginia, every one has noticed the increase of insects that attack the crops. The same lesson has long been learned in other countries, so that it has become an accepted maxim in Europe to foster the birds, and in Australia, and of late in this country, European birds have been imported for the simple purpose of insect destruction.

In the report of the Commissioner of Agriculture there is an article from the pen of Prof. George H. Perkins, of Vermont, in which he says that there are in the State of Vermont probably not less than eight hundred species of lepidopterous insects, (i. e., the moth and butterflies), and in the whole United States there are not less, probably, than four thousand. But leaving the rest of the States, Prof. Perkins confines himself to the following calculation to Vermont, and works out the following alarming results:

"If we suppose the number of species in this State to be eight hundred, the increase will be something like this: Each female lays on an average 350 eggs—but we will place the number at 300. Now suppose in the year 1871 there exists only one pair of each species, there would be during the year 240,000 eggs produced, which would develop into 240,000 caterpillars. If half of them were females, next year we should have 120,000 pair of insects, which would produce 36,000,000 caterpillars for 1873, and so on, so that in five years there would come from the unchecked increase of only one pair of each species 1,215,000,000,000,000 of caterpillars, or 20,000,000 for every single acre in the State. It is true that as the arrangement of things now is, not one in a hundred, if indeed one in thousands of these eggs ever reach maturity, but the great agents of destruction are the birds. Making all possible deductions on account of all destructive influences, except the birds, we have left a very large figure, and if this is multiplied by the number of pairs actually living, and as all know of some kinds there are thousands, the product is something appalling."

If such are the facts in Vermont, where a cold climate tends to harass and diminish insect life, what must be the innumerable hordes of insect depredators under warmer and more genial skies? If any of the animal creation, by its relation to the general economy of nature, deserves to be protected, it is the birds. For every apparent evil in nature the Creator has provided a remedy, and birds are the insect destroyers. The remedy is one in which all can have a share in rendering effectual. Farmers and planters should exert themselves to protect the birds from the senseless, savage, and worse than useless slaughter to which they have been condemned. These little beings not only minister to the solace of man by their beauty and melody, but they are even more useful than they are beautiful.

The foregoing we clip from the columns of the Baltimore *Sun;* and to illustrate the pecuniary loss sustained by certain districts of our country, on account of the fearful increase of destructive insects, we quote the following from the "Eighth Annual Report of the Noxious and Beneficial Insects of the State of Missouri," by Prof. C. V. Riley, the State Entomologist:

"To enumerate by counties, the following figures approximate the real loss sustained from the injury to grains alone:

"Atchinson, $700,000; Andrew, $500,000; Bates, $200,000; Benton, $5,000; Buchanan, $2,000,000; Caldwell, $10,000; Cass, $2,000,000; Clinton, $600,000; Clay, $800,000; De Kalb, $200,000; Gentry, $400,000; Harrison, $10,000; Henry, $800,000; Holt, $300,000; Jackson, $2,500,000; Jasper, $5,000; Johnson, $1,000,000; Lafayette, $2,000,000; Newton, $5,000; Pettis, $50,000; Platte, $800,000; Ray, $75,000; St. Clair, $250,000; Vernon, $75,000, and Worth, $10,000.

"The foregoing estimates exceed the amount of $15,000,000. They are arrived at, in the majority of instances, by combining the following elements: The number of acres of crops destroyed; the average amount of the crop, and the value of the crop, allowing forty cents a bushel for corn, one dollar for wheat, one dollar and a half for barley, and thirty cents a bushel for oats. The amount of loss redeemed by crops that succeeded after the insects left, it is impossible to determine; and yet this amount may again be offset by the injury, both temporary and permanent, to fruit, fruit trees, vineyards, gardens, meadows and pastures; by the fact that such crops as flax, castor-beans, &c., have not been estimated in the calculation; and lastly, by the injury to stock, the animals necessarily driven out of the country, and the general depreciation of property."

The foregoing has relation to a single species of insects, namely: the "Rocky Mountain Locust," (Grasshopper) and there are hundreds of others that multiply as rapidly and are almost, if not quite, as destructive.

Now, although it might be difficult to demonstrate satisfactorily in what manner birds could affect the increase or decrease of these and many other insects, yet it has been stated as a remarkable coincidence, that since the wholesale destruction of the wild animals of the great west—especially the feathered tribes, there is, comparatively, a greater increase, and a more frequent occurrence of destructive insects. Be this as it may, taken as a whole the beneficial qualities of birds—and especially insectivorous birds—are altogether unquestionable. Sufficient allowance is never made for the benefits derived from birds early in the season, and before there is anything in the way of fruit and vegetables for them to destroy. Moreover, many species that do not generally appropriate insects as food for themselves, yet invariably feed their young upon them. Indeed, there is hardly an *order* or a *family* of birds that are not, either directly or indirectly a benefit to the vegetable world—not excepting even the carnivorous species. Our eyes are in a measure shut to the constant operations of the feathered tribes, and if they destroy a single female insect, or the larva of the same, which during the course of the season would have been the parent of thousands, they illustrate in a most forcible manner how much "an ounce of prevention is worth more than a pound of cure," and also illustrate that with our eyes thus closed, it is impossible to tell what an elephant is like, by only feeling its tusk or its tail.

It is true, where there is a redundancy of birds and a paucity of insects, the former must have a *living*, and to obtain it, they will appropriate a part of the crop which they have helped you to save. If the naked questions were "Birds," or "No Birds," the matter would be easily decided and quickly, for with no birds at all, this world would soon be a bleak and barren waste, altogether unfit for human beings to dwell on.—Ed.

FRENCH COOKING.

"The French acquire their art of providing and cooking from example and habit. The skill is handed down from one generation to another, each generation adding to its own improvements. Among the professional cooks there exists marvellous skill of combination and change. They cook eggs in one hundred and twelve different ways; they have more

than three hundred sorts of puddings and sweetmeats, fifty methods of cooking beef and mutton, eighty of fowls. Among the rich classes the same dishes are not used oftener than once in three or four weeks, so great is the variety. One would suppose their dishes would disorder the stomach, but dyspepsia is a rare disease in France. Altogether, the French are an extraordinary people, and when their habits and methods of living are understood, we cease to wonder at their health and great wealth."

If there is any one domestic operation on this earth more than another which ought to be executed with care, economy and skill, it is that of cooking; and yet, among the average of American housewives, there is none that receives less attention and talent. A woman during the course of her life will change the style and quality of her dresses, her bonnets, her shoes and her furniture hundreds of times, and will even manifest some galling anxiety lest she be deemed unfashionable, and yet will stand as invulnerable as the "rock of ages" in regard to the style of cooking and baking—the *last* loaf in an experience of forty years will be, perhaps, worse than the *first*.

The morning, midday or evening *meal*, its time, its place, its quality and its order, is the most important domestic event within the life experiences of human beings, for on it depends the physical and mental health, as well as the happiness and content of the entire family. Hunger and thirst, normally manifested, are the imperative calls of nature through the ordination of nature's God, and cannot be with impunity lightly or disdainfully regarded. The Divine fiat has gone forth, and the physical and mental systems cannot be built up or recuperated without a scrupulous attention to the legitimate demands of these natural desires—and more, physical comfort and development is the plane and continent upon which must rest and be manifested the moral comfort and development of the creature.

There is not a single labor in the daily circle of domestic duty but what should be subordinated to the daily meals, and none more entitled to the thoughtful and patient skill of the prudent housewife, or her domestic assistant, whatever else may be necessarily omitted.

Everything that is eaten and drunken should be eaten and drunken "to the glory of God," and with reference to Him who has said, "Take, eat this and drink this in remembrance of Me." The careless, slovenly and disorderly manner in which the meal is prepared by the masses of the people, and the indecent haste and imperfect manner in which it is appropriated, is little short of daily profanation. Of course there is an opposite extreme, in which there may be a morbid fastidiousness manifested, which may culminate in mere sensualism, but we have reference to that intelligent exercise of domestic duty which makes the proper distinction between "eating to *live*" and "living to *eat*."

We are not advocating those excessive combinations of pickels, spices and condiments which are resorted to to create a false or morbid apetite, for the sake of its illegitimate gratification alone; but, as God has created an infinite variety of edibles for the delectation of the human family, and as the larger number of these require culinary preparation, as much skill should be exercised in this department of domestic labor, as is exercised in the production of a watch, a necklace, or a dressing-case. Much of the illness, the unhappinees, and the domestic disquietude of the world, may be traced directly to unskillful and unwholesome preparation of human food, and the barbarous manner in which it is partaken of.

The secret of French cooking lies in this, that their "skill is handed down from one generation to another, *each generation adding its own improvements;*" in which they differ from other people, who never add any improvements, but who make it a point to literally do things just as their fathers and mothers have done them—"good, bad or indifferent."—Ed.

THE HISTORY OF CULTIVATED VEGETABLES.

The Tomato or "Love Apple."

(*Lycopersicum esculentum.*)

The Tomato, or Love Apple, is the fruit of a herbaceous plant, having a hairy stem and rank smell; belonging to the Nightshade and potato family, nat. or *Solanaceæ*. It is a native of South America, whence it was early introduced by the Spaniards into Europe, and used as a vegetable. The editor of the *Bongardinier* (pour l'an 1818) describes the tomato as coming orginally from Mexico, but Mr. Sabine, in a paper he read on this plant, before the Horticultural Society in 1819, said that there is no authority for this statement, for though Hernandez, in his History of Mexico, mentions it, he does not particularly distinguish it as a native of that country. South America being the native country of this vegetable, it was of course unknown to the ancient Greeks and Romans; still the name Lycopersicum is stated to have originated with Galen, the celebrated physician, who lived about A. D. 131, but it has not been ascertained to what plant it was given. The name is derived from *lykos*, a wolf, and *persicon*, a peach, implying that the fruit was of such inferior quality as to be fit only for the use of that animal. Gesner, an eminent physician and naturalist of Zurich, born in 1516, entered into some investigation of Galen's on the subject, but they did not lead to a certainty, and his opinions are criticised by John Bauhin Anguillara, an Italian, in a work published in 1561, conjectures that the Lycopersicum of Galen was the tomato, and on this authority it is said to have acquired in after-times the name of Lycopersicum Galeni. In the *Adversaria* of Pena and L'Obel, published in 1570, it is called *Poma amoris*, *Pomum aureum*, and *Lycopersicum quorundam*, in conformity with Anguillara's conjecture.

In the "Elemens de Botanique" of Tournefort, 1694, we find he adopted Lycopersicum as the name of the genus in which he placed the particular plant now treated of. Dodoens, a Dutch botanist, described this plant as grown in his time in the Continental gardens, (see his "Pemtades," published at Antwerp, 1583), and that the fruit was eaten, dressed with pepper, vinegar and oil. It appears by the "Hortus Kewensis," to have been cultivated in England in the year 1596, but it must have been introduced some years previously to that date, as Gerard mentions it in the early part of his voluminous "Herbal," (published in 1597), which must have taken some years in compiling and printing.

This author calls the tomato *Pomum amoris*, and says, "Apples of Love do grow in Spain, Italy, and such hot countries, from whence myself have received seeds for my garden, where they do increase and prosper." He also tells us that "there hath happened into my hands another sort very notable with the former, only the fruit thereof is of a yellow colour." Parkinson, in his "Paradiseis," published in 1656, says that "the tomato grows naturally in the hot countries of Barbary and Ethiopia, yet some report them to be first brought from Peru, a province of the West Indies. We only have them for curiosity in our gardens, and for the amorous aspect or beauty of the fruit." There is no record when this vegetable was first employed as an esculent in this country, but Miller, in his "Gardeners' Dictionary," published in 1752, after describing them, says they were much used in soup in his time. Being a native of hot climates, the crop very much depends on the season in this country; when it is favorable, large quantities are produced in the open air. As far back as 1818, being a very fine summer, the growth of this vegetable around London exceeded the demand. Mr. John Wilmot, of Isleworth, states that from a crop of 600 plants that season, he gathered 400 half-sieves. The fruit on several single plants probably weighed 40 lbs.; some of the apples were of an extraordinary size, exceeding twelve inches in circumference, and weighing twelve ounces each.

It is stated that this vegetable, medicinally considered, is an excellent substitute for calomel, and can be taken when that valuable medicine cannot, and with less injury to the constitution (see McIntosh's "Book of the Garden.") In France and Italy whole fields of this plant are cultivated; so great is the demand in some parts of the latter country that there is scarcely a dinner served up in which it does not in some way or other form a part. In England the plant is more cultivated than formerly, and there has been of late an importation of this vegetable from the United States, preserved in tins. In the course of an extensive series of chemical experiments on plants by E. Solby, he found that the leaves and stems of the tomato contained nitric acid. It is stated in the "Gardeners' Magazine," vol. x., (1834), that tomato buds may be grafted on potatoes, and plants thus treated produce good crops of both vegetables.

The old European botanists wrote the name of this plant Tumatle. The Spaniards and Portuguese call them Tomates, which appears to be the original Peruvian appellation; and in Mexico this and several plants of the Solanum genus are called Tomatles.

There are several varieties of Tomatoes known by the form and color of their fruits. Duval, in his "Natural History of the Solanum," notices their distinctive characteristics, and describes each as a distinct species; but it is believed that they can all be referred to a common type, viz., the large tomato, with deeply-divided, rough, hairy leaves, and clusters of yellow flowers, succeeded by large lobed fruit of an orange red or scarlet color when ripe. Dr. B. Seeman, in his "Flora Vitiensis," or the description of plants in the Fiji Islands, mentions *Solanum anthropophagorum* (the cannibal's tomato), called Bogo dina, being one of the plants which Fijians cultivate very near Bure-ni-sa, or strangers' house, where the bodies of the slain in battle are always taken to be feasted with the fruit of this plant, and from which it appears that savages sometimes require a *relish* with their disgusting food.—H. G. Glasspoole, in *Science Gossip*.

PROPERTIES OF FUEL.—WOOD.

The wood we burn is composed chiefly of three elements, oxygen, hydrogen, and carbon, in various proportions. Of these, oxygen adds nothing whatever to its value as fuel: that depends upon the other elements; hence, the more oxygen, the less there can be of the other substances, and the poorer the wood. Oxygen and hydrogen are both gases. Neither has ever been liquified or solidified. Carbon, on the other hand, is a constant solid, and it is this property that makes our fires stationary. When wood is newly cut, it contains from twenty to fifty per cent. of sap or water, the quantity varying with the kind of wood, and with the season of the year. Exposed to air for a year, wood becomes air-dried, and parts with about half of its water; fifteen per cent. more may be expelled by artificial heat; but before it loses all its moisture, it begins to decompose or char. The presence of water in fuel therefore diminishes its value as such in two ways: it hinders and delays combustion, and wastes heat by evaporation. If one hundred pounds of wood contains thirty pounds of water, there is left but seventy pounds of combustible material. In the process of burning, one pound will be expended in raising the temperature of the inherent water to the boiling point, and six more in converting it into vapor, making a loss of seven pounds of real fuel, or seven-tenths of the entire combustive force. Besides this dead loss of about ten per cent. of fuel, the water present is an annoyance, by hindering free and rapid combustion. Equal weights of different varieties of wood in similar conditions produce equal quantities of heat, but it will not do to purchase wood by weight, owing to the varying quantities of its moisture. It is usually sold by measure, but even equal bulks will be found to vary in this latter respect as much as equal weights. A series of careful experiments conducted by

Prof. M. Bell, has been tabulated as follows, showing the heating values per cord of several American woods—shell-bark hickory being taken as the standard, and marked 100:

Shell-bark hickory,...100		Yellow oak,.....	60
Pignut hickory,.....	95	Hard maple,.....	60
White oak,.....	82	White elm, ...	58
White ash,.....	77	Red cedar, ...	56
Dogwood, ...	75	Wild cherry,.....	55
Scrub oak, ...	73	Yellow pine, ...	54
Witch hazel,.....	72	Soft maple,.....	54
Apple tree,.....	70	Chestnut, ...	52
Red oak,.....	69	Yellow poplar,.	52
White beech,.....	65	Butternut, ...	51
Black walnut,.....	65	White birch, ...	48
Black birch	63	White-pine,.....	42

The hardness of wood depends upon the density of its fibres, or rather of their packing. The same species of wood is not always of equal density. Those trees which grow in the forest, or on low wet lands, are not nearly so consolidated as their confreres in the open fields or on barren soils, where growth is slow and retarded.

During the process of combustion, heat is evolved in two ways; first by flame, second by red-hot coals. Soft woods are much more active in the first stage than hard, and hard woods are more active in the second than soft. The soft wood burns rapidly, with a voluminous flame, leaving but little coal; while the hard produces less flame, but yields a larger mass of coal. The cause of this is, partly, the free admission of air through the spongy texture of the soft wood, but it is mainly due to chemical composition. Pure woody fibre (lignin,) from whatever source, has the same composition: oxygen, 10 parts; hydrogen, 10; and carbon 12; in other words, there is just enough oxygen in it to unite in combustion with the hydrogen and produce water. But in most woods the fibre is impure, especially in the softer kinds. In hard woods, on the other hand, the lignin approaches much nearer the proper chemical combination. In soft woods hydrogen is in excess, hence the vehemence of their combustion at first; more carbon is taken up with the hydrogen, producing flame and smoke, and the coal residue is diminished. It is an error however to suppose that soft wood yields less heat than an equal weight of hard. It burns more quickly, to be sure, but the heat evolved is intense, much more so than that of hard wood in the same time, hence, for rapid and concentrated heat it is better adapted than the other.—*Yommans.*

BITTER BUTTER.

A lady correspondent of the Maine *Farmer* gives her views as follows upon this subject: Simply covering pure, sound cream in a clean tin pail will not of itself cause bitterness nor fermentation in the cream it contains; on the contrary, keeping it from contact with the oxygen of the air, would have a tendency to retard changes rather than hasten them. Cream is very seldom bitter in the summer, nor would it often be in winter if the milk were kept at a temperature as high as 65°, day and night. It is impossible to state just what causes bitterness in each specimen of butter or mess of cream. Sometimes it may be caused by weeds or poor feed eaten by the cows, but much oftener it is *indirectly* caused by a low temperature of the milk during the rising of the cream. Perhaps it would be more correct to say that a low temperature is the exciting or immediate cause, just as cold may be the exciting cause of a fit of sickness in the human patient.

It must be remembered that milk is a compound substance, and that it is subject to constant changes from the moment it leaves the udder until it is digested in the stomach of man or animals, or until it is entirely decomposed by the usual process of decay. Milk contains not only fat, curd, sugar and water, but also several essential oils which may add to or take from its agreeable flavor, according to the condition they may be in. It also often contains germs of fungi which, under certain conditions, may injure its flavor. These little vegetable growths are liable to increase with great rapidity, when the conditions are favorable, and thus to destroy or entirely change the character of the milk growth, and in the summer souring tends to counteract the germ. As milk is often kept in warm rooms, the souring process begins so soon that the milk is protected from the effects of germ growth. Heating or freezing milk will also prevent germ growth for the time being. That change in milk which produces bitterness can go on under a much lower temperature than is required for producing sourness. So, without attempting to explain in detail all the different changes to which milk is subject while the cream is rising, we may perhaps make the subject a little clearer by comparing the two conditions of sourness and bitterness with a railroad track and its turnouts. Temperature is to milk as a switch is to a railroad track. If the temperature is low, but not low enough to prevent all action, which would be at or near the freezing point, the milk will go off on the track towards a condition of bitterness, just as sure as there are any fungoid germs in it, but if the temperature is high enough to send it towards a state of acidity, bitterness is escaped. We seldom hear any complaint of bitter milk, cream or butter in warm weather. It is when the days begin to be cool in the fall or early winter, and before the milk is removed to winter quarters, that the questions begin to come in, "Why don't the butter come?" and "What makes the cream bitter?" It is possible there may be milk so pure that a low temperature would not cause bitterness in forty-eight hours, but we believe such milk is very scarce. The only perfectly sure preventative we have practiced is to heat the milk to 130° as soon as it comes in from the stables. People who do that seldom have any trouble of this kind.

TRANSPLANTING TREES IN FALL OR SPRING.

Mr. W. H. Ragan, Secretary of the Indiana Horticultural Society, gives his views on the above subject thus, in the Indiana *Farmer:* The principle through which successful propagation of plants by artificial means is insured, is the temperature of the soil in which the cutting is inserted, and a lower degree surrounding the top. Such conditions stimulate the root and retard leaf growth. A cutting inserted in soil heated from below, will strike root, as the gardeners term it, long before any apparent growth manifests itself above ground. This tendency is in accord with a natural law that demands first the permanency of the plant resources before a supply can be demanded therefrom. When these conditions are reversed, we see leaf-growth developed, with flattering prospects of success, when a few days of dry weather intervening, causes the plant to wither and die. On examination we find no root growth to supply the heavy drain by the developed foliage upon the plant, rendering death only a question of time.

Now, a tree transplanted early in the fall has the advantage of having its roots in warm soil, while its top is in the cool atmosphere, conditions almost analogous to the artificial means adopted by the propagation.

A transplanted tree, with a large portion of its roots lost in digging, becomes very much like a rootless cutting, requiring similar treatment to insure its growth. A tree transplanted early in the fall, while the ground is yet warm, will form numerous fibrous roots before cold weather, which, if protected by the mounding process, referred to in a previous article, will be ready in the spring to contribute to the wants of the tree, when drawn on by the developing foliage. Thus, the propriety of covering the roots warm and securely for the winter, will become apparent to the planter, as this tender growth will be easily damaged by the heavings of the frost and winds of winter, when your tree becomes even worse off than if removed in the spring. This mound of earth should be removed when spring opens up.

Trees transplanted in the spring have the reverse conditions of the fall planting to contend with, viz.: a high atmospheric temperature, tending to develop foliage, and a low temperature of the soil, retarding root growth, often resulting fatally, as in the case of the cutting referred to, when overtaken by a period of drouth.

The results of fall and spring planting, in favor of the former, are more apparent in case of trees of large growth, being due to the greater proportional mutilation of the root, and the larger expanse of evaporating surface in the foliage. Such being the case, the reader will readily perceive the importance of transplanting large deciduous trees early in the fall.

CHINESE AGRICULTURE.

I will show the teachers of agriculture another people, who, without the aid of science, of which they know nothing, have found the philosopher's stone, which these very teachers, in their blindness, vainly seek. I will point out to them a land, the fertility of which has for three thousand years never decreased, but, on the contrary, has been ever on the increase; and where more men are crowded together on a square mile than are to be found on the same space in Holland or England.

According to the testimony of all reports of our own and former times, made by Davis, Hedde, Fortune, and others, and which have been fully borne out by the special inquiries into the state of Chinese husbandry, instituted on the spot at my request, by the direction of the late Sir Robert Peel, it appears that in China, nothing is known of *meadow culture*, or of *fodder plants*, which are grown for the sake of cattle. *Farm-yard manure* is equally unknown; every field yields *produce twice a year*, and is never allowed to lie *fallow*.

Wheat often produces one hundred and twenty-fold and upwards (Eckelberg); and a fifteen-fold crop is considered an average yield (Davis). All those means which the German teacher of agriculture regards as *indispensable* for increasing the produce of our fields, and instructs his followers to employ, are not only *entirely* dispensed with by the Chinese farmer, but he actually obtains, without their co-operation, crops which exceed more than two-fold those of the German high farmers.

I readily admit that the Chinese are differently circumstanced from what we are in Europe. Most of them are Buddhists, and eat no beef; we eat more flesh, and must consequently grow fodder for the production of that article of our diet. But that is not the question before us, but one which concerns those principles that are to guide the practice of husbandry. Our teachers of modern agriculture do not tell us to grow fodder that flesh may be produced, but that we ought to do so for the purpose of forming manure; which clearly shows that they have no just conception of the true nature and aim of agriculture, and that they are altogether ignorant of scientific principles in the matter.

In laying down a scientific principle, the first point for consideration is not whether the application of it will turn out profitable or not, but whether it is *true;* for if it is a true principle it *must* prove advantageous.

In scientific agriculture "manure" finds no longer a place, for the notions that were formerly attached to the term are completely obsolete; just as is the case with the word *Phlogiston*, which, up to the end of the last century, was used to explain chemical phenomena.

So long as the nature of Phlogiston was unknown, that word served as a collective term to connect together, in an intelligible form, a number of *unknown* operating causes; but when it had once been settled what "Phlogiston" really meant and represented, the term had to give way to more correct ideas, and interpretations of phenomena became what they had never been before, viz.: real and trustworthy. Wood does not, on that account, burn differently now-a-days from what it formerly did; the air played the same part in its combustion then as now; and water still possesses the same property of making bodies wet; but what immense progress has been made by mankind, as the result of substituting

for the word "Phlogiston," the proper conception of the nature of air, of oxygen, and of the process of combustion!

A similar progress, but much more important, and infinitely more beneficial to man, will spring from a correct apprehension of the process of nutrition in plants and animals. Absurd as would now be the attempt of a teacher of chemistry to account for any chemical process by having recourse to Phlogiston, it is no less inadmissible in a teacher of scientific agriculture to explain a given fact by attributing it to "manure;" for, in the place of the obsolete notion of "manure," *which has no longer any meaning*, we have now for every plant certain positively known *elements of food*, to the united action of which we have to look for an explanation of the fact or phenomenon in question.

The doctrine which inculcates as necessary for the cultivation of the land, the production of manure by green crops, and along with this the maintenance of a stock of cattle, is erroneous.

It is necessary here to distinguish between *necessity* and *utility*. A stock of cattle may prove very useful to the farmer, and yield him a remunerative return in butter, cheese and meat; but this is quite a distinct affair from the tillage of his fields, and he ought to know, and must be taught, that there is absolutely no compulsion upon him to keep a stock of cattle.

The keeping of cattle is necessary for the production of manure, but the production of manure is by no means necessary for the fertilization of corn fields. In the system of the rotation of crops, *all that is required is* that green crops should be grown, and that their constituent parts be incorporated with the arable surface soil of the field; and it is quite immaterial for the cereals, whether the green crops be previously eaten by the cattle and converted into manure or not.

If lupines, vetches, clover, turnips, &c., are cut up and ploughed in, in the green state, their action is far more powerful.

There is no natural connection of mutual dependence between the production of corn and that of flesh and cheese: on the contrary, they interfere with each other, and must in science be considered as perfectly distinct and separate things; for the production and sale of flesh is carried on at the expense of grain, and *vice versa*. We cannot do without meat, milk, or cheese; and if the production of these articles be left entirely to the grazier, who, on his part, ought to meddle as little as possible with the growing of grain, both he and the farmer, as well as the consumer, would profit by it. In England this separation of the two pursuits is gradually gaining ground; and when, as is to be hoped, our German farmer shall have succeeded, in the course of time in mastering the multiplication table, we may expect that the same separation will take place in Germany. Chemical manufactories are not established anywhere and everywhere, but only in localities offering certain natural advantages; and agriculture, after all, is simply an industrial pursuit, like any other.

In China they know nothing of the fundamental principles upon which German agriculture is based. Except green manuring, they neither know nor esteem the application of any kind of manure beyond the excrements of man. The other matters occasionally employed by them to increase their crops, are in quantity and effect utterly insignificant, when compared with the use of human excrements.

It is quite impossible for us in Europe to form an adequate conception of the great care which is bestowed in China upon the collection of human excrements. In the eyes of the Chinese, these constitute the true sustenance of the soil (so Davis, Fortune, Hedde, and others tell us), and it is principally to this most energetic agent that they ascribe the activity and fertility of the earth.

The Chinese, whose house is still, what it most probably has ever been, a tent, only that it is built of wood and stone, knows nothing of privies as we have them in our country; but, in their stead, there are found in the principal and most comfortable part of his dwelling, earthenware tubs, or cisterns most carefully constructed of stone and lime; and the notion of utility so completely prevails over the sense of smell that, as Fortune tells us ("The Tea District of China and India," vol. I., p. 221), "what in every civilized town in Europe would be regarded as a most intolerable nuisance, is there looked upon by all classes, rich and poor, with the utmost complacency, and," he continues, "nothing would cause greater surprise to a Chinese than to complain of the stench arising from these receptacles." The Chinese do not disinfect this manure, but they are perfectly aware that it loses part of its fertilizing power by the action of the air, and they, therefore, take great care to guard against evaporation.

Except the trade in grain, and in articles of food, generally, there is none so extensively carried on in China as that in human excrements. Long clumsy boats, which traverse the street canals, collect these matters every day and distribute them over the country. Every Coolie who has brought his produce to market in the morning, carries home at night two pails full of this manure on a bamboo pole.

The estimation in which it is held is so great that everybody knows the amount of excrement voided per man in a day, month, or year; and a Chinese would regard, as a gross breach of manners, the departure from his house of a guest who neglects to let him have that advantage to which he deems himself justly entitled in return for his hospitality. The value of the excrements of five people is estimated at two Teu per day, which makes 2,000 cash* per annum, or about twenty hectolitres (440 galls.), at a price of seven florins.

In the vicinity of large towns these excrements are converted into poudrette, which is then sent to the most distant places, in the shape of square cakes, like bricks. For use these cakes are soaked in water and applied in the fluid form. With the exception of his rice fields, the Chinese does not manure the field, but the plant.

Every substance derived from plants and animals is carefully collected by the Chinese and converted into manure. Oil cakes, horn and bones are highly valued, and so is soot, and more especially ash. To give some notion of the value set by them upon animal offal, it will be sufficient to mention that the barbers most carefully collect, and sell as an article of trade, the somewhat considerable amount of hair of the beards and heads of the hundreds of millions of customers whom they daily shave. The Chinese know the action of gypsum and lime, and it often happens that they renew the plastering of the kitchens for the purpose of making use of the old matter for manure.—(Davis.)

No Chinese farmer ever sows a seed of corn before it has been soaked in liquid manure diluted with water, and has begun to germinate; and experience has taught him (so he asserts,) that this operation not only tends to promote the growth and development of the plant, but also to protect the seed from the insects in the ground. (Davis.)

During the summer months, all kinds of vegetable refuse are mixed with turf, straw, grass, peat, weeds, and earth, collected into heaps, and when quite dry, set on fire; after several days of slow combustion, the entire mass is converted into a kind of black earth. This compost is only employed for the manuring of seeds. When seed time arrives, one man makes holes in the ground; another follows with the seed, which he places in the holes; and a third adds this black earth. The young seed planted in this manner grows with such extraordinary vigor that it is thereby enabled to push its rootlets through the hard solid soil, and to collect its mineral constituents. (Fortune.)

"The Chinese farmer sows his wheat, after the grains have been soaked in liquid manure, quite close in seed-beds, and afterwards transplants it. Occasionally, also, the soaked grains are immediately sown in the field properly prepared for their reception, at an interval of four inches from each other. The time of transplanting is towards the month of December. In March the seed sends up from seven to nine stalks with ears, but the straw is shorter than with us. I have been told that wheat yields 120 fold and more, which amply repays the care and labor bestowed upon it." (Eckeberg, Report to the Academy of Sciences at Stockholm, 1765.)*

In Chusan, and the entire rice districts of Chekiang and Keangsoo, two plants are exclusively cultivated for the purpose of sowing as green manure for the rice fields; the one is a species of Coronilla, clover is the other. Broad furrows, similar to those intended for celery, are made, and the seeds are planted on the ridges in patches, at a distance of five inches from each other. In the course of a few days germination begins, and long before the winter is gone, the entire field is covered with a luxuriant vegetation. In April the plants are plowed in, and decomposition soon begins, attended with a most disagreeable odor. This method is adopted in all places where rice is grown. (Fortune, vol. I., p. 238.)

These extracts, which, from want of space, cannot be further extended, will probably suffice to convince the German agriculturist, that his practice, when compared with that of the oldest agricultural nation in the world, stands somewhat in the position of the acts of a child to those of a full-grown and experienced man. The Chinese system of husbandry is the more remarkable, if we take into account what they have achieved in other mechanical and chemical pursuits, more incomprehensible, as they owe everything to the purest empiricism. For the Chinese system of instruction has, for thousands of years, so thoroughly excluded every inquiry after an ultimate cause of things, which might possibly have led to the discovery of scientific principles, or to the establishment of a science, that the capability of making further progress, except by imitation, would seem to be destroyed to the very root in that people. The study of the physical laws which has led European nations to the invention of the steam-engine, and of the electric telegraph, and has enabled man to control and turn to his account the forces of nature in numberless other instances, is a matter of absolute impossibility to the Chinese scholar. It is the express command of their first and most ancient teacher of religion, Confucius, that the student shall never allow any thought to arise in his mind but such as he finds written in his books.

It is quite true that what suits one people may not on that account suit all countries and all nations; but one great and incontrovertible truth may, at all events, be learned from Chinese agriculture, viz.: that the fields of the Chinese cultivator have preserved their fertility unimpaired, and in continued vigor ever since the day of Abraham, and of the building of the first Pyramid in Egypt.† This result we also learn has been attained solely and simply by the restitution to the soil of the

*100 Cash are equal to about 4½d.—(Fortune.)

*The *Dresden Journal*, of 16th September, 1856, contains the following statement: "As we are informed from Eibenstock, forest inspector Thiersch, of that place, has for several years past made very successful experiments in transplanting winter corn in autumn. He transplanted the young plants intended for the purpose in the middle of October, one peck of seed corn to one hundred square rods of ground, which produced an uncommonly rich crop. There were roots from which sprung as many as fifty-one stalks with ears, and the latter contained as many as one hundred grains."

I have applied to Mr. F J. Thiersch for more precise details of his experiments; and from his statement as to the cost of the operation and the return made, there appears to be no doubt that the Chinese mode of husbandry might also be resorted to with advantage in Europe, in localities where the land is rich and labor abundant. One of my friends, who visited M. Thiersch's experimental field, told me that he had counted twenty-one stalks with full ears on a plant pulled up at hazard (not picked out.) For poor fields this method of cultivation is entirely unsuited.

† Vessels of Chinese porcelain are found in the pyramids of the same shape, and with the same characters of writing on them, as are made in China at the present day.

mineral constituents removed in the production; or, what amounts to the same thing, that this has been affected by the aid of a manure, of which the greater portion is lost to the land in the European system of civilization.—*Liebig's Letters on Modern Agriculture.*

[The foregoing exhibits so much of a practical character, and moreover so much against which there exists yet such deep-seated prejudices, notwithstanding the philosophy of the question, that we give it a place in THE FARMER, as a system that will perhaps be studied with more profit in the future, than it has yet been up to the present time. A century hence, and with the same ratio of increase in our population as that which has characterized our first century as a nation, may put an entire new face on the question, and we may gather something from it that will be useful.]

LIGHTNING AND LIGHTNING RODS.

From this time till frost comes, look out for the advent of the lightning-rod man. He will call at the house and enquire for the owner, and is never so happy as when informed that he is absent. This gives him an opportunity to scare the women folks, who are very likely to be "afraid of thunder." He will represent the danger of living in a house that has no lightning-rod attached to be so great that they will not "sleep nights" till one is put up. Having talked for an hour, he will leave a tract, half of which is devoted to statistics of mortality from lightning, and the other half to the advantages of the celebrated patent, spiral, tubular, double-and-twisted thunder exterminator.

He calls again in a week and expresses his surprise that the house is standing and its occupants are alive. The head of the family is ready for a trade, for he fears that the female members of this household will die of fright if the house is not equipped with a lightning-rod before the next thunder cloud appears. He signs a skilfully worded contract, by the terms of which he obligates himself to pay so much per foot for a sufficient amount of rod to protect the building he occupies. Of course the lightning-rod man, being an expert at the business, is constituted sole judge of what length of rod is necessary. He roughly guesses that about fifty feet will be required.

The next visit is for the purpose of putting up the celebrated lightning-demolisher and thunder-tamer. A survey of the house is now made for the purpose of seeing how many feet of rod the signer of the contract can be forced to pay for. You may depend on the lightning-rod man to figure this very fine. He understands how to bend the rod round the eaves of the house, how to carry it to the extreme corner, and how to attach it to the most distant chimney. He is engaged in selling rods by the yard and he has no notion of disposing of a scant pattern. When measured up with all its crooks and turns it is found to be about three times as long as was originally supposed.

If this was the only swindle connected with the transaction there would be less cause of complaint. But it is not the only one. The rod is generally sold for four or five times as much as it cost. Most of the claims for the efficiency of the rod, the ability of the point or points to attract lightning, and for its peculiar method of attachment to the building are fraudulent. Some smart fellow got a patent on some particular turn or twist in a piece of fragile metal that could not support itself, and used it for the purpose of selling an article almost entirely useless.

Every electrician knows that the fewer turns, twists, curves, angles, and joints there are about a lightning-rod, the better it is for the purpose for which it was designed. The truth of the matter is, there has been no essential improvement on the original lightning-rod as brought out by Dr. Franklin. That was a straight continuous bar of wrought iron, secured to a building by attachments of wood or metal. It was a very inexpensive and simple contrivance, but it conducted electricity better than most of the new-fangled humbugs that have taken its place.

. The cheapest way to procure a good lightning-rod is to buy a bar of round iron three-fourths of an inch in diameter, and of the requisite length to reach ten feet above the highest point of the roof, to extend over the roof on the most direct line to the ground, and to continue into the earth till permanent moisture is reached. This can be secured to the chimney, the roof and walls of the building by means of iron staples. The tip of the rod should be cut in the form of a screw so as to fit into a polished point that can be obtained in almost any hardware shop. Sometimes points may be obtained that will fit over the end of the rod.

Instead of a round iron bar a strip of iron one inch wide and a fourth of an inch thick may be used, and in some respects it is superior. This strip may be pierced with holes and tacked directly to the building and chimney, or it may be secured by staples, or by pieces of iron bent over it and secured by screws. Whichever kind of conductor is used, it is advisable to paint it of the same color as the house, so it will not act to disfigure it. The paint will protect it against the action of the air and rain, and will not essentially injure its conducting power.

At present, all persons versed in the laws that regulate the passage of electricity, look with disfavor on any attempts to insulate a rod by means of pieces of glass. On the other hand they advise connecting the rod directly with the building, and particularly with metal eave-spouts, or other metal surfaces about the exterior of the building. The old idea that electricity only passes over the surface of a substance is abandoned. It is now accepted as a fact that electricity in motion pervades the entire substance of the object through which it passes. This dispenses with the argument in regard to tapes and ribbons of metals as conductors of electricity.

The matter that demands most attention in putting up a lightning-rod is the connection it forms with the earth. This is the thing to which lightning-rod men give the least care, as digging in the hard earth is not the kind of occupation they prefer. It suits their purpose better to sink a crow-bar into dry sand and to drop the end of the bar into it. The end of the rod should reach permanent moisture, or else it should extend into a pit filled with charcoal, coke, or scrap iron, either of which constitute very excellent conductors of electricity. —*Chicago Times.*

[We, of course, do not hold ourselves responsible for the sentiments of the foregoing, nor yet for the following from Prof. Wise; nor do we republish them in disparagement of any of the men, or any of the systems, involved in the *lightning-rod business.*

But of late years the phenomena, and the experiences of those who have been both practically and scientifically interested in the subject, have been so various, have taken such a wide range, and have culminated in conclusions so different from those which had previously been current among the people, that we think it about time that both sides of the subject were seriously considered. If lightning-rods are any protection to buildings—and it is very extensively presumed that they are—or if they are entirely useless—and a very intelligent portion of the community believe that in their present forms they are—the people who incur the expenses of their erection, or who may desire to save that expense, ought to know just where they are standing. There is one consideration, in addition to arguments and practical experiments, which also ought to have its due weight in the matter, in these rather degenerate times. The *motives* of those who are the zealous advocates of lightning-rods, and those who from philosophical grounds deem them entirely useless, are of quite a different character, although there may be a certain phase of self-interest in both; but the one is more likely to be exercised in behalf of self alone, perhaps, than the other.—*Ed.*]

Prof. John Wise writes as follows to the Philadelphia *Times:*

About dusk last evening, while in conversation with Prof. Blasius upon the philosophy of storms, the elements of nature were clever enough to give us an ocular demonstration of how a storm is precipitated upon us. We were sitting at the time in front of 1951 North Eleventh street. A streak of cloud, running from southwest to northeast, marked the node of the polar current from the south. Soon the heavens were all ablaze with lightnings—heat lightning, flashing from cloud to cloud; forked lightning, running horizontally, and spitting out lateral streaks along its track; zigzag lightning, crashing downward with fearful detonations. It was a brilliant display of natural fireworks. The orange-colored flashes were followed by heavy thuds and rumbling reverberations; the vivid, diamond-like discharges were followed by crashes like the explosion of a thousand percussion caps. The orange-colored was low tension, the diamond-colored high tension. It seemed as if the polar current supplied the electricity and the tropical current fired it off. A few hours later a second storm was precipitated over the city. This one came with artillery and battering rams. The destruction from the wind was the carrying away of flags, awnings, roofs, etc.; that of the electricity in the manner of thunderbolts. The building under the roof of which the *Times* thunders forth its anathemas against the political corruption of the day was the recipient of a grand salute from Jupiter's artillery. The shot came from the southwest, and took in its range one of the sandstone pinnacles on the parapet wall. It broke off one of its ornate projections and then struck the roof, which is of corrugated iron, a good compensator. Now this has on it a range of chimneys, four of them lined from west to east. The electrical force is not manifest on the western one. On the second one, which stands in the line of projection, the iron plate on its top was displaced and the mortar between the bricks was forced out and scattered around to a considerable extent. The next chimney eastward showed a less mechanical action on its mortar; the last one in the row still less, showing conclusively that as more surface of metal was flashed over the less became the force. This temple, like that of Solomon, has its immunity from harm by lightning in the metal that forms its roof.

Another shot took in its range the flag-pole of the Custom House (the old United States Bank building.) It shivered the flag-pole into fine kindling wood, but one big splinter was hurled over an adjoining building, which in falling planted itself into the slate roof. The pole was shivered down to where the metal sheeting of the roof was in contact with it. Beyond that not a trace of the electric force is visible—another conclusive proof that metal roofs afford certain protection from lightning strokes. About a week ago Hirsh's umbrella house had a similar electrical visitation, but having a metal roof nothing was damaged but the flag-pole. These are a few of the hundreds of lightning strokes that I have examined that show the protection in metal roofs. The "lightning rod" as a protection in itself is of no more value as a protection than a bodkin would be to ward off the ball fired from a columbiad. I may add that all thunderbolts come from the westward, in the line of direction of the storm.

HEREDITARY INFLUENCES.

There are probably few persons now living who have paid the subject any attention, who are not inclined to attribute to the influences of inheritance many more characteristics than were formerly assigned to that source. Less is heard of the term "instinct" and more of the term "hereditary." It has been seen that much of that which we call intuitive in animals and men, is only the same knowledge, perhaps a little exaggerated, as their parents possessed; and when, as in the case of the cave swallow, we know the origin of certain habits which are now just as much innate in the young as others, the origin of which is lost, we are inclined to consider all instinct, so-called, but the sum of inherited experience. The parent transmits to the young not only its general form and external appearance, and

not only its specific mental likeness, but also those peculiarities which distinguish it as an individual, and, to a less extent, those traits which it has acquired during its life. Instincts are habits fixed by heredity transmission and are unconsciously obeyed, and this rule admits of few exceptions. Pointer pups taken into the field, unaccompanied by older dogs, will stand with muscles strained and eyes fixed at the first partridge they see. The young shepherd dog shows a disposition to guard stock. All spiders construct webs, yet each variety constructs its web peculiar to itself. The dog not only inherits scent, but also that which enables him to know a definite kind of game. Certain races of Indians also inherit scent, and so do negroes. Dr. J. S. Bailey mentions a family of negroes who inherited this faculty in a remarkable degree. No matter how stealthily a white person approached their cabin at night, their conversation would immediately be hushed, and they would discover his approach by their scent.

But besides this, changes in the manner of life, habits made necessary or caused by new conditions and environment are transmissible; and here enters that wedge of variation which seems to have been instrumental in producing the present diversity of form among animals and plants. Before the settlement of this country all the swallows nested in hollow trees, in caves, and under the ledges of rock, as they yet do in the far west and in the remote forests of the British provinces. But when farmers began to till the land, and to keep cattle, and erect houses, the swallows, probably at first attracted by the greater number of insects, seized upon the outhouses and chimneys as more suitable places for building their nests, and have gradually abandoned the woods in the settled parts of the country altogether. Their young have not gone back to the woods and caves—although some of the first generations may have done so—and have little by little modified the shape of the nest to suit the situation, until there is a very great difference between the nests built in our barns and those built by the wild birds of the same species in the Rocky Mountains.

It was long ago found out that certain advantageous traits in horses and cattle could be perpetuated and augmented, the power to make these peculiarities more lasting and more prominent increasing with each generation. Examples of this are numerous and known to every breeder, and it is upon the faculty of inheritance, under advantageous conditions, that Mr. Darwin hinges his doctrine of evolution by natural selection. But, not only do good features perpetuate themselves, but evils and deformity also come under the influence of inheritance, and are the surest of all to descend from generation to generation. Even those deformities that arise from artifice or accident are transmissible. Many Indian tribes of Peru, and some of the Oregon coast, had peculiar modes of distorting the heads of their children, and now many children are born with their heads out of shape in the peculiar way. Esquimaux sledge dogs and Manx cats usually have to suffer the loss of their tails, and their puppies and kittens are often born tailless; and in rare cases the loss of a limb in men has resulted in their children having but one arm or leg. Blindness, deafness, insanity, idiocy, and morbid appetites are all inherited, and statistics abound to show the extent to which this influence has tainted the human race.

In view of these facts, which recent investigations have brought to light, the study of the heredity of disease, in their relation to mankind, becomes one of the deepest interest and importance. To a thoughtful man, it is fearful to consider how unwittingly men are daily sowing seeds of disease and infirmity in their frames, which, once rooted, can never be eradicated, but which will reappear again and again in one form or another. No man may contract asthma, rheumatism, gout, consumption, or any disease which affects his blood, through carelessness or whiskey, or any other form of dissipation, and plead that it hurts himself alone. If he have children he surely curses them with an infirm constitution, and opens an ever-broadening, ever-deepening channel for a new stream of misery to flow through the world. Our insane and idiot and inebriate asylums, our hospitals for consumptives and scrofulous patients, even our prisons are witnesses of the certainty of this result. It has been said that there never now occurs—no such thing is recorded in recent times—an original case of syphilitic disease. This may be too strong a statement, for some physicians doubt its truth; but it is certain that hundreds of innocent families bear in their systems and faces to-day the living, loathsome marks of their remote forefathers' vices, who are not aware of the fact and cause of their suffering. Not alone does the good men do live after them. The iniquities of the fathers are visited upon the children even unto the third and fourth generation. For any one who cares for his race or his children, could there be a stronger argument for leading a pure, wholesome, careful life, than these facts contain?—*Forest and Stream.*

[Analogous to the same subject, only on a higher plane, is the following from the editorial columns of the *Public Ledger.*]

Reproductive Force.

There is nothing more wonderful in life than its reproductive force. Everything which has in it the element of growth has also the power of creation. Every organism, from the humblest blade of grass to the most illustrious man, is not only living its own life, but impressing it upon myriads of other similar existences, and this not by any intentional action of its own, but by an inevitable law of its very being. In the simpler forms of life this transmission of self appears to be chiefly in the direction of propagation. The plant lives its individual life, and drops its seeds, which springs up into similar organisms. As we rise higher in the scale, however, we notice that this reproductive force is widened in its action. The bird not only lays its eggs, but cherishes its young, and doubtless maintains some degree of social influence upon its feathered mates. But it is reserved for man to exercise this power in the fullest and broadest sense. He reiterates himself, not only in his children but in all with whom he comes in contact. He impressed not only his physique upon a few, but his character upon the many. There are births of conduct going on continually, and each one of us is a parent. As the sun sheds unconsciously its light and heat, and makes all things within the range of its influence in some degree like itself, so we shed our dispositions and qualities upon one another, and transform them in some degree to our own image.

This influence is something quite apart from any voluntary and intentional action. We often deliberately set to work to produce some change in our friends or in society at large. Perhaps we work hard to improve a man, to educate a child, to promote a reform or to break up a vice. We may bring all our powers to bear upon the matter in hand, we may set other influences in operation, we may descant eloquently upon the advantages of one course and the evils of the other; nay, we may even call to our aid all the restraints of the law and the rewards of public favor, and with it all, we shall not accomplish so much as will a single, good and pure life by its mystical attraction. The one is artificial, spasmodic, noisy; the other is natural, constant, quiet; the one is like medicine given to counteract some evil, the other is a like a pure and bracing atmosphere entering into the lungs and giving new vigor and tone to the entire system.

Take the child from its earliest years—how is its character built up, its disposition engendered? Partly no doubt by the parents' active and earnest labors and precepts, but much more largely by their lives. The opportunities they have for deliberately instructing him are a mere nothing compared with those that he has for observing their conduct, drinking in their opinions, and finding out their real desires, feelings and aims. He is told, for instance, of the sacredness of truth, and the sinfulness of deceit, but if he sees those around him practicing small artifices, if he hears unfair transactions recounted as good jokes, if he is himself duped and misled by insincerity, how much will the moral lectures affect him? They will but add another instance of duplicity, and strengthen within him the spirit of dishonesty which he is constantly absorbing.

The same thing is going on everywhere, and with every one. We are all continually and inevitably influenced by the lives of those around us. It is not that we copy them, but that we unconsciously absorb them. We are, as it were, pouring our natures into each other all the time, without thought or retention. The stronger the nature the more potent is its magnetism. The closer we approach to the sphere of another, the more we partake of his character. Patience, courage, hope and enthusiasm, are not taught, but infused. They are transmitted by an electric current that no power of ours could create, and certainly none could destroy.

We can never fully estimate this reproductive force. Not only every action, but every thought, feeling, desire and aim is full of potency upon others. They are constantly being shared, and are ever writing their impress on the characters of those with whom we mingle. We are always either lifting some one up or drawing him down to our own level. An atmosphere of some sort is always emanating from us, and permeating others. Is it pure or corrupt? Are we infusing the spirit of justice, truth and love, or of selfishness, deceit and hatred? Are we instilling the habits of industry, temperance and frugality, or of idleness, sensuality and extravagance? As the fountain is, so will be the stream. If we would know what influence we are shedding, we have but to examine our most cherished thoughts, hopes and purposes. We may fancy them hidden in our own breasts, but it is not so. They are all at work reproducing themselves in countless forms in the hearts of others, and building up their characters for good or for evil.

REVERSION OF SEEDS.

Some recent legal decisions have compelled the majority of the seedsmen in this country to put upon their seed packets a disclaimer to the effect, that while they will use every effort to supply their customers with seeds that are fresh and true to name, yet that they will not hold themselves responsible for the same. This action has been brought about through a suit at law, in which a prominent seedsman was mulcted in heavy damages because some cabbage seeds which he sold failed to produce any heads, the plants producing nothing but loose leaves, in all respects resembling the wild cabbage in its native state. The case was tried without any endeavor on the part of the seedsman to call in botanists of standing to explain the phenomenon, and through this neglect, we think, he lost his case.

The subject is an interesting one, as it involves the doctrine of reversion in vegetable life, or the tendency of all varieties of fruits, plants, and vegetables to revert back to the original type or species from which they were primarily derived. It is, therefore, very important, and as it has a practical bearing on the cultivation of plants, we will endeavor to enlighten our readers about it, and give them some important hints in this direction upon the cultivation of flowers and vegetables.

All double flowers, nearly all cultivated vegetables, and nearly all the fruits we grow are aberrant or abnormal forms of some original type species as it exists in nature. How these aberrant forms are produced we do not know, except that they come from cultivation in which the plant is over-supplied with food, water, or some other substance necessary to its growth in a state of nature. Take the cabbage, for instance. In its native state it grows three or four feet high, with long, narrow leaves, and no tendency to head, very much resembling a depauperate specimen of Scotch kale. Cultivation has caused the leaves to widen out, and to lose their tendency to elongate; the stem has also lost this power of

elongation, the leaves fold over, and a head is formed. So with beets, carrots, parsnips, and the whole list of vegetables, the aberrant form being sometimes in the root, sometimes in the leaves, and again in the fruit.

It is the same with our fruits. The apple and pear, as we cultivate them, are derived from fruit perfectly inedible in its natural state; the peach, from a small, dry, bitter fruit; the plum, from a sour, astringent fruit; and so all through the list.

It is well known to vegetable physiologists that the petals and the organs of fertilization in plants are only leaves developed into other forms for special purposes. In double flowers, properly so called, the stamens or pistils are changed into petals, or else there is a larger or more numerous development of these petals than is usual to the plant in a natural state; and sometimes these are scarcely transformed from leaves, as in the case of the double green rose or the double green-flowered dahlia. In the case of the dahlia and plants of the same natural order (*Compositæ*), the stamens and pistils remain unchanged, but the petals of the disc rays all assume the form of those of the floret rays. In most double flowers the plant appears to lose the vital energy or power to transform the leaves into sexual organs, and does not appear to be able to go beyond the transforming of the leaves into petals. But what causes this loss of power is unknown. The double narcissus becomes single when planted in poor soil, so that in it and some other similar cases it can not be owing to insufficiency of food that the duplexity of petals is produced, while, on the other hand, excessive vigor and health do not do it, for double flowers have never yet been obtained by promoting the vital energy of the plant.

It appears to be brought about in the seed, as it is in this that we seem to have some power of controlling the effect. If seeds of the ten-week stock are sown immediately after ripening, although they may have been saved from double flowers, scarcely a double flower will be produced; but if the seeds are kept three or four years, the large majority of the plants raised will produce double flowers. Melons, cucumbers, and plants of this kind will run all to vine, and produce but few fruits, if the seeds are quite fresh; but if kept three or four years, the seeds produce plants of less exuberant growth, but of greatly increased fertility.

It is often recommended to save seeds only from the best specimen plants; but this is only applicable to cases where the plant is not an aberrant or abnormal variety. If we sow a hundred seeds each of a Newtown and a Spitzenberg apple, a Bartlett and a Seckle pear, a Greenage and a Golden Drop plum, we are not at all likely to get a seedling equal to the parent, and most of them will be perfectly worthless. We may sow a hundred seeds of the finest double roses or dahlias, and not get one worth having, and perhaps the majority of the flowers will be single. For this reason, especially in the case of double flowers, some experienced cultivators have recommended the saving of seed from semi-double or not fully double flowers, as nature appears to carry the process forward until a, to her, artificial perfection is reached, and then suddenly reverts back to the original starting-point, and then begins the process anew.

In cases where the abnormal development is in the root, as in the carrot, beet, and parsnip, and not in the foliage and the organs of fertilization derived from it, there is not the same tendency to revert back. In such case seeds should be saved from the most perfect specimens and sown as fresh as possible, as the abnormal development in such cases appears to arise from an excess of vital energy, superinduced by an excess of food furnished to the plant.

Changes in color and form among flowers and fruits are what are known as sports, and are all changed by leaps, or suddenly, and not by gradual development, as when a peach-tree produces nectarines on some of its branches, or some colored flower produces seeds which produce plants with white powers, and *vice versa;* or the seed from a small cockscomb produces plants with large heads. Aberrations of this kind, especially in colors, can be made permanent by saving seeds from the best and purest colored flowers, and will generally come true, as the organs of fertilization are not affected, as in the case of double flowers.

A little observation and consideration of this subject will save our readers from disappointment in some of their gardening operations, by leading them not to expect to have plants or flowers of abnormal forms to always preserve their characteristics. To a certain extent we can control nature in our operations, but after we have gone a certain distance she revolts.

For The Lancaster Farmer.

ABOUT MUSHROOMS.

My esteemed friend, H. M. Engle, a few weeks ago, brought me a fungus to name, stating that it would be desirable to have a reliable mark to distinguish those that are eatable from those considered poisonous.

In my botanical pursuits I neglected this branch. About twenty-five years ago, happening to spend an afternoon with a friend, contiguous to a shady, moist woods, in the latter part of September, my attention was attracted by the profusion and great variety of fungi growing all around, and induced me to sketch and take notes, as well as to collect quite a number, with the expectation that by the aid of the figures and classification in London's Encyclopædia of Plants, I would be enabled to name them.

True, the genera I could determine, but those described being European, I was still at a loss to name our species for want of a list of such known to be native. I endeavored to get the work referred to by Persoon. A list of 3,043 species of fungi, which came under the observation of Lewis D. de Schweinitz, around Bethlehem, Pennsylvania, and by him communicated to the Philosophical Society of Philadelphia, in 1831. Others have since added to this list from the north. Rev. Dr. M. A. Curtis, in his catalogue of Plants of the State of North Carolina, (Geological Report), 1867, gives 438 species of Agarics, of which he considers fifty-six as esculent. But, alas! these catalogues are locked up in these societies and can not be had. Hence, the study with reference to those found and named is barred, and consequently no satisfactory report can be made or definite opinion given.

In an English work, recently published, called "The Modern Housekolder; a Manual of Domestic Economy in all its Branches," by Ross Murray, is neatly executed, with accurate figures of the most useful of British fungi, with descriptions and mode of cooking and propagation. Still they may, and in some respects do, differ from our native species, so that I shall not attempt in this article to treat this subject specifically, but, in a general view, present some prominent facts worth knowing, gleaned from at least ten different sources, in addition to my own observations. The fungi derive their nutriment from the substance on which they grow, and not from the air, as the allied class of Lichens. Mr. Berkeley says: "The *Fungi* may be recognized either as the creatures of corruption, *i. e.*, springing from various bodies, whether animal or vegetable, in a more or less advanced stage of decomposition—or as parasites of living bodies, producing an injurious change. The ephemeral toadstools of the hot-bed, the mushrooms of our rich pastures, the sap-balls on decaying trees, the moulds which infest our food, and even the tissues of living animals, the mildew, blunt, and smut of our corn crops, &c., are classified with the fungi, of which there are two great sections, and these divided into natural orders and tribes. A vast number of species are known, and many of these are of great importance to man, either from their useful or their mischievous properties. The mushroom, truffle and morel, delicacies well known to the table, and highly prized and extolled by many."

Schwaegrichen, the editor of Schweinuz's first contribution to the knowledge of our North American species, derived great satisfaction in eating those which possessed neither *bad flavor* nor *disagreeable smell*, (the italics are mine) and which had a *tolerably firm* consistency, eaten with bread and drinking nothing but water; such a diet pursued for several weeks, as he affirms, increasing his strength and improving his health. Persoon who furnishes the foregoing, also says: "I have observed that fungi, if moderately used, are very nourishing." The substance known as "*fungin*" is equally present in those that are harmless or poisonous, and is itself highly nutritious, containing nitrogen; they are very similar to animal matter in their composition, and like animals give out carbonic acid gas, and not like other vegetables absorb carbonic acid from the atmosphere and respire oxygen. It seems the only criterion to judge of quality is smell and consistency of their texture. The flavor is variable, compared in some to the smell of new made hay, some like violets, anise, walnuts, new meal, &c., which are all rather agreeable. Others again have an odor so intolerably fetid as to be nauseating. With regard to form, color and general features, some edible species can not be distinguished from the magnificent species of the *Amanita* (*Agaric*) *Muscarius*, the Fly Agaric of Europe, and found in our woods. The Czar Alexandria lost his life by eating of it, and yet we learn that in Kamtschatka they are used as an article of food, and also to keep up a drunken frolic, the intoxication being similar to that produced by the *haschisch* and *Maygon* in the East. Thus we learn that while the same species are used as food in Russia, they are condemned in Europe. The Parasol Agaric (*Agaricus procerus,*) often met with, is in *high request all over the continent*, called the king of edible fungi. "Whenever an agaric on a *long stalk*, enlarged at *the base*, presents a *dry cuticle*, more or less *scaly*, a dark colored *umbonated top*, a *moveable ring*, and *white* gills, it must be *Agaricus procerus*, and it may be gathered and eaten without fear, says a good authority. The fungipophagists lament the tons of valuable food wasted through neglect of fungi as articles of diet. Dr. Badham, Dr. Greville, Berkeley, Mr. Worthington Smith, and others are enthusiastic in their praise. Dr. Badham compares some of them as "beefsteaks" growing on oaks in the shape of *Fistulina hepatica. Agaricus fusipes*, to pickles in clusters under them. Puff-balls, not unaptly compared to "sweet-bread," for the rich delicacy of their unassisted flavor. *Hydna*, as good as oysters, which they somewhat resemble in taste; *Agaricus deliciosus*, reminding us of tender "lamb kidney," the beautiful yellow chanterille, the "*Kalon kai agathon*" of diet growing by the bushel; the sweet nutty "Boletus" in vain calling itself *edulis* (edible), where there was none to believe; the dainty *Orcilla* (*Agaricus heterophyllus*), which tastes like the craw fish when grilled; the red and green species of Agaricus, to cook in any way and equally good in all"—enough to make one's mouth water, and feel like "going for them." Why, the Rev. M. J. Berkeley, the profound author of an extensive work on Fungi, says of the Fairy-ring champignon—the *Marasmius oreades:* "The common fairy-ring fungus is the best of all of them. Yet there is scarcely one person in a thousand *who dare venture to use them.*" There are two kinds, however—this has an extremely fine flavor, and makes perhaps the very best ketchup that there is.

The two kinds are chiefly distinguished by the gills; in the first the *M. Oreades*, growing in pastures, gills broad and far apart. *M. Urens*, woods and pasture, gill narrow and crowded together. These latter are to be avoided. To illustrate the uncertainty, I will mention a few cases, because of the prominence of an advocate in the use of fungi for food. Mr. Worthington Smith, the fungologist, to whom specimens of the before-mentioned *Marasmius oreades*, extolled by Berkeley and others, were sent for examination, being of a lot partaken of by a woman and two children at Plymouth, England. Fourteen hours after eating they were seized with symptoms of

poisoning; vomiting and purging occurred, followed by delirium in the mother and convulsions in the children. The children, aged six and thirteen, died three days afterwards, but the mother gradually recovered. Mr. Smith, in full confidence, ate half-a-dozen after having cooked them. Within an hour or two the usual symptoms of poisoning came on, with burning of the throat, irresistible depression of spirits and disordered stomach, which fortunately for him, gradually passed off without more serious consequences. Another statement says: Mr. Worthington Smith annually attends the Hereford Fungus Festival, where earnest fungologists have a fungus banquet, and therefore he must be regarded as a judge. Nevertheless this eminent fungologist, with bis family, were nearly poisoned by eating another fungus, the *Agaricus fertilis*. The cooked specimens scarcely weighed half-an-ounce, and yet Mr. Smith, his wife and child, suffered severely through it. Mr. Smith states that the gastronomic qualities were excellent, so that the sense of smell and taste afforded no indication of its poisonous qualities. The symptoms in this case were swimming of the head, nausea, vomiting and prostration. Deep but uneasy sleep followed, and perfect recovery did not take place for ten days or a fortnight. (A. Smee, pp. 359). If the laudation of some stimulates us to "go for them," such facts are enough to cause us to "stand still a bit and think about it." I may be excusable for declaring with Alfred Smee, that for years I have attempted to discover a test for the discrimination of wholesome from poisonous fungi, but have failed.

And yet when we consider that in some sections they are collected by the quantity and sold at the markets—without hearing of any bad results—there must be a secret somewhere whether in soil, pabulum, weather, or certain conditions, I shall not pretend to say from my limited experience.

Vinegar, salt, alcohol and cooking properly dispels a certain acrid volatile principle, in *orum*, *ranunculus*, and why not in fungi. Still there is, nevertheless, in some species a fixed principle that these means will not remove, and therefore cannot be used for food with safety.

On one of my botanical rambles I met, in Mr. Horst's woods, near the Chickies creek, a fungus in a clean grassy spot, in size, shape and color that of a large home-made loaf of bread. I thought this was a monster, and cutting it open I found it of a uniform texture and a rather pleasant odor, and no doubt edible, but I passed it. This, however, is no comparison to the one mentioned by Dr. Greville, found in England, the *Polyporus Squamosus*, which attained a circumference of seven feet and five inches, and weighing thirty-four pounds after having been cut four days. It was only of four weeks growth, thus acquiring an increase equal to nineteen ounces per day. Dr. Lindley has computed that the cell multiplied at the extradordinary rate of *sixty millions in a minute*. This was a similar puff-ball to the one I mentioned, and sprung up during the night to the size of a pumpkin, as stated by Lindley. In the work of F. A. Pouchet, M. D., from the French, "The universe, or the infinitely great and the infinitely little," on page 436, is a picture of a boy on his knees on the side of a Gigantic Lycoperdon or puff-ball of one night's growth, copied from nature, and mentions the "feverish activity which must reign in the vital laboratory of those monstrous lycoperdons, nine feet in circumference, of which Bulliard speaks in his *History of Fungi*."

If my communication is not calculated to give the reader any clear guide to enable him to select edible fungi with any degree of certainty, it will at least give some idea of the difficulty of the task—nor do I believe in giving only one side of any subject. I have long ago learned that to every question there are two extremes, and an old proverb, in the German, says, "Middle mass, ist die beste strass."

Mushroom and Truffle—Appendix.

Agaricus campestris—the cultivated mushroom—is so important, in a culinary point of view, that a constant supply is desirable. The culture is easy when the proper means are used. To grow mushrooms artificially, fresh horse droppings must be obtained from the stables, placed under cover, in an airy shed, till thoroughly dry; when dry these droppings are packed into a solid bed, in a suitable outhouse, which will cause the material to heat—care must be taken not to allow it to become too hot, say blood heat—pieces of spawn, which contain the mycelium of the mushroom, about the size of an egg, are inserted into various parts of the bed. This bed must be kept perfectly dry for about six weeks, by which time the mycelium, or long threads of the spawn, will have run through the bed. All this time the bed must be kept dry and at a temperature of about 60° Fahr. In six or seven weeks the spawn has filled the mass; the material may now be gently sprinkled with lukewarm water, but care should be taken not to give too much water, lest the mycelium rot. A few days after watering, little buttons are formed, which in a few hours expand into mushrooms. By carefully following these directions there is no danger of failing to raise a crop. Some recommend covering the bed with loam, but this is not necessary; a cave or cellar is considered of advantage to raise them in. What is called mushroom spawn is usually made of horse droppings, formed into masses shaped like bricks, through which the mycelium is allowed to penetrate. Warmth and moisture promote the growth.

The Morel (*Morchella esculentus*) is highly esteemed in France. The Truffle (Tuber æstivum) ought to be found in the limestone districts, if understood like the truffle-hunters of Europe do, where to look for them, but they train dogs; this they do by placing a truffle in an old shoe and making the dog find it, and make his being fed depend upon it; when he understands once, he soon depends on his scent, and will smell it under the soil; so the dog will when taken out to hunt the truffle in the field smell it and scratch for it. The dog is soon trained. However, before we can train dogs to hunt the truffle we must first find it to train him with, and there is the difficulty, provided we even have them hidden away in our fields and unknown.

Truffles (Tuber cibarium.)

Grow a few inches beneath the surface of the soil, which is usually of a dry and light quality, and around the roots of oak and chestnut trees. Collected between October and January, when fully matured they become gelatinous and gradually dissolve, are about the size of a hen's egg, and have no roots or fibrils; the skin is blackish or dark grey, with small projections like warts on it. The flesh is greyish white or blackish with black or brown veins. I mention this, because if such a thing would be dug up, no one would suppose it was the famous Truffle, and its discovery even unknown, unless a reader of THE FARMER.—*J. Stauffer.*

[We also, in common with our contributor, and others, have for a long time been waiting to see a reliable work on edible mushrooms, properly illustrated, issued from the American press, and accessible to the general reader; and yet, from all we have read upon the subject, it seems to be involved in some difficulty and doubt, when it embraces those species with which we have not been practically familiar from our youth up. When we were a boy of ten or a dozen years, Mushrooms, Morels, (called "Mauricles") and also a species called "Pipestems," were much commoner than we have ever known them to be since, and rich and poor, learned and unlearned, intelligent and ignorant, gathered them, cooked them and ate them, without any seeming apprehensions of poisoning. It is true, unlike the restless gastronomic spirit of the present age, they confined themselves to two or three well known species, but these were freely used, without the least suspicion. The pipestems were not abundant, not common, and were only appropriated by the knowing ones. We opine, however, that even if a book were published on the subject, and the species well defined and illustrated there would be still some experimental knowledge required, before the people would trust the species to which they had not been long previously accustomed.—ED.]

For THE LANCASTER FARMER.

THE MAGPIE PIGEON.

Magpies belong to that numerous class of fancy pigeons—mostly German productions—known as "Toys" or Toy birds. The Germans have well wrought out their peculiar taste for vivid and striking combinations of colors in pigeons. Toys are birds whose chief characteristics are their plumage, and differ from other pigeons in lacking any decided peculiarity of form or skeleton. Thus while any fancier could recognize without a moment's hesitation, a pouter, carrier or Button head, devoid of all feathering, yet none could tell one variety of many toys from another nor from a common pigeon. In some few varieties

of toys there are in the best specimens certain less decided but still distinctive variations or types of form, as for instance the low, heavy, and clumsy framework of the swallow is entirely distinct from the upright, elastic build of the bird under consideration. The magpie, as its name implies, is so called from the English native bird which it resembles. In color it is nearly the counterpart of its namesake. Black is the most popular variety, being also the easiest perfected. A black magpie should be marked as follows: head, neck, upper part of body and tail black, remainder of plumage white. The black and white should be distinctly separated by a well-defined line—in no case should they intermingle. A very common blemish is the indistinctness of markings; this point especially must be carefully regarded. One chief beauty of the magpie is the exceeding richness and intensity of color, if a black, a jet, glossy black; if a yellow, a clear rich butter yellow, &c. The feet and shanks should be entirely free from feathering, and of a bright red color. The eyes should be clear pearl. That is the iris a clear white or nearly so, while the pupil is a rich black. Magpies are excellent flyers, and a trained flock on the wing makes a most beautiful sight. They are good, free breeders, feed and rear their young tolerably well. Altogether they are a very pleasing variety, and rank high in the catalogue of the finest toys. —*W. Atlee Burpee.*

For THE LANCASTER FARMER.

THE WINTERING OF PLANTS.

It is always an object with housekeepers to get cabbage, cauliflower and lettuce as early in the spring as possible. Lettuce itself is often sown in the fall and left to take its chance of withstanding the winter, which some kinds occasionally, but the finer sorts seldom do.

Cabbage and cauliflower are not hardy enough to stand this kind of treatment in our latitude, even in the mildest winters. The good woman of the house, therefore, often brings her kitchen or sitting-room window into play, to raise plants of the above somewhat earlier than they can be raised in the open ground. These plants, however, being raised in a warm air, where no cold current ever strikes them, are not hardy enough to plant before the middle of April, and some delay till even near May.

There is a way of raising these plants by which their earliness can be forwarded at least three weeks, and it is done as follows:

About September 15th to 20th, for this latitude, a piece of ground is prepared by spading under and mixing with the soil three inches of short and well decomposed barn-yard manure, thoroughly pulverizing the soil, and immediately sowing thereon the seeds of cabbage, cauliflower and lettuce. By such heavy manuring as this the plants will be ready to transplant into cold-frames by the middle of October. Lettuce is usually planted into the cold frames at the distance of 1¾ inches each way, and flat as it grew in the seed beds. Cabbage and cauliflower are given 2¼ to 2½ inches space, and set down as deep as pos-

sible without covering the heart, as the stem of these plants is the tender part. I have sometimes found it advisable, if these plants grew very much before cold weather set in, to fill up between the plants with sand, as far as the stem pushed out of the ground.

Any size of sash can be used for covering; if the regular hot-bed sash, which are 3 feet wide and 6 feet long, are used, each sash will hold about 400 cabbage or cauliflower, or about 700 lettuce.

The cold-frames are made in a sheltered situation, facing south or southeast, on the top of the ground, the width to suit the sash, and look like hot-beds, only there is no heating material used. The back board of the frame should be from 12 to 14 inches wide, and the front 7 to 8 inches, so as to allow plenty of slope to carry off the water. The bed of the frame should be so situated as to leave any water, that may accidentally come into, drain off very readily. After the sash are put on the plants should be kept rather dry, as the object is merely to preserve them and have them grow as little as possible during the winter.

The sash are not put on until pretty heavy frosts, say about the last of November, and should be entirely removed on fine days until about the middle of December, when all the attention that is necessary is to see that on such days the sash are raised on the back end, or if made to slide, push up and down three or four inches, at about nine o'clock in the morning and closed again about three in the afternoon. The sash are sufficient covering for any weather, except that on very cold nights a piece of carpet, or a shutter may be put over the sash where the cauliflowers are, as these latter plants are not quite as hardy as cabbage or lettuce.

Plants treated in this manner, if they have not been kept too warm, can be planted out any time after the middle of March without fear of injury, as the pretty severe freezing that may happen after that time will not hurt them. This year I planted on the 11th of March, and though the ground was frozen very hard after that, only about three plants out of every hundred died, and they may have died from some other cause.

When only a few plants are needed they can be bought, at very reasonable rates, of men who make the raising of plants a specialty, and brought right to your own door, through the postoffice

The following varieties have been found especially valuable for earliness and quality combined:

CABBAGE.—Jersey Wakefield, one of the very best, first early, hard-heading varieties; Early Summer, a few days later than the above and somewhat larger; Early Winningtadt, known also as Early Cone; second early, very hard conical head; a great favorite with many on account of its size and extreme hardness, but is not as fine a cabbage as either of the others mentioned above. Early Dwarf York, earlier than any of the above, but has a small and very loose head. This kind should not be sown before the 20th or 25th of September, or it might shoot into seed instead of forming heads, which would also be the case with the others should they be sowed much earlier than the time stated.

CAULIFLOWER.—Early Dwarf Erfurt; one of the earliest and best. Early Paris; a good second early variety.

LETTUCE.—Early Tennis Ball; small hard head; fine yellow; very early. Early Simpson; a large yellow curled lettuce; does not form hard heads, but is second to none in quality.

Flower seedlings of hardy perennials, if seeds are sown August 20th to 30th, can be wintered very nicely in the cold-frames, and will then bloom in the spring or summer; whereas, if the seed is not sown until in the spring, most of them will not flower until the following season. The kinds that are mostly treated in this manner are Snapdragons, Hollyhocks, Pansies, Pinks, Sweet Williams, &c. As only limited quantities of these are wanted, it would be well to give them extra room, say three inches, so as to make them very stocky.

Those whose onion sets have failed, or who did not get enough of them for next spring's planting, can raise them very cheaply and easily this fall, by the following plan:

About August 15th to 25th, take a piece of level ground, two feet wide and of the desired length, and raise border about two inches. On the enclosed shallow depression sow onion seeds at the rate of about twenty seeds to the square inch; then cover them up with clean sand to the depth of two inches, *i. e.*, level with the border. The sand should be such as is washed by water, as river or meadow sand, as that dug from a bank is said to be sometimes injurious to the vegetable growth. These sets do not need any more attention until planting time, except perhaps a slight covering of leafless brush, as the sand being free of seeds of weeds, no weeding is necessary. This method may also be used in the spring to raise dry sets, and requires much less labor than the old method. If it is used to raise dry sets only about half the quantity of seed should be used. The fall sowing is very much favored by some, though the green sets are harder to plant than the dry ones, but it is claimed that the certainty of wintering, and the trouble saved by not needing storing, more than compensates for the extra trouble in planting.—*A. B. K.*

For THE LANCASTER FARMER.

THE DAIRY—No. 4.

(Continued from May number.)

This brings us to the management of milk and cream supplied to customers. A good herd of cows, and an ample supply of proper food form the basis of the dairyman's operations, but in order to deliver his milk or cream into the hands of the consumer in proper condition, requires labor, vigilance, care and management that makes his occupation oft-times anything but a pleasant one, especially when after devoting his best energies to his business he is charged with the adulteration or want of neatness with the milk or cream delivered to his customers. That there is in too many cases good reason for such charges is not denied, but the wholesale denunciation of dairymen which is quite common is entirely unfair and out of place.

It will be shown before the close of these articles that consumers are in many cases not judges of a good article, or do not know how to take care thereof after receiving it. The great difference in the quality of milk from different cows is no doubt a leading cause for the general charges of its adulteration. All the extra feeding that may increase the quantity of milk will not materially improve its quality. It is reasonable that the dairymen should endeavor to purchase or raise cows that will produce the largest quantity of milk, where the latter only is sold.

Suppose a cow yielding six gallons of milk per day, and another yielding three gallons, but both produce the same amount of cream, the difference in the value of their milk must be quite apparent. In a dairy of cows of both descriptions, say half and half, and a majority of the richer milkers coming in fresh at one time, the milk (if otherwise properly managed) would no doubt give entire satisfaction to the consumer, but by and by these cows may become dry and the more copious milkers come in with milk only half as rich, will not the consumer at once conclude that his milk contains a larger proportion of water than formerly? Suppose the chemist is called to analyze the fluid, can he positively ascertain whether the excess of water is natural or artificial? If he cannot then there should be a standard of what shall be considered milk. That such difference may exist in the same herd is but fair to conclude, and that different herds vary extremely in the richness of their milk is established beyond question.

Where the dairyman has an established custom it is very important that the supply of milk should be as regular as possible, which makes it necessary to provide an ample supply of green crops in summer, and good hay or fodder and roots in winter. The sowing of corn for fodder, to resort to in case of grass running short, is considered indispensable with many of the most successful dairymen. Regular hours for feeding and milking is all important.

But now comes the most important part of the business, requiring great care and the most scrupulous neatness in all its departments, from the drawing of the milk to its delivery to the consumer, because of its power of absorbing impurities by which it may be surrounded. Sufficient bedding must be provided so as to keep the animal as clean as possible, and grooming is as important as for the horse. Before milking always have water and a cloth to wash and dry off again, not only the teats, but the entire udder, whether we observe filth thereon or not, as there will be, when milked dry, a continual scattering of a yellowish dust, effete matter from the skin of the udder, which should never be allowed to enter the milk. Always set the pail a little aside instead of under the udder, so as to be sure should any impurities drop therefrom they will not fall into the milk. We need only to look into the strainer after the milk has passed through, to learn whether cleanliness has been observed in milking, but even this is not an infallible test, for we have seen both men and women while milking, have the milk running along their hands and wrists, thence drop into the pail. Such we consider slovenly milking, even after washing the udder. But the writer has also seen milking done where the udder and teats, filthy as they were, were cleansed, not with water, but with milk pressed out and with it washed a little, and then, with the pail directly under the udder, a greenish liquid would cover the milker's hands and wrists. Milk passing through such a process would hardly make passable gilt-edged butter whatever may be the after management.

All vessels used for milk, cream, or butter, must be kept perfectly sweet and clean, so as not to impart the least taint. Tin vessels should be used as far as possible, and the joints should be filled with solder so as not to allow any crevice in which anything might lodge to become rancid, for "a little leaven leaveneth the whole lump," holds as good now as it did 1800 years ago.

In the summer season, rapid cooling, whether for butter or where the milk and cream are sold, is essential. If in large cans, when cool it will keep sweet longer than in small ones, except under ice. When milked in the evening and thoroughly cooled, it will keep sweet twice as long as that milked twelve hours later, when the latter is taken warm and both are delivered to customers at the same time. Unless there is a good spring-house, an ice-house is now considered essential to dairying, even on a small scale. The proper construction of an ice-house would seem to come in here, but would require an article by itself of considerable length. Suffice it to say that by always having the milk set lower than the ice, so that the cool air which naturally descends will fall *on* the cans, the cream can be kept sweet as long as the milk. This hint is given as the result of the writer's experience. In setting the cans on top of the ice the result usually was, that the cream would be sour while the milk in the bottom of the can was sweet. In the summer season the best possible method should be adopted to keep the milk sweet until the cream has all risen, and there is scarcely any danger of keeping it sweet too long. In the winter the reverse must generally be practiced, *i. e.*, to prevent the milk from getting too cold.

The ice cream business has increased to such an extent that many dairies are kept for cream only. In order to have the cream as near pure as possible, deep cans are best, as it requires a much smaller surface of milk to skim from to produce a given quantity of cream, while in skimming from shallow pans or crocks a larger proportion of milk must necessarily be taken up with the cream.

The writer has had several years experience in the retailing of milk from the wagon, and that the consumer is very often at fault in the management of milk does not admit of a doubt. One lady would say, "I don't want any this morning, mine from yesterday is still sweet." Another would say that her milk was sour last evening already, while both received theirs the previous morning, from the same can at nearly the same time; but of course upon the dairyman rested the blame. Others would say, "why other dairymen's skimmed milk is as good as your new milk," while a new customer would greet you with the order to "call regularly, as your milk seems so much richer and better than that we have been getting from the other milkman." These facts prove the milk trade to be a precarious one at best.—*H. M. E., Marietta, Pa., Aug. 8, 1876.*

OUR PARIS LETTER.

Correspondence of THE LANCASTER FARMER.

PARIS, June 29, 1876.

The decline in the exportation of cattle from this country to England, which in 1866, was as much as 38,000 head, and at present is under 2,000, has compelled the French government to seriously revise its legislation respecting its sanitary regulations in reference to live stock. The principal laws bearing on this subject are anterior to 1786, with special measures, often confused and contradictory, to meet such epidemics as those of 1841, 1849, 1865 and 1871. A Commission has been at last named to consolidate and revise all existing laws and regulations affecting the sanitary condition of farm stock. The Commission is composed of practical and scientific men of the highest standing, whose office will be permanent, and their services remunerated. The domestic animals of France represent a value of four milliards of francs, being less by one milliard, than the war indemnity paid to Germany. This stock is not only important as a food supply, but it forms the basis of farming operations. The last distemper destroyed 100,000 head of cattle in France, hence, the importance of the Commission that will secure a permanent staff of veterinary inspectors, charged not only to officially watch contagious plagues, but to insist on farmers rearing their stock in accordance with hygienic conditions. The "Vet." will henceforth be not only a surgeon, but an officer of health.

A race of cattle possessing remarkable qualities, and peculiarly suited for mountainous districts, is the *Salvers*, so named, after an ancient town in the Cantal Mountains—the latter being off shoots of the Cevennes. The animals are alike excellent for work, milk and fattening, and of late are in much request with foreign purchasers. Professor Lambl, of Prague, asserts that in proportion as the population of a country increases, the number of cattle diminishes, so that in time, the animal finishes by disappearing in those localities where man draws his support principally from the soil. He concludes, that the period is not distant, when Bohemia will be unable to support farm stock. If the country, however, by its industry and commerce, can purchase food for animals, the anticipated evil can be obviated.

Ticks are very prevalent this year in cows and sheep. These parasites belong to the same order as spiders; the mouth is armed with a kind of bill or sucker, consisting of three blades, the central one possessing several rows of teeth. The insects lay an enormous number of eggs, not upon the body of the animal where they have lived, but upon the soil; the young subsequently climb upon plants, where they patiently await the passing by of the animal, and then seize and penetrate its skin at the root of the hair. Several of the insects of course die of hunger, while thus waiting, but then like the spider, they can exist for a long time without food. There is nothing to be apprehended when the parasites are but few in number; when otherwise, the beast can die of exhaustion. In addition to mercurial ointment, an application of oil and turpentine, rubbed in with a paint brush, will soon destroy the nuisance.

The eminent German experimentalists, Messrs. Wolff, Funcke, and Krenzhage, have published the results of 71 practical experiments on sheep between two and three years old, and belonging to the crossed Wurtemberg breed. In 49 cases, the animals were fed on fodder, such as tares, clover, aftermath, and meadow hay, with the addition of turnips and mangolds; in 22 cases these roots were superseded by potatoes. It was found that the digestibility of the fodder, diminished with an increase in the ration of the roots. Thus, the digestibility of the nitrogenous or protein matters, diminished four to twenty-two per cent., when the total of the dry substance of the roots attained 12 to 95 per cent., as compared with the total of the dry matter of the fodder. With potatoes this diminution was as high as 7 to 40 per cent. In Germany the nutritive value of roots is thus estimated according to their dry matter, apart from the ordinary water of vegetation. In France, and perhaps in other countries also, roots are rather considered as aids to augment the volume of the ration, rather than to complete its alimentary value. This seems to be a grave error, for the dry matter of roots, is on an average, as rich in nitrogenous matters as the dry matter of rye, barley, oats, maize or buckwheat. and the experience of Wolff and his collaborators clearly prove, that the digestibility of ailments is markedly variable following the manner they may be given. These experiments will also tend to allay in some measure the family quarrels between scientific and practical farmers. There are not a few who decline to accept a practical experiment unless it be controlled by direct chemical analysis. Thus it would seem, that in order to deduce results, it is more important to live in a laboratory rather than among fields and stables. Now animals are themselves excellent chemists, and when five pounds of hay are replaced by fifteen of beet, and the cows continue to furnish the same quantity of milk, without loss of condition, it is clear that in this circumstance the beets equal in value, one-third of hay.

Among some new fodder plants that at present attract attention, is *fromental*, or French ray grass, the Tourves variety being the best. It is an indigenous plant, and is well known in Provence, being peculiar to light soils and natural meadows; it is precocious and vigorous, generally attaining the height of six feet when in flower, which is the moment when it ought to be cut; the second is often as good as the first crop, and the aftermath is also respectable. In the department of the Eure, the new "rye-buckwheat," so named from the length and color of the grain resembling that of rye, is very superior to the Tartary variety; it is precocious, all the grains ripen uniformly, instead of successively, are heavy, and yield excellent flour.

M. Goffart continues to do good service to his fellow countrymen by keeping before their eyes his experience and his experiments on the culture of Caragua, or horse tooth maize, for preservation in trenches in a green state in autumn for spring feeding. As an instance of the important proportions the culture of Caragua maize—called after Nicaragua where it grows luxuriantly, but from whence no seed has been imported—has attained, two years ago only five tons of that variety of maize were sold for seed in France, and last year the quantity was 250 tons. After visiting numerous farmsteads in the country, noting the various processes for preserving the green maize, and having personally tested them all on his own estate, M. Goffart concludes that the best plan consists in chopping the maize, the better to force out the air, trampling the mass well at the sides of the trench, and never allowing it to rise above the surface of the pit. The latter ought to be excavated in a sloping soil, in a dry situation; the walls to be in masonry, two yards under and the same above the soil; elliptical in form, 2 or 3 yards wide, and sufficiently long to contain 80 tons of the chopped forage; the latter will prove sufficient for twelve cows during the winter. The cost of the mason-work will be fr.60 per head of cattle, but will be repaid in the first season alone. The top of the trench ought to be closely covered with boards, and all available heavy lumber, stones, bricks, &c., placed thereon to insure compression. Covering with sand and earth is considered objectionable. The trenches can be extended in parallels according to the number of cattle to be fed. The principal to keep in view is, to exclude all fermentation of the mass, pending, as well as after being put into the trench. This can be secured, and only so by expelling the air. Some two pounds of salt per cubic yard of stuff, may be added, not to preserve, but to give a flavor to the fodder; the latter has been found to keep better, the less it was mixed with cut straw, chaff, husks, &c. There has been no good result from chopping up oil poppies with the maize in order to induce the animals to sleep and thus fatten more rapidly. Such aids, if they do not provoke sleep in cattle, have never yet promoted their putting up flesh.

Two, among the many regional, or official agricultural shows just held throughout France, merit notice. That at Gap, in the Upper Alps, where its remarkable race of cattle—the Tarine—is notorious, having the fine triangular head of the Durham; the horns are small and well curved before; the shoulder is all muscle, and the ham is composed of sinews of steel, for the animal has often to seek its food like a goat. The sheep in point of muscle are the same, and the rams have no horns. The raising of sheep is dying out; not more than 50,000 now are fed on the Alpine slopes, where formerly five times that number existed. It has been found, that everywhere the sheep put its pointed foot, like Attila's, the grass ceased to grow, because the heavy rains succeeding, formed little ravines from the foot marks, and carried away the soil. Cattle are preferred; their hoof is larger, and when grazing they cut the grass to the surface of the soil, not tear it up by the root, as is the case with sheep. The Berkshire breed of pigs succeed best in the Alps. The show at Arras was important; it includes the regions of Calais and Boulogne, where so much produce leaves for England; it is the centre of the beet-growing districts, the rotation being beet, then wheat or roots, with clover, succeeded by flax, colza, oil poppy, and potatoes. It is also the quarter for Dutch and Flemish breeds of cows, which do not differ very much, save in color, the former being mahogany red, and the other black; both are good milkers and fatten rapidly. There is an aversion to cross these breeds with Durhams, but it was just this crossing that carried off the prize. Similarly with sheep, the Merino once was the favorite, owing to its fine wool; the dishleg Merino supplanted it, for at the age of two years the animals have an average weight of 60 lbs., a result formerly attained only when three years old, and the fleece, weighing 9 lbs. in grease, brings as high a price as that from Merinos.

Italian farmers in order to prevent harness and objects in leather generally, from suffering from the ammoniacal odors of the stable, add a little glycerine to the grease employed to coat the leather.

At this season it may be useful to allude to a plan of haymaking in the mountain, boggy meadows of the Vosges; when the grass is cut it is only left three hours exposed to the sun; if allowed a longer time on the soil before being carted home, it would fail to soften the stems and so render their digestion difficult. No complaints are made of the fermentation and its consequences, as in the case of green artificial fodder. Tares, generally employed for feeding horses, are mown when the pods commence to form; lucern, especially in dry seasons, must be cut when the flowers begin to show, in order to save the lower leaves that commence to be yellow. As in the case of lucern the leaves are the most nutritive part of the plant. This explains why the French never turn clover over to dry during the daytime, selecting the morning and afternoon, the leaves being then less brittle.

"OUR FARMERS IN COUNCIL."

Agricultural and Horticultural Society.

The regular monthly meeting of the Lancaster County Agricultural and Horticultural Society was held in the Athenæum rooms, on Monday afternoon, August 7th.

The following members were present: H. M. Engle, Daniel Lintner, Alex. Harris, Johnson Miller, Levi Groff, William McComsey, M. D. Kendig, Dr. P. W. Hiestand, Jacob Bollinger, P. S. Reist, J. Stauffer, S. S. Rathvon, E. S. Hoover, Calvin Cooper, Levi S. Reist, J. B. Garber, Wm. Hershey, J. Frank Landis, W. L. Hershey, A. F. Hostetter, Phares Kauffman, Simon P. Eby and John M. Stehman.

The President being absent, Henry M. Engle was called to the chair.

Johnson Miller, one of the members of the committee appointed by the society to report the rain fall, reported that he had as yet been unable to secure a rain gauge.

Mr. Engle thought there was no use of going to the expense of purchasing a rain gauge, but that one could easily be made out of tin, in the shape of a pot lid, about ten inches wide and six or eight inches deep, with glass tube attached. He had made one like this, and it worked satisfactorily. The fall of rain during the month of July, in his locality, was about one-and-a-half inches.

Mr. Kendig, another member of the committee, said that he had purchased a rain gauge, but in the late heavy rains it proved too small, and in consequence he could not make a report. By the next meeting he thought he would have a report, as he was negotiating for a larger gauge.

Mr. Cooper said he had made a gauge similar to the one described by Mr. Engle, and that it worked well. The amount of rainfall in his neighborhood was 3 77-100 inches for the month of July. Mr. Cooper also stated the amount of rain-fall for each rainy day during the month, also the state of the thermometer on such days.

After the discussion of rain-fall was at an end, the report of the crops was next in order.

Johnson Miller said the wheat crop in Warwick township was a good one, although some fields were considerably damaged by the ravages of the fly. The Foltz variety proved the best. The hay crop, although not large was of the best quality. The corn and tobacco were growing finely. The former, although not so heavy in the straw, will make a large yield of grain. There will be more tobacco raised in this county this year than ever. Fruit of all kinds is plenty. In some instances the apples fall before they come to perfection.

Before taking his seat Mr. Miller presented to the society a few apple tree twigs for inspection. He said they were taken from the trees in the orchard of Jacob Erb, in Penn township, whose apple trees are all dying off at the top, as well as the twigs of last summer's growth. The best of soil is on the orchard, and it lays on a southern slope, so that freezing could not be the cause. Some of Mr. Erb's neighbors' trees also suffered in the same way, and he hoped the matter would receive the attention of the society.

Mr. Kendig, of Manor, said the wheat crop just harvested was a good average one. Corn and tobacco look promising, the latter being larger at this season than any former year's growth. The young grass was very small, some fields having none at all. All kinds of fruit look well and will be a heavy crop, notwithstanding a great deal drops.

Mr. Groff said that the wheat and hay crop in the eastern section of the country was a very good one. Corn and potatoes will also be good, although they yet need rain. Fruit of all kinds plenty.

Mr. McComsey had heard that the wheat crop just harvested was not fully developed, on account of the intense heat in the early summer ripening it too soon. He would like to know if such was the case.

Mr. Engle replied that when the wheat was turning and it was very hot weather the heads would not fill out so well. This season when the early wheat was filling out it was rather cool weather, and he noticed the heads were well filled. The late wheat, which passed through the hot spell, was not so well filled. Experience had taught him that the weather had a good deal to do with the cause.

Mr. Bollinger reported that the corn about Ephrata, Clay, Manheim and Earl townships was rather thin in the stalk, in consequence of which he did not think there would be a heavy crop. The grain crop was good and was harvested with very little expense this year, as it could be cut down in the morning and hauled in before night.

Mr. Kendig asked for information in regard to his young grass. As it was a perfect failure, he thought of plowing it down and sowing it in clover and grass seed together with a little oats for shading.

Mr. Bollinger replied that he had a neighbor that tried this method and got an excellent crop. In another instance another neighbor tried it and it proved a perfect failure. Perhaps the location of the lands had something to do with it. The latter's land was exposed to the north winds.

Mr. Engle believed the success depended a great deal on what kind of weather we have in the fall.

Mr. Cooper reported the harvest in East Lampeter more bountiful than anticipated. The late rains were a great help to the young grass, corn and tobacco. The fruit was suffering to a great extent by blight, especially so in regard to the pears.

Messrs. Hoover and Levi S. Reist also referred to their pear trees being affected with blight. They would like to know a remedy

Mr. Cooper said that the blight takes effect both on the bark and wood of the tree. He had tried different experiments, and found that the only way to save the tree was to split the bark of the branch affected in two or three different places. It could be done best with a pruning knife. If this was done in time it would prove a good remedy. Trees that were treated in this manner revived and are now flourishing, while those that were not touched died.

Mr Hoover wanted to know if it would do any good if the branch were to be cut off.

Mr. Engle thought that if nothing else would save the tree, it would be well to cut off the affected branch. He had saved trees by cutting off the branches.

Mr. Hoover wished to know if hen manure applied to the roots of trees and grape vines was beneficial.

Mr. Kendig said he found it very good in making trees grow.

Mr. Stauffer had a friend who applied some guano to the roots of two pear trees affected with "yellows," and it helped them.

Mr. Engle did not think a case of real yellows could be cured. Some people do not know the difference between an attack of worms and yellows.

Mr. Hostetter said that he observed that the locust trees in the vicinity of Petersburg were dying at the top.

Mr. Hoover, who had traveled over a great part of the county during the last two months, found that the locust trees as a general thing were dying. The trees first die around the top, while the foliage on the remaining part of the tree seems perfectly healthy. About one-third of the trees in his neighborhood are affected in this way.

Mr. Stauffer thought the trees were attacked with borers.

Levi S. Reist was of the impression that the trees were injured by the heavy frosts which visited this section of the county two or three years ago.

Mr. Hostetter hoped the matter would receive the attention of the society, as the locust interest was an important one in this county.

Mr. Hoover thought that the best remedy was to cut the trees down and take care of the stock.

LEVI S. REIST said that after the tree was cut down and you did not wish the sprouts to grow, all you had to do was to bore a hole in the stump and put some salt in it. This, he said, would kill its growth.

MR. GARBER had tried this plan and found it worked like a charm.

"How can we best improve the appearance of our farms," was the next subject taken up for discussion.

MR. KENDIG was called upon to give his views. He said he did not know much about the subject, as he had given it no thought. He believed, however, that there was great room for improvement of our farms. In the first place, he would remove all briers and rubbish, and have the buildings put in good repair and whitewashed. This would add much to the appearance of the farm. Locust trees should be planted along the lanes and roadsides.

MR. ENGLE thought that in addition to the above remarks of Mr. Kendig, a good orchard and ornamental trees, shrubs and flowers, would add much to the beauty and value of the place.

MR. MCCOMSEY thought that every farm should be made a model farm, such as Mr. Young's or Mr. Peiper's. To be successful in improving farms, much depends on cultivation, habits and taste.

MR. HOOVER believed there could be a great many more model farms in this county if more interest would be taken in the matter. If a farmer can't keep his farm in repairs, the sooner he sells it, the better for himself and farm. Much could be added to the appearance of farms if the time spent in lounging around shops and stores were spent in making repairs.

MR. HOSTETTER thought the matter of taste should be propagated. Every summer he notices new tastes in the selection of flowers in the lawns, yards and gardens of this county. In some places, in the course of a few years, an entire revolution takes place. He thought that the boys and girls should be put to improving the farms. The father and mother are generally too busy and seldom get out as much as the young folks, and hence do not get too see the improvements that are going on among their neighbors. The boys and girls in going around notice those things more readily, and if they were humored a little more and put to work they would add much to the beauty and improvement of the farm.

MR. GROFF said that so many had spoken of the improvements in beautifying the farms, would it not be well for some to speak of improving the land "inside of the fences."

MR. BOLLINGER agreed with Mr. Groff. He said he was born and raised in Franklin county, and while living there noticed the following: On one side of him there lived four old bachelors and two old maids. They never paid any attention to improving their house or yards, but put all their time and attention in improving the land by manuring and liming it, thus bringing it to a high state of cultivation. In 1860 the farms of these parties were worth $250,000. On the other side lived a man who devoted much of his time in beautifying his buildings and in planting ornamental trees and flowers. The result was that in a few years he had to appoint assignees. His experience was that it was best to first cultivate the land and afterwards look to the flowers, etc.

PETER S. REIST referred at length to the fine farms of Horace Greeley, James Young, and Wm. L. Peiper, and the Coleman estate, showing that, although they were model farms, they would not keep their owners, but that the owners had to keep them.

MR. ENGLE believed in the planting of fruits and berries. They would not only prove beneficial but would add much beauty to the place.

There being no further discussion, society, on motion, adjourned.

The essayist for the next meeting will be Abram F. Hostetter.

A number of apples and pears were presented for inspection by Messrs. Engle, Cooper, Hoover and Reist.

A very fine bunch of Clawson's white wheat, grown on the farm of Dr. E. B. Herr, Creswell, was presented by Martin D. Kendig. The seed was received by the doctor two years ago from the department at Washington.

GENERAL MISCELLANY.

Cheese.

The State of New York alone has now nearly 1,000 cheese manufactories, which use the milk of more than 250,000 cows, making therefrom 80,000,000 pounds of cheese, which is 1,000 pounds for every three cows. The cheese production of the whole United States is over 250,000,000 pounds, of which 96,600,000 are exported. England scarcely exports 25,000,000, while little Holland, which used to be the principal cheese producing country of the world, exports at present 60,000,000 pounds.

The Crops in the East.

The farmers in this section, and throughout the country, have reason to rejoice. The crops of wheat, hay and oats have been excellent in eastern Pennsylvania. The corn fields show a splendid growth. The reports are encouraging in nearly all portions of the West and South. Cotton promises a good yield. Fruit is abundant. Potatoes have flourished in spite of the bug. When the freshets of last year, sweeping away the crops in the fertile plains of the Mississippi valley, are remembered, there is sufficient cause for gratitude. In our own county, the drouth last summer reduced the yield of hay and wheat far below the average.

In calculating the effects of good crops upon the future financial condition of the country, it is to be borne in mind that every bushel of grain, and every pound of meat, and every ton of hay, and every bale of cotton produced, beyond our own wants, is equal to so much gold in settling the balance of trade.

It looks now as if the Centennial year would be a most productive one. In view of the depressed condition of business, this is a cheering prospect. Abundant harvests must precede a revival of business. Our agricultural industries underlie all others, and to these we must look for the solid foundations upon which to build up trade. The indications now are that this great source of wealth will yield largely, and be followed by a more active and healthy business than we have had for several years.

Western Crop Reports.

From advices received by the Toledo *Blade*, it appears that in Ohio, Indiana, Michigan, and Illinois, the wheat crop in nearly all the wheat-producing districts is nearly up to the average in quantity, while the quality is superior to that of any former year. Spring wheat in Illinois has generally done very badly. The best reports for winter wheat came from Michigan, where the harvest is especially good. The corn crop promises very well everywhere. The acreage is much larger than ever before, and though farmers were much discouraged early in the season by continued wet weather, which prevented working and drowned out the corn in low places, they believe now that the crop will be enormous unless interfered with by frost. The crop in Illinois, Indiana and part of Michigan is nearly a total failure, and what grain was grown is deficient in quality. In Southeastern Michigan and Northwestern Ohio the crop is unusually good. The barley crop is up to the average. A large quantity of flaxseed was sown in some parts of Indiana and Illinois, and has done well. There were less potatoes planted than last year, but the crop will be enormous. Hay, except in some parts of Michigan, where rain has interfered with its cutting and curing, has produced far beyond the crop of the previous year. The quality is very good, and it has been well taken care of. The apple crop is very large everywhere. Only a partial crop of peaches will ripen well. Taken altogether, the farm products will exceed those of last year from thirty to fifty per centum.

The Grasshoppers and the Birds.

It was hoped that the grasshopper, from which the Western farmers have suffered so much in former years, would not be heard from this year. But the month of July, which teems with destructive as well as creative energies, has brought him to the surface again, and we hear of the old plague of Egypt in the new State of California. It is suggested by a contemporary that the Grangers could not do better than take up arms against the grasshoppers, and that they might do this by considering the question of how far birds should be protected by effective laws for the sake of their aid in suppressing insects. The natural enemies of grasshoppers are enumerated by a late writer as moles, mice, hawks, and many small birds, black crickets, and the long green grasshopper, which is usually taken for a vegetarian, swine and turkeys. But there is no agent so destructive of insects as birds, and hence it is urged that the Grangers should take up the cause of these innocent and useful creatures, who are constantly being slaughtered in the West and elsewhere by reckless and foolish men and boys. The prairie chicken of the West, and even birds not used for food, like the insect-devouring crow and the tiny wren, which feed principally upon those who devour the food of man, ought to be secured by adequate legislation from those human allies of the locusts, whose greatest ambition is to kill everything in the feathered line which comes in their way. Next to the preservation of forest trees, which are so ruthlessly destroyed in America, we know nothing of more serious interest to agricultural populations, and indeed to the whole country, than the preservation of birds.

Toads.

There is a very common prejudice against the toad. By many he is looked on with loathing and disgust. He is regarded as an ugly, uncouth, and worthless nuisance, that should be abated at sight. But this prejudice is ill-founded and unjust, as the toad is not only harmless but quite useful to farmers and gardeners. They should therefore be regarded as friends instead of being treated as enemies. The eggs of the toad are usually laid in the water, but at times, when this is not accessible, they are laid in damp, dark places, and in such cases they do not pass through the tadpole state. While in the tadpole state they live on vegetable food, but as toads they live on insects, spiders, &c. They are exceedingly well adapted to catching insects, having a tongue of marvelous construction. It is quite long and may be projected six or eight inches, the tip of it being so directed as to just reach the object, and being covered with a viscid, gummy substance, that causes the insect to adhere to it, it is thus quickly conveyed to the mouth of the toad and buried alive. The movements of the tongue in thus taking in a fly or a bug, are so rapid that they cannot be followed by the eye. The number of insects that a toad will eat is almost incredible. A few of them in a garden will keep it well rid of bugs, plant lice, &c. They generally spend the day in some dark, secluded spot, often a hole under a stone or clod or the side of a rock, and in the evening they come out and hop about in search of a supper of live insects. They may be induced to take up their residence in the garden by confining them for two or three days to the place, when they will become quite well contented. A board laid about two inches from the ground is just the kind of a hiding place that suits them. They are long lived, being often known twelve to sixteen years old, and it is said that one lived to be thirty-six years old. On account of their propensity for destroying insects, toads should be encouraged to become permanent residents of our fields and gardens.—*Ohio Farmer.*

Improving the Land "Inside the Fences."

Would you allow one of your readers (who would rather go to bed without his supper, than without reading your paper,) to express his admiration of the witty and ingenuous speech of Levi W. Groff, esq., made on Monday, the 8th inst., in the meeting of the Lancaster County Agricultural and Horticultural Society. Those who will recollect your able report of that meeting, and others who may take the trouble to refer to it, know that the subject discussed was "How can we best improve the appearance of our farms." Five different members expressed their respective opinions on the subject in regular succession, all of whom seemed to look merely to unproductive qualities—buildings, fences, trees, shrubs, flowers, &c., as elements essential to getting up a model farm—citing Mr. Young's and our distinguished townsman Wm. L. Peiper's farms as examples.

In response to this series of speeches Mr. Groff said, "that so many had spoken of the improvements in beautifying the farms, would it not be well for some to speak of improving the land *inside of the fences!*" In view of the grave importance of the matter under discussion, involving the very essential essence of success on one side and failure on the other to the farmers of our country, this speech takes place among the words spoken fitly and wisely in our period.

While a proper regard for sufficient buildings, fences, trees, shrubbery, flowers, &c., should not be discouraged, nothing tends more to bankrupt the farmer than the use of money for ornament or show, when the "land inside the fences" is clamoring for lime, manure, or other fertilizers, and the growing crops stand as pitiful monuments of the owner's folly. Where farmers have large lots of bank stock whose dividends are kindly applied to their prosperity by fertilization and ornamentation, that is all right, but all farmers cannot have such outside aids, and such as start out on the ornamental, showy theory, will certainly never come to it by farming. Your reader would back up Mr. Groff, and others who followed him, in educating our farmers in the science of enriching the soil first, last and all the time. I can conceive no greater calamity to befall any man, than a young farmer just starting out in life, having his head turned away from his business—cultivating and improving the soil in the old way—and trying to make a living or make money by the policy of show or ornamentation. There is only one class of farmers that make money by actual farming, and those are the ones that do business a little in the old way.—*Lancaster Daily Express.*

DOMESTIC ECONOMY.

Keeping Milk and Butter in Cellars.

Milk or butter may be kept in a cellar the bottom of which has been grouted, and with good results, if proper attention be given to ventilation, drainage and temperature. When the ground is not of a character to afford natural drainage, drains should be laid so as to carry off all accumulations of water liable to occur at any time at the bottom of the cellar, and this should be done before grouting. By so doing, dampness from the floor is avoided, as well as impurities from stagnant water under the grout. If milk is to be kept in the cellar for the purpose of getting the cream and for butter-making, means must be taken to have the temperature of the room as low as sixty degrees Fahrenheit. Unless some one of the devices now in use for reducing the milk to a low temperature be employed, such as the large pan system, where flowing water is carried under the milk, or where the ice system and its modifications are adopted, there should be good ventilation to carry off stale air or noxious gases, as milk absorbs taints that will prove injurious to the butter.

We have seen excellent results from milk cellars

having grouted floors, the walls being nicely plastered with water-lime cement and the floors made smooth and level with the same, and presenting the appearance of an immense block of stone.

We should not advise butter and milk to be kept in the same apartment. A butter cellar should always be kept by itself. It should be properly ventilated and used for no other purpose than for keeping butter. And so with the milk cellar; it cannot be used for storing vegetables, or for the soap and meat barrels, or for fish and other family provisions. Milk and butter are dainty aristocrats in their nature. They are extremely fastidious about coming in contact with filth and anything having an unsavory odor, as such contact speedily demoralizes them; and when they once become tainted, they go on from bad to worse, apparently having no disposition or power for reformation. So the dairyman should be careful and not introduce them to bad company.—*Rural New Yorker.*

Graham Gems.

The following hints regarding the cooking the palatable and healthful Graham gems are admirable:

For the baking of these in perfection, the iron gem pans are indispensable, and I take it for granted that all housekeepers have them or will have them. Put one quart of Graham flour in a basin; add two tablespoons of sugar, a little salt, and two tablespoonfuls of baking powder. One little dip more in the baking powder will do no harm, if you want them extra. Beat two eggs very light in a bowl, fill up with cold water, mixing them well. Stir these quickly into the flour; and let me say to beginners that therein lies the grand success in the using of baking powder. Stir like lightning, and always have plenty of flour. (I suspect that "feather cake" tried to fly away because there was not flour enough in it. It is not safe to trust to receipts entirely in this respect.) But to return to our gems. The batter should be just thick enough to barely pour from the spoon, and more cold water can be added if too thick. The gem pans are supposed to be heating on the stove. Take a bit of butter and a knife and grease them quickly. If they are heated right the butter will "sizzle." Fill half full of the butter, and bake in an oven almost hot enough to burn anything else up. If my oven is not hot enough on the bottom I put the pan upon the grate. By the time the tea is made, and babe in his chair, with clean face and bib, the muffins are done, and I hope they will be good. They certainly will be if the directions are followed. The pans can be filled if there is any butter left. These are very good cold, and are healthful and economical, as no shortening or milk is required.

Rules for Home Education.

The following rules are worthy of being printed in letters of gold and placed in conspicuous places in every household:

1. From your children's earliest infancy inculcate the necessity of instant obedience.
2. Unite firmness with gentleness. Let your children always understand you mean what you say.
3. Never promise them unless you are quite sure you can give them what you say.
4. If you tell a little child to do something, show him how to do it and see that it is done.
5. Always punish your children for wilfully disobeying you, but never punish them in anger.
6. Never let them perceive that they vex you to make you lose your command.
7. If they give way to petulance or ill temper wait till they are calm, and then gently reason with them on the impropriety of their conduct.
8. Remember a little present punishment when the occasion arises, is much more effectual than the threatening of a greater punishment should the fault be repeated.
9. Never give your children anything because they cry for it.
10. On no account allow them to do at any one time what you have forbidden, under the same circumstances at another.
11. Teach them that the only way to appear good is to be good.
12. Accustom them to make their little recitals with perfect truth.
13. Never allow of tale-bearing.
14. Teach them self-denial, not self-indulgence, of an angry and resentful spirit.

How to Get Along.

Don't stop to tell stories in business hours.

If you have a place of business be found there when wanted.

No man can get rich by sitting around stores and saloons.

Never "fool" in business matters.

Have order, system, regularity, and also promptness.

Do not meddle with business you know nothing of.

Do not kick every one in your path.

More miles can be made in a day by going steadily than by stopping.

Pay as you go.

A man of honor respects his word as he does his bond.

Help others when you can, but never give what you can not afford to, simply because it is fashionable.

Learn to say No. No necessity of snapping it out dog-fashion, but say it firmly and respectfully.

Use your own brains rather than those of others.

Learn to think and act for yourself.

Keep ahead rather than behind the times.

Young man, cut this out, and if there be any fallacy in the argument let us know.

A Model Dairy.

The Commissioner of Agriculture, in his recent report gives the dairy farm of Darlington Bros., at Darlington Station, Delaware county, on the W. C. & P. R. R., a very complimentary mention. It says: "The farm consists of 350 acres, and the dairy herd of 80 to 100 cows, (now 123 cows), mostly of native stock, selected for their butter qualities. There are two large spring houses; one of them 32 feet by 46 feet, 1½ stories high, and built of stone, contains a never-failing spring, which delivers about 8 gallons of cool water per minute. The milk room is about 24 feet by 28 feet, and the milk is set in large pans, the largest containing 500 quarts. The churning is done twice a week, each churning returning an average of 650 pounds of butter, destined for regular customers in Philadelphia and New York. Prices during 1875 varied from 65 cents to $1 per pound. The buttermilk and skim milk are fed to the hogs, numbering from 60 to 70."

Dish Washing Without Soap.

Have your dishwater hot, and add a very little milk, as this softens the water, gives the dishes a nice gloss, and preserves the hands. It removes the grease, even that from beef, and yet no grease is ever found floating on the water as when soap is used. The stone vessels should be set on a stove with a little water in them when the victuals are taken from them; thus, they are hot when one is ready to wash them and the grease is easily removed. Tinware keeps bright longer cleansed in this way than by using soap or by scouring. The habit so many have acquired of scouring tins is a wasteful policy, as the present style of tinware will not bear it.

Keeping Eggs.

I saw in a late number a request for a receipt to preserve eggs. My plan is to take the fresh eggs when they are plenty and cheap, and coat them with lard or other clean grease. I prefer lard. I put a lump in a saucer or anything convenient to melt; (not boil,) then with a small rag grease each egg; it will take but very little grease. I pack in a box or in a keg of wheat bran, or chaff, small end down. Anything like chaff or cut straw will answer. I prefer bran. I have kept eggs 12 months as good as when put away, and have no doubt they can be kept any length of time.—*Country Gentleman.*

Remember This.

If a man faints away, instead of yelling out like a savage, or running to him to lift him up, lay him at full length on his back on the floor, loose the clothing, push the crowd away so as to let the air reach him, and let him alone. Dashing water over a person in a simple fainting fit is a barbarity. The philosophy of a fainting fit is that the heart fails to send the proper supply of blood to the brain. If the person is erect, that blood has to be thrown up hill; but if lying down, it has to be projected horizontally, which requires less power, is apparent.—*Our Friend.*

One Egg Cake.

One and one-third cup of flour, one-third cup of sweet milk, one cup of sugar, one teaspoonful of melted butter, one egg and two teaspoonfuls of baking powder.

Coffee has a much finer flavor when it does not boil. It should be steeped as tea to retain its flavor. Grind only sufficient for a meal at once.

Palatable Graham bread can be made by making a sponge of white flour at night, in the morning add two tablespoonfuls of molasses for each loaf, and make it as thick with Graham flour as you can stir it with a spoon. Fill your pans half full; let them rise till full; have the oven pretty hot at first, and cool it off after the crust has set. A great deal of Graham bread is baked to death.

The editor of the *Rural World*, and who is good authority on such subjects, says: A corn is a bruise of the sole of the foot, producing extravasation of blood, and in a majority of cases is the result of faulty or neglected shoeing. The treatment consists in removing all pressure of the shoe from off the seat of the corn and its contiguous parts. A bar shoe answers the purpose best when properly adjusted.

The green outer husks of walnuts contain a yellow brown and remarkably fast dye, which is well suited for dyeing woolen or cotton materials, staining wood, etc. Wool thus dyed requires no mordant, is very soft to handle, and not like that dyed with vitriol. The shades of color obtained are from bright to dark brown. The husks may be simply kept dried till used, or packed moist in tubs, by which means their coloring power is further increased.

My attention was drawn to notice the amount of corncobs that are thrown away daily, from feeding one pair of horses. The cobs looked so clean and nice it does seem as though they were made to do a farmer more good than to add to the bulk of the manure heap. Being of rather a speculative turn of mind I tried a little experiment with a few cobs, by pouring over them a small amount of coal oil, and then put them in the cook-stove to see what the effect would be. I was entirely satisfied that I had produced an excellent fuel. They furnish a kindling cheaper, and equally as good, than the patented article sold in the cities and towns. Farmers who have to haul wood long distances, and then prepare it for use in the busy seasons of the year, will find this hint of value. I think it would be better to let the cobs lay awhile, after pouring the oil over them, before using.—*Cor. Prairie Farmer.*

Where all other means have failed to exterminate bedbugs, sulphurous acid gas has succeeded. Take everything out of the infested room, plug up all the windows tightly, close all chimneys, and empty about one ounce of powdered sulphur on a pan of hot coals, placed in the middle of the floor. Shut the doors and cover all cracks; let the sulphur burn as long as it will. When the room is large it is a good plan to fasten a bit of tin tube to the bottom of the pan, and to this connect enough small rubber pipe to lead out of the nearest door. By blowing into the end of the pipe with the bellows, the sulphur will be caused to burn more quickly by the draft created and to give a denser smoke. After the sulphur has burned out, paint all the cracks in the floor and around the mopboard with a strong solution of corrosive sublimate, and treat the furniture to the same before replacing it. We have seen a room frightfully infested completely freed by this plan.—*Scientific American.*

LITERARY NOTICES.

"Eighth Annual Report of the Noxious, Beneficial, and other Insects of the State of Missouri. By Charles V. Riley, State Entomologist." A royal octavo volume of 195 pages, including title page and index, in paper covers.

"Made to the State Board of Agriculture, pursuant to an appropriation for this purpose by the Legislature of the State." Jefferson city, 1876. Mainly devoted to the histories of the Colerado Potato-Beetle, the Cauker-worm, the Army-worm, the Rocky Mountain Locust, and the Grape Phylloxera. Fifty-five characteristic illustrations, including many figures, printed on fine calendered paper, and in fair type. The work is statistically authenticated by the condensation of a large mass of correspondence between Prof. Riley and various intelligent sources in Missouri and the neighboring States, and is written in the author's usual comprehensive and lucid style.

Missouri has, at least, conferred the title of State Entomologist on one of her citizens, and for eight years has been making appropriations to her State Board of Agriculture, for the purpose of enabling it to publish annual reports of that officer's labors to the people of the State. Whether it affords any additional compensation or not, this may be regarded as a recognition of the importance of this species of knowledge to the farming interests of the State, if it does nothing more. Is is true, that this may not secure a state against the incursions of noxious insects, but it may enable its citizens to *know* the nature of the infestation, how it generated, how continued, and how it may be mitigated or abated. Whatever may be the final results of entomological knowledge, the subject cannot be practically or successfully pursued without patient research and great labor, therefore, if in any sense "the laborer is worthy of his hire," we happen to know, from long experience, that he is eminently so in this field of operation. When we reflect that the farmers of twenty-six counties in Missouri suffered a loss of $15,000,000 in the summer of 1875 from the depredations of the Rocky Mountain Locusts alone, we cannot regard the matter as unimportant, whether future incursions may be prevented by the dissemination of entomological knowledge or not—either wholly or in part. Such knowledge is valuable if it does nothing more than to infuse a just and intelligent comprehension of the nature and extent of an invasion of noxious insects, for without knowledge of some kind on the subject, the people may become the victims of those misapprehensions and fears which only aggravate a calamitous state of things instead of mitigating it. When will Pennsylvania see the necessity of making an appropriation for similar purposes to her "State Agricultural Society?" After she is overrun by some devastating horde of insects, or before?

The National Agricultural Congress.

The fifth annual session of the National Agricultural Congress will be held in the Judges' Pavilion, International Exhibition Grounds, Philadelphia (Evening Session at Belmont Hotel), on Tuesday, Wednesday and Thursday, September 12th, 13th and 14th, 1876, commencing at 10 o'clock, A. M., on Tuesday.

All Agricultural Societies, Agricultural Periodicals, Agricultural Colleges, Boards of Agriculture, Granges, Farmers' Clubs, or other organizations whose object is the promotion of agriculture, are invited to send delegates; and all persons desiring to promote the objects for which the Congress is instituted, are earnestly requested to attend and participate in the deliberations.

Believing that the time is come when the agriculture of the United States must be studied and considered as a whole, and by a comparison of the capabilities and conditions of widely separated regions, in order to fully understand in what manner the interests of each and all may be best promoted, we appeal to the agriculturists of every section of the Union, and to all who are working for their welfare, to gather together in this Centennial year of our Nation's history, and, in the birthplace of American national freedom, to counsel together and to give a new impulse to the agricultural progress of our country.

Societies, etc., sending delegates are requested to communicate their appointment to the Secretary, at Iowa Agricultural College, Ames, Iowa, previous to September 1, and after that time to him at the Belmont Hotel, 41st and Oregon streets, Philadelphia, where delegates on their arrival are invited to call and report.

W. C. FLAGG, *President*.

G. E. MORROW, *Secretary*.

The Belmont Hotel, corner of 41st and Oregon streets, and convenient to the Exhibition Grounds, will be the headquarters of the Society and the place where its *evening* meetings will be held. Delegates desiring rooms are requested to notify the proprietors in advance.

ORDER OF BUSINESS.

Tuesday, September 12th, 10 *P. M.*—Call to order. Prayer.

Address of Welcome, &c., by Dr. Chas. R. King, President Philadelphia Society for Promoting Agriculture, and Burnet Landreth, Esq., Chief of Bureau of Agriculture, International Exhibition.

Response by President of the National Agricultural Congress. Appointment of Committee on Credentials.

Address—"American Agriculture," by the President, W. C. Flagg, of Illinois.

3 *P. M.*—Report of Committee on Credentials. Election of Members. Payment of Dues. Appointment of Committees. Address—"Objects and Work of the National Agricultural Congress," by the Secretary, G. E. Morrow, of Iowa. Discussion.

8 *P. M.*—Address—"The Outlook of American Agriculture," by Joseph Harris, of New York. Discussion.

Wednesday, September 13th, 10 *A. M.*—Reports of Committees. "Agricultural Statistics," by J. R. Dodge, Statistician Department of Agriculture, Washington.

Address—"American Agricultural Literature," by Dr. E. L. Sturtevant, Massachusetts. Discussion.

3 *P. M.*—Address—"American Live Stock Interests," by L. F. Allen, of New York. Discussion.

Address—"American Dairying," by X. A. Willard, of New York. Discussion.

8 *P. M.*—Address—"The World's Grain Crop of 1876," by Hon. Alex. Delmar, of Pennsylvania.

Thursday, September 14th, 10 *A. M.*—Address—"Our Grain Fields," by Alfred Gray, Secretary Kansas Board of Agriculture. Discussion. Address—"Our Southern Agriculture," by Col. Thomas Claiborne, of Tennessee. Discussion.

3 *P. M.*—Election of officers for ensuing year, and fixing place of annual meeting. "Agricultural Education," Address and Discussion, Prof. A. S. Welsh, Iowa Agricultural College; Prof. N. S. Townsend, Ohio Agricultural College.

8 *P. M.*—"Agricultural Organizations and Co-operation." Address and discussion. Thos. P. Janes, Commissioner of Agriculture, of Georgia, will address the Congress upon Agricultural Reform.

So far as time will permit, other appropriate topics will be discussed. Brief addresses are expected from a number of gentlemen widely known in agricultural circles, from their official positions and writings.

SOME time back a man of notoriously bad character, residing in a village, wished to emigrate. To obtain assistance from the Emigration Commissioners one must have a character, and the man accordingly asked one from his neighbors. Everybody was anxious he should go, and everybody therefore certified to his excellent reputation. No one was more astonished at this result than the man himself, and, after looking at his certificate, with its long list of signatures, "Well," said he, "I had no idea I was so much esteemed in the neighborhood; I think I shall stay."

PENNSYLVANIA RAILROAD SCHEDULE.

Trains LEAVE the Depot in this city, as follows:

WE TWARD.	Leave Lancaster.	Arrive Harrisburg.
Pacific Express*	2:40 a. m.	4:05 a. m.
Way Passenger†	4:50 a. m.	7:50 a. m.
Limited Mail*	9:25 a. m.	10:30 a. m.
Hanover Accommodation.	9:30 a. m.	Col. 10:00 a. m.
Mail train via Mt. Joy	11:20 a. m.	1:00 p. m.
No. 2 via Columbia	11:20 a. m.	1:20 p. m.
Sunday Mail	11:29 a. m.	1:20 p. m.
Fast Line	3:25 p. m.	4:50 p. m.
Frederick Accommodation.	3:35 p. m.	Col. 4:15 p. m.
Harrisburg Accom	6:10 p. m.	8:10 p. m.
Columbia Accommodation..	7:32 p. m.	8:10 p. m.
Lancaster Express	7:40 p. m.	8:10 p. m.
Harrisburg Express	7:45 p. m.	9:05 p. m.
Pittsburg Express	9:10 p. m.	10:35 p. m.
Cincinnati Express*	11:30 p. m.	12:45 a. m.

EASTWARD.	Lancaster.	Philadelphia.
Atlantic Express*	12:40 a. m.	3:10 a. m.
Philadelphia Express†	4:10 a. m.	7:00 a. m.
Harrisburg Express	7:25 a. m.	9:25 a. m.
Lancaster Express	7:50 a. m.	10:30 p. m.
Columbia Accommodation..	9.28 a. m.	12:30 p. m.
Pacific Express*	1:10 p. m.	3:30 p. m.
Johnstown Express	3:05 p. m.	6:00 p. m.
Harrisburg Accom	5:50 p. m.	9:00 p. m.

The Hanover Accommodation, west, connects at Lancaster with Limited Mail, west, at 9:25 a. m., and will run through to Hanover without change of cars.

The Frederick Accommodation, west, connects at Lancaster with Fast Line, west, at 3:25 p. m., and runs through to Frederick without change of cars.

The Frederick Accommodation, east, leaves Columbia at 12:30 p. m., arriving at Lancaster at 1 p. m., connecting with Pacific Express at 1:10 p. m.

The Dillerville Accommodation leaves Harrisburg at 5 a. m., coming via Mt. Joy, and arriving at Lancaster at 9:05, connecting with Lancaster train.

The York Accommodation, leaving York at 6:22 a. m., connects at Columbia, at 7:25, with the train leaving Marietta at 6:52 a. m., at Lancaster with the Harrisburg Express at 7:25 a. m.

The Marietta train leaves Columbia at 6:05 a. m., and returning, leaves Marietta at 6:25, connecting at Columbia with the York Accommodation, and at Lancaster with the Harrisburg Express at 7:25 a. m.

On Sunday there will be two sections of Pacific Express, east, the second section starting from Columbia at 12:30 p. m., making all the stops between Columbia and Lancaster, and the Johnstown Express stops from Lancaster to West Philadelphia.

The first section of Pacific Express, east, on Sunday, when flagged, will stops at Middletown, Elizabethtown, Mt. Joy, and Landisville.

*The only trains which run daily.

†Runs daily, except Monday.

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THE LANCASTER FARMER

DEVOTED TO AGRICULTURE, HORTICULTURE, DOMESTIC ECONOMY AND MISCELLANY.

"THE FARMER IS THE FOUNDER OF CIVILIZATION."—WEBSTER.

Prof. S. S. RATHVON, Editor. LANCASTER, SEPTEMBER 15, 1876. PEARSOL & GEIST, Publishers.

THE FARMERS HOME ORGAN.

The Lancaster Farmer;

A MONTHLY NEWSPAPER,

DEVOTED TO AGRICULTURE, HORTICULTURE, DOMESTIC ECONOMY AND MISCELLANY.

PRACTICAL ENTOMOLOGY

Made a prominent feature, with special reference to the wants of the Farmer, the Gardener and Fruit-Grower.

Founded under the auspices of the Lancaster County Agricultural and Horticultural Society.

Edited by Prof. S. S. RATHVON.

THE LANCASTER FARMER has now completed its seventh year—the last having been under the auspices of the undersigned as publishers. When we assumed the responsibility of the publication one year ago, it was with a determination to make such improvements during the year as would place the Farmers' Organ of this great agricultural county in the very front rank of publications of its class. That we have done so, our readers will bear cheerful testimony. But our work of improvement is only fairly begun. We propose to make the volume for the Centennial year still more interesting and valuable than its predecessor for 1875. In this, however, we need the co-operation of every friend of the enterprise. To make it a success, every one who now reads THE FARMER should at once send us at least one new subscriber.

The contributions of our able editor, Prof. RATHVON, on subjects connected with the science of farming, and particularly that specialty of which he is so thoroughly a master—entomological science—some knowledge of which has become a necessity to the successful farmer, are alone worth much more than the price of this publication.

THE FARMER will be published on the 15th of every month, printed on good paper, with clear type, in convenient form for reading and binding, and mailed to subscribers on the following

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Five copies, one year,	5.00

All subscriptions will commence with the January number unless otherwise ordered.

All communications intended for publication should be addressed to the Editor, and, to secure insertion, should be in his hands by the first of the month of publication.

All business letters, containing subscriptions and advertisements, should be addressed to the publishers.

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RATES OF ADVERTISING.—Ten Cents a line for each insertion. Twelve lines to the inch.

CONTENTS OF THIS NUMBER.

OUR FENCE CORNERS

"Before they Call I will Answer."*

Give me to eat! O, Father in Thy garners
The golden grain is stored,
Thy purple grapes hang heavy in the vintage,
Thy harvest fields with promises are scored;
To eat, for I so wearily have fasted,
And yet my kindred call on me for bread,
On me, whose harvesting the worm has blasted,
On me with hands in helplessness outspread!

Give me to drink! O, Father, in Thy garden
The fountains ever flow,
I hear their cooling plash and see them glitter,
Oh, pour their fullness on these sands below;
To drink, I am so weak and faint with going
To broken cisterns that can hold no rain,
Then lead me nigh to that rich overflowing,
Let my parched lips Thy cup of gladness drain!

So prayed my soul in heaviness of sorrow,
Lo! even as I cried,
Bread, manna-sweet, was broken at my table,
And crystal-brimmed the goblet close beside.
Even "before they call," is it not written?
The banquet hall awaits the tardy guests,
The faint, the thirsty, and the famine-smitten
Have but to cry; God's love outruns the rest.

WHAT interjection is of the feminine gender?—A-lass!

ACCOMMODATING a friend with a fifty dollar note is an ex-L-lent way of getting rid of money.

THE extreme height of misery is a small boy with a new pair of boots and no mud puddle.

COOL drinks—Those taken at another fellow's expense, without invitation.—*Sunday Courier.*

SOLILOQUY by a tippler—The public always notices you when you have been drinking, and never when you are thirsty.

THE useless waste of money on weddings and funerals calls for reform. Extravagance makes young men dread marriage and death.

THE sun's rays focus on the earth about this season of the year, and those are the raysons for its being hot enough to scorch a paper collar.

PAINTING the Lily.—Generous shoeblack (to colored gentleman): "Better 'ave 'em done, sir; I'll touch up yer face, too, for the same, sir!"

HENRY WATTERSON poetically says that ice is "water gone to sleep." It has every opportunity for going to sleep while Henry Watterson is around.

"YOU are a nuisance. I'll commit you," said an offended judge to a noisy person in court. "You have no right to commit a nuisance," said the offender.

A YOUNG lady, following a Shakspearian play with the book, remarked to her companion: "How imperfect those actors are! None of them say 'exit' when they go off."

A PERSON who was sent to prison for marrying two wives, excused himself by saying that when he had one she fought him, but when he got two they fought each other.

"MRS. SPINKS," observed a boarder to his landlady, "the equal adjustment of this establishment could be more safely secured if there was less hair in the hash and more in the mattresses."

"HAVE you much fish in your bag?" asked a person of a fisherman. "Yes, there's a good eel in it," was the rather slippery reply.

EVEN during the heated term two of our Western contemporaries got into a grammatical dispute. Its singular how men could be in such a mood, while the heat is in tense.—*New York Commercial Advertiser.*

IN Bath Abbey, England, is to be seen the following:

"Here lies Ann Mann,
She lived an old maid and died an old Mann."

It wasn't a loaded Onondaga county preacher who recently said: "Brezzern, szeasier for a cmmit—hic—tgo srough ze knee of an idol, zan for—hic—a rich mau to live—hic—peazably with hiz muzzer-in-law."

AN Illinois judge has decided that a washing bill cannot be collected, and any experienced washerwoman will tell him that he is right six times out of ten, which is probably better than the average of his decisions.

IT is supposed that the reason graduates of female colleges are called bachelors of art instead of maids of art, is that the former is a higher degree. At least the maids are always after the bachelors.—*Norwich Bulletin.*

PLANT a Centennial tree this year—it may live to see the second Centennial.

* "And it shall come to pass that before they call I will answer; and while they are yet speaking I will hear.—*Isaiah*, lxv. 24.

The Lancaster Farmer.

Prof. S. S. RATHVON, Editor. LANCASTER, PA., SEPTEMBER, 1876. Vol. VIII. No. 9.

WHAT IS BLIGHT?

A good deal is said by the agricultural papers at this time—and also by agriculturists and horticulturists, when in meetings assembled—about *Blight*, its causes and its effects, but mainly its *effects;* for, as to its *causes*, all seem to be at sea without a compass, and therefore all that is advanced is merely conjectural and unsatisfactory. And here at the outset we confess that we feel unable to cheer the aggrieved parties with any information of acknowledged value to them, in reference to the most aggravated form of the blight about which they most complain. First, however, it is essential that we should exactly know what is meant by *blight;* and particularly the kind of blight that may have come under our observation; for, it is very evident, from the manner in which it is described by various persons, that there must be different causes for its manifestation. The dictionary interpretation, or rather definition, of *Blight*, is a "mildew; decay; anything nipping or blasting; applied as a general name to various injuries or diseases of plants, causing the whole or a part to wither, whether occasioned by insects, fungi, or atmospheric influences." Also, "a downy species of *aphis*, or plant louse, destructive to trees." "To frustrate; to prevent the growth and fertility of vegetation, as *blighted* corn." And, as the term is now used, it is made to cover a variety of effects, proceeding from a variety of causes; in fact, when a plant or tree becomes enervated, wilted, or withered from any cause, it is said to be *blighted;* mainly because no other name seems to so conveniently cover the case as this term.

In short, without a qualifying adjective or prefix, the term *blight* is about as indefinite as the terms "pinch-bug," or "worm." When the base of a young peach tree becomes seriously infested by the "Peach-tree borer," (*Ægeria exitosa*), causing the leaves to wilt or turn yellow, and giving it a weak and sickly appearance, it is said to be *blighted*, and so it is, but this is of a specific character, and is the effect of a cause that may be readily discovered if we will but make an intelligent effort; and, knowing the cause, we may apply the remedy. This, perhaps, might appropriately be called the "Borer-blight."

When the leaves of peach trees become gnarled, curled, and yellowish in color, and the cavities and inequalities caused by their distorted condition, contain the "peach-aphis," (*Aphis persica*), then the tree may be said to be afflicted with the "aphid-blight;" and, knowing the cause, the cure would be in finding something to kill the aphids. But the leaves of peach trees sometimes turn yellow, become curled, crisped, wilted and dry, when no borers are in the trunk or at the roots, and when no aphids are on the leaves. In some instances a very minute fungus is present, and then we might properly term it the "Fungus-blight," and when no *fungi* can possibly be detected, if it has been caused by the previous winter's freezing, it might be called the "Frost-blight;" but when it has not been caused by frost, it is conveniently called "Fire-blight," about the *cause* of which doctors by no means agree. Fire-blight is variously attributed to climatic causes, electrical influences, or the chemical character of the soil; but just which, what or how, there seems to be a diversity of opinion on, even among the most experienced in these matters.

All the foregoing causes and their effects are sometimes visible on the apples, the pears, the oaks, and other kinds of trees; and this is conspicuously the case in regard to the pear trees the present season. In addition to the foregoing, however, there is a small beetle, which, in both its *larva* and *imago* states, perforates the smaller branches and makes an excavation in the heart, causing all the leaves to become withered, wilted or blacked, above the perforation, and this might, by way of distinction, be called the "Beetle-blight." This beetle is the *Tomicus pyri*, and to destroy it would be to cut off the blighted branches a few inches below the blighted portion, and burn them. Sometimes the leaves of the pear trees are infested by a "slug" which skeletonize them, and gives them a crisp and burnt appearance, and this we might properly name the "Slug-blight. These slugs are the larvæ of a "Saw-fly," (*Selandria pyri*,) and an application of a poisoned powder or solution, at the proper time, might effect their destruction and cure. But the "Fire-blight" of the pear sometimes occurs so suddenly, so mysteriously, and so generally—epidemically as it were—that the cause, thus far, has been past finding out, and the question still is, "What are we going to do about it?" This kind of blight sometimes is confined to one or more small branches; at other times to a large branch, or the quarter, or the half, or the greater part of the tree. At other times again (as in the present season,) it commences at the top, and taking one branch after another works downward, until it finally compasses the whole tree. In the evening the tree may be fair to look upon and on the following morning it may be blighted. This form of blight may be confined to a single tree in an orchard; or others, or nearly the whole orchard, may be more or less infected, but the causes may be the same, and as difficult to determine, as in the case of the peach tree.

There is at this writing (Sept. 1st,) two "Horse-chestnut trees," (*Æsculus hippocastanum*,) on the south side of Chestnut street, near Duke, in Lancaster city, all the leaves of which, during part of July and August, became crisp, discolored and fell off, without the presence of insects or any other visible cause; and one of these trees, near the ends of the branches, has put forth new leaves, shoots and flower-buds, so that now it presents the singular spectacle of leaves, flowers and fruit at one period. The blight in these trees is analogous to fire-blight, and probably proceeds from the same cause, whatever that may be. The Elm trees of Lancaster and vicinity, and also elsewhere in the county, the present season, have been infested by multitudes of a species of *Galeruca*, which is said to have been introduced into this country from Europe many years ago, and the larvæ as well as the mature insects puncture and skeletonize the leaves, giving such leaves a burnt and blighted appearance.

On the 10th of August we examined some young locust trees on Chestnut Hill, in this county, and we found all the tender growth of the present season infested by large numbers of small "Tree-hoppers," (*Smilia*,) which were engaged in sucking out the sap, accompanied by a host of ants, which benefited by the punctures made by the hoppers, or lapped up their excretions. We never before saw the hoppers so abundant; from fifteen to twenty-five were often seen in a group, of various sizes, some of them so very small that they could not be detected without a magnifier, but all were engaged in the work of exhausting the sap of the trees. There is also a small "curculio" (*Apion robiniæ*,) which punctures the leaves of the locust; but the worst enemies to them are the "Leaf-miners." These penetrate the leaves, eating the *parenchyma*, and leaving nothing but the upper and lower skin remaining. They are both the larvæ of a minute species of *Lepidoptera* and of *Coleoptera*. The latter is the *Hispa suturalis*, and is far the worst. Some years ago we noticed a row of locust trees, about an eighth of a mile in length, nearly every leaf on which was more or less mined by these little insects, which were present in myriads, producing a brownish and yellowish blight, and this prevailed that season in many parts of the county.

When all these contingencies occur at the same time, and the "Locust-tree-borer" (*Clytus robiniæ*,) penetrates the trunks and branches, the trees have a fearful ordeal to pass through, and it would not be very surprising if they should become blighted and die. But these trees sometimes become blighted without the presence of any of the afore-named external enemies, and no positive evidence of the internal ones, just as is the case with the peach and the pear.

Apple trees are not so subject to fire-blight as the pear trees; but when the "Root aphis," the base, the trunk, and the branch borers attack young apple trees, they produce a blight that is more certainly destructive than any other form of the disease. Some years ago, from the "Tower" in Mount Auburn Cemetery, near Boston, we noticed that many isolated apple trees, as well as whole orchards, were more or less browned and blighted, and when we inquired the cause we were informed that it was caused by multitudes of "Canker worms," (*Anysopteryx nernata*). But apple trees may also be blighted from other as yet unknown causes, and it is the function of those who are always about and among them to make intelligent observations and to record them. "That's what's the matter." Those most interested in these things pay the least attention to them.

Branches of oak and hickory trees often become blighted, and when, subsequently, a storm of wind comes, these branches are broken off and fall to the ground. In the oak tree these blighted branches are caused by a brownish cylindrical beetle—or rather by its larva—called the "Oak-tree pruner," (*Elaphidion putator* and other species.) This larva mines through the heart of the branches, and when it has nearly completed its larval period, it gnaws away all the wood at a certain place, leaving nothing but the bark remaining, and then it does not require much of a wind to break them off, the larva usually being found in the fallen branch. From these branches we have bred the above-named species. The "Hickory-tree pruners" deposite their eggs in the branches and then girdle them; the winds after a time breaking off the branches, and the young pruner is afterwards developed therein. We have never bred the last named beetle from these pruned branches, but we have detected them girdling them. It is scientifically called *Oncideres singulatus*, and has a family alliance to the "Apple-tree borer," (*Saperda bivittata*). S. P. Eby, Esq., informs us that an insect of some kind is girdling his Linden trees, near Mountville, and those he brought us present the same appearance as the hickory pruner's work.

Some causes of blight and decay in trees we may be able to account for, but even then we may be at fault for a remedy, much less can we provide one when we are ignorant of the cause. On this subject the following, from *Science Gossip* for August, 1876, may contain some suggestions that may be worthy the attention of horticulturists and others:

Decay of the Trees in Hyde Park.

In *Science Gossip* for May, 1873, is a memoir on raphides and other plant-crystals by Professor Gulliver, F. R. S., illustrated by numerous wood cuts; and he has subsequently given descriptions, with a plate, of the short crystal prisms in various plants, more especially of the order Leguminosæ, in the *Monthly Microscopical Journal*, December, 1873. As to the use of raphides and other plant-crystals, he regards them as valuable manure, to be restored at the fall of the leaf to the earth for the nutriment of the parent plant; and besides to afford at other times important

botanical characters, in which respect true raphides are very significant. The report of the June meeting, 1876, of the East Kent Natural History Society, contains some applications of these facts to the sad state of the trees in Hyde Park, so much deplored of late in the newspapers and elsewhere. As if to remove the natural food of these trees, their fallen leaves and fruit have for many years been carefully swept away, and no suitable manure substituted. These leaves and fruit are very rich in sphaeraphides and short prismatic crystals, consisting chiefly of phosphate or oxalate of lime, the very food required for the preservation of the plant. And indeed every gardener well knows the excellence of leaf-mould as manure; but in no work on botany, or horticulture, or arboriculture, has the main cause of that excellence been explained or even recognized. But now we see how the fall of the leaf is a provision of nature for the welfare of the plant. In such a soil as that of Hyde Park the calcareous salts are especially needed for the preservation of the trees. No wonder, then, when so long and regularly deprived of the fallen leaves and other parts, these trees should show signs of decay, just as beasts would pine and waste if their natural food were taken from them. eHad the old forests been always cleared of the fallen leaves, there would long since have been a decay of the noble vegetation which still excites the admiration of the traveler. Rich and deep soils may afford for ong periods a sufficiency of calcareous salts for the preservation of the plants, but not so shallow and poor soils. The quantity of saline matter annually taken up even by a single tree from the soil, and appearing as microscopic crystals in the plant is prodigious; and unless this saline material be returned to the earth, exhaustion thereof must sooner or later occur. The Legumens, too, are very rich in short prismatic crystals, and these no doubt in such plants as the trefoils, which are so greedily devoured by cattle, afford an important supply of the calcareous or other salts, which are essential in the animal economy. Has any agricultural chemist ever estimated the quantity, by weight, of the short prismatic crystals in a truss of clover? They present in the clovers and other trefoils lovely microscopic objects, suggestive, too, of utility. Nor are such observations alone in proving the high value of the microscope in explaining or directing practical operations in the cultivation of useful plants.

If the foregoing extract does not elucidate the subject of blight, or satisfactorily explain its cause, it at least suggests the importance of leaf-mould in sustaining trees and plants, and securing their healthful condition, because the fallen leaves contain the "raphides," or cellular crystals of those mineral salts, which are so essential to the growth of vegetation; a fact that is no doubt more or less apparent to many, without eliciting the practical attention of any. We cannot tell how far we may be injuring vegetation by the continued removal from the soil of those elements which they most do crave. Even in cases of *fire-blight*, when only a single branch is smitten, we cannot tell how long it may have been in process of that peculiar condition which was necessary for the development and visible manifestation of the phenomenon. It was, 'tis said, the "last straw," which "broke the back of the camel," and plants, like animals, may for a long time patiently and tenaciously endure a deprivation and then suddenly break down. Again, trees, shrubs and plants that are in a vigorous state of growth, are not so subject to the infestation of insects and fungi as those which have become enervated by reason of the depletion of the soil in which they are growing, or at least do not so readily succumb to these infestations. Some forty or fifty years ago there was no tree in Lancaster county more popular, or more universally grown, as an ornamental tree, than the Lombardy Poplar. Every farm house had them in the yard, and in cities, towns and villages, whole rows of them adorned the side walks. But one by one they became blighted and decayed; first perhaps a single branch, then the fourth or half of the tree, and finally the whole body decayed and died, so that now it is rarely that they are seen any where; no one knew why or how, and no one seemed to think that the mulching of the soil with the fallen leaves was of any importance in securing it a healthy condition; for the yards and sidewalks where they grew were carefully swept, and kept scrupulously clean.

But it is also the opinion of very respectable authorities that blight is caused somehow through climatic and electrical influences, although they may not be able to explain exactly how. Others again, that a long-continued term of intense heat may cause it. The rapid volatilization and evaporation of the sap from the leaves, and especially the new growth of the wood, (the trunk, from the same cause, being unable to supply the abnormal exhaustion,) and the final contraction of the tissues and the pores, thus preventing the normal circulation in the leaves and tender branches, especially when the season is more than ordinarily a dry one. We often see this effect in succulent vegetation, on account of its rapid secretion and luxuriant expiration, by which its equilibrium is interrupted, deranged, or destroyed. We also often see (for instance, in long continued hot and dry weather,) the blades of corn, the leaves of clover and succulent vegetation generally, roll themselves up into tubes, or close up their most exposed surfaces, and thus present a dry and shrunken appearance, terminating in withering decay and death. Some also allege that it is the effect of a previous hard-freezing winter, through which the sap becomes vitiated. But the mild winter of 1875 and 1876 affords no support to this theory. Notwithstanding the mild winter named, the present has been the worst blight season that we have had for many years.

Verily, a wide field, on this "crop," is before us, and it ought to elicit the most competent and persevering explorers, for the subject is drawing unusual attention towards the various forms of *blight*.

GRAPE PHYLLOXERA.

Phylloxera vastatrix.

It is estimated that damage to the amount of $27,955,000 will be done to the French vineyards this year by a small insect called the phylloxera, which attacks the vine roots and dries up the leaves.

According to the most reliable authority, this insect occurs in two very different forms or phases, so different indeed that there are others who contend that they are two different insects. We have observed it in the tubercular or gall form on the leaves of the Clinton and other grape vines in this county, at various times, during the past seven years. Generally, however, on the Clinton, and other varieties that have originated from the same stock. On one occasion we visited the vineyard of Mr. Reuben Weaver, of Rapho township, not far from the northern boundary, and found all his Clinton vines seriously infested, and none of the others, except here and there a few on the Franklin. Whole rows of the Clinton were infested from one end to the other, from the base to the very ends of the new growth, in some instances hardly a single leaf escaping. Of course, this prevented the leaves from developing and performing their normal functions, and in the same degree preventing the ripening and maturing of the fruit. We recommended the cutting off the infested ends and laterals, and destroying the insects in their ova or larva form. To what extent he followed our suggestions we are not informed, but in no subsequent season were his vines infested as they were on the occasion we alluded to, and this has also been the case in various other localities in the county.

The presence of this minute insect (*Phylloxera vastatrix*,) shows itself in vast numbers of irregular, raised tubercles, or galls, on the undersides of the leaves of the different varieties of the grape, and it is especially on those whose leaves are of a delicate texture; and hence, on whatever variety they may appear, they will always be on the tenderest portion, often out to the very ends, where the leaves are imperfectly expanded. These galls are of various sizes, and, of course, in various stages of advancement, and it is wonderful how they succeed in extending their domain so rapidly; for we have noticed them on the young, scarcely half-expanded leaves, at the very ends of the vines. On carefully opening these galls at the proper season (during July and August,) they will be found hollow and the interior cavities filled with yellowish eggs, or young insects, so minute that their forms can only be recognized by the aid of a magnifier. When the young are ready to emerge forth, a fissure occurs in the tops of the galls, through which they effect their escape, and thus spread over the vines.

They belong to the great APHID, or Plant-louse family, and their food is the sap of the vines, and when such countless millions occur as are sometimes on the vines, of course they must greatly enervate them, if they do not entirely destroy them.

But it is not in this form that they are the most destructive, or have been so devastating as they have been for some years in France and other European localities, especially the former. They also occur on the roots of the vines, especially after they have dropped their foliage, and in this form they are the most destructive, for the reason that they are not so accessible as they are when their operations are confined to the leaves. The paragraph we have quoted at the head of this paper is no exaggeration, but rather falls below the real loss sustained by the French grape growers, than rises above it.

The root Phylloxera has also been detected in this country, especially in some of the Southern States, and no doubt where our vines have suffered from invisible causes, it may have been due to the presence of the root form of this insect; and where they are so numerous as we have seen them on the leaves of the Clinton grape in this county, it would be nothing strange if they should also attack the roots in time. The investigation of these insects is attended with many difficulties, on accout of their minute size, and their very peculiar erratic economies; and notwithstanding many observations have been made, and much has been written on the subject, their history is by no means clear to the ordinary perception of those who are most interested in its development.

A liberal reward, amounting to some millions of francs, has been offered by the French government for a certain remedy to destroy them, which has not yet been awarded, if it has even been claimed; and the Academy of Sciences has appointed a commission to institute the proper investigation; but we believe nothing that can be universally applied has yet been developed. Submerging the vineyards has been deemed the most effectual, but this, of course, cannot be applied except on low flats; therefore, so far as it relates to highland or hillside yards, it is entirely out of the question. Perforating the ground near the vines, and introducing an insecticide has been found beneficial in such localities, but even these remedies have not been of sufficient efficacy to claim the rewards that have been offered. In the face of these discouragements the French grape culturists are looking towards *prevention*, and consequently are beginning to import largely from America our hardier varieties of the grape, as root stocks for new vineyards, and are digging out and destroying their own finer varieties, as it is these which have been most subject to the attacks of the Phylloxera. The insect seems bound to run its course, and perhaps after that the afflicted districts may enjoy some repose, but more millions of dollars may be lost before that auspicious period arrives.

The history of the procreation, transformations, habits and specific development of the *Phylloxera vastatrix*, is too complicated to be made clear to the mass of the people, or even to the generality of the horticultural public, mainly from the exceeding minuteness of the subjects, and the eccentric order of their transformations. From the weight of the evidence, as the question now stands, it appears to have had its origin in America, from whence it was somehow introduced into England, and from thence to France.

Dr. Fitch, of New York, described grape-leaf galls formed by this insect, under a different name, years before it became destructive in Europe, or perhaps even before it was known there, and we noticed the galls in Lancaster county, even before Dr. Fitch described them. During the existence of the Old Horticultural Society—about 1855—an infested vine was brought to the meeting for the month of July; but of course, it was an enigma that we could not then answer, and the matter passed off.

Five different kinds of the eggs, and of different sizes, are deposited by the females, and if the *depositor* is so small as to elude human observation, except by artificial means, the difficulties of recognizing the *deposit*, is a matter that is not very surprising under the circumstances.

These insects deposit their eggs on the under or downy sides of the leaves—occasionally a few of them are deposited on the upper sides—under the loose bark of the trunk or branches, at the base of the vines, or in crevices in the earth in proximity to them; and when the young are hatched they find their way to the roots and feed on the sap either of the roots or the leaves, as the case may be. Both winged and unwinged males and females occur, all having a somewhat different history and habit. The eggs of the leaf form of the insect are deposited in May and June, and both kinds continue to deposit eggs as late as the end of October, and under one peculiar phase of their development some of the females lay a single egg, nearly as large as the parent, and which afterwards increases in size. In view of this system of oviposition on the canes of the grape, it is recommended to strip off the bark and burn it, and to apply coal oil, dilute carbolic acid, or other similar substance to the canes. Although there seems to be some conflict of opinion among those who have been giving their attention to the investigation of the history and habits of this insect, it is now claimed that the subject is nearing its completion, if that end has not already been attained.

But satisfactory as the case may be to those who have time, patience, ability and opportunity to demonstrate to the few who may have the penetration to comprehend the process and results of their labors, there is still need of a plain historical detail of the insect and its various transmutations, embracing the leading facts of what is actually known, with all the repetitions, complications and doubtful points eliminated; so as to make the subject practically useful to that portion of the community who are engaged in viticulture, whether they are amateurs or professionals. Even *then*, it will require closer habits of observation than many people may have time or inclination to bestow upon such a subject, in order to make an application of the remedies that experience may prescribe, however effectual they may be. Under any circumstances, there are many who would rather discontinue the growing of grapes altogether, and devote their time and means to a less precarious crop, than to subject themselves to slow, troublesome, and expensive remedies or preventions. We hope, however, it may be a long day before our county or our country is visited by such an infliction as has visited France. Missouri and California ought, however, to admonish us that we cannot depend on entire exemption. R.

ELM-TREE LEAF-BEETLE.

Galeruca xanthomelana.

On the 5th of August, 1876, our attention was called to a multitude of "singular worms" on the pavement under an English Elm-tree, near the southwest corner of North Duke and East Orange streets, and subsequently to the large elm in front of St. James' Episcopal Church, as well as to a row of elms in front of the residence of Mr. F. Shroder in East Orange street; and a few days afterwards Mr. Jno. Hager sent us about a gill of the same *worms*, from his residence in the western suburbs of Lancaster city. On examination these worms proved to be the *larvæ* of the coleopterous insect above named. When we visited these places we found these larvæ crawling down the trunks of the trees in great numbers, and collecting in masses around their bases, as near as they could get to the moist earth, and many of them had already changed to the pupa state. A large number of them, however, crept into the crevices, and under the loose bark, and pupated there, whilst others crept close to the bases of the buildings and pupated there; and possibly, if they could have done so, they might have crawled a little distance into the earth. We could have swept together at either of the places above named, enough to fill a pint measure, and still they were coming in multitudes.

The foliage of the trees above was perfectly riddled in millions of small holes, or entirely skeletonized, presenting a crisp and blighted appearance. In a preliminary article, published in the *Daily Express*, we stated that these insects were a foreign importation and that they first made their appearance on the elm trees in the vicinity of Baltimore, as now appears more than thirty years ago, and were very destructive. This is their first appearance in Lancaster county "in force." Mrs. P. E. Gibbons found several specimens on an elm, near her residence, about two years ago, and Mr. Auxer informs us that he found several, last year, in Pequea valley. From this it will be manifest that the insect is increasing in our county. Within one week after they had pupated, the mature beetles began to appear, and continued to do so from the above date to the end of the month. These insects belong to a large family of hibernating species, and therefore if they were not generally destroyed when they came down from the trees—as we recommended—we may have them in increased numbers next season. Both the *larva* and the *imago* of many of the Galerucans feed on the foliage of trees, and when they are numerous they possess great defoliating powers.

The Remedy.—When these insects occur on the foliage of a tree that it is desired to save, a liquid poison (Paris green, hellebore, tobacco, carbolic acid or whale oil soap) should be thrown on it from the nozzle of a garden engine; but when the tree is large this would be almost impracticable. The larvæ, when mature, descend from the tree and no doubt undergo their transformation either in the ground, or among rubbish or grass at the foot of the tree; and from our experience the present season, this occurs during nearly the whole month of August. The fact that they assembled in the places they did in this city, may have been owing to the circumstance of their being unable to penetrate the ground—the trees being paved all around with brick—and some of them we found amassed in corners and crevices around a marble door step, and along the base of a wall, ten feet from the trees. Under such circumstances the larvæ and the pupa may be easily gathered up and scalded or burned. The mature insects no doubt ascend the trees again and feed on the leaves until their fall late in the season. We have found an allied species (*Diabrotica vittata*) feeding on wild plants in the woods, on warm days in November, and these might exhibit similar characteristics; and this character pervades nearly the whole great family to which they belong (Chrysomelidæ.)

Description.—These larvæ are $\frac{3}{8}$ of an inch in length; the head and feet black; color glossy yellow, two swarthy lateral stripes, and a dorsal yellow stripe; the segments are divided transversely above by a distinct suture, exhibiting twice as many segmental divisions above as there are below; each segment, above and within the yellow stripe, has four dark tubercular dots, surmounted at the apex with a few short diverging hairs; on the lateral dark stripes are three similar dots, triangularly arranged, on each segment; indeed, the lateral stripes are formed by the color of the tubercles extending down a little beyond their bases, leaving narrow yellowish interstices between; on the abdominal segments are marginal rows of yellowish tubercles armed with hairs, similar to the others, on a minute, dark, apical tip; on the under side—which is yellowish—there are four dark dots on each abdominal segment, and a dark central dash, latitudinally arranged.

The pupæ are three-sixteenths of an inch in length, (when stretched out straight $\frac{1}{4}$ inch,) lemon yellow in color, and the antennæ, feet and wing covers folded over the *sternum*, as is usual in coleopterous pupæ; along each side of the abdomen a sort of frill, more or less, projects outward in sections, those of the greatest depth about the centre. These pupæ are entirely disengaged from any other object, naked and unprotected.

We omit a description of the *imago*, because the description of *xanthomelana* given below covers them as nearly as any thing we could give, and we quote the description of two different insects in deference to the opinion of those who supposed this insect to be *Galeruca calmariensis*.

"*Galeruca calmariensis*, Lin.—Oblong-ovate: above testaceous: deeply punctured; crown, furrow on the thorax, scutellum, a dash on the elytra, breast and base of the abdomen black; apex of the abdomen and base of the antennæ testaceous. (L. 2—2½ l.) Aquatic plants; London district; Weston; Bristol; Swansea."

"*Galeruca xanthomelena*, Schon.—Oblong-ovate, flattish; above griseous-yellow, thickly punctured; crown with a triangular black spot, and another geminated one at the base of the antennæ; thorax with three black spots; elytra with a long black dash within the margin, and a short streak near the middle; legs dull yellow, thighs with a dusky spot without, tibia with a black streak, hinder pair bent. (L. 3l.) Elms; London district."—From Stephens' Manual British Coleoptera, containing brief descriptions of all the species of beetles hitherto ascertained to inhabit Great Britain and Ireland. London, 1839.

"*Galeruca calmariensis*, Lin.—'Elm Galeruca.' An oblong oval beetle 0.25 long, of a grayish yellow color, with three small black spots on the thorax, a broad black stripe on the outer part of its wing covers, and a small oblong spot near their base; though originally named by Linnæus from a small seaport town of Sweden, is common over the chief part of Europe, feeding upon the leaves of the elm, to which it is sometimes very destructive. It has been introduced from thence into this country, and on its first appearance in the city of Baltimore some twenty years ago, it and its larvæ, which are thick cylindrical blackish six-footed grubs, wholly denuded the elms of their leaves, for several successive seasons."—From Fitch's 5th Report, 1859. Ins. N. Y.

What Dr. Harris says about this insect, in his otherwise excellent work, is not of the least assistance in determining its species. He merely states the fact of an insect called *Galeruca calmariensis*, which in its larva and mature states depredates upon the leaves of the elm trees, but aside from this there is no positive evidence that he had ever seen a specimen of it.

We should probably have ticketed this insect *G. calmariensis*, without any hesitation, from Dr. Fitch's description alone, had we not had Stephens' prior description also before us; in which he conspicuously omits the marginal dash or stripe, and states that that species feeds on aquatic plants instead of the elm. But it is not necessary here to repeat all the distinctions between *calmariensis* and *xanthomælena*, for the foregoing descriptions, from Stephens' work, will plainly show those distinctions; and, although neither of them may entirely cover the insect we have under consideration, the weight of their testimony, to our apprehension, is in favor of the latter named species, and any one who chooses to do so can make the comparison for himself; but from these descriptions, we could easier conclude that the present subject is a species differing from both of them, rather than that it is the former. Therefore, until the question is decided by more competent authority, we feel disposed to ticket our insect *xanthomælena*, Schon.

Since writing the foregoing we add the following from Dr. John L. Leconte, to whom we had submitted specimens for his examination:

"Dear Sir: The *Galeruca* you have, so injurious to your elms, is *G. xanthomelena*. Gyllenhal, in error, described it as *calmariensis* Fab., quite a different species.

Very sincerely yours,

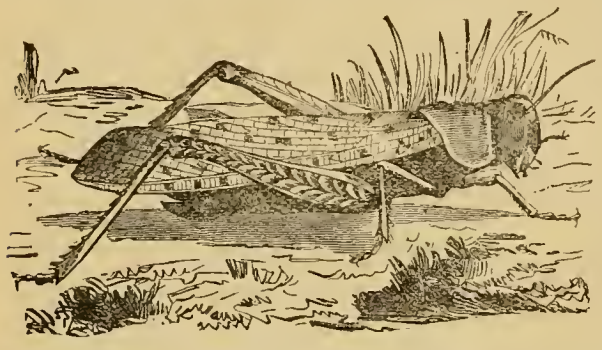
J. L. Leconte.

Philadelphia, Sept. 5th, 1876."

There is a slight orthographical difference between Dr. Leconte's rendering of the specific name and that in Stephens, but this is unimportant in the history of the insect.—Ed.

THE LOCUST.

The term "LOCUST" is a common name applied to many different species of this insect, and therefore to designate any of them as *the* Locust, must necessarily be very indefinite. It would be better to say *a* locust, or add a specific prefix, as the "Carolina Locust" (*Locusta carolina*,) The "Red-legged Locust" (*Caloptinus femer-rubrum*,) The "Yellow-winged Locust" (Locusta *sulpurea*,) The *American Locust* (*Acridium americanum*,) &c., &c., which would convey a specific idea of what particular species we mean, when we speak or write about these insects. Although all, or nearly all the species in the United States, that were formerly included in the genus *Locusta*, have been referred to other genera, (the two mentioned above being now referred to the genus *Œdipoda*) still, as a common name, with the qualifications we have mentioned, they may properly be called LOCUSTS. The illustration accompanying this paper was probably intended to represent the Locust of Scripture—the migratorial locust of Africa and Asia, (*Locusta migratoria*) and which has been so destructive to the vegetation, where it abounds. In the absence of a local figure, we introduce it here, in order to impress upon the minds of our readers the true form of a *Locust*; for, from what we often hear and read in the newspapers, we are confident that many, otherwise intelligent people, have their minds very much muddled as to the form and habits of Locusts.



We well remember, somewhere along in the years 1827, 1828, or 1829, when we first read "CAPT. RILEY'S NARRATIVE" of his great sufferings in Africa; the book contained an illustration of an "African Locust," (similar to the above figure, only larger,) and how very much astonished we were to find that animal so much like a grasshopper. We found great difficulty in realizing it, and yet our mind had not been pre-occupied by any definite idea of the *form* of an African Locust. Previous to that period, and judging from the record of their destruction in the land of the Pharaohs, in Egypt, we could not have told whether a locust was the size of a Hen or Fish-hawk. We imagined it, however, to be something very horrible—a sort of German "Boar-Wolf," that gorged itself on anything that came in its way, animate or inanimate, and no doubt, *now*, about nine out of ten, when they hear the term locust, associate it with an insect in the form of a huge *cicada*, or English "Harvest Fly."

We have a large species of locust in Lancaster county (*Acridium americanum*,) that measures fully three inches in length, a half inch longer than the figure at the head of this paper, a few of which are seen every summer, sometimes more and sometimes less, but never, so far, very numerous; and whenever the "Rocky Mountain Locust," (*Caloptinus spretus*,) becomes numerous and destructive, and people happen to find one of our large species, they become alarmed, and think it may be an "advance guard" from the west.

If this species should ever become as numerous as the Rocky Mountain species in the Western States, and if size means anything, it must necessarily become more destructive than that species. The most numerous, and therefore the most destructive species we have ever had in Lancaster county is our common Red-legged Locust (*Caloptinus femer-rubrum*) which is about the size and shape of the Rocky Mountain Locust, and only about half the size of our illustration. On one occasion (in the summer of 1839) we have seen this species very numerous and very destructive in the county of Lancaster, and in fact, in all eastern Pennsylvania. Corn, grass, and green herbage in general was fairly eaten up with them, but they came too late in the season (August and September) to effect the total destruction so characteristic of the visitations of the Rocky Mountain Locust, or the African Locust. On the occasion we allude to the air swarmed with them as far up and out as vision extended, and their expanded wings glittered in the sun like snowflakes.

The best time to destroy these insects is before their wings are developed and they are able to fly. Then, if ditches, or holes with perpendicular sides are dug, the insects may be driven into them and destroyed. Prof. Riley relates a case that occurred at "Darnet's Ferry," on the Platte River, Mo., where twelve men attacked the locusts with clubs, when they attempted to cross that stream, and destroyed at least *five hundred bushels* of these insects, and thus saved about one hundred acres of as fine wheat as was ever raised.

In another instance fifteen barrels of locusts were one evening shoveled up and hauled from the base of the Court House at Independence, Mo., each barrel weighing two hundred and twenty pounds, a total of *three thousand three hundred pounds*. Two thousand bushels of locusts were paid for by the authorities of Blue-earth county, Min.; and in all the counties in the State, where the locusts occurred, more than *fifty thousand bushels* were destroyed.

To show the voracious character of these insects, it is stated that they ate off everything that was green in some places, including the castor oil beans, tobacco, potato tops and the milk weed, even to the roots an inch or more below the surface of the ground; and when these failed they gnawed off the surface of old fences and buildings, as well as old textile fabrics, and finally, that they turned upon and ate their own species, the stronger devouring the weaker.

We, however, do not think that our climate is favorable to the propagation of the Rocky Mountain Locust, even if it should, in its migrations, come so far eastward. It appears that it only leaves its own native breeding grounds, high up in the northwest, after it has eaten up all the vegetation there, and has attained wings; and it appears to us that on that line it ought to be fought, and Congress ought to authorize a commission for that purpose, assisted by men, money and means to effect their destruction up there.—ED.

ARCTIC WOLVERINE, OR GLUTTON.

Gulo Arcticus.

Some of the early authors on natural history referred the Glutton to the genus *Ursus*, or Bears; it belongs, however, to the MUSTELIDÆ, or Weasels. Linnæus rightly regarded it as a *Mustela*. In their general port and figure the gluttons are intermediate between the Polecats and the Badgers. They have no decided scent-pouch, however, but instead thereof a glandular fold of the skin.

Two, perhaps three, varieties or species of the glutton are known; (*Gulo arcticus*, *G. vulgaris*, and *G. luscus*,) the first named is a native of the high northern latitudes of the old world, especially Russia; the last named, of the cold regions of North America. The common Wolverine (*vulgaris*,) belongs to Northern Europe, but this is probably only a variety. The old world species (*arcticus*,) is the "Rossomak" of the Russians, and is of a deep chestnut color, passing into black on the limbs, with a brown disk on the back. The American Wolverine (*luscus*,) is of a paler color, and has a much longer and more bushy tail. The Glutton is nocturnal in its habits; the limbs are strong and short; the feet subplantigrade, with five toes and armed with sharp claws; the head broad, ending in a narrow muzzle; the ears short and rounded; the tail moderate. These animals are all of similar habits, and indeed some naturalists regard them as only varieties of the same species. The first writer who has described this animal was Olaus Magnus. "Among all the animals," he says, "which are regarded as insatiably voracious, the glutton in the northern parts of Sweden has received an express appellation, being called, in the language of the country, 'Jerff,' and in the German, 'Vielfrass,' which means an excessive or ravenous eater, a glutton, or a gormandizer, and is very characteristic."

It is said that the Glutton is indeed a voracious animal, but by no means formidable to man or the larger quadrupeds, in proportion to its size; however, its strength is very great. Slow in its movements, it makes up by perseverance and industry for this defect, and at a steady pace pursues its prey for many miles; hunts out weak or dying animals, and destroys hares, marmots, young foxes and birds, which it seizes unawares. Buffon, and also other more recent authors, relying on the authority of Magnus, Isbrandt and others, have contributed to the currency of the statement that the Glutton has recourse to the most subtle artifices in order to surprise its victims, and that it lurks in the branches of trees until the reindeer approaches to browse beneath, when it throws itself upon the unsuspecting animal with unerring rapidity, fixes its strong claws in the skin, and proceeds to tear the neck and throat, till the wretched victim falls exhausted and dies, when the victor devours his prey at leisure. And this is not all; it is said to gather moss or lichens, and drop them down from the tree whereon its secreted in order to decoy the deer to the place, and bring it within easy reach. Although Gmelen, in his account of his journey through Siberia, says that "this address of the Glutton managing to seize animals by surprise, is confirmed by all hunters," yet Dr. Godman and Dr. Richardson, in their able histories of the American Glutton or Wolverine, positively affirm that no such artifice is resorted to by that species, to entrap or capture its prize at any time.

Authors generally agree that the Glutton is extremely annoying to the fur hunter, visiting their traps, and devouring the animals taken in them. In Siberia it rifles the traps of the Sable and the Corsac Fox, and in Northern America, it is said, it will follow the Marten-hunter's path around a line of traps extending forty, fifty or sixty miles, and render the whole unserviceable merely to secure the baits, which are generally the head of a partridge or a bit of dried venison. They are not fond of the Martens themselves, but never fail tearing them in pieces, or of burying them in the snow by the side of a path at a considerable distance from the trap. Snow drifts often conceal the repositories thus made, in which case they furnish a savory meal to hungry foxes, whose sagacious nostrils guide them unerringly to the savory spot, and two or three foxes, it is said, may often be seen following the Wolverine for this special purpose. During the summer the beaver becomes the common prey of this voracious animal. The Glutton is cunning and determined; it fights very resolutely, and is more than a match for a single dog, its strength being great. Its fur is in much re-

quest, especially that of the Siberian animal, which is dark and beautifully glossy. The length of the glutton, exclusive of its tail, is about two feet six inches; that of the tail, including the long full fur, ten inches. The females bring forth once a year, the brood of cubs being four in number. The fur, when the hair is removed, is soft, downy, and of a pale yellowish color, sometimes passing into whitish.

According to Dr. Godman, our American Wolverine (*Gulo luscus*) inhabits the northern parts of America generally, quite to the Arctic Sea, and it is probable that its visits extend beyond the continent towards the Pole, as a skull was found on Melville Island by Capt. Parry, which belonged to this animal. It is an inhabitant alike of the woods and the barren grounds, and is capable of enduring the severest cold. Although the motions of this animal are necessarily slow, and its gait heavy, yet the acuteness of its sight and powers of smelling are ample compensations; and as they are seldom or never killed without being found very fat, there is good reason for believing that they never suffer much from hunger. It is said that its great strength, and its sharp claws and teeth, enable it to offer a very effectual resistance even to the bear. Its extraordinary strength and its great gust for food, causes much trouble to the hunters and travelers who attempt to secure provisions by burying them in the snow, or protect them by coverings of boughs and trunks of trees. It is almost impossible to prevent this creature from finding access to such places of deposit, either by strength or stratagem, and destroying the stock on which the voyager depends for his future subsistence and safety. So fierce and dauntless is the Wolverine that it has been seen to take away from the wolf a carcass of a deer, and when engaged in feeding on said carcass it has refused to move, though warned of the hunter's approach and has suffered itself to be shot down while thus maintaining its prize.

The regions inhabited by this animal are abundantly supplied with small quadrupeds and birds as well as with larger animals, so that without any very great effort, it is quite probable it is able to procure a plentiful subsistence, without exercising the ingenuity that has been attributed to it by the older, and some of the modern writers. When taken captive and retained in confinement, its disposition does not seem by any means as untamable as has been represented, nor is its voracity especially remarkable.

Situated as we are, we do not profess to be conversant with the history and character of the Wolverine, and therefore the foregoing is merely a compilation from the works of Godman, Arnold, Wood, Tenney and Knight, and we are willing to believe that their historical descriptions are more reliable than their figures of the animals. We have six illustrations of the animal before us, and there are no two of them that bear any closer resemblance to each other, apparently, than a dog and cat. The one we have selected to illustrate this article seems a nearer approach to the fore animal than any of the others, according to the description given. The generic latin name *Gulo*, means a "glutton," and the specific name *arcticus* has reference to its *habitat*. The specific name of the American species, *luscus*, means "blinking."

The "Wolverines" belong to the order CARNIVORA, family MUSTELIDÆ, tribe PLANTIGRADA, because in walking they place the whole sole of the foot on the ground, which enables them to stand erect, in contradistinction to the DIGITIGRADA, which walk more on the ends of their toes, and are consequently more active than the former.

A SOUTHERN bee-keeper claims the sunflower to be a large honey-producing plant, and recommends the pods after the seeds are taken out as excellent bee-feeders.

THE BARRED OWL.

(*Strix Nebulosa*)

However stupid owls may seem, and with whatever aversion or prejudice they may be regarded—whatever depredations upon domestic possessions may be charged against them, it cannot be said that they purloin or destroy our grain, our vegetables, or our fruit. If there is no settled prejudice existing against owls, they are at least the subjects of almost universal contempt, and to many timid people they are an absolute "fright." Men and boys, in general, show little respect for them, and at all times feel themselves at perfect liberty to cast a missile at them, or shoot them down with the least possible compunction. And yet, so far as injuring anything of acknowledged usefulness to the human family is concerned, there is perhaps no member of the feathered tribes, or no subject of the animal kingdom that is more harmless or performs a more watchful and continuous use than the owl. As "mousers" they are of more value than the best of cats or terriers, and find their prey, at times and in places where their more favored rivals scarcely ever venture or intrude.

The peculiar character of the plumage of owls is such that their flight becomes light, smooth and noiseless; so much so that not the slightest rustling of the wings can be heard. On one occasion we kept one in our sanctum

about four weeks during winter. He perched and slept all day, but at night he fed and became lively, and would fly about the room, from the top of a bookcase to a chair back, and from thence to a quart bottle containing alcoholic specimens—perching on the cork—and although he often came within a foot of our face we never could hear him, or feel the air agitated by his wings, nor did he ever overturn any object he ever rested upon.

The various species of owls feed on mice, moles, squirrels, rabbits, frogs, snakes, toads, fishes and insects, and many other night prowlers; and whatever animal they may capture, after breaking the bones in it, they take all down, "horns, hoofs, hair, skin and toe nails," and afterwards they disgorge a "pellet" composed of hair, feathers, bones, wing-covers of beetles, or any other substances that are indigestible. About twenty species of owls are known to the United States, and eight or nine species have been captured in Lancaster county up to the year 1870.

The "Barred Owl," (*Strix nebulosa**) an illustration of which is tolerably well represented in the figures accompanying this sketch, is one of our larger and commoner species, and is more frequently met with in the fall and winter, than any other of the family, especially near the borders of creeks or rivers, or near swamps bordered by woodlands; but it is only a winter visitant of Lancaster county. There is a specimen of it (No. 137) in the Linnæan Society's collection, which was shot in this county some years ago by Judge Libhart. This species feeds mainly on rabbits and squirrels, and it is also charged with killing poultry, and hence it is, perhaps, more diurnal in its habits than any other species except the "Prairie Owl." Where rabbits, squirrels and poultry do not abound, however, this bird feeds chiefly on mice, moles, frogs, lizards, snakes, and sometimes even on fish. It is by no means a shy bird, but will often at night, approach very near to a camp fire, and seemingly scrutinize all that is going on without manifesting the least alarm. It will turn its thick head towards you, and fix on you its large eyes, and follow all your movements as if it were cognizant of all you are doing. It builds a rugged nest in the forking branches of a large tree, and usually lays three purely white eggs, about the size of a hen's egg, but more globular, and with a coarser, rougher shell. If occasion requires, it is capable of a protracted flight, as they have been noticed to fly two miles or more on one stretch. The usual length of the female bird is about twenty-two inches, and that of the male about seventeen inches. There is also often a remarkable difference in the size of the same sex, some females being twenty-eight and some males twenty inches in length. The young are, for some time after birth, covered with a fine white down, which gives them quite a peculiar, but not a repulsive or uninteresting appearance. These birds are said to make the day or night hideous on the approach of a storm, responding to each other in such unearthly tones that one cannot help thinking something very extraordinary is about to take place among them. In the South, in dark cloudy days, their cry may be heard from every patch of wood near the plantations, indicating an approaching storm; and of course they become the awful and infallible weather prognosticators, among the superstitious and illiterate Africans.

We noticed recently a great mortality among the sheep of New South Wales by starvation—one pastoral district losing fifteen thousand—and that said mortality was caused by the total destruction of the pastures by the field mice, which were multiplying and swarming over large portions of the country. The authorities were taking counsel with reference to the importation of hawks, *owls* and other birds of prey, as the only feasible means of destroying the mice. This may be regarded as a practical recognition of the utility of the owl as a field scavenger, and illustrates its position in nature in maintaining her equilibrium. A similar event occurred many years ago in Scotland through the redundancy of rabbits, in which owls performed an important function. Although it might be difficult to subdue the mice where they become so numerous as they are said to be in New South Wales, yet it is questionable whether such an inequality could ever exist where the birds of prey are suffered to multiply without molestation. This is a matter to be considered by those who are in the habit of slaughtering hawks and owls on account of the jeopardy they place their poultry in. The presence of these birds may be an evil, but their absence might be worse.—ED.

*Its latest scientific appelation, we believe, is *Syrnium nebulosum*.

ABOUT POTATOES.

"What's the matter with the potatoes?" This is a question now generally asked by the potato consumers, and especially by their prudent housewives. The almost universal complaint is, that the potatoes now brought to our markets are not nearly so plenty, so large, or of so excellent a quality as those obtained early in the season, and they want to know "what's the matter," especially since there has been so much "blowing" about our Centennial crops.

We will essay an answer to the very rational query, as it occurs to our apprehension, supported by the testimony of those who ought

to know whereof they are speaking. In the first and most essential place, there has not been as many potatoes planted this season in Lancaster county as usual, on account of the "beetle," but more particularly on account of the better prospects in tobacco. Last year the potatoes were low in price and plenty, whilst tobacco brought a good price, and the market was firm. Then the cultivators reasoned thus, "We will 'put in' tobacco and buy our potatoes." And through this reasoning we will have more tobacco and fewer potatoes.

A redundant crop of tobacco, however, will never compensate a depleted crop of potatoes, unless some mode is discovered by which the former can be cooked and eaten like "greens," and the surplus can be salted down like "kraut." But, enough on that score.

Secondly, the reason the potatoes are not so good now as those that matured early in the season, is because they were planted too late, and not late enough. The early crop *made* during the cool moist early summer weather, and *matured* about the time the intense heat set in, whilst the later crop *made* during the intensely "heated term," and their natural aliment was too rapidly evaporated through a protracted dry "spell," and *matured* when it was too late to regain what they had lost. Those that were planted *very* late, and are now *making*, and that will *mature* during the latter part of September and the fore part of October—other things being equal—will be of a better quality. The common potato is not adapted to long-continued and intensely hot and dry weather. Those conditions are congenial to the sweet-potato, but not the solania, and hence the former, at this time, are of a good quality generally.

We have only to compare the potato crops of New York State and Canada with those of the Carolinas and Georgia, in order to determine the meteorological conditions they require. Still, occupying a middle geographical locality between those two extremes, we may and do raise good potatoes here, when all the natural conditions are favorable; but, as a general thing, we should plant very early and very late, in order to realize a reasonable prospect of a good crop, and particularly a good quality. Potatoes are very succulent, and while the tubers are forming they should not have too much heat nor too much drought. They need considerable moisture, but not too much. The ground being kept loose by cultivation, is in just that condition to permit a too rapid evaporation of the earth's moisture, when a long, hot, dry spell intervenes. True, the "Colorado Potato-beetle," until it is finally exterminated in our county, will be something of a drawback to the cultivation of potatoes, but that does not account for the inferior potatoes brought to our market now. We think it is owing almost exclusively to meteorological causes.—Ed.

ANSWERS TO CORRESPONDENTS.

Mr. S. M.—Your pea-green caterpillar, with green head, a white and a light brown stripe along each side, and with transverse rows of green tufts of diverging hairs, on each ring or segment of its body, is the *larva* of the "Peacock-Moth," (*Saturnia Io*,) which will spin a coccoon at the end of summer and remain in it until next spring, and then come forth a large and beautiful moth, the female expanding nearly three inches across the extended wings, and the male somewhat less. Both sexes have a large spot on the hind wings, similar to one of the spots on the peacock's tail-feathers. The male is of a mottled yellow color, and the female a mottled brown.

The *larvæ* feed on the foliage of diferent kinds of trees, such, for instance, as the willow, elm, poplar, and others. The hairs on the *larva* when it comes in contact with the tender skin of the human body produces a stinging or burning sensation, similar to that produced by nettles.

S. P. E., Esq., Lancaster, Pa.—The insect that is in the habit of girdling the hickory trees, is commonly called the "Hickory Girdler;" (*Oncideres cingulatus*) and we have reason to suspect that the same species is girdling your English Linden Trees. *First*, your inclosure is in proximity to a piece of woodland containing a large number of hickory trees. Many of the smaller branches we found girdled, in a ramble we took over a part of it on the 29th of August last, and especially along the margin of said woodland. We think it was perhaps not exactly in season to find the Beetle very plentiful, as we only captured one specimen, and that one we found on the flowers of a species of *Solidago*. Secondly, so far as we know, there is but one species of *Oncideres* in the United States, and we cannot say positively that that species confines itself to one particular tree, although the hickory may be its specialty; but we have heard of them girdling the smaller branches of the apple on several occasion, both in the east and the west.

Mr. Samuel Auxer, of this city, and the late Henry G. Bruckart, of Silver Spring, collected eighty-two specimens in one day along those hills, about two years ago, and although they were of many sizes, yet they were all of the same species, (*cinglatus.*) They are long-horned beetles (Longicomia) and the family Saperdidæ, which also has a family alliance with the apple tree borers, and others of the same forms and similar habits. These considerations, therefore, lead us to conclude that the Hickory Girdler, and the Linden Girdler, are the same species, or are likely to be found so. The mature insects vary in size from half an inch to nearly an inch in length, and of "grizzly-grey," relieved by brown, in color. It is not only possible, but it is highly probable, that this pruning is ultimately beneficial to the trees they infest; but, if a remedy should be necessary, we can recommend nothing better at this time than gathering up the fallen branches and burning them, and for the same purpose, cutting off all infested ones.

J. M. W., Lancaster, Pa.—The very singular footless caterpillar you sent us, with the fleshy and bristled horns at each end of the body, with the green sides, and brown saddle-like mark on its back, is called a "Hag-moth," or "Saddle-back moth," (*Empretia stimula,*) and belongs to a *Lepidopterous* family, called Lamicodans. It has now spun itself up into a brownish silken cocoon, about the size of a marrow-fat pea, and if the surrounding conditions continue favorable until next spring, it will issue forth a small, rather robust moth, expanding from one-half to three-quarters of an inch. There are several species of them, some of them covered with a shaggy coat of fur, and of a singular hag-like form. They seem to be omniverous feeders, and may be found on apple, pear, quince, cherry, and plum trees; and we have also found them on the blades of corn and various other vegetable productions, feeding on the leaves. The hairs produce a very pungent and burning sensation when applied to the tender skin, something like nettles.

A Rare Bug.

Quarryville, August 22, 1876.

S. S. Rathvon—Sir: I send you a bug that I caught to-day. Please give it a name, for I am not acquainted with it. If you have plenty of the same kind you can do as you please with it I thought it was a "big bug" at any rate, and you ought to have it.

Yours truly,

R. C. Edwards.

P. S. Please give it a name in the *Intelligencer*.

In reply, it affords me the greatest pleasure to comply with the request of the writer of the above, for he has sent me a most beautiful and a rather rare insect, in Lancaster county; indeed, in an experience of thirty years, I have not found half a dozen specimens in the county, or its vicinity; and I particularly desire my correspondent to send me all of this species that he may be able to collect.

It is a *Cychrus viduus* and belongs to the great family *Carabidæ*—the larger number of which are carnivorous—in the order *Coleoptera*, or beetles, and not "bugs." If they were even numerous they would have an economic value that ought to be respected, for they feed on other insects. This insect is too uncommon to have ever received a local common name —other than "ground beetle"—a name that might be applied to a multitude of different species; therefore, it would be better to impress upon the memory, in connection with the object, the scientific name at once.—*S. S. R., Lancaster Intelligencer, Aug.* 23, 1876.

Since publishing the above, we have instituted a thorough examination of our cabinet and records, and find that all our specimens of this species have been taken in localities farther south than Pennsylvania, and that this is probably the first specimen of *Cychrus viduus* that ever has been taken in Lancaster county; and therefore, that it is entirely new to this district. Mr. Samuel Auxer, the most thorough and keen-sighted entomological canvasser in the county, or perhaps the State, assures us that in an experience of over twenty years, he has never found a specimen in Lancaster county. The late Mr. Bruckart, of Silver Spring, had one specimen in his collection, but it cannot be ascertained now from whence it came. This very much enhances the value of the specimen we received from our Quarryville correspondent and increases our thanks. When we received this specimen it was yet alive, and emitted a very strong musky odor. This specimen is much larger than any now in our local collections, and on an analytical comparison may possibly prove a new species. Under any circumstances, we admonish our kind correspondent to keep a "look out" in the locality where this one was taken; perhaps others may be found.

Mr. Editor: The inclosed insect pierces the stems of the tobacco plants, and lays its eggs in the incision, which causes the plants to wither and die.—*H. M. K., per R. S. M., West Hempfield, Sept.* 4, 1876.

Please identify and report in the columns of the Lancaster Farmer.

We are sorry that we are compelled to entertain grave doubts as to the identity of this as the insect which pierces the stems of the tobacco plants of our friends, and lays its eggs in the incision. The insect sent us is the well-known "Wheel-bug" (*Reduvius novenarius*), which is carnivorous in its habits, and, so far as our observation goes, deposits its eggs on a plain permanent surface, where they would be likely to remain all winter without disturbance, and hatch in the spring. These are always set side by side on their ends, like a miniature honeycomb, with pinkish crowns and glued permanently together and on the object that receives them, whether it is a tree, a shrub, a fence, or a brick wall. The insect itself seizes other insects with its strong anterior feet, pierces them, sucks out their liquid substance, and is said to thus destroy the larva of the "Colorado Potato-beetle." Gentlemen, we beg you to look again, and "be sure you are right," before we withdraw our good opinion from an insect that we have long so favorably known.—Ed.

Mr. Editor: I send you a green worm, caterpillar, or whatever you may call it. I found it in my orchard, on the grass near an apple tree, on the 18th inst. I also had found three of the same kind fifteen days ago, on a sweet cherry tree, with a top abont large enough for a good-sized fly-bush, which had completely been stripped of its foliage by them. Those I summarily mashed, which I thought an effective cure. This one I send you for examination, in order to elicit something about its habits, and also what to do with such subjects.

Please answer through the columns of The Lancaster Farmer, as it might be of interest to others than—*A Subscriber, "Delight Farm," Providence township, Lancaster county, Aug.* 19*th*, 1876.

The box containing the caterpillar, alluded to by our correspondent, was duly received, but it will be impossible to tell *exactly* what its name is until next spring: for having spun a silken cocoon, the insides of the box are tied so firmly together that it cannot be opened without destroying it, and to do so would be like killing the goose to get the golden egg.

Judging, however, from the circumstances under which it was found, and from what little we could see of the color and texture of its silk, it is the "American Silkworm," "Cecropia Silkworm," or "Cecropia Moth," (*Attacus cecropia,*) and it has also other both common and scientific names, not necessary to be mentioned here. If there is any purely American insect from which silk might be successfully produced, we think it would be this species; therefore, if our correspondent ever desires to go into that business, he can let these caterpillars have the run of his orchard, for they

will feed on apple, pear, quince, cherry, and other kinds of foliage; but if not, the best thing he can do is to "mash" them, for if three can strip the foliage off a small cherry tree, he can form some idea what a thousand can do. The moth is very large and very pretty, especially the males, some of which measure nearly six inches across the expanded wings. The ground color is dusky brown, varegated with waved lines of white, dull red, and dark brown; the *antennæ* are feathered, and there are four crescent-shaped spots on the front and hind wings. The body is about two inches in length, and has cross lines of red, brown and white.

The generic name, *Attacus*, means elegant, and the specific name *cecropia*, is supposed to have been derived from Cecrops, the founder and head of the Athenians, the most polished and refined people of antiquity. They usually come down from the trees and spin their large spindle-shaped brown cocoons on shrubbery or the dry stems of plants, where they remain all winter, and the moth appears in April or May, according to the temperature of the weather. Last spring one evolved for us in the house, in March, in the same room where it had been all winter. We have never known them to be very numerous or destructive.

LOCUSTS AS FOOD.

In the annual report of the Commissioner of Agriculture and Arts for Ontario, recently to hand, we find the following remarks by Prof. Riley: "Whenever the occasion presented, I partook of locusts prepared in different ways; and one day I ate of no other kind of food, and must have consumed, in one form and another, the substance of several thousand half-grown locusts. Commencing the experiments with some misgivings, and fully expecting to have to overcome disagreeable flavor, I was rather agreeably surprised to find that the insects were quite palatable, in whatever way prepared. The flavor of the raw locust is most strong and disagreeable; but that of the cooked insects is agreeable, and sufficiently mild to be easily neutralized by anything with which they are mixed, and to admit of easy disguise, according to taste or fancy. But the great point I would make in their favor is, that they need no elaborate preparation or seasoning. They require no disguise, and herein lies their value in exceptional emergencies; for when people are driven to the point of starvation by these ravenous pests, it follows that all other food is very scarce or unattainable. A broth made by boiling the unfledged *Caloptenî* for two hours, in the proper quantity of water, and seasoned with nothing in the world but pepper and salt, is quite palatable, and can scarcely be distinguished from beef broth, though it has a slight flavor peculiar to it and not easily described. The addition of a little butter improves it, and the flavor can, of course, be modified with mint, sage and other spices, *ad libitum*. Fried or roasted in nothing but their own oil, with the addition of a little salt, they are by no means unpleasant eating, and have quite a nutty flavor. In fact it is a flavor, like most peculiar and unpleasant flavors, that one can soon learn to get fond of. Prepared in this manner, ground and compressed, they would doubtless keep for a long time. Yet their consumption in large quantities in this form would not, I think, prove as wholesome as when made into soup or broth; for I found the chitinous covering and the corneous parts, especially the spines on the tibia, dry and chippy, and somewhat irritating to the throat. This objection would not apply with the same force to the mature individuals, especially of larger species, where the heads, legs and wings are carefully separated before cooking; and, in fact, some of the mature insects prepared in this way, then boiled and afterwards stewed with a few vegetables and a little butter, pepper, salt and vinegar, made an excellent *fricasee*.

BLACK HAMBURGS.

Black Hamburgs are deservedly at the head of this valuable class of fowls. They are larger, are fuller and more plump in body, and lay larger eggs than the other varieties. They are very prolific and may be termed "everlasting layers." They should be fine and symmetrical in shape and conform with other Hamburgs—not tall and thin like the Black Spanish. In color they should be a deep, glossy black, enriched throughout with a beautiful resplendent green gloss; when the sun shines upon their plumage it is very resplendent with an intensity and glow unequaled by any other black fowls. Their legs are of a slaty blue color.

The ear lobe is a very attractive feature of the Black Hamburgs. It should be oval and pure, spotless white throughout, standing forth in bold relief with the surrounding black plumage and red wattles. The comb should be rose, evenly serrated, and coming to a point at the end. This point should turn nicely upwards and not point down, as is often the case. The comb must also fit firmly on the head and not lop to either side. The Black Hamburgs are not nearly so common as the Penciled and Spangled varieties, and good specimens are exceedingly rare. Many birds at our exhibitions show too plainly, in their form and style, a very decided cross or admixture with Black Spanish blood. To the Rev. W. Sergeantson is probably due the credit of the present perfection of the highest class of this breed. L. Wright, in his illustrated book of poultry, speaks of his birds as the "most successful in the show pen," and gives an illustration of his premium fowls. Our Black Hamburgs, depicted in the accompanying beautiful engraving, drawn expressly for our new catalogue, were, with other hens, brought over by Mr. Spence, of Scotland, who selected them in person from Rev. Mr. Sergeantson's yards.

In breeding Black Hamburgs, as with other non-sitting varieties, it will be necessary to keep a few mongrel hens that have proved good mothers, to hatch and rear the young chicks.—*W. Atlee Burpee, Phila., Sept.*, 1876.

INSECT VITALITY.

A common fly, that had lain drowned for two days in a cup of lager beer, at Holyoke, recently, and was swelled to huge proportions by the liquid, was by experiment of some idlers on a wager, restored to activity by an hour's coaxing with the heat of a cigar held over the fly previously covered with the cigar's ashes. As soon as people find this out they will sing "I would I were a fly" louder than ever.

Whether the above is truth or not, the tenacity of some insects is very remarkable, and we have seen exhibitions of it fully as wonderful as the above. It is on record that the Rev. Mr. Kirby, a distinguished minister of the English established church, had his attention first called to the study of entomology, from witnessing something akin to the above. He had immersed the "Twenty-spotted Lady-bird" in alcohol for sixteen hours, after which he put it on a window sill, in the warm sun, when it revived and flew away, to his astonishment and disappointment. We have seen nearly all the flies taken in a "Tumbler-trap," after being immersed in water for half a day, revive again, after having been thrown out in the sun, within an hour after exposure to its rays. We have seen a pair of "Horned Toads" from Texas survive for five months without eating anything whatever.

FEED FOR YOUNG FOWLS.

We presume there are few farmers' wives that do not raise a flock of chicks every year without difficulty; but we have heard many complain that they had tried turkey raising until they gave it up in disgust.

As I have been remarkably successful with this most most tender of all fowls, I will give my plan of feeding, which is, simply, *feed nothing raw*. I prefer feeding corn bread made of unsifted meal and cold water. Make the dough stiff, and bake it in a slow oven until done—no more. If baked too long the crust will be hard, and if the meal is sifted the bread will be sticky. Enough can be baked at once to last several days, and is more convenient than mixing raw meal every feed. I think it well to feed all young fowls in this manner, but always found it *absolutely necessary* to bake bread for turkeys and common ducks. The Aylesbery are more hardy, but I follow my old plan and bake break for them also. I have fifty-seven at this writing that are growing nicely.

Lice are often the cause of death in young fowls, and must be got rid of before they will thrive well. I prefer using an ointment made by stewing tobacco in lard, to sulphur, or anything else I have ever tried. Anoint the breast and under part of the wings of the mother, and head and under part of the young, and the vermin will give you no further trouble.

If these simple directions are followed, together with housing until the sun is up and the dew is nearly gone in the morning, and on stormy days, you will never fail to have a nice roast for Christmas.—*Prairie Farmer.*

BOILING EGGS.

There is an objection to the common way of boiling eggs which people do not understand. It is this: The white under three minutes' rapid cooking becomes tough and indigestible, while the yolk is yet soft. When properly cooked, eggs are done evenly through like any other food. This result may be obtained by putting the eggs into a dish with a cover, as a tin pail, and then pouring upon them boiling water, two quarts or more to a dozen eggs, and cover and set them away from the stove for fifteen minutes. The heat of the water cooks the eggs slowly and evenly and sufficiently, and to a jelly-like consistency, leaving the centre or yolk harder than the white, and the egg tastes as much richer and nicer as a fresh egg is nicer than a stale egg, and no person will want to eat them boiled after trying this method once.—*Boston Transcript.*

It affords us pleasure to indorse the above fully, emphatically, and unqualifiedly, after an experience of nearly a year, practiced almost daily. Whatever may be said, or whatever may be the fact, in regard to "hard boiled eggs," or "soft boiled eggs," as healthy or unhealthy diet, we are prepared to say that the difference is immensely in favor of the mode given by the *Transcript*, when compared with any other mode of cooking eggs that we know of. The French, among their one hundred and twelve different ways of cooking an egg, may have a better way than the above, but we question whether they have a simpler, cheaper, sweeter, or more healthful way—but, try it, and then judge for yourselves; try it honestly and thoroughly, as you would to attain heaven.

HOW TO TEST FUNGI.

The following is said to be an infallible test for knowing the qualities of mushrooms:

"Before peeling the mushrooms, pass a gold ring backwards and forwards over the skin. Should the bruise thus caused turn yellow or orange-colored, it is poisonous; but otherwise it is quite safe. Every married woman has a gold ring to test the mushroom thus; or a sovereign rubbed on it will have the desired effect."—*People's Friend.*

Would some of our experienced fungiologists say if there be any truth in the above test, and if so, any other metal will answer as well as gold? If an accurate test, it cannot be too widely known; and if erroneous, the sooner it is confuted the better.—*I. P. Soulter, in Science Gossip.*

It seems to us that the above might be a better test of the quality of the gold than of the mushroom. At any rate, we would prefer a more distinguished authority than "*it is said*" before we could be led to eat mushrooms bearing this test alone, especially if they were entire strangers to us. Still, we reproduce this because of its simplicity, and because a test of some kind is very much desired; for there are so many fine things of the mushroom kind which me meet every time we visit the wooded portion of the country, that it is difficult to realize they should all be rank poisons. In every fifty specimens of these it will be found that some animal has been eating portions of them—mainly insects—and on a recent ramble we found a "Box-turtle" (*Cistuda clausa*) in the very act of feeding on a fine large specimen, which, although good-looking enough, we would not have trusted as edible. This species (*an Agaricus*) had a fine flavor, was pale bluish tinged above and white beneath; about three inches in diameter and tolerably abundant. "A sure test" for these fungi is the one thing now most needed in regard to these singular plants.

FINE PEACHES.

We cannot refrain from making our acknowledgments to Mr. Joseph Samson and Mr. Lewis H. Fisher for the receipt of large, fragrant and luscious *Susquehanna Peaches;* those from the former weighing 11½ ounces, and from the latter 10½. If there are any finer peaches than these grown in Lancaster city or county they have not come *substantially* under our editorial supervision.

For The Lancaster Farmer.

CLIMATOLOGY.

This is a subject that has arrested the attention of scientific men of late years in all parts of the country, and it certainly demands the fullest investigation by men engaged in agricultural pursuits. It is of very great importance to an agricultural people to occupy a country, the climate of which is well adapted for the raising of certain crops. The knowledge therefore of the mean temperature and the quantity of rain which falls in different parts of an extensive country is of great practical importance to its inhabitants, not only in regard to agriculture, but also with reference to navigation, devastating floods, driving of machinery, supply of water to cities, etc.

Few districts, says Professor Rogers, of the United States, or indeed of the world, are more favorably circumstanced as to rain than Pennsylvania. Lying within the belt of non-periodic rains, it is blessed with a *singularly equable distribution of moisture throughout the year*, the State is seldom visited by a drought, and if any do occur, take place in the latter half of the summer. These dry periods do not appear more frequent than once in four or five years, and rarely so severe as those which visit the West and other parts of the country. It is in like manner comparatively exempt from protracted and flooding rains. The rains take the form of light rain storms of one or two days' duration and of intermitting showers, and these excepting during the occasional summer and autumn droughts are spread with remarkable impartiality *over the several seasons*, and over all the several months of the year.

At Philadelphia, the annual average of rain-fall is about 42 inches; at Carlisle 34 inches, and at Pittsburgh 35 inches. It would seem to imply that the mountain rains of Pennsylvania are derived, to a considerable amount, from the far removed Gulf of Mexico, the southwest wind from which has parted with a large share of its moisture on its journey, while the Atlantic slope, or seaboard receives an additional supply from the more *local winds of the ocean.* At Philadelphia during a period of 18 years, the fall of rain and snow was one year 35 inches, and in another 55, and at Pittsburgh during the same years it was one year 25 inches, while in another year it was 47. It is seen in the Central States of the Union, that in some years less than half the average quantity of water falls, and in others nearly double the average quantity.

The annual average rain fall upon every square mile of the Mississippi valley is about 40 inches; and in England about 35 inches, including 5 inches of dew, and for the whole globe about 34 inches. The mean annual quantity of rain is greatest at the equator, and decreases gradually as we approach the poles. Thus, at Calcutta the annual quantity of rain-fall is 81 inches, and at St. Petersburg, in Russia, it is only 16. More rain falls in mountainous countries than in plains. Among the Andes it is said to rain almost perpetually, while in Egypt it hardly ever rains at all.

The highest part of North America lies between the 40th and 50th degree of north latitude. The great rivers originate there. It is covered with immense forests and abounds with large swamps and morasses, which render it incapable of receiving any great degree of heat, hence the rigor of winter is severe.

There is in the northern hemisphere more land, less sea, more fresh water, and more atmospheric air than there is in the southern. About two-thirds of all the fresh water on the surface of the earth is contained in the great American lakes. The Pacific feeds the clouds with vapor, and the rains feed the Atlantic with rivers. The Gulf Stream in the Atlantic, and the Mozambique current in the Pacific, are rivers in the ocean. The influence of the Gulf Stream upon the climate is very great. Tables of the quantity of rain-fall at various places in the States of the American Union indicate no signs that the seasons on an average for a series of years have changed; nor that the winters are colder and the summers hotter and drier than formerly. In 1813, at Norway, in the State of Maine, 9½ feet of snow fell; in 1831 9 feet, and in 1845 9½ feet. Providence, Rhode Island, had 30 inches of rain-fall in 1835, and in 1848 40½ inches. In 1858 Florida produced 79 inches of rain, Maine 42, Mount Joy, Pa., 44, Philadelphia 39, Sacramento, Cal., 17, and Westfield, Mass., 43 inches. From a table of the Smithsonian Institution for twelve months, ending in June, 1868, it appears no rain fell in California in July, August, September, November, December, February and March. Twenty-one inches fell in the mouth of May, and the balance of the months 8¼ inches; total, 29¼ inches, at three places of observation. Penna., during the same time, at 25 places of observation, produced nearly 44 inches; Ohio, at 19 places, 40¼, and Florida, at three places, 56 inches. At Ephrata, Lancaster county, Pa., during the year 1870, the amount of rain-fall was nearly 42 inches, distributed with considerable uniformity through the several months of the year.

Very many writers entertain the opinion that our winters are colder and our summers hotter and drier than formerly, and the streams smaller than fifty years ago and that the clearing off of a our forests diminishes the volume of water in our streams.

The winter of 1780 was the coldest winter known in Philadelphia until 1855, 1856 and 1857. The winter of 1835 was very cold, and the earth covered with an abundance of snow, and the winter of 1875, with but little snow or rain.

The winter of 1828 was very wet and mild, and the winter of 1842, farmers plowing with their coats off every month in the winter; no ice and very little snow. The winter of 1851 was also very mild, and the winter of 1876, which we all remember very well, was snowless and iceless in these parts, and to a considerable extent over our country. The last six months of 1874 and the first six of 1875 were very dry; wells and streams failed; waters lower in our mill streams than for forty years, in this section of country, and the winter intensely cold. The winters of 1783 and 1784 were nearly as intensely cold as that of 1780, and by referring to the severely cold or mild winters, that it rarely happens in a period of a century that we have a long succession of very cold winters or mild ones; that they change about to give us a taste of each; and on an average our winters are not any colder than they were a hundred years ago, or the summers any hotter.

And the same equitable law seems to prevail in its effects upon the state of the quantity of rainfall, snow, dew, fog, mist, wind and storms. The prevailing opinion that our forests are too unsparingly swept off by the woodman's ax, is well enough; but that our principal streams have lost in the volume of water in a century is not so clear or so well sustained.

Having been born on the west bank of the Conestoga, and having spent my boyhood along this beautiful winding stream, and recollecting all about it for a half a century, I hope I will be pardoned for giving my impressions of the vagaries of this valuable stream, which furnishes an abundance of pure water for the clever inhabitants of the city of Lancaster. In the winter of 1822 there was a great flood, doing much damage. In 1850 there were two tremendous floods in the latter half of the summer, sweeping away bridges, crops and fences. In 1869, in the fall, there was another great flood, exceeding in destructiveness any flood remembered by the oldest inhabitant or tradition, sweeping away corn, bridges, saw-mills, etc. Since then the stream has not at any time been unusually swollen. In the fall and winter of 1874–5 the Conestoga was lower for a longer continued time than for forty years, owing to the dry weather in the fall and winter. During a period of forty years it does not appear that this stream has decreased in volume on an average, taking a series of years together. According to tradition and the recollection of its oldest inhabitants, it was more frequently

lower half a century since than of late years, although the country along it and its tributaries was then much more wooded than at present. Forty years ago there was an almost unbroken forest along the Conestoga from Lancaster to and beyond Hinkletown; now it is nearly all cut off, and the land in a high state of cultivation, and yet the stream is as strong as ever.

In 1868, England was visited in the summer of this year with a dry, hot season, such as had not been known in the south of England for 70 years. There was not the slightest trace of dew at night; and the excessive dryness was owing to the prevailing polar currents; water for sheep had to be carted for use from morning to night, while at New York large quantities of rain had fallen during this time. In Scotland the water was scarce on many farms, where such a want is seldom felt. The channels of streams were dry and farmers were wistfully looking for rain. Such is the case very frequently while it is very warm and dry at one place, it is warm and rainy at another place or country.

We are very apt to imagine that when a winter is bitter cold, or a summer unusually hot, that our climate has changed; but this is a delusion. The same is true of hot or dry seasons. In Camden, South Carolina, in the year 1838, there were four months, May, July, August, September, in which not a drop of rain fell, and the number of rainy days was very few, and the quantity of rain during the year extremely small. The fields and gardens in this place and immediate vicinity were almost literally scorched. Tomatoes, beans, corn, pepper, and all vegetables were destroyed as if a fire had gradually burned them. From the 19th of March until the 17th of April the sun and moon, both at rising and setting, were of a blood-red color.

In Summerville, Georgia, near Augusta, in the year 1839, the summer and autumn were extremely dry. The Savannah river had not been so low for seventy years, and never known to continue low so long at one time before within the recollections and traditions of the oldest inhabitants. Acres of its bed were run out, fenced in, ploughed and planted in the autumn. From the 20th of October to the 3d of November, the sun rose and set, and the moon rose, appearing like blood-red balls of fire.

At Marietta, Ohio, in the year 1838, the heat and drought of the summer continued till the 22d of September, when there fell a little more than an inch of rain. All the crops which depend upon the summer months for their growth, as potatoes, Indian corn and beans, suffered exceedingly. Pastures were dried up in August, so that some farmers began to feed their cattle and horses early in September with hay. Many were subjected to great inconvenience for the want of water. Mill streams failed, so that many farmers were obliged to take their grain fifty miles or more to mills worked by steam power.

In the year 1839, at Marietta, Ohio, the quantity of rain and melted snow during the year was a little more than 33 inches, being about 9 inches less than the mean quantity for this region. Yet the distribution of rain was so equal that every month had its due share in such seasonable showers as to afford a good supply for vegetation, and crops of all kinds of grain and grass were never more abundant.

Wm. C. Bryant says the streams in eastern Ohio are smaller, and the weather drier than fifty years ago; but had he been there in the summer of 1875, and seen the wet weather in Ohio and Indiana during harvest time, and the grown and spoiled wheat, he would perhaps have changed his opinion.

In 1831 Lancaster county was visited with continued wet weather for fourteen days, right in the midst of the grain harvest, and in consequence the wheat nearly all germinated, thus destroying its glutinous quality, making it worthless for bread. In 1838 very dry weather from July to December. During this long period very little if any rain fell; mud roads were six inches deep with dust; corn and potatoes failed entirely; pastures were scorched, the air filled with dust and grasshoppers. The grass fields looked like plowed fields; farmers were obliged to feed their horses and cows on hay early in the fall. There has not been such a drought in Lancaster county since, although in the last six months of 1871 no great quantity of rain fell. The frequent light showers kept vegetation in a vigorous condition, so that the fall crops and pastures were abundant.

Much more vapor rises during hot weather than during cold; hence the quantity evaporated depends in some measure upon temperature. Much more vapor arises in maritime countries, or those interspersed with lakes, than in inland countries.

From a table of Dr. Dalton, of Liverpool, England, for four years, ending in 1775, it appears that the mean annual evaporation from the surface of water amounted to nearly 37 inches.

It is estimated that five inches of dew is deposited upon the earth in England in a year. No day passes without rain in some part of the earth, so that part of the evaporated water is constantly precipitated again. The annual evaporation over the whole surface of the globe is about 35 inches annually.

Stones and sand have a less capacity for heat than the earth has, which is always somewhat moist; they heat or cool therefore more rapidly and to a greater degree. Hence the violent heat of Arabia and Africa, and the intense cold of Terra del Fuego. Living vegetables alter their temperature very slowly, but their evaporation is great, and if they are tall and close as in forests they exclude the sun's rays from earth, and shelter the winter snow from the wind and the sun. Woody countries, therefore, are much colder than those which are cultivated.

Evaporation takes place in plants to an inconceivable degree under certain circumstances. It is known by the experiments of Dr. Hale that a sunflower plant will lose as much as one pound and fourteen onces by evaporation in twelve hours. In damp or wet weather this evaporation is least; in hot, dry weather it is greatest.

The annual amount of evaporation from a given surface of water in the interior of the country is greater than that of the rain which falls on the same surface, but the amount of evaporation from the surface of the ground is generally less, particularly in mountainous districts. Less vapor is given off from the surface of salt water than from the surface of fresh water. Perhaps as much as five times more vapor arises from fresh water as from moist earth. Water is constantly eveporated from the surface of the ocean; the amount, however, diminishes as we proceed from the equator towards the poles. The valley of the Mississippi owes its fertility principally to the moisture which proceeds from the Gulf of Mexico and the intertropical part of the Atlantic Ocean.

The influence of the nature of the soil on the climate of a country may be inferred from its greater or less power to absorb and radiate heat, and from its capacity to absorb, or transmit over its surface the water which may fall upon it in rain or be deposited in dew.

The influence of cultivation on the climate of a country, drying up of extensive marshes and systems of drainage which would evaporate, and by the latent heat thus absorbed would cool the ground, is suffered to pass through it to the drain beneath, and is thus carried off without depriving the earth of a large amount of heat, which would otherwise be lost.

The Andes Mountains in the trade wind region stand up so high that the wind, in order to cross them, has to part with all its moisture, and consequently there is on the west side, as in Peru, a rainless region. Upon the Red Sea there never falls a drop of rain; it is all evaporation.

The Parana, the Ganges, and the Nile annually overflow their banks. The rainy season, which is periodical in these climates, floods the rivers. From these inundations the inhabitants derive happiness and plenty. The Nile begins to rise for forty days, and decreases for about as many more.

There are rivers which are said to lose themselves in chasms under the earth, and flow for miles in secret and undiscovered channels. What seems to occasion the loss of the Rille, the Ithon, and the Aure, in Norway, is the nature of the soil through which they pass. It is in general porous and composed of thick sand. There was a river in Greece which suddenly disappeared in the sand, and seemed wholly lost; but far away in Sicily it rose again, undiminished, and flowed on as before. The Wolga, in Europe, is said to abound with water during the months of May and June, but all the rest of the year is so shallow as scarcely to cover its bottom.

Some rivers, like the Po in Europe, and the Mississippi in our country, run on higher ground than the country through which they flow; but the banks made to keep them in sometimes break, when the devastation is great.

For The Lancaster Farmer.

LATE FLOWERING TREES.

Having heard of an anomalous freak in certain horse-chestnut trees, on Chestnut, near the corner of Duke street, in this city, this morning, September 5, in passing along I saw panicles of flowers in full bloom, as they are usually seen about the first of June or earlier, while at the same time the nearly perfected fruit was on other branches of the same tree. I first noticed the situation, being alongside of the turnpike road, sloping westward, and closely surrounded by the pavement, sheltered from the morning sun by the buildings of Mr. Gorrecht's store and dwelling, and open to the afternoon's sun shine and northwestern winds; these are considerations, when we recollect that the *Æsculus hippocastanum*, or common Horse-chestnut, is a native of *Asia*. (The Ohio Buckeye, is a different tree.) Hence I notice the situation. The mere fact, that of the development of flowers late in the season, is not so rare; it frequently occurs in various kinds of fruit trees; the cause is desired. Without going into the physiological details, I will simply suggested or infer that a bud is a branch folded up into scales and covered; these buds whether lateral or terminal, are in direct communication with the pith of the tree or branch, its bark and capiliary vessels; "the sap ascends through the whole tissue of whatever sort; and the transmission is continued through it, especially through its central portion, or the pith, in the growing apex of the stem throughout. But in the older parts below, the pith is soon drained of sap by the demand above, and becomes filled with air in its place; thenceforth it bears no part in the plant's nourishment." This is taught by Dr. Gray, in his text-book, as well as by all close observers. Now suppose that in early spring, (I am told that a simular effect was noticed the year previous,) that from some cause of chill and exposure to the direct rays of an afternoon sun, the equilibrium of the flow of sap is disturbed. Aided by the prevention of the morning's sun having its influence, the action of the sap in certain branches may be stimulated, drawing the nourishment from the pith, and starting such buds, which elongate their nodes and internodes, and successively develop the leaves. Flower and fruit in that direction, during a dry spell and exposure to sunshine, may thus become exhausted in a degree, while rain, a more uniform degree of heat, later in the season, will act upon the latent buds, and produce a new development of leaves and flowers—while the older leaves may languish and wither. It is easily conceived how all this can take place as a natural process interrupted; and the malady will increase, and no doubt the trees will perish eventually. It is simply a struggle to overcome conflicting difficulties, arising from partial shelter and exposure, during summer and

winter, and an impervious surrounding of stones over the soil—obstructions to the natural requirements of the tree. Any one, with a good magnifying glass, can discover, by cutting the bud of a lilac or horse-chestnut, that in the midst of the scales is a bunch of flowers in miniature already formed. Of course he must select a flowering bud, as he readily can, as I have done, in early spring. Any thing that interferes, arrests or changes the normal functions, must necessarily induce abnormal action in those functions, if any at all. And so also with the withering of branches in the pear or other trees—functional disarrangement by whatever cause induced, will manifest itself. When a branch is deprived of its supply of sap, and exhausted by evaporation, especially in young wood, the finer tubes will collapse, and thus the top or terminal portions of branches will perish first, and of course the leaves become dry, crisp and dead. How are we to prevent this? Only by aiding nature to that which it lacks. How shall we know what is lacking? General symptoms will indicate whether it is of old age, unripened wood or tissues; over exhaustion of the previous year; more head than the root can supply; untoward situation or uncongenial soil; too much water or too little. It is well, however, that nature is prolific in resources, and fights to maintain its status; then learn its wants, and aid, not retard, the proper action of all its functions. But, alas! who is sufficient for all this—superficial as all our knowledge is at best? And yet it is our duty to learn by observation and study the experience of others, and so profit by knowledge; in all humility use what means we may have, and do the best we can. *Pro bono publico.—By J. Stauffer, Lancaster, Pa.*

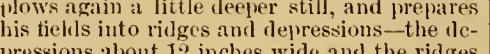
For The Lancaster Farmer.

WHEAT GROWING.

Some weeks since I saw a statement in a paper, published at Mechanicsburg, also, nearly the same statement in the Monthly Agricultural Report for May and June, the purport of which was, that Mr. J. M. Heiges, of York county, had grown seventy-one bushels of wheat on an acre of ground. These reports were so extraordinary that I was rather skeptical as to their truthfulness. To satisfy my doubts I addressed a letter of inquiry to Mr. Heiges. He very kindly answered my letter at length, saying the reports, as stated, were perfectly true; that he actually raised at the rate of seventy-one bushels per acre. Also, that he grew fifty-five bushels per acre of the Foltz wheat in 1874; and, in 1875, another variety produced him 49⅔ bushels per acre; and this season his choice variety produced him only 51 bushels and 21 lbs. per acre. He gave a neighbor 2¼ bushels last fall, and this neighbor now reports 102 bushels grown on 2¼ acres! This neighbor is a member of the York County Agricultural Society, is 65 years of age, and says it is the best yield he ever had. Now, when one or two farmers can grow 50 to 71 bushels of wheat to the acre, *why can not other farmers do likewise?* At this rate wheat-growing will pay as well, if not better, than growing tobacco. My impression is that Mr. Heiges' soil is not naturally very strong or rich.

But to give Mr. Heiges' mode of culture, and which I apprehend is the main cause of his success. He sows his wheat on oats and wheat stubbles, but *manures heavy* and *plows deep*, and plows the second time *still deeper*, pulverizes his soil thoroughly, and sows his wheat about the 25th of September, and has not had a failure since he commenced his present mode of culture. One of his reasons for adopting this plan was that he thought we were not raising half enough wheat per acre, and as he would not plant ten grains of corn in a hill, or plant a field of corn and not cultivate it, he asked himself why it would not pay to cultivate his wheat as well? He tried a sixth of an acre, and his yield was a little over eight bushels. He tried an acre next year, and fifty-five bushels was the result. He has taken four crops of wheat from one plot of ground in succession, and intends sowing the same field again this fall. Had as good wheat on this plot as he saw on any other ground.

As before stated, his plan is to manure heavy and plow deep, pulverize his soil thoroughly, and, about the 25th of September, plows again a little deeper still, and prepares his fields into ridges and depressions—the depressions about 12 inches wide and the ridges about 10 inches—thus:



sowing the wheat broadcast, and going over with the harrow in the way of ridges and depressions; then dragging, so as to make the field perfectly level; thus the seed nearly all fall into the 12-inch depression, or spaces of a regular depth. Then, in spring, so soon as the ground becomes moderately dry to work, he goes through with some kind of a cultivator two or three times, until the wheat becomes too high, thus giving regular cultivation, the same as a field of corn. This spring cultivation, no doubt, is the cause of his great success.

He has two varieties of wheat—"Champion Amber" and Heiges' Prolific"—that are very stiff in the straw, stand up well, and are both bald wheats. Though Mr. Heiges considers both these varieties as very superior, yet he does not believe that by the ordinary culture, they would produce such great crops as by his mode of culture.—*J. B. Garber, Columbia, Pa., Sept. 7th*, 1876.

For The Lancaster Farmer.

AGRICULTURAL PAPERS.

Notwithstanding the attention which has been called by the press of every description to the importance of taking agricultural papers, there are yet plenty of farmers and others making a business of working the soil, who think it is all a waste of money to take such papers. They do not believe in and are utterly prejudiced against what they are pleased to term "book farming." They generally have an idea that there is a chap of some city or town who wants to make an easy living, and so gets up these papers for his own individual benefit, and who knows as little about such matters as the judge of horses at a fair, who could only tell a mule from a horse because the former had "long ears and a thin tail."

We will admit that the man does get up these papers for his own benefit, for there are very few persons who work without expecting a compensation for their labor. At the same time, it is very easy to see that the editor, at least, must be conversant with good practices in farming, or there would soon appear such a mass of rubbish as would drive away all subscribers, and thus, of course, make the "easy living" come out on the wrong side.

Agricultural journals may be divided into two classes—general and local—depending on the scope of country for which they are intended. The latter is usually intended for a county or two, or perhaps a State or section of country, such as The Lancaster Farmer, and should be taken by every farmer or owner of a lot, as they treat on such crops as are best fitted for that locality. The articles that appear in these local papers, with the exception of such as are written by the editor, are furnished by voluntary contributors, who are generally subscribers.

The general class are usually more pretentious than the local, having, besides the chief editor, a number of other editors who have special departments of the paper. This class is composed of regular farmers' journals which treat on all subjects connected more or less with farming proper, such as horticulture, stock, bee-keeping, &c., and special journals which are devoted to one special subject, such as horticulture, or small fruits, or bee-keeping. The former should be taken by every farmer, not to the exclusion of the local paper but in conjunction with it, as each covers more or less ground which the other does not touch; if the farmer also devotes attention to fruit raising, &c., he should take a paper devoted to that special subject and of course it needs no argument to show that a man in any of these special pursuits should take a paper devoted to that.

Now and then a person meets with one of those subjects who know everything about farming, or fruit raising, or gardening. You can't convince them there is anything about their business they don't know. Whenever a man thinks his education is finished out and out, whether in trade, occupation, or profession, he is incorrigible and beyond improvement. With such it is all folly to talk about taking a paper on their special occupation.

It may now be asked, What are the advantages to be derived from taking an agricultural paper? We will try and see what the advantages are, as on this we must hinge our advocating such papers.

Machinery is beginning to be used more and more on the farm; where grass was done altogether by hand, we now use machines to sow the seed, to cut it, to spread it, to rake it, to load it, to unload it, and finally to cut the hay; and so with all other crops. If a farmer wants a machine he wants a good one, and where can he better find out what machines are manufactured to do the work than in the descriptions and advertisements of an agricultural paper.

Fertilizers are becoming a necessity, and are so acknowledged by most farmers, but when they come to buy them they are perfectly at sea in the multitude of brands offered, each claiming to be the best. To test them is at the best expensive and troublesome. Where can a farmer find out better how and what kind to use than in the experience of others, as given in an agricultural paper.

Greatly improved varieties of wheat, corn, &c., are often brought out, which it would take years perhaps before they could become disseminated in the neighborhood of our farmer, but now the distance is annihilated by the agricultural paper.

Improved methods of culture, rotation, &c., are often found out by accident, or by trial, and the reports thereon are brought to the farmer's own door by the post-office, in an agricultural paper.

Frauds are practiced by bogus fertilizer manufacturers, swindling patent right agents, tree agents with peaches on poplar and apples on oak roots, and all others of the humbug fraternity, have very little chance to ply their trade with the farmer who takes an agricultural paper.

The feeding value of grains, hay, straw, &c., are beginning to be more studied, and with some surprising results. Very few, fifteen years ago, would have believed that a ton of straw, with the addition of four or five dollars' worth of oil cake, would be equal in feeding value to a ton of good hay. Such facts as these can be found out soonest and best in agricultural papers.

Insect pests are becoming more numerous and alarming each year, and it is very important that the best methods of destroying them and preventing their ravages should be found out in the least possible time, and that their natural enemies, such as birds, soldier bugs, &c., be described, lest they also fall victims to the farmers' efforts at extermination. This can always be best learned from agricultural papers, and in this branch, at the head of all, stands The Lancaster Farmer.

To think intelligently is one of the greatest keys to success, and this faculty is of as much account to the farmer as to the professional man. To start a new idea, and then think it out logically to the end, is a great teacher; and in this lies one of the great values of agricultural papers.

Therefore, take your local paper; also, take one of wider scope; and if in any special business, you cannot afford to be without a paper on that specialty. If you take a paper, and do not find some article in the course of a year's subscription, each of which is worth to you many times the cost of the paper for a whole

year, then are you one of the seven wonders of the world.

The above thoughts were suggested by seeing the announcement in some of the papers that by sending in your name now, if you are a new subscriber, you will get all the numbers for this year and the whole of next year for the regular subscription price.

This is a chance which should be taken advantage of by all who have heretofore not taken such paper, and remember that in the present progressive stage of farming you cannot afford to be without the agricultural papers.—*A. B. K., Safe Harbor, Lancaster county, Sept.* 2, 1876.

[We commend the above to the respectful consideration of the farmers of Lancaster county, in reference to patronizing agricultural papers, no matter in what direction their choice may lead. We also feel grateful to our contributor for his flattering notice of our journal, and assure him our chief ambition has been more to make THE LANCASTER FARMER a useful medium of information to its patrons, than a mere means of compensation to ourself, however paradoxical such a profession may appear.—ED.]

For THE LANCASTER FARMER.

SWARMING BY DIVISION.

In the August number of THE FARMER of last year was an article by Mrs. Tupper, taken from the *Bee Keepers' Magazine*, upon the subject of Artificial Swarming, wherein she recommends, contrary to the general custom, that the dividing be postponed until after harvest. She directs that the bees be placed in hives sufficiently large to hold frames enough for both the parent colony and swarm, so that the frames may be filled while the bees are together. The method is based upon the well-known principle that one strong stock will gather more honey than two weak ones. Upon reading the article it seemed so plain and practicable, that I wondered I had never thought of it myself. I accordingly constructed a number of hives twice the size of those I had been using, and at the beginning of the clover season, last spring, put all the stocks in them that would bear swarming, putting the empty frames between the full ones. There was not an abundant supply of clover honey in this vicinity this year, but most of the empty frames were filled in two or three weeks, and the stocks became very strong in numbers. All have been divided since the first of July, thus allowing ample time to raise a sufficient number of fertile queens to introduce one in each queenless part at the time of making the division. All are now good strong stocks, very much stronger than they could have been with this year's supply of honey, had they been divided in the beginning of the honey season. There is the same difficulty as with all methods of swarming where empty frames are introduced among the full ones at the time when drone rearing is at its height the bees will build too much drone comb. This may be obviated, I believe, by using the worker-comb foundation, such as can be purchased for $1 per pound, or made by the bee-keeper himself with a simple contrivance exhibited in the British Section of Agricultural Hall, at the Centennial.

To those that contend that agricultural papers are of no practical value to farmers. I would say that I consider the information gained from the article referred to above, worth to me, for this year alone, many times the price of THE FARMER, probably enough to pay for it for the rest of my life.—*W. P. Bolton, Liberty Square, Lan. co., Pa., Sept.* 1, 1876.

THE great trees of California are not found in any other country excepting where they have been recently propogated. They belong to the generel cypress family. These redwood trees are remarkable for their *isolation*. They are isolated systematically, and extremely isolated geographically. They seem to have been created local and lonely denizens of California only.

MANURIAL VALUE OF CLOVER.

If clover has been sufficient to sustain Mr. Geddes' land, may we not reasonably conclude that it will do as much upon these rich prairies? If I understand him correctly, only one crop of clover is ploughed under in his five years' rotation. Is this so? Can he or some one else tell us what is the value of cornstalks for manure? Here in the corn growing region much land is cropped with corn continually without manuring, the stalks being broken down, then raked and burned every spring, and many men contend that better crops can be grown when the stalks have been burned than when they have been plowed under. Others, like myself, contend that the stalks should always be plowed under, first running a stalk cutter over the fields, which cuts them into lengths of about one foot. I think that returning the annual crop of stalks will do much toward preserving the fertility of our soils, even if the corn is removed. Who can tell us what is the manurial value of an acre of heavy stalks, standing say eight feet high? Does chemistry give us any light? What says experience? Will Mr. Geddes give us his opinion?—*H., McLean Co., Ill.*

Answers by George Geddes.

I am asked whether it is our rule to plow in a crop of clover once in our five years' rotation. Yes. But this rule cannot always be carried out, for it sometimes happens, as it did this year in many places, the clover crop is destroyed by freezing and thawing in the spring, and thus we have no crop to plow under. And again, the seed sometimes fails to "catch," and this makes it necessary to put in another crop, and try and make clover grow with that. The failure of a crop of clover seed in "catching" is a serious matter. A few weeks since, walking with the venerable and well-known John Johnston through a field of his wheat, and, observing as to the promise of a crop, I was asked to see if any of the clover was starting after the long drouth that had just been terminated by a heavy rain. Eighty-three years had dimmed his vision, but not his zeal as a farmer, and he called for a little help, and when told the clover was coming he said: "Ah! that is more important even than the wheat; for if we lose our clover we must go right over the work again, and put in another crop with which to seed with clover." I cannot add anything to this dictum of the highest authority in the land.

Five-year rotation—first year, clover and timothy meadow; second year, pasture; third year, corn; fourth year, barley or oats, followed by wheat sown in the fall to be harvested the fifth year—the clover and timothy seed being sown with and on the wheat. This is the theoretical round, but circumstances very often break into it. In fact is hardly ever strictly carried out through all the fields. One-fifth of the farm in corn is too much at present prices of manual labor and corn. So it quite often happens that a piece of clover land that has been used one year for meadow and another for pasture is sown to barley or oats, and that crop followed by the wheat. Thus the course is, in part, reduced to four years, two of them being given to the clover and timothy, and this is all the better for the land, as we have the land half the time in restoring crops, and the other half in exhausting crops. How disastrous to all this a failure of the clover is, can be readily understood; not only is the rotation broken into, but the manuring is prevented.

The best protection against loss of clover by its freezing out in the spring is thorough drainage of the land. It is the water in the land that expands by frost. If there is no excess of water in the land, the freezing does very little harm, except in the very special and rare case of thawing several inches of the surface, leaving the subsoil still hard frozen. If a cold night comes and freezes two or three inches of the top of the land while the long tap root of the clover is held fast below, the expansion of the surface will lift up the crown of the plant, and in so doing break off the tap root. As the ground becomes warm and again free from frost, the broken clover roots may be seen standing above the ground, where the frost left them—dead. Two-year-old plants suffer in this way much more than the shorter rooted plants that have only had the previous season in which to grow. Their tap roots are shorter, and they have most of their lateral roots very near the surface of the ground. The injury to clover, in its second winter, was very great in central New York this season, and especially so on undrained land. A liberal covering left on the soil helps to protect it against the frosts that kill clover, and having made his land free from stagnant water and allowed it a liberal covering in the fall of its own production, the farmer must abide the result, with the feeling that, having done his duty, he has nothing to do in the future but to be governed by whatever may come to pass.

I am particularly asked, when to plow under clover? The clover is doubtless of most value to plow under when it has fully matured its growth, both of top and root, and this will not come till the second crop of the second year has gone to seed. By the second year I mean the year after the seed was sown. Supposing one crop, the latter part of June or early in July, had been cut for hay, a second crop of the medium clover will mature and bear seed before cold weather. This crop is too valuable to be plowed under, for the seed will usually be worth not far from $15 per acre. So it is not usually good economy to plow clover in for manure when it is worth most for that purpose, for then it is worth still more for seed.

Our clover fields are usually cut for seed the year after the wheat has been harvested, having earlier in the season given us a crop of hay. In cutting the seed crop a harvesting machine is used, and the stubble is left high. If the plow fallows that fall, there will usually be left on the ground as much clover stubble as can well be plowed under. The matured roots all being there the land is given a heavy dressing of manure. If the plowing is left until the next spring, the same manure is there, though flattened down by the snow; and if not plowed into until May for corn, there will be added a considerable spring growth to go under with it. The spring growth often furnishes ewes with young lambs the food they most love, and generally is better disposed of in that way than for manure. Supposing the second year after the wheat is harvested the field is used for pasture, a liberal allowance of clover and the grasses that grow with it is plowed under in the fall, or left over for the next spring's plowing.

Of late years we have rarely plowed under full crops of clover for manure when we had any other use for it, such as making hay or feeding off by stock. The roots, the leaves and stalks that accumulate on and in the ground, under our system, have been sufficient to keep up fertility with the help of manure made in the yards and stables. Lands that have been "scourged" by cropping, without compensation, require a different treatment; and to renovate lands that are what is called "worn out," the largest quantity of top will be required as well as the roots.

To again refer to Mr. John Johnston's methods of culture in raising wheat, to show how lands may be made very productive, I will state that during the most of the years of his owning and managing a large farm, wheat was considered the paying crop, and other crops were mostly raised with a view of promoting the greatest yield of wheat when its time to occupy the ground came. Supposing him to have in the spring a field of good clover; when it was as large as he could plow it into the ground, he would commence his summer fallowing; and having mixed his crop of clover thoroughly with his soil, and killed the weeds, he would sow his wheat and reap a large crop. Clover seed was duly sown on the wheat in the spring, and great quantities of barn-yard manure were spread during the fallowing on the poorer places in the field.

If this land was not required for any other crop, he would again summer fallow the year after the wheat was cut, and thus take a crop of wheat every two years from the same land, and by the free use of clover (gypsum being sown on it) and yard manure, he found no difficulty in raising constantly increasing crops

of wheat. To provide his yard manure, he usually purchased sheep in the fall and fed them during the winter on hay, straw, corn and oil-cake meal, and sold them to the butcher in the spring. Sometimes he fed as many as a thousand at once, calculating that if he received the market value of his corn and hay, and pay back for the oil-cake he bought, that he did very well, and had full compensation in the manure, though he never failed but once in making a handsome direct profit on his sheep. Perhaps no man has in this country been more successful as a raiser of wheat than Mr. Johnston, or has, on a large scale and for a long series of years, averaged larger yields.

In talking over his methods of farming, he will dwell constantly on the importance of barn-yard manure; but careful attention to his story will show that few men have used clover more than he did. Some years since he sold most of his land and reduced his farm to about 100 acres, a considerable part of which he rents at an annual sum of $25 an acre to nurserymen to raise fruit trees on, and he no longer raises crops on large areas. Should he now resume business on the scale of 40 years ago, he would find that other crops besides wheat brought money and had a quick sale, and he would act accordingly, but he would use no less clover or barnyard manure. He would make his clover fill his yards, and he could no longer purchase oilcake meal at the prices of olden times, and it is very doubtful if he would fatten as many animals as he formerly did.—*New York Tribune.*

OUR PARIS LETTER.

Correspondence of THE LANCASTER FARMER.

PARIS, July 27, 1876.

The harvest ordinarily commences in the south of France about the 8th of June; this year it is nearly three weeks late, except in the north. It is, however, now completed, and so far as can be judged, the yield will be a fair average. In many cases winter had to be replaced by spring sowings of wheat. Hay in several regions has proved a satisfactory crop, and if the humidity was favorable in one case, it was objectionable in another from the weeds which were rapidly developed.

An agriculturist of antiquity—Varro, "the most learned of the Romans," observed that a good cultivator ought to follow the errors of his predecessor, then those of his neighbors, and lastly, undertake some experiments. It is in this third stage that France now finds herself respecting harvesting machinery. The price for cutting grain crops per acre is 14 francs, therein including the one-third for binding. With the reaping machine, the total cost per acre is one-half less, allowing for all special and general expenses. French agriculturists are not insensible to this serious difference, and are every year being compelled, from the diminution of manual labor, to consider the necessity of employing machinery. Native implement makers do not appear to be equal to the occasion; they are allowing foreigners to cut them out. The buyers are numerous, for it is estimated France requires 200,000 seed distributing machines, and possesses but 15,000; and wants at least 100,000 mowing and reaping machines. The question of meeting this deficiency is so important and pressing, that the government has requested its prefects to study the best means for extending the use of these implements, as well as of steam ploughs and threshing machines, and if the municipal councils, of which there are 36,000 in France, that is to say, one for each parish, could not allocate funds to purchase these machines, and repay their cost from the tariff charges for hiring them out.

As an historical curiosity, the French in ancient times employed a machine, where the idea of the modern reaper may be found. Pliny states that the Gauls, in the case of large and level tracts of land, employed an implement, having sloping teeth placed in planks, and when driven forward, by a bullock pushing from behind, plucked off the ears of corn which fell on a receptacle board. Palladius attests that this rude reaper was in use in the fourth century, that two women and a bullock were sufficient to gather the entire harvest of a tounland in a short time, especially where straw was no object.

Wurtemburg has three official breeding studs, consisting of 80 mares and 150 stallions; the chief stud is at Marbach, where the land is stony, dry, and the layer of arable soil, very thin. One-half of the oats consumed are produced on the farm, as is also the hay, peas and much of the straw. The stallions and grooms suffice to cultivate the land, save in spring, when the stallions being distributed at the various depots for covering purposes, bullocks are employed for the light work of that season; often three year old mares are similarly employed. The peculiarity about the products of these studs is that the animals are not wicked, and are devoid of vicious habits. The climate is very severe, the winter endures seven months, and there is no spring; cutting winds abound—the Suabian Alps being in the neighborhood—and the nights, even in the middle of summer, are cold. This climatic severity tells on the health of the animals, the mortality affecting exclusively mares and colts. On the contrary the horses are proportionally robust and vigorous, to which may be traced the excellent reputation they possess as hunters. Since ten years the Anglo-Norman is the type of horse preferred and acclimatised.

Baron de Wollwarth has done much to settle the vexed question as to the efficacy of shearing or clipping animals as a means to promote rapid fattening. He selected 22 bullocks, 12 of which he clipped after they had been without food for 18 hours. The result was very unfavorable for the shorn lot, especially immediately after that process, and the more markedly so, as before the experiment there was no sensible difference in the daily augmentation of the 22 animals. Clipping is thus far from being a universal panacea; that operation increases generally the wants of the animals, for deprived of a portion of their coats, they are more exposed to the action of cold, and the increased digestibility means a greater production of heat to supplement what has compulsorily disappeared. The beast gets warm at the expense of its fat, or in other words, the shearing necessitates a supplement of food. There are exceptions, as in the case of horses of a lively disposition, and only sojourning in the air pending work; here clipping diminishes transpiration, which from its exhaustive tendency demands even an excess of food. There are cases where sheep and cattle can be shorn if the sheds be too warm, but improved ventilation might tell better on the stock. Then again there are animals sensible to cold and others much less so.

Professor Sanson draws attention to a general error, and which is important to rectify now, that maize-fodder is becoming so largely cultivated for preservation in trenches. "The best moment to cut maize is when the seed commences to form in the ear;" such is the common belief and error. The nutritive value of maize as a forage plant is subject to the same laws as clover, hay, &c. Now it is well known, as proved by scientific investigation and practical experiment, that a plant is richer in nitrogenous and protein matters, in proportion as its development is advanced, or is, in fact, young; that in proportion as it becomes old it becomes more woody, the cellular tissue increasing and the protein diminishing, and that the digestibility of the forage and the assimilation of its principles diminish with the maturity of the plant. Wolff has demonstrated that red clover in its first growth contains 22 per cent. of protein, and only 10 when nearly arrived at maturity; the increase of cellular tissue being respectively as 25 to 42. It is well known to graziers that the extent of meadow sufficient to fatten an ox pasturing would never accomplish that end with the hay produced on the same superficies. The seed of a plant absorbs and concentrates the elements of its stems, and hence the *entire plant* ought to be more nutritive when it is in its flowering than in its grain-producing stage. Payen also has shown that in this younger state the juices of digestion act more powerfully and uniformly.

Having alluded to M. Wolff I may remark, that eminent German's great work, "The Rational Alimentation of Domestic Animals," has appeared in a French dress. He is director of the Agricultural "Station" of Hohenheim, and since 25 years has devoted his attention to the scientific and practical study to the comparative richness of the food of animals, its relative digestibility and its constituents. On these points he is perhaps the first authority of the day.

Messrs. Heiden, Von Gruber and Brunner have conducted a series of delicate experiments, to decide whether it was more profitable to give to milch cows potatoes raw or steamed; they found that a ration of 28 lbs. of potatoes per day produced no effect either on the quantity or quality of milk, or on the animals putting up flesh. Messrs. Wagner and Schaffer's experiments on the cooking of the tubes, conclude that unpeeled potatoes ought to be boiled, and the peeled ought to be steamed.

The French Legislature has decided that fish culture shall form a part of the programme of all the farm schools. This was a branch of rural industry formerly much cultivated in this country, especially in reference to carp. The latter is a most prolific and easily propagated fish; weight for weight, it fetches nearly as high a price as beef, and no farm stock can manufacture flesh so rapidly as carp. Any pool of water can raise the fry; at two years of age, they must be transferred to larger spaces of water, and even then can command at the rate of 200 francs per 1,000 head.

The bean crop is severely attacked this year with the black bug; ashes, soot, and guano scattered in the early morning while the dew is on the plant, a solution of urine, etc., have been tried with more or less effect. Steeping seeds in a poisonous solution and hastening the growth of the young plant, are amongst the most efficacious preservatives. M. Burvenich recommends that an excellent means to prevent the root of cabbages from being attacked by the worm, is to plant them in furrows somewhat like celery; the cause of the disease he asserts is due to the aridity of the soil.

If no cure has yet been found for the vine bug malady, the attempts to conquer the phylloxera are far from diminishing. Submersion of the vines is, up to the present, the sole remedy that has everywhere succeeded where tried; the sulphuret of carbon has given but chequered results. A feeling in favor of importing American vines, on which French stocks could be grafted, has set in, and the government has nominated a commission to go to Philadelphia and investigate the subject.

Germany has decided to establish an Agricultural "Station," exclusively devoted to the culture of the best varieties of sugar beet; in that empire the manufacturers themselves raise 69 per cent. of the beet cultivated. For the production of 1 cwt. of sugar 11 cwts. of roots are necessary, and the expenses of manufacturing vary from fr. 35 to 40 per cwt., the duty being fr. 11 on that quantity.

Messrs. Transon, of Orleans, find that rolling the seeds of larch, pine, the glands, &c., of other trees in a paste of red lead, and drying them before sowing, completely wards of the attacks of birds and field mice.

The Agricultural Society of the Lower Seine, finding all existing instruments unreliable for detecting the adulteration of milk, now offer a prize of a gold medal and fr. 700 to the inventor of an instrument capable of indicating if milk has been skimmed or watered.

OUR LOCAL ORGANIZATIONS.

Proceedings of the Lancaster County Agricultural and Horticultural Society.

The regular monthly meeting of the Lancaster County Agricultural and Horticultural Society was held in the Athenæum rooms, on Monday afternoon, September 4th, at 2½ o'clock.

The following members were present:

Henry M. Engle, Johnson Miller, Peter S. Reist, E. S. Hoover, Wm. McComsey, John B. Erb, S. S. Rathvon, Martin D. Kendig, M. M. Brubaker, John M. Stehman, Levi S. Reist, Andrew Lane, Harry Wolf, Jacob Witmer, Mr. Hershey, David Swartz, C. L. Hunsecker, Harry Reist, D. Smeych, John Gingrich, Casper Hiller, John Miller, Mr. Landis, Phares Kaufman, Israel L. Landis, Dr. Hertz, and Reporters of the press.

In the absence of the Secretary, Alex. Harris, (who is now on a visit to some of the Southern States,) Johnson Miller was appointed temporary Secretary until his return.

The report of crops being first in order, Henry M. Engle was called upon to state their condition in his district. He said the corn crop was a full one. The potatoes were almost a failure, and were small in size. The young clover was not promising, while the apple crop was far above an average, although many varieties showed a tendency to ripen too soon; especially so was this the case with the winter fruit. Peach crop fair, but not so perfect, on account of over-bearing. A fair crop of grapes; same may be said of pears. The season was an excellent one for sweet potatoes.

M. D. KENDIG, of Manor, reported the tobacco crop not so good as expected, it having been damaged considerably by the drought.

J. B. ERB, of Beaver Valley, gave generally encouraging accounts of the crops in his district. The fruit crop, he thought, was two or three weeks ahead of time. Bees have not been doing so well as on former occasions. Potatoes would not be half a crop; corn three-quarters of a crop. Tobacco would also be about three-quarters of a crop, the worms being very troublesome this season. Trees that were planted last spring have made a vigorous growth. Caterpillars were less numerous on trees than formerly. The summer grass was good.

PETER S. REIST stated that the wheat crop was not as good a one as was expected, and that corn would make about three-quarters of a crop. Tobacco was injured very much by worms. Bitter weeds were high and very troublesome. Trees that were planted last spring have made more wood than ever noticed by him before. The peach crop was good, and young clover had recovered.

DANIEL SMEYCH, of Lancaster, said that grapes were poorer than they had been for the past nine years. Concords were almost a failure, while many other varieties were very little better. He had thirty-five varieties, all of which were defective, more or less.

JOHNSON MILLER, of Warwick, reported corn as growing finely since the late rains, and will make a good crop; perhaps not equal to last year in quantity, but of a better quality. Young clover is poorly set, and potatoes yield rather poor with most farmers. The bugs have destroyed them with some farmers, and also the season had been rather dry for the late plantings. Fruit in abundance. Apples are dropping fast, with no prospect for a large supply of winter apples. Cider is abundant, and selling as

low as $2 to $3 a barrel. The farmers are now getting ready to sow. The ground is in excellent condition. There is some wheat already up, and with favorable weather will grow rather rank He would prefer sowing from the 10th to the 20th of September. The weather prophets predict a warm fall, especially the month of November, and if that should be the case, this will be in time even with an early fall. The tobacco crop is pretty well housed, although a good deal is out yet. It is of good quality, and will make the largest crop ever produced by this county. Considerable of it was spoiled by the worms, which were more numerous this year than formerly, and where they have not been properly attended to, they have damaged the crop to some extent. A great deal of tobacco was late in growing, and farmers should give it time, and not cut it too green, on account of frost, which he thought is not so near at hand as some imagine.

N. N. Brubaker, of East Hempfield, informed the members that peaches and apples in his district were very plenty, although the latter crop was falling very fast. The limbs of young peach trees were dying off at the ends, from the depredations of a small white worm. The ground is in good condition, and farmers are getting ready for seeding. The corn and tobacco crops were both good. He would like to know what would be a good remedy to destroy white grub worms, which attack strawberry plants.

A letter was read from A. H. Hostetter, esq., essayist for the occasion, stating that he was unable to be present, but hoped to be with them at the next meeting, when he would have his essay ready.

The question for discussion at this meeting—"How to keep our boys on the farm"—was postponed until the next meeting.

Ephraim Hoover wanted to know what were the best varieties of wheat to sow. At present he found the Fultz wheat the best, and in an experience of thirteen years, found late sowing to be the best, because you would escape the ravages of the fly. His Fultz wheat yielded fully one-quarter more than any other kind. He said that late seeding was from the 25th of September to the end of the first week in October, and that early seeding was from the last week in August until the middle of September.

H. M. Engle said that this subject was discussed at length some years ago, and at that time many farmers came to the conclusion that land was too dear to raise wheat, and that it could never be raised again like our forefathers raised it. He thought a good crop depended a great deal on how the farmer treated the soil, and what kind of seed he planted. He believed in a change of seed. He then instanced his experience in planting different kinds of seed, such as the red and white Mediterranean, the Fultz, Amber, and other kinds. Farmers should strive to produce early wheat. If he would grow largely, he would sow the Fultz and Clawson white altogether. Both of these varieties could be depended upon as producing a sure crop.

Johnson Miller said that he had experimented with the Clawson wheat for two years. He received the seed from the Department at Washington. The first crop was a success, the latter was a complete failure.

Peter S. Reist did not believe in experimenting with every new variety of wheat that was introduced in the market. A few years ago he thought he would try some new kinds, and sowed six different varieties. After trying it for some time he was compelled to fall back on his old kind—the red bearded, or as some call it, the Mediterranean. This variety is very nice to work, produces a clean chaff and sure crop. He thought it best to sow wheat on light plowed ground, so that when the frost came, the roots would not be damaged.

Ephraim Hoover believed in changing seeds from north to south.

C. L. Hunsecker, of Manheim, believed that the Fultz wheat, which was so popular just now, would, like all other new varieties, fail in the end. It would be like the "Strowble" wheat of old, which for a time could be grown on almost any kind of soil. He spoke at some length on the different varieties of wheat now in use.

John M. Stehman was in favor of early sowing, and preferred the Fultz variety above all others. From the 6th to the 20th of September he regarded as early sowing. In early sowing the sprouts have a chance to become strong, and are not so liable to be damaged by the fly.

Levi S. Reist believed that early and late sowing depended entirely upon the season.

J. B. Erb reported the green worms as troublesome in his district.

H. M. Engle thought that more depended on the season than on the time and variety of seed planted In the whole, success depended a great deal upon many contingencies, and in such a case it would not be well to set a given time to sow. He believed in changing from one variety to another, the same as is done with fruit. In this way the best kind can be selected and improved.

Johnson Miller said that Moses Geisenberger, a merchant on North Queen street, had a new kind of wheat, which he had been sowing on a farm near Reamstown, that was proof against the fly and would not freeze.

Peter S. Reist did not believe in sowing in the signs of the almanac, as was often done by some farmers, but he did believe in heavy manuring, which would bring the soil up to the old standard and large crops could be raised.

Jacob S. Witmer, of Millersville, was in favor of alternating seeds, that is, changing from one soil to another. His farm was a slate and limestone one, and he found that by planting in different places from year to year, that different qualities were produced. In some portions he noticed a difference of five to six bushels to the acre. He believed that in the course of a few years seed would degenerate, and it would become necessary to get a new kind. He would like to know something about the Egyptian wheat. His was very small in the grain and shriveled.

Johnson Miller said that he had inquired about the Egyptian wheat, and found that it proved a perfect failure with all who raised it.

H. M. Engle agreed with the remarks made by Mr. Miller, and said our climate was not suited at all for its raising. It ripens on our soil too soon, and no wheat is good that ripens before its time. He hoped no farmer present believed in the signs of the almanac, but that they all believed in the signs of the soil.

M. D. Kendig said that a point was overlooked, and that was the quantity of seed to be sown to an acre. He was in the habit of sowing from a bushel to a bushel and a peck to the acre, but if the season is favorable, one bushel to the acre is enough.

H. M. Engle said the remarks of Mr. Kendig were very opportune. As a general thing, farmers sow too much seed to the acre.

At the conclusion of Mr. Engle's remarks, the discussion came to an end.

On motion of Mr. Kendig, a committee of five was appointed by the chair to test the different modes of cultivating wheat, and the proper amount to be sown, and report the same at the next meeting of the Society. M. D. Kendig, H. M. Engle, John Gingrich, Johnson Miller and J. Frank Landis were appointed as said committee.

The President suggested that every other member of the Society give his personal attention to this matter, and experiment at least to some extent in the matter of drilling and cultivating wheat.

Johnson Miller read a letter of invitation from the Berks County Agricultural Society, to attend their exhibition on the 12th, 13th and 14th of this month. He moved that the invitation be accepted, and that a committee of three be appointed to represent the Society at the exhibition. Johnson Miller, Peter S. Reist and Ephraim S. Hoover were appointed as said committee.

H. M. Engle called attention to the pomological exhibition at the Centennial, and urged the members to contribute fruits, as there would be no exhibition held here this year. The exhibition commences on the 11th inst., to continue until the 16th.

On motion, a committee of three (including the chairman) was appointed to represent the Society at the next meeting of the National Horticultural Congress, which meets next week, at Belmont Hotel, Centennial grounds. The committee consists of H. M. Engle, Dr. Elam Hurst and Israel L. Landis.

H. M. Engle presented some grapes that were considerably cut. He stated that they were damaged by bees, the opinion of the bee keeper to the contrary notwithstanding.

Calvin Cooper reported the amount of rainfall in his district for the month of August at 1 55-100; Mr. Engle as 1 10-16, and Mr. Kendig as 1 29-100.

A committee of five, consisting of Messrs. Johnson Miller, Calvin Cooper, M. D. Kendig, Peter S. Reist and H. M. Engle, were appointed to revise the by-laws of the Society, to report at next meeting.

Mr. Kendig moved that in the future all persons presenting fruits to the Society, give a history of such exhibits.

Israel L. Landis gave notice that there would be a meeting of tobacco growers next Monday at 2 o'clock, at the Black Horse Hotel, this city.

"How can we dispose of our corn crop to the best advantage?" will be the question for discussion at the next meeting.

Ephraim S. Hoover had a fine stalk of tobacco on exhibition.

Simon P. Eby said that he made a visit to the orchard of Elias Eby, in Rapho township, a few days ago. The orchard contains some fifty trees, all of which are in fine bearing condition. The trees are about twenty years old, among the varieties being the "Northern Spy," "Spitzenberg," "Baldwin," "Roxbury Russett," and "Sweitzer," all of which are full of fruit. The soil of the orchard is limestone, lies level and is not protected by any hedge. Some of the apples were placed on exhibition.

The display of fruits was one of the largest placed on exhibition for some time, the following being a list of the exhibits and exhibitors:

President Calvin Cooper presented to the Society the following varieties of grapes: Rogers, No. 4, (Wilder); Martha; Christine, or Telegraph; Northern Muscadine; Hartford Prolific; a white seedling for name; Merrimac (Rogers, No. 4.)

Henry M. Engle presented a number of Seckle, Bartlett, Howell, Des Moines and other pears, and several bunches of grapes.

Mr. J. B. Erb, of Lime Valley, exhibited the following: Jeffries and Early Bellflower apples, Concord, Clinton, Martha, White Clinton and Iona grapes.

Levi S. Reist presented Bartlett, Onondaga and McLaughlin pears.

Elias Eby presented fine Rambo and Sweitzer apples.

After tasting and passing judgment on the fruit exhibited, the Society adjourned.

The Bee-Keepers' Society.

The society met in the Athenæum rooms at 2 o'clock, on Monday, August 21st. The first question discussed was, "What brings on the swarming impulse with a colony of bees, and how are we to control it?"

Dr. Boyer said the best plan to prevent bees from swarming was to give them plenty of room to work. Space has more to do with it than anything else.

Several members said that they have had colonies to swarm several times in a season, although the brood chamber was not more than three-quarters filled with comb.

Mr. Lintner said that the swarming was caused by the hive being filled with comb, and the comb with brood; the queen having no place to deposit eggs. In this case the bees will construct queen cells and swarm. To prevent this he uses a movable frame hive, and when his colony gets too strong he removes a couple of the frames with the adhering bees into an empty hive, and the bees will at once commence to work on the empty frames. In this manner he had no trouble in preventing his bees from swarming.

What causes bees to die out, having a good supply of honey in both the brood and honey chambers? was the next question.

Dr. Boyer thought the cause was in the queen not being a good breeder, and hence the colony grows too weak. If the colony is not strong, they will die if they have ten gallons of honey.

Mr. Detwiler said much depended in the winter care of bees. A quilt or some other absorbent should be placed in the top of the hive to absorb the moisture arising from the bees. If this is not done, this moisture will form into ice, and the sides and top of the hive and the bees will freeze.

Mr. Myers thought it was owing to the weather being extremely cold for a long period. He had noticed that on warm days in winter the bees removed the honey from the outside combs, and stored it up in the centre of the hive. If the weather was too cold, they could not reach the outside honeycombs.

At this point some of the members got to discussing queens. Mr. Funk said bees will not cease to work on the death of the queen, but will continue to store honey until all the brood in the hive is hatched out.

Dr. Boyer said that when a hive lost a queen, a fertile queen should be inserted, as from ten to fifteen days would be lost in waiting for a queen to hatch out, explaining the process of making a queen by the worker bees.

Some argument ensued as to whether the Society was not entirely off the original question, and another question was proposed, viz.:

What kind of a bee hive is recommended as handiest, cheapest and most convenient to handle bees in, with the least injury to the colony?

Mr. Kirkpatrick said he had long used the "Langstroth," "Buckeye," "King," and a hive of his own manufacture, called the "Doubledecker." The latter he considered the *best*.

All the members seemed to agree that a movable frame hive should be used, with the frames of uniform size.

The question "What is best to do with bees when honey is scarce?" was well answered by Dr. Boyer, who said that when stock pasture becomes scarce, the only thing left was to feed the stock, and when honey became scarce, bees should be fed, or they would certainly starve.

"Are bees injurious to fruit?" was discussed at considerable length.

Mr. Funk said they were. He had had his entire grape crop destroyed by bees.

Dr. Boyer said that was a mistake; bees will work in grapes, apples, etc., if the skin is first broken, but in no case can they puncture the skin. He explained that the curculio, a small insect, first stung the grape, and then the bees would very naturally work on the sweets that oozed from the wound.

Mr. Lintner sent to the clerk's desk and had read an article from the Lancaster *Examiner*, (published several months ago) giving a description of the manner in which the owner of a vineyard, near Schoeneck, destroyed nearly all the bees in that section of the county. Noticing that the bees were eating his grapes, he made a trap, consisting of two large planks. These planks were raised by means of a prop a foot apart, and baited with molasses, and after a large number of bees had congregated he sprung his "infernal machine" and destroyed thousands at a time. In this manner the bee colonies in the vicinity were so weakened that one apiarist lost eight out of twelve colonies.

Will bees gather more from flowers by being fed a little every day through the summer?

Dr. Boyer said they should be fed in the spring before the honey pastures were in bloom, but doubted the expediency of feeding them when honey was plenty in the fields.

Several gentlemen agreed that the bees should be fed in summer, if they could be made to work on the artificial food, but as a general thing, the bees seemed to prefer the natural honey.

In what condition should a hive be to winter well?

Mr. Funk thought the only thing necessary was "plenty of bees and plenty of honey."

Dr. Boyer thought too much honey was unprofitable. In no case should they have more than thirty pounds.

Mr. Detwiler asked the question, "When do bees consume the most honey—in mild or in cold winters?"

Dr. Boyer said in the moderate winters the bees consume the most, as in extreme cold weather they lie in a dormant state.

Mr. Detwiler disagreed with the doctor, saying he had always found his bees to consume one-third more honey in extreme cold than in moderate weather. He believed more food was necessary to keep up sufficient animal heat, and keep the bees alive.

Mr. Hershey said bees do not lay dormant in winter. He had examined hives when the mercury marked five degrees below zero, and the bees answered to a knock on the hive. He had also opened hives in very cold weather, and the bees would dart out, but of course would soon become chilled and drop on the ground.

Will it pay to feed bees strong all summer?

Mr. Funk thought it did. He gave his experience. Had purchased a pound of sugar for 10 cents, and added one pound of water. This produced two pounds of honey, which was worth 30 cents per pound.

Mr. Myers said his experience proved to him that three pounds of sugar, fed in syrup, would not produce more than one pound of honey.

Mr. Lintner exhibited a colony of Italian bees in his patent "Buckeye hive." The bees, comb and all the contents, were taken from the hive with entire satisfaction, no one getting stung. A vote of thanks was tendered Mr. Lintner for exhibiting his hive.

The following new members were added: Wm. Kirkpatrick, West Walnut street, city; John Diekle, city, and Jacob L. Witmer, of Millersville.

Dr. Boyer was appointed essayist for the next meeting.

Messrs. Myers, Hershey and Detwiler were appointed a committee to prepare an order of business and rules to govern the society.

The society then adjourned to meet on the 2d Tuesday in November, at the Black Horse hotel, this city.

The Millers' Association.

The regular monthly meeting of the Millers' Association was held in the Board of Trade rooms on Monday, Sept. 11th, the Vice-President, Benjamin Wissler, of Clay township, in the chair. Owing to the inclemency of the weather the attendance was not so large as at the previous meeting, but there was a good interest manifested.

Several new members were elected, and a bill for printing and another for rent were presented and ordered paid.

The committee appointed last month to look up a permanent place of meeting reported, and a discussion followed as to the propriety of having the rooms open every Monday. The unanimous feeling of the members was that the Association ought to have its room open every Monday as a general millers' exchange place, where millers might meet each other to transact their business and where farmers who have grain to sell or other business with millers, might meet them with their samples. It was thought to be much more convenient for both millers and farmers.

After some further miscellaneous business the Association went into a discussion of the relative value of different kinds of wheat, especially of Foltz wheat.

Mr. Samuel L. Levan had noticed that in the discussions of the Agricultural Society this wheat had been favorably commended, and that there is a growing tendency among our farmers in general to let go the other kinds of wheat and to raise mostly Foltz wheat. He thought it a wrong tendency, and argued that Foltz wheat is not the best wheat for flour. In the Baltimore market they are discarding it to such an extent that it sells at a discount of four cents a bushel.

Mr. Henry Snavely also expressed himself unfavorably. He said it will do for the best flour only when mixed with other varieties in small quantities.

Mr. A. H. Shenck agreed with Mr. Snavely, and gave his experience as being similar. It would not do well alone; makes dark flour, and not so good.

Mr. John H. Bushong gave his opinion also against it if used alone or in large quantities. He considered it a wrong policy for the farmers to sow too largely of it, as it would not keep price with other varieties.

Mr. M. O. Stirk did not feel quite so unfavorable to it. He had succeeded in making good flour of it; thought it would do better by and by, as farmers learned more fully how to raise it; thought the miller must learn to mix it, his own opinion being that it could be mixed to advantage, about half and half.

Mr. John H. Bushong thought that millers had much to learn in the mixing of different varieties of wheat; was convinced that great improvement could be made in flour with more knowledge and skill in this direction.

Mr. Samuel L. Levan said that he had lately had a letter from parties in Western Pennsylvania, where the Foltz wheat is almost the only variety, asking him to send them a number of bags of the "old red" wheat and saying they intended to distribute it among the farmers to induce them to raise it instead of the Foltz.

Mr. R. R. Royer agreed fully with what had been said against Foltz wheat. He had tried it, mixing it with Michigan Amber and other wheats, and had tried the "old red" in the same way, and the difference in flour was so noticeable that he had no hesitation in giving his preference to the "old red."

The discussion was indulged in formally by a number of other gentlemen, and the opinion was almost unanimous that the Foltz wheat had not given satisfaction as a standard wheat; that while it might be used in connection with other varieties, it would not do well alone or if used in large proportions, and that our farmers would consequently make a mistake by sowing it exclusively or too largely.

As this is a matter of great importance to our farmers at this season, they would no well to make a note of these opinions, coming, as they do, from such a number of practical millers.

We are glad to see the Millers' Association taking up such questions, and giving the community the benefit of their experience upon them. It is only by such an interchange of views and experiences on the part of all classes interested, that we will succeed in bringing our farming and other trades to intelligent and satisfactory ends.

The Tobacco Growers.

A meeting of the tobacco-growers of this county was held on Monday, Sept. 11th, at the Black Horse Hotel, this city. The meeting was largely attended by farmers from various sections of the county, and a temporary organization was effected by calling Aaron Summy, of Mount Joy, to the chair, at whose request Israel L. Landis, who was one of the prime movers in organizing the Society, stated the object of the meeting.

Mr. Landis said the main object of the Association was to promote anything and everything pertaining to the cultivation of tobacco and preparing the same for market, and that anything relating thereto should be fully discussed. Among many matters that suggested themselves for discussion, were the different varieties to be recommended, the procuring of seed, time and manner of sowing and transplanting, the care of plants by setting out, and the cultivation of the same. Also in regard to fertilizing the land, destroying the worms, topping, cutting, housing and curing and preparing the same for market.

After referring at some length to the above questions for discussion, Mr. Landis said that it would not be out of place to state the number of pounds of tobacco raised annually in this county, and compare it with the productions from other parts of the country. In 1870 the United States produced 262,735,341 pounds of tobacco; of that amount Pennsylvania produced 3,467,539 pounds, and Lancaster county 2,692,584 pounds, thus showing the vast amount raised in this county. The estimated yield for this county last year is 14,000,000 pounds. This he regarded as an immense crop, and said that it is now one of the greatest export articles which produce a return of loose currency. As such he thought it should receive a good portion of attention from farmers.

At the close of Mr. Landis' remarks, a permanent organization was effected by electing the following officers: President, Martin D. Kendig, of Manor; Secretary, W. L. Hershey, of Neffsville; Treasurer, Andrew L. Lane, of Neffsville.

Aaron H. Summy moved that a committee of five be appointed to draft a set of rules to govern the association. The chair appointed the following gentlemen as the committee: Simon Minnich, John M. Stehman, Reuben Garber, Aaron Summy and Martin Pyfer.

The committee retired to an adjoining room, returning in a short time. Their report called for naming the Association "The Lancaster County Tobacco Growers' Society," and that it meet on the second Monday of each month in the Athenæum room. The report also called for the payment of fifty cents by each member, and that the officers of the Society be elected annually. A constitution and by-laws will be submitted at the next meeting.

The only topic discussed was the propriety of making a display of tobacco at the Centennial. For this purpose a committee of five were appointed to select specimens of some of the best varieties, and have it put on exhibition at the great show.

Pending this, the Society adjourned to meet on the second Monday of October, in the rooms of the Athenæum.

WHAT KIND OF WHEAT SHALL WE SOW?

As the season of seed-time is again at hand, this is an important question for our farmer friends to consider. In an agricultural community like ours it is of prime importance that great care should be exercised in the selection of seeds, and especially of grains. The labor of preparation is the same whatever the variety selected, and the soil once prepared, it is worse than unwise to sow an inferior variety when a better can be found.

As the relative value of different varieties can only be determined by experiment it will be of interest to those concerned in this subject to notice the experience of a number of the millers of our county with the variety of wheat known as Fultz wheat, as it is given in the proceedings of the Millers' Association, which we publish in this issue of The Farmer.

As touching another variety of wheat which is being introduced into our county, the following, which we copy from the Detroit *Tribune*, may be of value:

"A New Variety of Wheat.—Considerable inquiry is being made throughout the State for the 'Clawsen' wheat, a new variety of white wheat that is being introduced quite extensively among the farmers, now that seeding time is at hand. For several seasons it has been cultivated in parts of New York. For the purpose, therefore, of learning of its real value and its qualities for manufacturing purposes, Messrs. Merrill & McCourtie, of Kalamazoo, addressed letters to millers at Albany, N. Y., who have had opportunities for judging as to its merits or demerits, and the following answers have been received. We are indebted to Messrs. Gillett & Hall, commission merchants of this city, for the communication. Messrs. E. M. Carpenter & Co. write as follows:

"'We have had experience with flour manufactured from Clawson wheat at Baldwinsville, N. Y., and the flour was very poor. It has no strength, and bakes black. Every miller in this State that has tried it has got into trouble. We speak of the crop of 1874. We have not heard how it works this year, but presume no better. Our millers will not touch it, as it has given them so much trouble heretofore. We hope it will not be introduced into the State of Michigan.'

"Messrs. Durant & Co. report as follows:

"'The Clawson wheat is very unpopular with millers in this state. All the testimony within our range for the past year is to the effect that it will not make a family flour at all, and ruins the grade even if mixed with other wheat in moderate quantities. It lacks in gluten, and when made into dough, it slacks down and continues to do so as flour is worked in; is without elasticity, and will not rise. Manufacturers say that the flour will not make more than half the amount of paste that ordinary flour does. Millers buy it at a reduced price and make it into low grades of flour, but would much prefer not to see it at all. We think you should avoid it by all means. Absolutely certain by experience that it is an unsafe wheat.'"

For The Lancaster Farmer.

FROM NORTH CAROLINA.

The wheat and oats crop have been gathered through this section of country, wheat about half an average crop. My opinion is that it was injured by the frost and cold spell about the 20th of March last. The heads, as a general thing, are not filled out at the points, and some heads not producing full grains. The winter oats, where not killed out by insects or otherwise, turned out tolerably well. Spring oats was much benefited by the good growing season the past spring; yet the crop of winter and spring oats will not be more than three-fourths of a yield. In this section corn needs rain. Cotton promises a fair yield, unless something unforeseen befalls it before it matures.

Within the past fortnight the weather has been warmer here than I have ever felt it since I have been in this country (35 years). At this writing the prospect for rainfall is good, and should it come will benefit all garden truck, as well corn, white and sweet potatoes, and tobacco.

While traveling in your State, in June last, I noticed but one field of grain (wheat) that was short and bare in spots. This field I saw in Chester county, on the north side of and immediately on the line of the Pennsylvania Railroad. In Lancaster county all crops, so far as I saw, were fine. Your farmers deserve *great* credit for the manner in which they till the soil and make it produce so well.—*M. R., Salisbury, N. C., July* 24, 1876.

A Long Furrow.

The Fargo (Cal.) *Times* asks: What do you think of an unbroken furrow six miles long? That's what you can see any day by going to Elm river, where Messrs. Dalrymple and Grandin are breaking prairie. The teams start in the morning and make one round across an entire township and back (twelve miles) before dinner, and the same in the afternoon—twenty-four miles' travel for each team every day. All for wheat next year.

GENERAL MISCELLANY.

Apples at the Centennial.

Among the special features of the past few weeks at the great Centennial Exposition were the collection of apples from Iowa, Michigan and Australia. The interest centred especially in the latter, as compared with American fruit, and some valuable lessons have been derived from them by those who examined them critically. The influences which climate, soil or other conditions have on altering the appearance and quality of the fruit, never had a better illustration. In taking the run of the Michigan and Iowa apples for instance, collected as those of each state were from many different growers, there were often several plates of the same kind. Sometimes the kinds would average smaller, or have some peculiarity from one state than were noted in another, and then again in other varieties the same peculiarities noted in the others would favor the other state. For instance the Ben Davis, an Illinois apple, we believe was in every case smaller in the Illinois collection than in the Iowa one, though in neither was its excellence equal to its reputation.

A striking feature of these western apples was their brilliant coloring. Most of the varieties were of the very highest character in this respect, much no doubt owing to the varieties selected or rather saved to this late period of the apple season, but yet not wholly, for even such a tame looking variety as we generally see it, the Rhode Island Greening, had a rosy tint on it.

When we came to the Australian apples the absence of this color was remarkable. Out of nearly one hundred kinds exhibited there was not one with a blush on its cheek equal to that on a simple Rhode Island Greening from Michigan. Some few had a slight glimmer. Northern Spy, for instance, was a good deal bronzed, and a curious old English kind, know as Norfolk Beafin, might have been as dark as the Black Detroit, if grown in a country like ours. The prevailing tint was of a deep orange, this running more or less through all the kinds. As showing the growing close relationship between America and Australia, it was pleasant to note that the greatest number of these apples were American kinds. The balance were of kinds often named in the list of Europeans, very few seeming to be varieties of their own, as far as we may judge from the names, most of them being familiar to those who study our pomological literature. The fruits were two months on the road, wrapped in cotton on the way, and though some had fallen by the wayside, the whole came in excellent condition, considering all things.

The more the Centennial Exhibition progresses the more the advantages become apparent. Even in such a small matter as this fruit exhibition, thousands of people saw what they never knew before—the capacity of the two young states, Iowa and Michigan, for raising beautiful fruit, while Australia, almost to us an unknown country, told us at once by her deeds that besides the good sheep raising country she is beginning to be known, also, in fruit-culture, so far at least as the king of fruits, the apple, is concerned, she can offer as good advantages to all who may be disposed to look on that fact as an inducement to settle within her borders.—*Germantown Telegraph.*

Improvement of Potatoes.

An article in the *Revue Horticole* translated and published in the *Farmer* (Eng.) contains some points worthy of attention by our American farmers, as the same principles which govern the growth of this tuber in Europe are also potent here. When we want to regenerate any particular kind of potato, or still more, to prevent its degeneration, it is of the first importance to make a judicious selection of parent plants. Several means may be adopted to this end. For example, the choice of the largest possible tubers, which represent well the marked features of the variety, since the too frequent setting of small tubers tends to deterioration. Another plan is to choose the seed, when digging up the crop, from the well-furnished roots, and select the tubers which are most typical of the special variety under treatment.

The shape of the tuber need not be too much considered. Some people imagine that tubers which differ from the usual shape of the kind to which they belong, are of necessity degenerate specimens, but this is an error. Tubers may be not exactly of the shape characteristic of the variety, and yet produce well-shaped potatoes in the following year. As a rule the shape of the varous kind of potatoes differs according to the nature of the soil in which they are cultivated. For example, it is generally supposed that the "Marjoulin" ought to be long and narrow; nevertheless, some light sandy soils produce it in a swollen, and sometimes even rounded form, though it turns out long and narrow if grown in stiff soil.

It is a general physiogical fact, common to almost all plants, and specially marked in the case of the potato, that if they are planted early every year their precocity increases, whilst by reversing the course of action the contrary effect is produced and they tend to become later in attaining full growth. The same result appears if we plant successively in a cold soil. In this case they become later in arriving at maturity, while the contrary happens if we select a warm ground. Again, it is almost certain that if we take the first buds that are developed on a potato for planting, the crop will be earlier than if we planted with the second buds, or still more with those of a third germination. It results from all this, that amongst the various precautions to be taken in attempting to maintain or even improve any variety of potato, a judicious choice of tubers for planting is of especial importance.

The employment of seeds, properly so-called, might also perhaps be resorted to, sometimes advantageously so. But how often must we not sow before we get good types, and good varieties as a result? Still, notwithstanding its uncertainty, this method should not be neglected. It is generally believed that certain kinds of potatoes, such as the "Marjoulin," neither flower nor run to seed. This again is and error. All potatoes will flower and yield seed when they are very strongly manured and in a condition of exuberant vegetation; but it is none the less true that there are some varieties whose natural strength leads them to flower and seed more freely than others.

Ignorance in Farming.

One of the greatest drawbacks to successful farming is the presence of the unknown quantity—ignorance of the exact condition of things, in value, weight and measure, concerning our products. We often produce at a loss. An account with each crop would decide the matter. If, after a few trials, it costs more to produce than a crop will sell for, its cultivation should be abandoned. Many continue to produce from year to year at a loss, simply from the want of a little calculation. The unknown quantity in weight and measure subjects us to great loss in buying and selling. A stack of hay came to my notice recently. The seller estimated that it would weigh a ton and a half. The buyer preferred to buy by weight. It weighed 1,850 pounds—quite a difference in favor of the buyer. There is no doubt that a great deal of hay changes hands every year on a basis no nearer the truth than this. Loss enough is soon made in this way to put in and maintain a hay-scale, even in a small neighborhood. The same thing is true in regard to live stock. Dealers can judge much more accurately than farmers, and are much less liable to be cheated. Farmers are much more liable to fail in buying than in selling. If we pay too much in buying, it makes an up-hill business all the way through. This is one great cause why many fail to make anything in feeding and handling stock. From considerable experience in weighing stock for others, I have found that the greater part fall short in weight from the estimate of the owners; some come very far short. Not more than five per cent. exceeds the estimates. Horses estimated at 1,100 pounds generally weigh about 1,000. Loads of hay called a ton quite often weigh only 1,200 or 1,500 pounds. Those who estimate the number of tons by the number of loads are often very much deceived, and in selling thus they have been cheated, because the scales failed to show as much as they expected. Weighing will remedy this. The pound avoirdupois is a known quantity; after ascertaining the exact number, we are in a condition to go forward without making mistakes in our calculations.

Another unknown quantity is in failure to know the number of acres under cultivation. A farm which had been taken up when the country was new, and occupied by five successive generations of the same family, had a twenty-acre lot. On the death of the first member of the family, the farm was sold. The twenty-acre lot contained but fourteen acres by actual measurement. Here were five generations of heroic workers deceived in the amount of work actually done, all the while supposing that they were cultivating six acres more than there really was. If the yield came up to what the increased acreage should produce, it did not matter so much. But the probability is that they were as far from the truth in the yield as in the acreage. I once bought a tract of salt marsh said to contain six acres. The surveyor made less than four acres, much to the disgust of the seller and the detriment of the reputation of persons who had gained a local notoriety for big days' work done thereon. Traditional "big days' work" often owe their existence more to some errors in calculation than to the amount of work really done. There is uncertainty enough attending the business of farming, from unfavorable seasons, and causes over which we have no control, without being subjected to loss in those we can remedy. We suffer loss from buying and paying for what we do not get; by selling what we do not get pay for, and in many other ways in which the unknown quantity affects us unfavorably. We should endeavor, where it is in our power, to eliminate it from our business.—*Cor. Country Gentleman.*

Draining Orchards.

Apple orchards on heavy soils or wet sub-soils are often injured in growth and in crops. Draining by running ditches midway between the rows will do them much good. As the operation must cut off many of the small roots it should be performed in spring, before the buds open; if left till the trees are in leaf it will more or less check their growth.

Iron and Gold.

It is a peculiarity of gold that, from the moment of its discovery to the day of its destruction, its intrinsic value cannot be increased. It will sell for as much in the dust or nugget as when coined into the sovereign. Experience has proved that every dollar of gold coined costs its dollar in gold to mine. Not so with iron. Iron continues to increase in value at every stage of development or manipulation; from the unattractive earthy ores, till it pulsates with the seconds of time, as it measures out the limits of the glorious orb of day. Gold is indestructible. No acid, gas, heat or cold affects its quality or disturbs its purity. It is regarded as the monarch among metals. It is more ductile than any other, and is the only metal free from oxygen—chemically free and pure. Iron is the servant of all. Its steel arms, its iron ribs and its revolving feet carry us obediently to the uttermost parts of the earth; it nurses us in our days of sickness; it protects us in the hour of danger. Iron has greater affinity for oxygen than any other metal, and is never found chemically free or pure. Gold always has an aristocratic shine. It is the mineral snob, typical of pomp, pride, riches, laziness, indolence and extravagance. It is piled idly in the bank or counting room. It is the ornament of the belle and the servant, the prince and the peasant, the palace and the play-house, the temple and the tenement. It is courted alike by both; fools and philosophers, though "all is not gold that glitters." Iron is the bone and sinew of the land; it only shines when work or worth is demanded. The friction of enterprise, industry and duty keeps it bright. It builds our houses. It saws and draws, and smooths and grooves, and sows and mows, and faithfully serves both king and commoner without a blush of shame, or a bruise of resentment. It is the general benefactor of mankind, a true gift of God. Iron and gold cannot be fused or united; their elements are antagonistic. Iron is the only metal that will destroy gold. You may plate iron with gold, but the oxygen will in time, with its devouring rust, creep through and eat off the glitter of the gold, mar its face and scar its beauty. Humanity, aye, even the soul is frequently bartered for the golden bubble, but never for iron. Iron is the lowest and cheapest of metals, yet it can rise highest in the scale of intrinsic merit. When wrought to its highest value it is worth treble its weight in gold. Gold, the purest of ores, may sink to the meanest service of man. Gold is imperial, exclusive, despotic and scarce. Iron is domestic, cosmopolitan, abundant. Gold is regarded as the standard which fixes values. Iron produces the values so fixed, whether by the plow, or the press, the mine or the mill, the ship or the steam car; iron demonstrates its utility, its producing power. Cities have been ransomed with gold, but empires have been built up by iron. Gold clings to the few, but iron is the possession and the blessing of the many.—*N. Y. Mercantile Journal.*

Christian Laconics.

We cannot be too thankful for *small mercies*, but we may be too much troubled about *small miseries*.—1 Thess. v. 18; Luke x. 41.

It is *backward and downward* with the wicked—it is *onward and upward* with the righteous.—Job xvii. 9; Matt. vii. 13.

Grace and glory are inseparably joined—he that gets the one may be certain of the other.—Ps. lxxxiv. 11.

Sin forgiven is peace restored.—Matt. ix. 2.

Satan promises what he never gives—*lasting pleasure;* and gives what he never promises—*everlasting pain.*—Gen. iii. 4.

Worth and not *wealth* is a nation's safety—Prov. xiv. 34.

When love is warmest praise is loudest—the heart helps the tongue.—Luke i. 46, 47.

What can grace not do? for it raised up saints even in *Cæsar's household.*—Phil. iv. 22.

One may be *sincere* without being safe.—Prov. xvi. 25.

There will not be *a tear* in heaven—there will not be *a smile* in hell; there will be *no weeping* in the former, and *nothing but weeping* in the latter.—Rev. xxi. 4; Luke xiii. 28.

He that would commune *much* with God, must commune *little* with the world.—James iv. 4.

Forbidden pleasures, though *loved* at first, are *loathed* at last.—2 Sam. xiii. 15.

Though we must never be weary of the Lord's work, the sooner we weary of Satan's the better.—Gal. vi. 9; Peter iv. 3.

To be blessed with *happiness* we must be beautified with *holiness.*—Ps. cxix. 1.

None can enter by the heavenly gate *above* who do not enter by the narrow gate *below.*—Luke xiii. 24.

Humility is a grace not merely *ornamental*, but *essential*—not what *may be* in the Christian, but what *must be.*—1 Pet. v. 5, 6.

To Use Hen Manure.

Manure from the poultry-house is best mixed with six or eight times its bulk of loam. It can then be safely applied to any crop or seed.

A Little Every Day.

The longest life is made up of single days, few or many; but the days grow into years, and give the measure of our lives at the last.

The life is at the last what the days have been. Let the children, therefore, look after the days—one day at a time—and put into each one something that will last—something worth doing, and something worth remembering, something worth imitating by those who follow us.

1. Every day a little knowledge One fact in a day. How small a thing is one fact! Only one! Ten years pass by. Three thousand and six hundred and fifty facts are not a small thing.

2. Every day a little self-denial. The thing that is difficult to do to-day, will be an easy thing to do three hundred and sixty days hence, if each day it shall have been repeated. What power of self-mastery shall he enjoy who, looking to God for His grace, seeks every day to practice the grace he prays for.

3. Every day a little helpfulness. We live for the good of others, if our living be in any sense true living. It is not in the great deeds of philanthropy that the only blessing is found. In

"Little deeds of kindness,"

repeated every day, we find the true happiness. At home, at school, in the street, in the neighbor's house, on the playground—we shall find opportunity every day for usefulness.

4. Every day a little look into the Bible. One chapter a day. What a treasure of Bible knowledge one may acquire in ten years! Every day a verse committed to memory. What a volume in the mind at the end of twenty-five years.

Something for Bachelors.

Dr. Dio Lewis having learned the minimum quantity of food on which life can be sustained, advises all young men to marry and settle down in life. His idea is that "until a man is married his life is lacking in that which best develops his manhood." He gives "old bachelors" some hard raps in a letter published in the Green Bay (Wis.) *Advocate*, and then administers this rebuke to that class who are anxious to see the world before marrying: "Seeing the world as a young man does who has to earn his living as he goes along, amounts to very little. What he does see is nothing that helps him fight the battle of life more successfully. It only keeps him from the habits which are in direct antagonism to a correct and happy and successful life, and when he gets through 'knocking about' he has nothing to show for the misspent years save the habits which he must overcome if he would make anything of himself. Do you call that gain or loss? So, young man, take the advice of a man who has kept his eyes open for more years than you have lived, probably, and don't 'knock around.' If you think I have overdrawn the picture, look around you, and out of the men you know select those who have 'knocked around' and see if they do not bear witness to the truth of every assertion I have made concerning the class they represent. Are they men you envy? I tell you, boys, 'knocking around' makes a man good for nothing else, and I take it you have a desire to be good for something higher in life."

Saving and Having.

Either man must be content with poverty all his life, or else be willing to deny himself some luxuries, and save, to lay the base of independence in the future. But if a man defies the future, and spends all he earns (whether his earnings be one or ten dollars every day), let him look for lean and hungry want at some future time—for it will surely come, no matter what he thinks. To save is absolutely the only way to get a solid fortune; there is no other certain mode. Those who shut their eyes and ears to these plain facts will be forever poor, and for their obstinate rejection of truth mayhap will die in rags and filth. Let them so die, and thank themselves. But no! they take a sort of recompense in cursing fortune. Great waste of breath. They might as well curse mountains and eternal hills. For I can tell them fortune does not give away real and substantial goods. She sells them to the highest bidder—to the hardest and wisest worker for the boon. Men never make so fatal a mistake as when they think themselves creatures of fate: 'tis the sheerest folly in the world. Every man may make or mar his life, whichever he may choose. Fortune is for those who by diligence, honesty and frugality, place themselves in a position to grasp hold of fortune when it appears in view. The best evidence of frugality is the five hundred dollars or more standing in your name at the savings bank. The best evidence of honesty is both diligence and frugality.

Fertilizer for Grass.

The best artificial fertilizer for grass is Peruvian guano, which contains ammonia, phosphoric acid, and some potash. This costs but $60 a ton; 150 to 200 lbs. to the acre would be a good dressing to be applied every second year.

Deranged by the Bite of a Hog.

Several weeks ago Peter Harris, living on the Belair road, just back of the Baltimore cemetery, and in the employ of Mr. Chester, blacksmith, was bitten by a wild hog, which had been roaming about that portion of the city, resisting all endeavors to trap him. Mr. Harris suffered severely from the bite, and soon began to exhibit all the symptoms of hydrophobia. He foamed at the mouth like a mad dog, became hysterical, smashed chairs and looking-glasses, and wanted to hit his friends. Measures were being taken to remove the unfortunate man to quarters where the lives of other people would not be endangered, when suddenly, about ten days ago, he mysteriously disappeared, and has not been heard from since. The conjecture is that Mr. Harris has died, or he would have been heard from somewhere ere this, as he was at the time of his departure a raving maniac. He was attended by Dr. White, of Chase street, who states that hogs, as well as dogs and wolves, are subject to hydrophobia, taking the disease themselves without having been bitten. Mr. Harris was a married man, twenty years of age, and worked on a farm.

Mellow Soil Around Trees.

Unless the surface of the soil is mulched around young trees over an area of six feet in diameter, the ground should be kept clean and mellow. Every farmer knows that a hill of corn or potatoes will not amount to much unless cultivated, and yet there are many who will neglect to give the same care to a tree which is worth a hundred of either of the former. In rich soil trees may grow rapidly without cultivation, and no amount of grass or weeds retard them; but there are other things besides the growth to be looked after. If the weeds and grass are allowed to grow up around the stems of apple, peach or quince trees, the bark will become soft near their base by being shaded, and thereby be in a suitable condition for the reception of the eggs which will eventually become peach or apple borers. Take any dozen young apple trees in a section where the apple borer is abundant, and allow a portion to be choked with weeds, while the remainder are well cultivated, and then watch the result. From our own experience, we believe that the chances are nine to one in favor of those cultivated being exempt from this pest.—*Western Farmer.*

Living Within One's Means.

If a man desires to live within his means, and is resolute in his purpose not to appear more than he really is, let him be applauded. There is something fresh and invigorating in such an example, and we should honor and uphold such a man with all the energy in our power. But how difficult to stem the direction of culture in our best circles, where approbativeness is nursed and tickled into excessive growth in childhood, and consequently bears its fruitage of vanity, display, and supercilious obedience to conventionalities in mature life. The extravagance of the development may in time bring about a reform.

But just now the world is crazy for show. There is not one, perhaps, in a thousand, who dares fall back on his real, simple self for power to get through the world and exact enjoyment as he goes along. There is no end to the aping, the mimiery, the false airs and superficial acts. It requires rare courage to live up to one's enlightened convictions in these days. Unless one consents to join in the general cheat, there is no room for him among the great pretenders. May we not indulge the hope that by and by the intelligent classes will frown down this demoralizing, artificial, unnatural life, and rise to a higher and purer system? —*Hall's Journal of Health.*

The Wheat Crop in Europe.

The yield of wheat in Continental Europe this year is larger than was anticipated. In France adverse reports were prevalent till quite recently, but the crop is now believed to be above the average both in quality and quantity. In Russia the harvest is not so good as in some other countries, but is above the average for that country. The New York *Bulletin* prints the following table, showing the acreage under wheat and rye in some of the leading countries of Europe, and their respective populations at the most recent official dates:

	Acres under wheat.	Acres under rye.	Population.
Norway	11,186	32,851	1,742,000
Prussia	4,193,110	10,070,664	24,643,000
Denmark	128,858	561,607	1,784,000
Bavaria	718,025	1,460,788	4,863,000
Wurtemburg	39,214	100,091	1,818,000
Holland	214,074	487,578	3,767,000
France	17,136,667	4,730,378	36,103,000
Austria	2,301,411	4,908,265	20,420,000
Hungary	4,986,019	67,269	15,800,000

Fishbone in the Throat.

If you get a fishbone in your throat, and it continues to stick there, swallow an egg raw. It will be almost certain to carry the bone along with it.

The Farmer's Centennial.

There is no class of our community that should take a deeper interest in the Centennial exhibition than the farmers. The exhibition may be said to have been got up expressly for their benefit. Certainly no part of it more attractive or profitable to visit than Agricultural Hall, which is the best arranged and most comfortable of them all, if not the most beautiful of them all. The *Agriculturist* very justly says:

"No farmer or mechanic should miss seeing the Centennial Exhibition. If he cannot go, he should send one, at least, of his sons. If he cannot afford to do that, he should take what recreation he can in the most convenient manner. Family parties, neighborly picnics to interesting places, and social gatherings make us better acquainted with each other and show the best points of people whom we might suppose had but little good about them. In business no one is seen at his best, and we want to think as well of our neighbors as we possibly can."

How Weeds are Propagated.

A writer in an exchange says the greatest evil to which farmers are exposed by patronizing traveling threshers, is the carrying of foul seeds from one farm to another. If one farmer raises red root or Canada thistle, the seeds are sure to be carried all through the neighborhood by these threshers and clover hullers. The remedy suggested is for good, tidy farmers to club together and buy a thresher—not the large six or eight horse-powers, but a good tread power as now made, with a level tread, that will thresh two hundred bushels a day, with one team and three men. "It is far safer," he says, "more profitable because less expensive, costing not more than one-half, some say not more than one-third as much per bushel to thresh grain as with the traveling machines, and it relieves the house of a small army of men. As long as traveling machines are used from farm to farm, they should be brushed and swept from top to bottom before moving from each station. This is the only precaution that can be taken to guard against the dissemination of foul seeds, except the plan above suggested."

Old Fashioned Reaping.

One day last harvest, by pre-arrangement, a meeting of veteran farmers of the county was held on the farm of John F. Izard, at Clayton, in Gloucester county, N. J., to reap a field of wheat as they used to do in the early days of the Republic, before the introduction of the cradle and the reaping machine. A large number of persons were present to witness the now-a-days novel proceeding.

The following named old gentlemen participated in the work: Thomas R. Hewett, 79 years old, born in Gloucester county; Alpheus Heoman, 76 years old, born at Absecom; Samuel L. Izard, 73 years old, born in Clayton; John D. Turner, 75 years old, born in Gloucester county; Paul E. Jackson, 70 years old, born in the county; Wm. Hatness, 70 years old, born in Montgomery county, Pa.; Thomas C. Kelley, 71 years old, born in the county; Harrison Strang, who walked several miles to join the party, aged 66 years, born in the State. An old-fashioned dinner was prepared for the guests, and in the afternoon the ladies turned out in the field and gathered the sheaves of wheat.

Quick Work.

A trial was made on the 14th ult. at the Moss Creek Mills, near Carrollton, Mo., to ascertain the time in which bread could be made from wheat standing in the field, and with the following astonishing result, commencing at one minute after three o'clock and finished at twelve minutes after three:

Commenced reaping wheat	3.01
Finished reaping wheat	3.02
Commenced threshing wheat	3.02½
Finished threshing wheat (¾ bus.)	3.03¾
Commenced grinding wheat	3.04¾
Finished grinding wheat	3.06¼
Mrs. Lawton commenced making bread	3.08
Finished making bread	3.08½
Commenced baking bread	3.08¾
Finished baking griddle cakes	3.09¼
Finished baking biscuit	3.12

Covering Manure.

By a series of thorough experiments it has been demonstrated that to obtain great good to crops the first year, manure should not be buried but about two inches deep; it therefore follows, that when it is spread in the usual manner and ploughed under, much of it is covered too deep, and some of its virtue is lost; but the second crop will derive some benefit from it. Another way to lose a large portion of the ammonia of manure is to spread it upon land and leave it for days, and in some cases for weeks, before it is plowed under. If a farmer were seen to scatter greenbacks over his field on some windy day, it would appear that his head was quite as "level" as if he should allow the sun and wind to draw out half or three-fourths of the fertility of his manure before he plowed it under the ground.—*Woonsocket Patriot.*

No Secrets.

The moment a girl has a secret from her mother, or receives a letter she dare not let her mother read, or has a friend of whom her mother does not know, she is in danger. A secret is not a good thing for a girl to have. The fewer secrets that lie in the hearts of women at any age, the better. It is almost a test of purity. She who has none of her own is best and happiest.

In girlhood, hide nothing from your mother; do nothing that, if discovered by your father, would make you blush. When you are married, never, never, never conceal anything from your husband. Never allow yourself to write a letter that he may not know all about, or to receive one that you are not quite willing he should read. Have no mysteries whatever. Tell those who are about you where you go and what you do. Those who have the right to know, I mean, of course.

A little secretiveness has set many a scandal afloat; and much as is said about women who tell too much, they are much better off than women who tell too little. A man may be reticent, and lie under no suspicion; not so a woman.

Truthfulness to Children.

A parent, unlike a poet, is not born—he is made. There are certain things which he has at once to learn, or he will have no more influence over his child than if he were a common stranger. To gain obedience, you must first set yourself to deserve it. Whatever you promise your little one, however small the thing seem to you, and whatever trouble it cost you, perform it. Never let the doubt once enter that innocent mind that you say what you do not mean, or will not act up to what you say. Make as few prohibitory laws as you possibly can, but, once made, keep to them. In what is granted, as in what is denied, compel yourself, however weary or worried or impatient, to administer even-handed justice. "Fiat justitia, ruat cœlum," is a system much more likely to secure your child's real affection than all the petting and humoring so generally indulged in, to give pleasure or save trouble, not to your little ones, but to yourself.—*Sermons out of Church, by Miss Muloch.*

Felling "The Big Tree" in Calaveras.

One of the most ingenious applications of the auger is that of felling trees, especially as practiced on the mammoth growths peculiar to California. It is stated that "the big tree," as it was called, which grew in Calaveras county, contained half a million feet of inch lumber, and was felled by five men working 22½ days, making 112½ days' labor of this kind upon a tree. This tree measured ninety-two feet in circumference at the base, according to statements which admit of no question in respect to genuineness. It was not cut down with axes, but as a more practical method, was bored down with long pump augers, and the wood remaining between the holes was cut off with chisels on the ends of long sticks.

IT REQUIRES ten or twelve acres of land to support one person on meat alone; for one acre employed in feeding cattle only produces eight or ten ounces per day, and it requires from five to ten pounds of flesh a day to support one man if he lives on flesh alone. The quantity of land required to keep one ox will produce an abundant supply of vegetable food for at least four persons. One acre of wheat, barley, oats, or corn, will support two or three persons; one acre of potatoes or yams, enough nourishment for nine persons; and Humboldt estimates that an acre planted with bananas is sufficient to support fifty men.

A FARMER in England, suspecting one of his dogs of sheep killing and worrying recently, gave him an emetic, the result of which was to bring up some flesh and a sheep's ear corresponding to that of one of the sheep whose ear had been partly devoured. Should any farmer desire to test a suspected dog, he has only to give him a teaspoonful of salt and half the quantity of mustard, dissolved in warm water. For a permanent cure, amputate his tail just behind the ears.

MR. WILLIAM NEWTON, of Henrietta, N. Y., writes the *American Rural Home*, that the practice of plowing in clover for wheat is one of poor economy, and not as certain to give good crops as formerly, and runs out the land. It takes two years to produce a crop of wheat. The clover is worth more to feed to stock than to plow under. And the manure from it so fed is nearly equal to its value for plowing-in.

To Corn Beef in the Pot.

Cover eight or nine pounds of lean beef with boiling water, and add one teacup of salt, and boil until tender. It will be found much nicer than when corned in brine.

To Keep Swine Healthy.

Give hogs plenty of pure water to drink, and keep within their reach equal parts of wood ashes, common salt and flour of sulphur, and you need not fear the hog cholera nor any other disease.

PENNSYLVANIA RAILROAD SCHEDULE.
Trains LEAVE the Depot in this city, as follows:

WESTWARD.	Leave Lancaster.	Arrive Harrisburg.
Pacific Express*	2:40 a. m.	4:05 a. m.
Way Passenger†	4:50 a. m.	7:50 a. m.
Limited Mail*	9:25 a. m.	10:30 a. m.
Hanover Accommodation.	9:30 a. m.	Col 10:00 a. m.
Mail train via Mt. Joy	11:20 a. m.	1:00 p. m.
No. 2 via Columbia	11:20 a. m.	1:20 p. m.
Sunday Mail	11:29 a. m.	1:20 p. m.
Fast Line	3:25 p. m.	4:50 p. m.
Frederick Accommodation.	3:35 p. m.	Col. 4:15 p. m.
Harrisburg Accom	6:10 p. m.	8:10 p. m.
Columbia Accommodation..	7:32 p. m.	8:10 p. m.
Lancaster Express	7:40 p. m.	8:10 p. m.
Harrisburg Express	7:45 p. m.	9:05 p. m.
Pittsburg Express	9:10 p. m.	10:35 p. m.
Cincinnati Express*	11:30 p. m.	12:45 a. m.
EASTWARD.	**Lancaster.**	**Philadelphia.**
Atlantic Express*	12:40 a. m.	3:10 a. m.
Philadelphia Express†	4:10 a. m.	7:00 a. m.
Harrisburg Express	7:25 a. m.	9:25 a. m.
Lancaster Express	7:50 a. m.	10:30 p. m.
Columbia Accommodation..	9.28 a. m.	12:30 p. m.
Pacific Express*	1:10 p. m.	3:30 p. m.
Johnstown Express	3:05 p. m.	6:00 p. m.
Harrisburg Accom	5:50 p. m.	9:00 p. m.

The Hanover Accommodation, west, connects at Lancaster with Limited Mail, west, at 9:25 a. m., and will run through to Hanover without change of cars.

The Frederick Accommodation, west, connects at Lancaster with Fast Line, west, at 3:25 p. m., and runs through to Frederick without change of cars.

The Frederick Accommodation, east, leaves Columbia at 12:30 p. m., arriving at Lancaster at 1 p. m., connecting with Pacific Express at 1:10 p. m.

The Dillerville Accommodation leaves Harrisburg at 5 a. m., coming via Mt. Joy, and arriving at Lancaster at 9:05, connecting with Lancaster train.

The York Accommodation, leaving York at 6:32 a. m., connects at Columbia, at 7:25, with the train leaving Marietta at 6:52 a. m., at Lancaster with the Harrisburg Express at 7:25 a. m.

The Marietta train leaves Columbia at 6:05 a. m., and returning, leaves Marietta at 6:25, connecting at Columbia with the York Accommodation, and at Lancaster with the Harrisburg Express at 7:25 a. m.

On Sunday there will be two sections of Pacific Express, east, the second section starting from Columbia at 12:30 p. m., making all the stops between Columbia and Lancaster, and the Johnstown Express stops from Lancaster to West Philadelphia.

The first section of Pacific Express, east, on Sunday, when flagged, will stops at Middletown, Elizabethtown, Mt. Joy, and Landisville.

*The only trains which run daily.

†Runs daily, except Monday.

$1 a Year {To subscribers in the county.

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To subscribers out of the county. } $1.25.

Prof. S. S. RATHVON, Editor. LANCASTER, OCTOBER 15, 1876. PEARSOL & GEIST, Publishers.

CONTENTS OF THIS NUMBER.

ACRICULTURAL MISCELLANY.

DOMESTIC ECONOMY.

OUR FENCE CORNERS

Sociability with Cows.

There is a good deal of disastrous advice floating through the press. The latest candidate for misery is from the *American Agriculturist*. It advises farmers to be sociable with their cattle. The *Agriculturist* is confident that sociability with a cow will make it give more milk. If the *Agriculturist* is right this is an important discovery, and promises to work a revolution in farm economy. We may soon expect to see cows sitting back of the kitchen stove holding skeins of yarn, and horses playing dominoes with the hired men, and hens attending candy pulls, and oxen in charades. We say we may expect—but the man who came into this office yesterday morning, with a copy of the *Agriculturist* in his hand, and a face which closely resembled a piece of imperfectly cooked liver, has done much to weaken our faith. He had read the advice. He determined to be sociable with a cow which was the contrariest beast on the face of the earth to give down her milk. We don't exactly comprehend the process he employed to bring out and develop the social instincts of the animal, but he was around at the back of her, on his hands and knees—probably with a view to a little diversity in the way of leap-frog—when she drew her foot out of some of the best mud in this section, and explored for him with the most gratifying results.

"It is a great wonder it didn't kill me out and out," he added mournfully, "but it's knocked me out of the Centennial; —— the luck."—*Danbury News.*

PICKPOCKETS are having hard times. "Ten out of a dozen pockets that I got into," complains one of them, "don't have a thing in 'em but unreceipted board-bills and dunning letters."

"Considering that the mosquitoes are making their fall raids and are particularly lively just now, my dear," said Jones to his wife, "don't you think it would be a good idea to bring the baby's crib into our room? We might divert the attention of the voracious insects a little from ourselves. I hate to be broken of my rest, and baby can sleep all day, you know." Mrs. Jones went in search of the fire-tongs at once.

A BREWER having been drowned in one of his own vats, "Alas! poor fellow," said Jeykll, "floating on his own watery bier!"

"IT is easier for a camel to go through the knee of an idol than for a rich man to enter heaven," is the interpretation which a colored preacher gave to the Scriptures.

"PLEASE accept a lock of my hair," said a bachelor to a widow, handing her a large curl. "Sir," she replied, "you had better give the whole wig." "Madame, you are very biting, indeed, considering that your teeth are porcelain."

A PROVIDENCE boy went to a birthday party, and describes it as follows: "First, we all had some bread and butter; then we all had some lemonade, cold enough to freeze us; then we had a piece of birthday cake; then we had lots of ice cream; and then we all had the stomach ache; then we all lay down, and the big girls gave us some peppermint; then we all went out to play."

A WIT was dreadfully bored by a stupid fellow, who persisted in talking to him on natural history. "There's the oyster," at last said the bore; "what's your idea as to the notion that the oyster is possessed of reason?" "I think it may be true," said the wit, "because the oyster knows enough to shut his mouth."

A BREED of dogs without tails has been discovered in Africa; and how the mischievous boys there utilize old tin kettles and fruit cans, we cannot pretend to say.

THE Sandwich Islands are going to adopt a new flag, but they can't decide whether to take a gray horse-blanket with a hole in it, or an old vest with the back ripped out.

ACROSS the walnuts and the wine: Engaging child: "O Mr. Jenkins! do let me see you drink?" Mr. Jenkins; "See me drink! What for my dear?" Engaging child: "Oh! mamma says you drink like a fish."

IT was a New Jersey wife who said, "My dear, if you can't drink bad coffee without abusing me, how is it that you can always drink bad whisky without abusing the barkeeper!"

AT a medical examination a young aspirant for a physician's diploma was asked, "When does mortification ensue?" "When you propose and are rejected," was the reply that greeted the questioner.

Two Irishmen, traveling, were robbed and tied in a wood. One in despair, cried: "Och, I am undone!" Said the other, "Faith, then I wished you would come and undo me."

The Lancaster Farmer.

Prof. S. S. RATHVON, Editor. LANCASTER, PA., OCTOBER, 1876 Vol. VIII. No. 10.

PENNSYLVANIA FRUIT GROWERS' SOCIETY.

We do not speak officially or from any official authority, but it has been indicated to us that the next annual meeting of the *Pennsylvania Fruit Growers' Society* will be held in the city of Lancaster, in the month of January, 1877. The day we have not learned, even if it has been definitely determined upon, but no doubt in due time proclamation thereof will be made. Those who remember the interesting convocation of this association in our city in January, 1870, will be pleased to learn of this expected event, embracing, as it does, the magnates among the horticulturists of our great commonwealth; and we feel that we but express the sentiment of our people in thus heralding the welcome of its advent among us. This society was organized at the Cooper House, in this city, about twenty years ago, and from that period to the present one, it has been increasing in importance, practical ability, and the general diffusion of horticultural knowledge.

PENNSYLVANIA FRUIT AT THE CENTENNIAL.

Up to the 28th of September the display of Pennsylvania fruit at the great Centennial pomological demonstration was not very remarkable for such a great commonwealth—indeed, it was, by comparison, rather inferior. What it has been doing since that period may be inferred from the fact that the officials having it in charge, have been sending out circulars to the different counties, urging them to come to the rescue in redeeming the character of the State; and it will be seen by the proceedings of the October meeting of our local society, that this circumstance has created quite a flutter among its members. Some counties have done well, but most of them have been backward or derelict. This is not creditable, when we reflect that the great exposition is held within our own borders, and that Canada, Kansas, Colorado, California and other far-off States, have done so handsomely This was not because Pennsylvania had no fruit to exhibit; for, what little she had on exhibition at the time we refer to, the quality compared favorably with any that was there. Mr. Daniel Smeych, of Lancaster city, exhibited over thirty varieties of grapes, that were not inferior to the best that were on exhibition from any other locality. Indeed, his whole exhibit, including peaches and pears, elicited the commendations of connoisseurs, and were complimented by the press, and among them such journals as the New York *Tribune*. Mr. Smeych's collection went very far towards redeeming the character of Lancaster county at least, and fully illustrated what might have been done by both the county and the State, had there been a *will* to do it. We admonished our fruit-growers against this apathy, through the columns of THE FARMER, more than a year ago, and although we faintly apprehended what has since transpired, yet we did not think it would be to the extent it has. The fact is, too many of our people only aimed to be edified and amused with the wonderful sights of the Centennial, without thinking much about entertaining others by freely contributing to the great show of fruit.

In many of the departments our mechanics, manufacturers and artizans in general, have made creditable displays, both from the county and the State, but somehow the "founders of our civilization" have been remiss. This is not so much from a lack of the necessary material as it is from the inability to feel that weight of individual responsibility, without which it is almost impossible to effect an outward manifestation. In matters of this kind every man, in any way interested in it, should feel as if its success depended entirely upon his own individual efforts; and where every man is so influenced, there is no such contingency as a failure. It is therefore to be hoped that the committees appointed on the 2d inst. will be active and energetic in the discharge of their duties, and that our fruit-growers will heartily and handsomely respond. It is true, it may incur a little more labor and expense than exhibiting nearer home, but then the *occasion* must be taken into consideration—it is the centennial anniversary of our national existence, an event that cannot occur again for a hundred years.

THE CENTENNIAL.

Before the issue of the next number of THE FARMER, our great Exposition—the distinguishing characteristic of the nineteenth century—will, officially, have been numbered with the events of the past. True, it may not all be removed—indeed, the greater portion of it may be yet in place—but its *official* existence will be ended. Whether for good or evil, it will be regarded as a grand event in American history, and will furnish a theme that will last an age, and may never be exhausted. Doubtless it will also be criticised—perhaps severely criticised—for, grand as it is, and was, it did not reach perfection. But critics will withhold their criticisms until their outward expression cannot exert an injurious effect upon the interests of the show. Its most vulnerable parts, no doubt, may be attributable more to defective head-work than to heart-work, and yet before all is done, some rascalities may be developed and detected. Since rascalities *will be*, under merely human rule, it is best that they should be exposed, however they may tarnish a country's record. But, apart from all the evil that can possibly accrue, it has done and will have done an immense amount of good. It will do more to establish relations of amity and comity between diverse and remote nations than any system of diplomacy that ever was concocted among men. It is a great pity that every man and woman and every child old enough to recognize its meaning, could not have witnessed it, even for a single day. It would have constituted an epoch in their days never to be forgotten—an impression never to be entirely erased—it is and was so real, so tangible, so void of mere speculation. The extraordinary demonstration on the 28th of September—Pennsylvania's centennial commemoration of her State constitution—was one that never will be forgotten by those who witnessed it; and goes down to posterity as the largest of the kind that has ever taken place in the world. Nearly or quite three hundred thousand people passed through the turnstiles on that day, over two hundred and fifty thousand of which were paid admissions. This result is unprecedented in the history of the industrial expositions of the world, and shows how popular the occasion was in the minds and hearts of the people. Whatever may be the ultimate financial result of our Centennial Exposition, it cannot be charged to the apathy of the people, for it had been preceded and was continued through one of the darkest financial periods in our national history, and many were the self-denials and pecuniary shifts, that were necessary to obtain the means to patronize it, among the masses of the people. Many far advanced in years essayed pedestrian journeys of hundreds of miles to witness the grand pageant of *Fairmount Park*, and all were overwhelmed with wonder at the beauty, the variety, and the magnitude of the show. These impressions will be carried with them down to the end of their days, and together with the written history of the event, will be transmitted to posterity. Many will secure some token of remembrance while they visit the Centennial Exposition, and these will become heirlooms in the family from generation to generation. Many peoples and their productions of handicraft which heretofore had only an ideal existence in their minds, will now have assumed a realistic character, as tangible as if they had visited a foreign country or a foreign workshop.

HOLLAND PIPPIN.

From the following, read at the late meeting of the *Lancaster County Agricultural and Horticultural Society*, it will appear very probable that we have in this city an apple tree which was originally one of those brought over from Holland by Dutch emigrants, many long years ago, or was propagated from one of those early productions. We have had a knowledge of the fruit of this tree for two or three years, and have on several occasions submitted it to some of our local pomologists, but without any of them venturing to give it a name; and a distinct *appellation* we felt assured it was worthy of in the apple world, so that it might be able to stand up an "apple among apples." For this reason, therefore, and the suggestions of a "veteran," we adopt the above name, by which this fruit may be provisionally designated hereafter, and when it becomes manifest that it has some other name, the necessary correction can be made. When we reflect upon the facts presented to us every day in worthless or very inferior apples offered for sale, we may well be surprised that this apple has been so long neglected, and those inferior varieties cultivated instead. This may no doubt be attributable to the circumstance that for a long series of years, no knowledge of it existed outside of the immediate family who occupied the premises on which it stands. But now, when active horticultural organizations exist among us, and fruit-growers are turning their attention to the better kinds of fruit—whether among the *old* varieties or the *new*—it becomes manifest that this "neglected" fruit should no longer be "hidden under a bushel or a bed," and for that reason we feel justified in now making it known as a centennial development.

A Neglected Apple.

"The accompanying apple is from a tree growing upon the premises of Mr. Henry Sener, West Orange street, in this city.

This tree was brought here from Germantown, Pa., about forty years ago, and Mr. Sener informs me that, so far as his recollection extends, it bears a fair crop every year. I have thoroughly tested the fruit for two seasons, and, whether "baked, boiled or stewed"—in pies, dumplings, fritters or plain sauce, I have found it far superior to any apple offered in this market, not even excepting the "smoke-house."

The fruit is in a condition for culinary use all through the months of August, September and October, and in the latter month it is a good eating apple. The tree is old and hollow, and probably will not survive many years, and will no doubt be found worthy of propagating by budding and grafting, and Mr. S. will cheerfully supply any person who may want them. The branches are drooping, the larger portion of the fruit hanging on the outside exposed to sun and air.

It ripens through September and October. I sent a specimen to Dr. Stayman, of Leavenworth, Kansas, who has nearly one thousand varieties of the apple family described and illustrated. I also sent a specimen to Major Freas of the *Germantown Telegraph*, to which I have received the following reply, which reflects *some* light, if it is not conclusive:

GERMANTOWN, PA., Sep. 26, 1876.

My Dear Sir: I have just received your note and specimen apple. I do not think we have any now in this neighborhood, but I will publish a part of your note, which may elicit information. Most of the apple trees of which we had so many standing twenty-five years ago, are dead or removed, owing to the encroachment of buildings and streets. The property I own had many apple trees upon it, but I was obliged to cut them down. But none of the variety sent me.

I really think the specimen is the *Holland Pippin*, called by some the *Summer Pippin*. Many Hollanders settled in this place and neighborhood, and they brought many apple and pear trees with them, or introduced them subsequently. I have pear trees on my premises fully one hundred and fifty years old—Early Catharine, Windsor and Colimer, and some half dozen were cut down.

This specimen apple is a *Pippin*, and seems to meet all the conditions of the *Holland*. Thanking you for it, I am

Yours Respectfully,

S. S. Rathvon, Esq. P. R. FREAS.

In conclusion we would say that the average weight of these apples is eight to ten ounces—perhaps *eight* would be the safest—and the form is somewhat irregular. When fully ripe the color is "golden yellow," and the flesh is tinged with the same color. It is just sufficiently tartish to give it a *positive* quality, and therefore it is free from that insipid *negative* character which distinguishes so much fruit after it is cooked. In pies, dumplings or fritters, by the time the pastry is sufficiently baked, the apples are thoroughly cooked; and when cooked, the pulp retains its original color, or nearly so, and never turns brownish, as is the case with so many varieties of the apple. Some of the fruit weighs nearly a pound, but much more of it about half a pound, but the weight above named is about the average. The tree is about twenty feet high, the branches irregular and spreading, and the twigs, buds and fruit-spurs heavy. It is a kind of canopied or umbrella-shaped in form, and with a step-ladder nearly all the fruit may be gathered from the outside. Mr. Sener states that he usually commences making a culinary use of the fruit about the middle of July, and that even thus early it is sufficiently positive in its taste to make—with the aid of a little sugar—an agreeable relish, and just at the season too, when the appetite craves something of a tartish flavor.

We have no doubt that by budding or grafting the fruit might be much improved, and we hope our fruit-growers will make an effort to perpetuate it. True, they may not all live to gather their reward, but others will, and among the things of the first century of our history, that are worthy of transmission to our second century, we feel very confident this fruit is entitled to a prominent position.—ED.

THE ANIMAL AND THE VEGETABLE.

Their Physical Relations to Each Other.

Prof. Brainard, of the U. S. Patent Office, read before the Potomic Fruit Growers' Society, in July last, an interesting paper on the "Food and Diet of Plants," the concluding paragraphs of which, as condensed by the *Gardeners' Monthly*, are the following: The sources of plant food may be gathered from some analyses and contrasts. Plants feed on carbonic acid, animals give it off. Plants give off oxygen, animals consume it. Plants decompose carbonic acid, water, ammonia, &c., animals produce them. Plants produce nitrogenized compounds—albumen, gluten, casein, &c., animals live upon them. Plants also produce non-nitrogenized compounds—starch, sugar, green oil and acids; animals consume these. Plants endow mineral matter with properties of life, animals deprive them of these properties. Plants impart to chemical atoms the power to nourish animals, these reduce organic matter to a condition suited for the support of plants. Plants convert simple into complex forms, animals convert complex into simple. The plant is a mechanism of construction, the animal a mechanism of reduction. The plant is an apparatus for deoxidation; the animal an instrument of oxidation. The plant absorbs heat and electricity, the animal produces them. "From these observations," adds the editor, "we infer that animal excretions, especially urine, afford most valuable and appropriate food for plants. And our cities are impoverishing the country by emptying their sewers into the rivers. The time will come when this wanton waste will be stopped, and the wasted matters will be utilized." "A convenient method of saving this liquid manure is to collect it in a cask and deodorize it with dry earth and coal ashes." A recent number of the *Scientific American* states that two ounces of kerosene oil and six gallons of water make an excellent fertilizer. as also an antidote to the ravages of insects. It is to be applied with a watering-pot between the rows of plants and around the trees."

We have for years been thinking that the contents of cess-pools and sewers might be utilized, as recuperating elements of soil, and before the country celebrates another Centennial anniversary, this subject may be more popular than it is now. On this subject we would refer our readers to an article entitled *Chinese Agriculture*, in the August number of THE FARMER, beginning on page 119, which contains the basis of what may ultimately have to be done in this country if the unity of its government, or at least its civilization, continues to exist. We have now only attained our hundredth year as an independent nation, and even if we go back to the discovery of the American continent by Columbus, we are not yet four hundred years old, and already we have vast tracts of poor and worn out lands. This is not the case yet with China, notwithstanding the teeming millions of her population, and her three thousand years of agricultuaal experience. The relations between animal and vegetable life seem to be more practically carried into effect in that country, than they are in ours, although the scientific principles of the subject may not be so well understood among them as they are among us. It is true a vast amount of prejudice will have to be overcome before we are able to rationally utilize much that we now permit to run to waste; but the march of intelligence and the diffusion of knowledge will do much in preparing the agricultural mind of our country for any wholesome innovations that experience may finally develop as essential to our general prosperity. Many things that are now looked upon as positive evils, when their constituent principles are properly understood, may be converted into blessings. Some of the wisest agricultural philosophers are beginning to comprehend the doctrine that "there is no such thing as dirt." All *appearances* of such are merely the different phases of chemical change. By the powers of chemistry, some of the finest and costliest cosmetics and perfumes are elaborated from the common refuse of a gas factory, and we cannot fix a limit to the inventive energies of the human mind in this respect. Agriculture has, perhaps, a greater need of scientific aid than any other pursuit among men, for upon its success and its multifarious productions, the whole superstructure of human society must repose. We therefore ought to be willing to "live and learn," no matter from how humble a source true knowledge may spring. "Facts are stubborn things," and it behooves us to be able to make an intelligent discrimination between "fact and fancy" when they are brought under our supervision.—ED.

THANKS to Mr. Jos. Windolph, of Marietta, for a most magnificent lot of lucious *Sheldon Pears*, which are worthy fellows of Mr. Henry Sener's pippin apples. If any body else values our good opinion on such a subject, let them send around their apples and pears—especially *pears*.

We are also under obligations to Mr. Wm. Weidle for fine specimens of Doyenne and Duchess d'Angouleme pears—rare luxuries indeed to one so unaccustomed to such dainties, as we so long have been.

"HOW TO KEEP THE BOYS ON THE FARM."

This question became a subject of discussion at the October meeting of the "Lancaster County Agricultural and Horticultural Society," and elicited some very sound and sensible sentiments, expressed in a free, off-hand manner, by a number of the members, as a careful perusal of the proceedings in another part of this number of our journal will illustrate.

Without intending to indulge in that fulsome flattery which is so agreeable to the "putty-brained" simpleton, but so disgusting to the man of common sense, we nevertheless desire to notice complimentarily the progress which our farmers have made—and especially the young and middle-aged among them—and the abilities they have developed since the first organization of our local society, not only in their public speaking, but also in the literary improvement of their contributions to our journal, and if we have any cause for regret, it is that the latter are generally "so few and far between."

The problem involved in the caption of these remarks, and which was the subject of the discussion alluded to, is one that is not of a very easy solution, simply because of the great diversity of human minds and temperaments. If the natural tendencies of all minds were the same, and all possessed the same degree of strength, the difficulty of elaborating a system of discipline would perhaps not be as great as it is under its present varied constitutions. We do not presume to be able to enlighten our farmers on the best course they can pursue to "keep their boys on the farm;" because, in the first place, we are not a farmer—*we sincerely wish we were*—and in the second place, perhaps, it is not advisable that *all should* remain on the farm.

We may be permitted to suggest, however, that farmers are endowed with the same mental and physical faculties which usually pertain to the rest of the human family, differing, perhaps, only in relative strength and the proclivities which are incidental to their peculiar modes of life.

Therefore, if farmers desire to have their sons remain on their farms, and pursue the honorable calling of their fathers, anterior to any system of discipline for their mental and physical training—whether voluntarily or arbitrarily exercised—is a discipline which they by self compulsion should enforce upon themselves. It is not to be expected that children will be long contented with a farm-life when their parents habitually indulge in yearnings after the occupations and speculations of the towns. The children by hereditary transmission become themselves infected by these yearning desires, and in cases where this is not so, it is only the manifestation of a temporary exception, and not the rule. But this is only the *primitive* cause of disaffection on the part of children; a *secondary* cause is the absence of those external attractions, which are incidental to the mental and moral development of a progressive people; and the false inculcations which obtain, through popular conventionalism and social misconceptions. We sincerely believe, in the language of the "great constitutional expounder" of our country, that "*the farmer is the founder of civilization;*" and, occupying that exalted position, he has nothing to look up to but his God; and whenever his mind seeks another plane of view he is obliged to look downward. This is his legitimate *status*, and it is only when he perverts or misapprehends it, that he becomes a mere "hewer of wood and carrier of water." In the degree that he can appreciate this position, in that degree will he "feel the enviable independence of an American farmer, for while he turns the furrow and scatters the seed, he has the assurance that he does not labor for a master." This self-reliant attitude need not necessarily make him selfish, imperious, ascriptive and uncharitable; indeed, if he cultivates his mind in the same proportion that he does his fields, and does not neglect the longings of his moral nature, he will be humble without indulging in the more objectionable *pride of humility*.

There is an "old saw" to the effect that, "All work and no play will make Jack a dull boy," and per contra we may state, that all play and no work, is just as sure to make him a worthless boy. Between these two extremes, however, their lies a wide field for intellectual and physical culture, and on a proper manipulation of this field, much of the health, content and success of life depends. Farmers, in their relations to their children, perhaps make the same mistakes in discipline that other classes do, and one grand mistake, which only is seen long years afterward—if ever it is seen at all—is in not having sufficient regard to the fully developed man and woman, in the boy and the girl. Perhaps there are few parents who have grown-up sons and daughters, pursuing the duties of life upon their own responsibility, who do not bitterly regret the course they have pursued towards them in their youth. Instead of acting from a high moral principle, and for the ultimate welfare of their children, they may have been influenced by a blind impulse, and with no higher motive than their own personal comfort and convenience. Instead of reposing confidence in their children and according to them the courtesies that they have freely accorded to the children of their neighbors, they, perhaps, have been self-exacting, domineering, fretful and suspicious. Instead of making them "partners of their toil, their feeling and their fame," they may have only been careful to crush out every feeling of independent enterprise, and to impress upon them the absoluteness of their subordinate condition. Instead of affording them opportunities for mental culture, for recreations and for amusements, they may have subjected them to incessant toil, to intellectual denial, and to dogmatic gloominess. Under such circumstances as these, and less excessive than these, it would not be surprising that they should tire of the farm or desire to break away from parental restraint.

But it sometimes happens that parents defer too much to their children, especially when they have grown to manhood and womanhood, have acquired a little worldly knowledge and have become restive under the toils which are incidental to the farmer's life. Having been themselves deprived of the benefits of an early school education, they perhaps fail to comprehend what a true education means. *Learning* does not necessarily carry *wisdom* with it; *that* is the result of experience. Washington was a wise man, but in learning he was inferior to many of his subordinates in the army and the government. These children, then, possessing that "little learning" which "is a dangerous thing," often succeed in infusing their discontent into the minds of their parents, exciting them to exchange the "dull monotony" of a rural life, for the easier and more genteel occupations of the town, which often proves a sad mistake indeed.

Reference was made in the discussion to a simple sect of rural Christians, who discarded or discouraged all school learning as sinful, and yet are prosperous, contented and happy; illustrating that "if ignorance is bliss it is folly to be wise;" but this contented and prosperous condition is by no means the result of ignorance. It is owing to a rigid discipline which they voluntarily imposed upon themselves long years ago, and the results of their self-denials have been the heritage of their posterity. It is because they have been true to the fundamental principles of their moral organization and have transmitted fewer unstable and evil tendencies to their children. With the same persistent, self-denying moral culture, a higher degree of intellectual culture would not effect a detrimental change in their social characters. But with all this self-denial in the one direction, it does not necessarily follow that they are entirely perfect in another. The pride of simplicity may be as objectionable as the pride of intelligence.

To keep their boys on the farm, then, the farmer will be greatly assisted by recognizing their manhood in their early youth, and affording them all the rational aids that are necessary for a proper development of that manhood. They should have seasons of recreation and seasons of labor, and both should be adapted to their mental and physical conditions. The farmer, the farm and farm life should be represented as the *ne plus ultra* of man's social condition on earth, and this should not be inculcated as merely an empty profession, but as a living and ever-abiding truth.—Ed.

THE WORM SNAKE.

"Mr. Editor: I read with much interest a paragraph in your paper of the 25th inst., wherein an account is given of a supposed 'snake' seen by a friend of your Bucks county correspondent. You say in a note that a similar 'snake' had been seen some time previously in Connecticut. I was walking with my wife a few days since, when my attention was called to what appeared to be a 'snake,' about two feet long, crossing a lawn gravel walk. My wife, who has a horror of the genus 'sarpint,' ran off with considerable trepidation. I remained, however, to examine the reptile, and was greatly surprised to find, as described by your correspondent, that it was composed of myriads of small grey worms, each about a sixteenth of an inch in length. The form of combination was precisely that of a snake—small towards the head, larger in the middle, and tapering to a point at the tail. The worms seemed to be crossed, intertwined, and heaped upon each other, but the entire mass moved steadily forward. I have since learned that several of these 'snakes' have been seen since by a neighbor, who said that they were the 'army worm,' and so called because of their movements, bearing a fancied resemblance to a column on the march. Can it be possible that this dreaded pest of the cotton-field has appeared among us?"—*Carroll S. Tyson, Phœnixville, Pa., in Germantown Telegraph, August 26, 1875.*

[We expect to hear from Professor Riley, State Entomologist of Missouri, as to the name and nature of the worms forming this singular combination. The "army worm" does not confine itself to cotton growing States, but has made its appearance in several western States, and is known to feed on other growing crops than that of cotton. It may turn out that this is really that much-dreaded worm. —Ed.]

The phenomenon of the "Worm-Snake" has occurred so often both in America and Europe, and the records have been so numerous, that it is rather surprising so little should be known about them by the writers of the foregoing paragraphs, which have been copied by other papers without comment.

During the past ten or twelve years Prof. Cope has read two or three papers on the subject before the Phil. *Academy of Natural Sciences*, which have been published in its *proceedings*. During the period above named, at least half a dozen of those "worm-snakes" have been seen in Lancaster county, and three of them within the limits of Lancaster city.

In reply to a correspondent from Mountville, Lancaster county, we published a paper on the subject in the columns of the *Lancaster Inquirer*, in its issue of July 9, 1870, which was subsequently republished in the Lancaster Farmer, if we are not mistaken. Mr. J. Stauffer has also published one or two papers on the same insect in the *Daily Express*, of Lancaster, Pa. In the month of September, 1873, we confined about one hundred of these worms or larvæ in a glass jar with moist earth, and they formed a procession within the jar, moving round in a circle for a day or two, and finally disappeared beneath the surface; but of these only one or two specimens were bred to the *imago* state—owing, perhaps, to the unfavorable condition of the soil—small gnat-like insects, having a dusky color, clear wings, and the body one-sixteenth of an inch in length. These flies made their escape, or were lost. Within a week afterwards, in walking from Mount Joy to Marietta, towards evening we met a swarm of small flies gamboling in the air along the road side, and on capturing some some of them we found a close resemblance between them and those we had bred. We herewith reproduce our paper of 1870, and in addition assure the apprehensive reader that these insects are, so far as we know, entirely harmless, and that they are not the "army worm," (*Leucania unipuncta*) which is a nocturnal Lepidopterous insect, of a depredating family:

"On the 17th of June last, an *army* of these very peculiar Dipterous larvæ was discovered by Dr. A. K. Rohrer, of Mountville, in his garden, shaping its course, as he thought, towards one of his rose bushes. These insects come up out of the ground in almost countless numbers, and migrate to other quarters, in a long line, resembling a slimy sort of rope, or serpent, adhering together and covered by a mucus, which is supposed to protect their delicate bodies from the rays of the sun, and probably against other dangers. They belong to the family Tipulidæ, which includes the various species of the Crane-flies, gnats, and mosquitoes, and to the order Diptera, which embraces *all* of the two-winged flies. Comparatively little was known of these insects in this country until a very recent period, and so few are the opportunities to make personal observations upon them by practical entomologists, that much of their history remains still undeveloped. They were, however, observed on the continent of Europe, by Gaspard Schwenfelt, as early as the year 1603. In 1715 Jonas Ramus mentions the same phenomenon. Much superstition was attached to the appearance of these insect larvæ, by the peasantry in the districts in which they occurred, believing that it indicated a bad harvest if they moved toward the mountains, but if they moved toward the valleys or plains, the sign was a good one. In Norway these moving masses of larvæ were called the *orme-drag*, and when the peasants met one, they threw down their belts or waistcoats on the ground in advance of it. If the moving column passed over the obstacles, it was a good sign; but if it turned around them, it was regarded as a bad omen.

"The same phenomenon was observed in 1845, by M. Rand, Royal Inspector of the Forests of Hanover, and Prof. Berthold, of the University of Gottingen, gave an interesting account of an army of these larvæ which he observed in 1853, and which he described as the "Thomastrauer gnat" (*Sciara thome*), having succeeded in breeding the flies.

"On the 10th of August, 1865, my friend Mr. Jacob Stauffer and myself witnessed one of these slimy, snakelike armies of dipterous larvæ in the yard of Col. D. W. Patterson, of Lancaster. They were also observed by Mr. Wm. Kite, a teacher at Westtown school, Chester county, Pa., on the 11th of September, 1866, and also in 1867; and Prof. W. S. Roedel, of Wytheville, Va., observed a similar army at North Lebanon, Pa., on the 15th of July, 1865, and they have also been witnessed by other observers at prior and subseqent dates. From all that is known of them, these migrations are supposed to be for the purpose of finding a more suitable locality in which to undergo their transformation to the *pupa* and mature states; as they migrate only after they have perfected their larval condition, at which time they are about half an inch in length, and seven-sixteenths of an inch in diameter. They are composed of twelve segments, a small black head, entirely without feet, of a translucent white in color, and covered with a dark or greenish mucus, moving slowly along, by longitudinous expansions and contractions of the body, like maggots in general. The ropy or snake-like procession which they form is composed of thousands of these little *larvæ* compacted together and covered with slime, sometimes cylindrical and thicker than a man's thumb, and at other times flattened to two inches or more in breadth. The 'army' noticed by Mr. Stauffer and myself, was perhaps three feet in length, but part of it had been destroyed by a douche of hot water before we reached the premises; but M. Guerin-Meneville, a French entomologist, observed a column that

was thirty yards in length. This author says if the posterior end of this living column is brought in contact with the anterior portion, a circle is formed, and that these little animals will continue moving around in a circle for a whole day sometimes, before breaking and continuing to advance. These little 'army maggots' are sometimes extensively preyed upon by predaceous coleopterous larva, especially by those of the family STAPHYLINIDÆ, commonly called the 'Rover Beetle.'

"There may be different species of these insects in the United States, but so far as my examinations have gone, the specimens brought me by Mr. Develin, of the *Inquirer*, from Dr. Rohrer, agree with the species described by Baron Osten Sacken, of the Russian Legation at New York, and which he has named *Sciara toxoneuræ*. On the continent of Europe they are commonly known as the 'Heerwurm.'

"Mr. D. informed me that Dr. R. subsequently found them in his rose bushes, destroying the leaves; but this is quite a mistake. He may possibly have found the 'Rose-slug' (*Selandria rosea*), which, when quite small, might be confounded with the 'army maggot' by a superficial observation. But the rose-slug has feet, and belongs to the order HYMENOPTERA, which includes the saw flies, bees, wasps, ichneumons, hornets, yellow-jackets, and numerous other *four* clearwinged insects. The army maggot is the larvæ of a two-winged fly (Diptera), and could not climb a rose stalk. The female fly which deposits the eggs from which the rose-slugs hatch, is a small black four-winged fly, and performs that operation on the leaves of the rose, about the last of May, or the beginning of June, and after the larva has matured it goes in the ground to undergo its metamorphosis, and comes forth a fly, which by the same process produces a second brood; after the second brood goes in the ground, they remain there until the next season, about the period above named.

"I do not know any one who has bred the 'army maggot" in this country to the *imago* state, but it has been done frequently by European entomologists. They unfortunately have rarely come under the observation of practical entomologists, and when so occurring, perhaps under circumstances which would preclude the possibility of conducting successful experiments. It seems to me the only way would be to follow the column until it goes into the ground again, (which it has been seen to do), and then procure some of the earth and keep it in a proper condition until the mature insects are developed. In this way I have frequently bred the 'wheat-midge' (*Cecidomyia tritici*)."

One of these "Worm-Snakes," or "Army-Maggots," was seen in Lancaster city in the month of July or August last, but it was only some days afterwards that the *fact* came to our knowledge. As a general thing, people have too little interest in these things to trouble themselves much about their collection, preservation, or record, and when they do make any report of them, it is to the editor or local reporter of some daily or weekly newspaper, where the subject is referred to in the commonest and most general terms, and without regard to its place in the system of nature.—Ed.

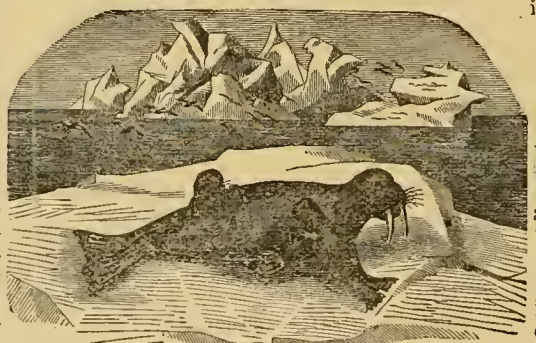
QUERIES AND ANSWERS.

W. R., Lancaster City.—The birds you submitted to our inspection both belong to the Rail family (RALLIDÆ). The smaller one is the common or "Carolina Rail, (*Porzana carolina*) and the larger one is the "American Coot" (*Fulica americana*).

The former is considered a good game bird, about on a par with woodcock and snipe; and "Rail shooting," in its season, is deemed an excellent sport—"Reed-bird and Rail" being coupled together from "time immemorial." The latter, however, although a larger bird, and seeming to make a nearer approach to the duck family, (ANIDÆ) has no reputation as a game bird. It occurs in this county less frequently than the common Rail, but a little farther south they can be sometimes counted by hundreds, if not thousands, in swamps and marshes, where they feed on both animal and vegetable food. We kept one for over two months confined without making the least possible progress in its domestication, during which time it ate sparely of lettuce, cabbage, bread, meat, fish and worms.

Mr. J. D.—It has occurred to me that you wanted to know specifically what the birds were which you submitted to me some days ago. The two upper ones were "Reed-birds" (*Dolichonyx oryzivorus*) in their autumnal plumage. All the remainder, except one perhaps, were the "Little Sandpiper" (*Tingra wilsonii*). The larger specimen was, I think, the "Jack-Snipe (*Tingra maculata*). There are eighteen or twenty species of the Snipe family that are found in Lancaster county, and their species in some cases can only be determined by measurement and comparison.—*R.*

J. T. B., Millersville, Pa.—The insects on the branch of the "alder" which you submitted to us on the 25th ult., and whose white cotton-like secretions gave them the appearance of being covered with hoar frost, are a species of "Wooly Aphis," of which some fifteen or twenty species have been described under the generic names of *Eriosoma* and *Pemphigus*, by Harris, Fitch, Walsh, Riley and others. This species is, as near as we can make it out, *Eriosoma lanigera*, F, if it is not a distinct species peculiar to the alder. We hoped that we might be able to affix them to the branch, and in that way preserve them, by suddenly submitting them to heat, but our design was defeated, for they nearly all dropped off, leaving it almost bare. Most of them we immersed in alcohol, but this separated the cotton-like flocking from them, leaving them naked; a few we have preserved in a small box. About one-half of them are winged, which is a confirmation of what Riley and Fitch say about them, although Harris represented them as wingless. Of course they are injurious to any tree or shrub on which they are found.



THE MORSE OR WALRUS.

(*Trichecus rosmarus.*)

The carniverous family PHOCIDÆ contains a curious group of amphibious animals, known under the common name of seals, (Harp-seals, Fetid seals, Monk seals, common seals), sea elephants, sea lions, sea bears, sea cows, sea leopards, and other land animals to which they are imagined to bear any resemblance, including sea dogs. The great Swedish naturalist, Linnæus, included all these animals in the genus *Phoca*, but as many species have been discovered ssnce his time, they are now distributed among several genera. But it is not of them we propose to speak on this occasion, but about an animal belonging to another genus, and which is better known to the world at large under the name of "Walrus," sometimes also, in books on natural history, the "Morse" (*Trichecus rosmarus*), and which inhabits the cold and unfriendly arctic regions.

Although the walrus bears a general resemblance to the seals, and is of a similar nature, yet it differs very conspicuously from them in this, that it has no canine or incisor teeth in the lower jaw, and has the upper canines enormously developed into formidable tusks, which in many cases are over two feet in length. In size it vies with the elephant seal, or sea elephant (*Phoca leonina*) having a body as large as an ox, and attaining a length of twenty feet or more; its body is covered with a coat of short brown hair, and its "muzzle" is amply provided with bristling whiskers. It finds its strong tusks very useful in lifting itself from the water upon the rocks or ice-banks, where large numbers are often congregated together basking in the sunshine. These tusks also serve as a means of defense, and for obtaining sea-weed, upon which, together with fish, it feeds; it is therefore not entirely carnivorous. When attacked it becomes very fierce, and is a formidable antagonist, especially when it is attended by its young. It can readily smash a boat with its tusks, or, rising in the water, it hooks them over the side and upsets it.

The period of gestation of the female walrus is about nine months, and she generally brings forth but one calf at a time, but never more than two at a time; this twin generation does not, perhaps, occur oftener in the walrus than it does with the cow, the mare and other female mammals. The walrus was at one time extensively captured for its oil, and an extensive trade was carried on in that perilous product—as many as fifteen hundred being slaughtered in a single day by a ship's company. But that product has become very much diminished, if it has not entirely ceased—not only because the number of animals has been greatly diminished, or they have moved farther north, but because the whale-oil trade superseded it, and this also having decreased, their places, for illumining purposes, having been superseded by coal oil.

What next will be substituted can perhaps be more satisfactorily demonstrated at the advent of our second historic centennial. The inhabitants of the cold region where it exists feed freely on its flesh, and sometimes fairly gorge themselves with it. The animal itself is capable of a protracted abstinence, sometimes prolonged to two or three weeks. It is gregarious in its habits, and often thousands congregate together at their feeding and breeding places.

THE BOBOLINK.

(*Dolichonyx oryzivorus.*)

It is wonderful how the name of this bird changes in different localities, and at different seasons of the year; but this is not more wonderful than the changes in its own plumage. When the bird—particularly the male—first appears in the spring of the year, clad in "nuptial plumage," with its merry

"Inkdum dinkdum,
Bob-o'linkum,"

its colors are black, drab and white, and so distributed and arranged as to elicit the name of "skunk-bird" in the northeastern States. It is then gay, happy, and full of its own peculiar music; but after the breeding season is over, the male assumes a garb very similar to the female, and it is then difficult to distinguish between the sexes, or between the old and young birds. Its nature also changes, and instead of the lively bobolink we meet in the spring, it is a dull and lazy gormandizer, and breathes no merry song, but has short, spiritless and monotonous calls instead. It is then esteemed a favorite "game," and is known in the north under the name of "Reed-bird." Shooting reed-birds "down at the Neck," has long been the sporting habit and locality of the "crack-shots" of Philadelphia, and when the season is inaugurated, great bunches of these delicate little birds may be seen in the windows or adjoining the doors of all the fashionable restaurants. In the Southern States it is known by the common name of "Rice-bird," or the more elegant names of "Rice-bunting" and "Rice-troopial." Later in the season it finds its way to the Island of Cuba, where it is kuown by a name that is equivalent in English to "Butter-bird." It gets so very fat in Cuba—and this is also the case sometimes in the United States, especially in the South—that when they fall to the ground the delicate skin bursts, and the feathers become saturated with oil. North or South, they are a popular table bird, although small in

size; but so toothsome are they, that their quality compensates for their lack of quantity, and when properly dressed they often sell in the restaurants at from 50 cents to $1 a pair. It would therefore be most prudent in those, not "up to the rigs," to first inquire about the price of reed-birds before ordering them at an eating-saloon. Some very charateristic anecdotes are related about "rural verdants" who had gorged themselves with reed-birds, and were then struck with astonishment equal to a small clap of thunder, when they ascertained the price afterwards.

Reed-birds are now in season, and in their transit southward they are often seen in large flocks in Lancaster county. They feed on seeds, grain and berries, and there is a kind of seed-bearing reed growing at the "Neck," below Philadelphia, that attracts these birds in large numbers. The reeds grow in a marsh at the confluence of the Schuylkill and Delaware rivers, but to obtain good shots at them the sportsman is required to hire a boatman who pushes him through the marsh among the reeds, and also secures the game after it is killed. This place has been famous for this sport for a long series of years, and probably will continue to be so as long as the reeds and the swamp continue. The "American Waxwing," "Cedar-bird," or "Cherry-bird," and also a large species of sparrow, (*Euspiza*) are often mistaken for the reed-bird; and the latter (except in the bluntness of its bill) bears some resemblance to it. But they all belong to different families, the reed-bird being more nearly allied to the ICTERIANS or "Red-winged Black-birds," whilst the former are related to the BOMBYCILLIANS and the FINCHES. We have a stuffed specimen of the Bobolink in our possession that we shot and prepared more than 39 years ago, and in the Linnæan Museum is one prepared 42 years ago by J. J. L., and both are in a good state of preservation.—ED.

For THE LANCASTER FARMER.

DOTTINGS FROM LEOLINE.

Dear Editor.—As it has been some time since I wrote you last, I have thought a few lines would not come amiss "just now." Although times are generally reported dull, yet they are brisk with us farmers at the present writing, and I have not much leisure to indulge in that occupation.

A Bit of Pennsylvania History.

On the banks of the Susquehanna river, and about one hundred yards from the water's edge, about one mile below Middletown, Dauphin county, there stands a log house that was built in the spring of the year 1770, which is consequently now over one hundred and six years old. It was built by two brothers named Pyle, but has been in the possession of the Zimmermans and Kirks; and is now owned by Thomas E. Kohr, who has lived in it over thirty-three years. One elm, one linden, and one walnut tree still stand, as venerable monuments of the olden times, when the Red men still traversed the surrounding forests. The present owner has renewed the inside of the house, but the outside remains much the same as it was in days of yore. It has the old-fashioned stone chimney, the walls of which are two feet in thickness, and on the whole it seems as solid and as good as it was when first built. There the old time-honored mansion is still standing, over lapping in part three centuries, including the whole period of our independent national existence; and there let it stand, "in the land of the free and the home of the brave."

Domestic Hints.

To keep swine in good health, give them charcoal to eat at least once a month. They will eat it almost as freely as corn. Any one that has a bake-oven can always have the necessary quantity of charcoal.

To keep lice out of the chicken house, pour coal oil on the slats where they sit or roost.

To make grape jelly, take good ripe grapes and squeeze out the juice; to every pint of juice add one pound of good white sugar, boil each pint separate for fifteen minutes, and it will become stiff when cold.

Edible Mushrooms.

Accompanying these lines I inclose a small piece of paper on which I have rudely traced illustrations of a few mushrooms which are known to me, and which I have frequently used.

No. 1 is white, has cells like a honey-comb, only somewhat larger, but not so deep. It comes up about the middle of May, and is found at the foot of cherry trees, maple, poplar and butternut trees.

A

No. 2 is a light brown; cells the same as No. 1, but not quite so large. It has a longer stem, however, the same in quality, and is found under apple trees, and also in the woods under different kinds of trees. It comes up in May and June, after a heavy thunder shower, and I have frequently gathered them by the basketful.

No. 3 is also a light brown when it first comes up, but soon turns a darker color. It is umbrella shaped, and striped on the inside; it is also similarly striped on the outside, only that the stripes are open, or flag-like. It comes up about the same time as No. 2. It is found only under apple trees, and then only under old ones. I have never found them elsewhere.

Nos. 4 and 5 come up during summer and fall. The first long-stemmed and angular or

B

pointed at the top, and the other more flat and rounded, with a shorter and thicker stem. They are white on the outside, and bright pink on the under side. They are found in the woods. I have seen people eat them raw with pepper and salt.—*L., Elizabethtown, Sep.*, 30, 1876.

In the absence of cuts to illustrate the five species or varieties of mushrooms alluded to by Leoline, we are under the necessity of making two groups of them, of which numbers 1 and 2 constitute the first group, and are illustrated by the figure A. Numbers 3, 4, and 5 constitute the second group, and are represented by the figure B.

Figure A is the common Morell (*Morchella esculenta*), known to the German population of our county under the name of "Moricles." There seem to be different varieties, or species of these, mainly distinguished by the length of the upright stem, and differing essentially only in that respect.

Figure B is the common mushroom (*Agaricus campestris*). There are also very many species and varieties of these. Numbers 3 and 4, alluded to by Leoline, are taller and thinner in the stem than our figure, the umbrellas or tops are more cone-shaped, do not expaud so widely as our figure, and differ in other respects, as she has stated in her descriptions.

We may further state that figure A expands more at the bottom than either of L.'s drawings, which on the whole are more spherical in their forms, and neither exhibit the short stem of our figure.

We have just been reading a paragraph in a daily paper, to the effect that four persons somewhere in Connecticut, had been poisoned by mistakenly eating "toad-stool" for mushrooms, three of whom died. Whether any of the reports of this kind of poisoning, that from time to time get into the public papers, are true or not, is more than we pretend to say; but somehow there seems to be so much uncertainty on the subject, that a novice had better regard them with caution, even with the foregoing descriptions and illustrations.

We should touch them doubtfully, unless we had the benefit of a few practical lessons from *Leoline*, who, we feel confident, knows all about the edible quality of the varieties she has above described. The subject is an interesting and useful one, for mushroom culture has become a successful and lucrative branch of human industry in France and other European countries, and we hope it may become so in America.—ED.

For THE LANCASTER FARMER.

WHAT CAUSES BLIGHT?

This question involves a number of other questions. I will allow my friend S. S. Rathvon, to give the entomological side of the subject, while I will, in my usual rambling way, put down the thoughts as they suggest themselves. This reminds me of Robert Burns, commencing with—

> "Which way the subject-theme may gang,
> Let time or chance determine;
> Perhaps it may turn out a sang,
> Or probably a sermon."

My object is, however, to present some facts—some as old and frequently retold as many an "old song," and yet of interest. The High Germans gave the name of "Blichfiur" to the sudden blasting of the leaves on trees and shrubs, rendered in English to "Fire-blight." I shall not occupy time or space with repeating the various notions of the Ancients, but simply consider vegetation as organized beings, and the intimate relation existing between plant and animal life; then the effects of frost, heat and fungi, and the investigations made and published touching this branch of the question. Modern research has made it difficult to say where the vegetable kingdom really commences and the animal ends, when we include the lowest forms of fungi and animaculæ. For instance, De Barry has shown that the *Æthalium septicum*, which appears upon decaying vegetable substances, in one of its forms, is common upon the surface of tan pits. In this condition it is, to all intents and purposes, a fungus, and formerly was always regarded as such; in another condition the Æthalium is an actively locomotive creature, and takes in solid matter as food. This may seem strange; yet consider the Polypes, or corallines: these minute creatures propagate by budding, (germination) and are of an arborescent habit, with jointed branches and stems, supported on a kind of root, in which neither pores nor polypes are distinguishable on the surface of the aggregated corallina, which look more as if built up as a plant, from carbonate of lime, into a pliant or stony mass, instead of woody tissues. An ordinary observer would suppose them to belong to the vegetable kingdom; *i. e.*, certain kinds, at least. In vegetation we find cells and nuclei. Huxley says: "Protoplasm, simply or nucleated, is the formal basis of all life." Although Mr. Huxley, as well as Darwin and Tyndale, say many things that are true, yet neither they, with all their chemistry and philosophy, are able to give an explanation of what constitutes the composition of living matter, or whence the protoplasm or nuclei derive their life and motion. This is a secret of divine wisdom and power—past finding out. So let us step softly. I will stop lest I get to "sermonizing," and return to plant-life. Suppose a peach-tree—the roots anchoring it in the soil, with its spongioles, like minute sucking and filtering tubes, to draw moisture from the soil, and such pabulum as it may find needful to supply the conditions of certain elements required in eliminating blossoms and fruit, the ultimatum of its being and organism. The pith or central axis of growth

was at one time thought as essential as the marrow in the bone. It arises from the neck of the stem of exogenous plants, and terminating at the leaf bud—with all of which, whether they are lateral or terminal, it is in direct communication, constituting a reservoir of nutritious matter for the young leaves when first developing. Light, heat and air, combined with the gases, perform their respective offices; so the plant feeds, perspires or exhales and breathes, as it were, through its lungs, the leaves. Capillary attraction in the minute tubes pumps up the juices, which circulate and become elaborated, and the various functions are performed to build up the tree, put forth its leaves and blossoms, and yield its luscious fruit.

This is healthy action in a healthy tree. Now what coustitutes the "Yellows," or disease of the tree? I may not specially direct all my remarks to the peach-trees only; some may apply more generally to other diseases than the "yellows." One claiming to have made peach culture a specialty, says: "Rarely do we meet with a peach-tree on a southern slope stricken with the "yellows," while aged healthy trees are invariably found in such places in perfection. I have some trees at the present moment in my mind's eye, so old that I can find no one to tell me their age exactly, which are growing on the south side of some buildings, models of health and productiveness." He then enters upon his mode of culture and success of the different sorts, extensively. The article is signed MELOCOTON. I set it forth that others may direct attention to localities of the kiud; for, if true, it forms a valuable consideration. In the Agricultural Report for 1871, the microscopist, Mr. ———, ———, of the department, informs us that the "yellows" is supposed by many fruit growers to originate in spring frosts; also, that the disease is unknown in Europe. Again, he says the "soil on which the 'yellows' of the peach flourish will produce healthy peach-trees, if they are grown under glass structures." Such a structure would also protect them from frost, in my opinion. He states that in his experiments, "maceration of the bark of the trunk and branches exhibits the presence of albuminous matter, in which a profusion of mycelium is found. When the albuminous matter is in profusion, monads and fungi readily grow, but the converse conditions give opposite results; hence the absence of fungi in the solutions of the bark of the roots—the bark of the root having a very limited portion of albumen. Solutions of the healthy bark gave no signs of fungi." He adds: "The experiments were frequently repeated, giving uniform results. The evidence thus furnished in the investigation of the 'peach yellows' favors the view, that when the mycelium is formed on the wood, the cambium cell layers are deposited between the mycelium and the fiber, inclosing in this way annually a sheet of mycelium, which continues to grow, and necessarily becomes highly compressed or felted." I may not be competent to judge what he means by his annual sheets of *mycelium* and *felting*. It is a wonder that no vegetable physiologist has taken serious objection to his entire experiments. Let any one try the experiment of any albuminoid vegetable, destitute of Quinia or tannic acid, and in less than six days of maceration both fungi and animalculæ will be developed. In the diseased tissues albuminous matter may be more abundantly present than in healthy bark, combined with tannic acid, which prevents the formation of the proper nidus. Ferments are of an albuminous or glutinous character, and produce germs of *Penicillum glaucum*, which is a fungus also.

But in his theory about the mildew on the grape caused by "atmospheric pressure on the sap in the leaves, to pass through the pores to the surface, depositing albuminous juice, the food of the fungi; then a high temperature following, all the conditions necessary for the formation of fungi are present," he adds: "It has long been observed that rust, mold, mildew and smut follow such a course of atmospheric variation." In short, he states that pale green or yellowish leaves are always infested by fungus, while those that are glossy or dark green never are. He does not prove by this that the fungus is the cause of the disease; it may be simply a secondary result, induced by the albuminous secretions on the leaves. Former experimentalists accounted for this diseased condition to a change of the humors in the tissues: 1st. Excess of heat causing the aqueous sap to be vaporized, and depositing the thicker albuminoid matters on the surface so as to clog up the stomata, produce stagnation and form the nidus for fungus development, like other decaying matter. This certainly needs no atmospheric pressure more than is exercised at all times under like conditions on the healthy or diseased leaves, becoming pale and spongy, and the breaking pores clogged up by albuminoid matter, so as to exclude the air and transform the chlorophil or green coloring matter.

This result is produced by excessive transpiration during a heated term of dry weather; the watery portions of the sap are evaporated, and the thicker albuminous portion lodged upon the surface of the leaves. This takes place, no matter how the atmospheric pressure is, as that, like the heat, would act (all things the same relatively) upon all the plants—leaving the question, why are some so clogged up and others not? Therefore we must look for a radical cause preceding the former, whether in the soil, planting, pruning or variety of the plant, and the change induced by planting, or rather transplanting, from one soil to the other; the delay or interruption while so doing; in short, any or a combination of these causes may affect the normal flow of the sap or full action of all the vessels, to induce weakness, so as to be less able to resist the action of heat, etc. So, some men are sunstruck, and suffer or perish, while others under the same circumstances escape. This is a common sense view; and I could produce any amount of evidence that would go to establish it. Depletion, whether by evaporation, aphids or insects of any kind, may do the same, but when an excess of moisture is in the plants, a degree of depletion may do no harm. Nature ever seeks to establish an equilibrium. As regards frost, I will say, observation has provided that a few warm days in early spring may start the buds, and subsequent frost retard them, and this interruption may leave its effects to follow by other concurrent circumstances, either surmounted to avoid or increased into pernicious results. I will give a case reported in my own words, where in early spring the frost in the ground yet locks up the spongioles or rootlets so as to be dormant. A few bright sun-shiny days may start the sap above ground, the pith or storerooms to the buds, wake up to motion, starting the leaves. This starting will draw upon all the cells to supply the action, while the root or base of supplies is under an embargo. The result is, that the tree may put forth vigorous leaves and appear to flourish, but alas! all the resources exhausted before the evil can be prevented, the slugglish supply from the root has to struggle through the exhausted cells and tubes, shrunken up, requiring for their own restoration the full supply, and too tardy to reach the advance skirmishing force, who, faint and starving, succumb, and all the leaves die, as by a stroke of lightning—apparently as suddenly. This I have myself witnessed. There is nothing strange about it; the functions stop, action stops; so when the heart no longer beats, and circulation stands still, the human machine stops, and decay and dissolution must inevitably follow.

Having already written more than I intended, I will only add that disease and the withering of the leaves in plants is not only caused by insects or by fungi, but various complications can take place to bring about like results in plants or animals. This subject is extensive and by no means exhausted. Of course various plants, localities and treatments will vary in result; and sometimes we meet with very conflicting statements as resulting from experience, in which this difference is not taken into consideration. Hence close examination as to the various conditions that invest each case must be examined. The parasitic fungus on the living plant, the fungus resulting from or found on decaying plants, the depletion and boring of insects, the effects of heat, cold, drought or excessive moisture, are all questions that should be had in view, and necessarily the data given, before a safe verdict can be given on any special case.—*J. S.*

For The Lancaster Farmer.

ARTIFICIAL FERTILIZERS.

Under our modern system of farming, there are on an average probably more of the fertilizing elements of the soil removed than are replaced by manures made on the farm in raising stock and from animals kept to work. Some of these elements, such as nitrogen and ammonia, are supplied in small quantities by the air and rain water. So if all the grain, hay and other produce were consumed on the farm, and the manure resulting therefrom applied to it again, its fertility would constantly increase. Some persons recommend this course, but as other things besides butter, cheese and meat are needed by people of cities and those who work at trades, a great deal of the other products must be sold off by some of the farmers.

Through the aid of science it has become known how much or what kind of materials are taken from the soil by any of the regular farm and garden crops, and by the same aid it has been discovered where to look for the materials so removed, and this has given rise to what are called "artificial fertilizers."

The principal materials removed in cropping are nitrogen, potash, soda, lime, magnesia, phosphoric acid, and sulphuric acid, but the different crops remove them in very different quantities. Thus buckwheat straw, weight for weight. removes about four times as much nitrogen, potash and soda from the soil as wheat straw; tobacco (leaves) remove more nitrogen than any other crop and over twice what the same weight of wheat would, and removes nearly six times the quantity of potash. This shows the reason why some crops are termed as "hard on the land."

From what we have observed above, a fertilizer should contain all the materials the plant needs in growing to a full development. Any fertilizer having all these is a complete fertilizer and could be used year after year with good effect, but unfortunately, the only reliable one is barnyard manure, and of which we have seldom enough. A fertilizer that lacks some of these materials may perhaps have others in abundance, and would be suitable for particular crops, or for soils out of which such materials had been taken by long-continued and over-cropping until it became "worn out," i. e., lacked some particular material which was needful for growing full crops. These may be called special manures.

In the application of the complete manures there is very little art to be employed, as the only trouble is that seldom enough of it is available. In the special manures, if the soil is already in fair order, with the materials in proper proportion, it is only necessary to know what materials are needed for the crop, and then apply that fertilizer which contains these in abundance. On over-cropped fields it is more difficult to tell what fertilizer is needed, for now the wants of the crop to be raised and the materials which the soil lacks have to be taken into consideration.

To apply artificial fertilizers the farmer should be conversant with the wants of the crops he raises, what the materials are, the amount removed, and where he can get them again at the lowest rates. It must be remembered, however, that the fertilizer that can be purchased for the least money is seldom, if ever, as cheap as the higher grades at twice the price. But the price itself is not always a sure rule, for in the *American Agriculturist* for April is given the analysis of five different

fertilizers, of which two high-priced kinds were worth more per ton according to a certain standard, than the price asked. Another, quoted at $42.50, was worth about that sum, while another, quoted at $55.00, was worth only $8.27, and another, quoted $25.00, was worth only $9.64. From this it will be seen that great care must be exercised in buying, and only well-known standard articles bought in large quantities. If a new or unfamiliar brand is bought, it should at first be purchased in small quantities and tested, and even should it turn out well, the reputation of the parties manufacturing the article should be established as persons who have embarked in its manufacture as a permanent and bona fide business.

We will now endeavor to learn what the materials are that are taken up in plant growth, their functions, &c.:

Nitrogen is an invisible gas and constitutes 77 lbs. out of every 100 lbs. of common air. It is seldom found in minerals, but is a very important element of animal and vegetable substances. It is found and forms an important part of lean flesh, white of eggs, curd of milk, gluten of grain, vegetable fibrine, &c. If the nitrogen could be easily manufactured from the air, where it is so abundant, there would be a good supply at low rates, but this is unfortunately not the case. It is found in fertilizers as ammonia, which is a compound of three equivalents of hydrogen, (also a gas), and one nitrogen. It is very volatile, i. e., escapes readily into the air unless fixed by changing it to sulphate of ammonia, or some like compound. The ammonia in animal manure and urine is readily fixed by adding sulphuric acid, but as land plaster (gypsum), which is a compound of sulphuric acid and lime, is more easily obtained, not so dangerous to handle, and answers the same purpose, it is better to use the latter. It is for the purpose of fixing the ammonia that the papers often recommend the application of plaster to the manure pile, but they seldom if ever give the reason for its application. It should be applied every time the stables are cleaned, or perhaps it would be better to scatter a small quantity every evening before bedding, having it handy in a box in the stable. The powerful stench that arises in some horse stables and causes the eyes to overflow, is ammonia escaping. As it is one of the costliest elements in all manures, especial pains should be taken to prevent its waste. In fixing the price of Peruvian Guano, it is calculated at 17¼ cents per pound, which is equal to $350.00 per ton. In any fertilizer where the quantity of ammonia is stated, it is easy to get the cost of the nitrogen by multiplying the price of ammonia by 17, and dividing by 14, because ammonia is composed of 14 parts, by weight, of nitrogen, and three parts of hydrogen. In the case of Peruvian guano; therefore, the nitrogen would cost 17¼×17÷14=21¼ cents. If nitrogen only is wanted it is best to buy nitrate of soda, which contains about 15 per cent. of nitrogen and sells at 4 to 4½ cents per pound, and the nitrogen contained in it will cost 27 to 30 cents per pound. It is very soluble and acts quickly. The quantity applied per acre is about 150 pounds, but in the case of wheat 100 pounds is recommended as a fall application, with another application in the spring.

The number of pounds of nitrogen removed per ton of the different crops is as follows:

Wheat, 41½, do. straw, 6½; rye, 35, do. straw, 5¾; oats, 38½, do. straw, 8; corn, 32, do. fodder, 9½; meadow hay, 28½, timothy do., 36½, red clover do., 42½; potatoes, 6½; tobacco, 92.

Potash is a compound composed of one equivalent each of potassium and oxygen, and is found in very variable quantities in different plants, or on the same plant, and I think that the same kind of plants vary with the locality where they are raised, for the analyses of different chemists vary sometimes as much as 25 per cent. or more as to the amount contained. Potash is seldom found in artificial fertilizers, and then only in small quantities. In Peruvian guano it is valued at 7½ cents per pound. To apply potash to the soil it is only necessary to give a good coating of wood ashes, but as these are difficult to get now-a-days, recourse is had to what are called "German Potash Salt," but if the potash is present as chloride (muriate) of potassium, according to Prof. W. O. Atwater, in *American Agriculturist*, they should not be used on tobacco, beets and potatoes, as it injures the burning quality of the leaf of the first, and decreases the quantity of sugar in beets, and of starch in potatoes. If present as sulphate of potash it will do no injury; the chloride is excellent for grains and grasses. I believe the nitrate of potash (saltpetre) is also sometimes used as a fertilizer.

In the absence of all potash compounds in the soil, the seeds will germinate but will not grow more than a few inches high and this growth is most probably at the expense of plant-food stored up in the seed. The amount (in pounds) of potash removed per ton of different crops is as follows:

Wheat, 10½, do. straw, 12½; rye, 11¼, do. straw, 15½ oats 8¾, do straw, 17¾; corn, 7½, do. fodder, 19¼; average meadow hay, 26½, timothy do., 40¾, red clover do., 36½; potatoes, 11½, (about one-third pound to the bushel); tobacco, 60½.*

Phosphoric acid is found in all plants, and is next to nitrogen in price and difficulty in obtaining it. It is also found in bones in combination with lime as phosphate of lime. It is also found in guano and other good fertilizers. In these fertilizers it is in three different states, known as soluble, reverted and insoluble. The reverted was at one time soluble, but has become insoluble, but when mixed with the soil it readily decomposed by other materials so as to be soluble. The rate in fixing the price of Peruvian guano is for soluble acid 10c., insoluble 2c., and reverted 8c per pound.

The amount of phosphoric acid removed in pounds per ton of different crops is as follows:

Wheat, 15¾, do. straw, 4½; rye, 16¾, do. straw, 4¼; oats, 6½, do. straw, 3¾; corn, 11¾, do. fodder, 10½; meadow hay, 8¼, timothy do., 14½, clover do., 11¼; potatoes, 3¼; tobacco, 9½.

In fertiiizers the number of pounds per ton is as follows: †Peruvian guano, 260; bone meal, 464; Baker guano, 696.

The above three materials (nitrogen, phosphoric acid and potash) are the most costly and hardest to obtain. The following are also necessary to plant growth, but are easily obtained.

Sulphuric acid is removed only in small quantities, and is the most easily and cheaply applied in the form of land plaster, sulphuric acid and lime. As the acid is easily washed out by rains, it should be applied oftener than fertilizers usually are. The usual quantity is from 100 to 150 pounds per acre.

Lime is removed in greater quantities than sulphuric acid, but it is not applied only on account of being one of the materials of which plants are formed, but it loosens clay soils, and seems to decompose and make more acceptable the vegetable matter in the soil. It has been found injurious to but two crops: Oats will not ripen perfectly after an application of it, and sometimes becomes rusty; according to Johnson, flax is said to be injured in the fiber by it, so that in Belgium it is not grown until seven years after the application. There may be other crops which are sometimes injured by an over-application. The amount applied varies from 25 to 150 bushels per acre, but on thin land it is not safe to go much over 50 bushels per acre, and to stand 150 bushels the soil would have to be pretty well stocked in vegetable matter. As it also is liable to be washed out by rains, the better plan is to apply less at a time than there usually is, and do it oftener, it being considered best to spread it on top and not plow under, as it is soon enough below the reach of plants.

Other elements are either supplied by the air or so plenty in the soil that it is not necessary to make any special mention of them.

Any farmer intending to use artificial fertilizers should have at hand some standard works on agricultural chemistry, and on plant growth, so as to be able to judge what he wants. He should give little heed to what an agent or dealer in fertilizers may tell him, though I might not blame the agent for wilfully misstating facts; but it must be remembered that the fertilizer may have done good in a certain case, yet in another it might not work, because it did not contain the materials which were needed either by the soil or the crop. At any rate it is advisable that only standard and well known articles be bought in quantity.—*A. B. K., Safe Harbor.*

*The amount of materials removed by crops, and some other figures are taken from tables furnished to the *American Agriculturist* by Prof. Atwater. They vary a little in some points compared with other authors, but as they are of later researches than the works I have access to, they are published as given in the above paper.

†The agents of the Peruvian guano give it at about 100 pounds more.

For The Lancaster Farmer.

LOVELY BLOOMING BULBS.

Our seedsmen have received their annual importations of lovely blooming bulbs from Holland and Germany. We have received the catalogues and examined the stocks of several firms, and without hesitation say, that the stocks are the most superb ever imported. Large numbers of new and superior varieties of the various species are among them for the first time. The drought of last summer ripened the bulbs so well that most all of them are as hard and sound as hickory nuts. Purchasers may rely upon getting sound bulbs and choice varieties. They may be planted in the months of September, October and November. The soil that will produce good crops of potatoes and corn will yield splendid blossoms of bulbs. Heavy loams should get sharp sand mixed with them, and sandy soils are benefited with muck and cow manure to bind and solidify them. All kinds of soils should be made rich with manures.

The bulbs are planted of depths according to their sizes: Snowdrops an inch under the surface, (that is, the tops of the bulbs); crocuses two inches deep; hyacinths, tulips and narcissus should be set three inches deep; crown imperials and lily bulbs, four inches deep. The earlier they all are planted the better. Whether they are set in patches or large beds, salt should be thinly scattered upon the surface to sweeten and fertilize the soil, and winter frosts affect it and bulbs the less.

The growing of hyacinths in bell glasses, in windows, is one of the cleanest and prettiest modes of flower gardening. The *Van Thol Tulips* are of early and brilliant blossoms, and should be grown in pots, in parlor or in glass-house.—*Walter Elder, Phila., Sept.* 25, 1876.

For The Lancaster Farmer.

LICE ON YOUNG TREES.

Last spring I examined my young apple trees, and found some of them full of bark lice, and stunted considerably, and thought I would try an experiment. So I cut or sawed off with a fine saw the top or limbs, and grafted with clean grafts of such varieties as I wanted, and greased the stems from the graft downward with lard, and now I have clean thrifty tops on them. I think it is a good plan, and perhaps some others may want to try it. But be sure that your scions are perfectly free from lice, as only one scale of nits would infest the whole top again.—*J. B. E., Lime Valley.*

[We believe the lard would have cleaned the trees, without sawing off the limbs, if they had been properly greased.—Ed.]

For The Lancaster Farmer.

TRANSPLANTING TREES.

By the time this number of The Farmer reaches its readers, it will be the time to transplant hardy trees and shrubs, both for ornament, shade and fruit bearing. All the species of evergreens should be planted first, as by so doing they make numerous fibres before hard frosts seal up the ground. The soil under the surface retains the warmth gained in summer long after the atmosphere has become cold; hence transplanted trees early set out

become established with new fibres before severe winter sets in. By that method success is more certain. Nothing gives such life-like beauty to the general winter landscape as do evergreen trees and shrubs. Every farm house should be garnished with a few of them, and every gentleman's broad lawn should be embellished with many of them. They are more successfully transplanted than the deciduous species, as they make a more numerous fibre growth. Dig holes larger than the spread of the roots, pulverize the soil well to put about them, and cover the surface with long straw manure or tan-bark or saw-dust.

I have been through many leading tree nurseries of late, and they have an abundant stock of suitable sizes to set out, of the various evergreen and deciduous trees and shrubs, for ornament, and the same with fruit-bearing trees and berry bushes. Hedge plants, too, are plenty, and of different species. Purchasers should send their orders early to the nurserymen and get the best, as they are sent off first.—*An Old Planter, Philadelphia, Sept. 25th*, 1876.

For The Lancaster Farmer.

LIVE GATE POSTS.

Some years ago I wanted a post at a certain spot where there were only a few inches of earth on top of some rocks, along the stream or creek. I planted a walnut tree, and now I have a post that the floods don't tear out. At another place, while digging a hole for a gate post, I struck rock about fifteen inches from the surface, and could not tighten the post to hold a gate without stays; so I planted a good-sized locust tree alongside the post, and it will soon be large enough to hang a large gate on. Along the creek I planted a row of willow stakes a few years ago; now they are a fine row of trees about thirty feet high, with timber enough to make a good cattle and flood fence. Whenever I set a post to hold a foot-log or flood-gate along the stream, I plant a tree alongside, and the roots will soon help to hold the post tight until the tree is large enough to answer for a post.—*J. B. E., Lime Valley.*

FACTS ABOUT BIRDS.

Is it not a marvel that a mere bird, that is much inferior in intelligence to an elephant or an ape, can find its way back to its residence of last summer, even though it be six or eight, or even nine thousand miles distant? And yet such is the fact. Every year, as spring approaches, we see birds coming from the tropical regions, passing by us, or stopping but a short time, and then we soon hear of their arrival in the colder regions of the north, where they have gone to lay their eggs and to tarry until they are hatched and their young partly grown.

Now it is only by very careful calculation, and by constant watching of the sun, moon and stars, and by carefully measuring distances, that mariners can find their way across the ocean, and so travelers on land, where the country is new and unsettled, have to use very much the same means to keep in a particular direction, or they will soon be lost. But here are these birds, without chart or compass, or any waymarks on the ocean to guide them, without any knowledge of astronomy, and yet they find their way over the trackless sea and forest, and often even occupy again their old nests. The Creator has mercifully given them this remarkable power, which we call *instinct*, and this often serves as a safe and perfect guide in other matters.

In a recent article we spoke of the bones of birds being hollow, especially of those that fly, and of their having numerous air-sacs over their bodies which are inflated like a balloon, so that they are much lighter, and can more readily sustain themselves in the air and fly.

These air-sacs are both filled and emptied at pleasure by the bird, as occasion requires. When they wish to descend rapidly to the earth, like the eagle or hawk to seize upon some living animal, the instinct of the bird leads it to contract the muscles connected with these sacs as to expel or squeeze out the air, and thus the buoyancy or lightness of the body is lessened, and it falls more swiftly to the ground. The same instinct leads the bird at such times to fold its wings as closely as possible to its body, thus reducing still farther its bulk.

All this will now help you to understand how the same bird that can soar so readily for many hours high in the air, can also plunge like an arrow into the water, and move so swiftly in it, that it easily catches the swift-moving fish in its own element. The Solan goose has been caught in fishing nets more than two hundred feet under water, where it had gone for its prey. These air-vessels are so completely contracted at such times that *all* the air is expelled, and thus the body of the water-fowl is much reduced in size. But this is not all. The air in the bones is also removed, and so the buoyancy is still more diminished. To prove that the air in the bones is in connection with the lungs, the experiment has been tried of breaking the leg of a bird, and also of making a hole in it so that the air could escape, and it was found that the bird could not then fly. So, also, when the bone was thus broken, the *wind-pipe* of the bird was closed by the experimenter, so that it was impossible to breathe through its throat, and yet the bird was able to breathe for some time *through the opening* in the *bone* of the leg, showing that these various receptacles of air are all in communication with the regular breathing apparatus of the bird—that is, its lungs.

How plainly do we here see the skillful hand of the Creator in not only giving to the bird these different air-holders, but also the instinct to use them at the right moment, and use them also in ways so different and so wonderfully adapted to its wants; contracting them all when it wishes to descend, and expanding and inflating them when it desires to rise. How absurd to suppose that a bird could *educate itself* to do all this! So, then, we see that the Almighty condescends to teach even *little birds* what it is needful for them to know.

The heads of birds are also worthy of special notice. Commencing with the beak, we find the head always more or less of a wedge-like shape, which fits them for cleaving alike both air and water. The bills or beaks of some are very peculiar. For instance, take the woodpecker's and examine it closely, and you will find it has a long chisel-shaped instrument, with a hard, horny substance at the end. Now this is just what the bird needs to bore into the bark of trees in search of the insects on which it feeds.

So the bill of the snipe is long and narrow, that it may probe the marshy ground for food; and as this food is mostly out of sight, the bill has *nerves of feeling*, so that when the end of the bill touches the food, the bird is instantly informed of it by these wonderful nerves at the bill's end, which are the same as eyes to the bird for discovering different substances.

The common duck has much the same arrangement, with strainers at the side for separating the food from the water. The bill of the parrot is adapted for climbing as well as for cracking nuts and picking out the kernel. The bills of some birds are good fly-traps, and actually serve for that purpose as they sweep with open mouth through the air in quest of insect food.

The tongues of birds are also very extraordinary contrivances. The woodpecker has a very long tongue, or rather a long handle to it in the back of its mouth. In fact, the tongue of this bird is really a barbed spear, having a double barb at the end like a harpoon. This is necessary to pierce the unseen worms it finds under the bark, and draw them out.

The wonderful eyes of birds may well surprise us. How far can you distinctly see a mouse or a small bird? Probably not more than a few rods. But some birds of prey, like the kite and hawk, will soar so high as to be quite out of our sight; and yet from that great height they can see such small objects as mice, and will dart so swiftly down in a straight line that, active as they are, there is no escape. This explains why such birds fly so high—they have from such heights a vastly wider field to explore, and must soon see, somewhere, some prey.

Now here we may well stop a moment to ask the question: How has all this come to pass that birds find their way back to their old homes, eight or nine thousand miles distant? How is it that they expand and contract the numerous air-vessels inside and outside of their bodies? How came they to *have such vessels?* How came they to be all connected with the breathing apparatus of the bird—that is, its lungs? How came the beak of the woodpecker to be so perfectly adapted to boring old trees for the food it most relishes? How came its tongue to be a real harpoon of hard, horny substance, just precisely what is needed to draw out the hidden worms when found?

And so we might go on inquiring how the beaks of the ducks and snipe have the power to *feel* the right kind of unseen food? And also how some birds have eyes so much like powerful telescopes, that they can see their prey miles distant from them?

To say that *they*, the birds, *themselves* made all these wonderful contrivances would be the most absurd nonsense, since they are the handiwork of Him who "doeth all things well."

THE SELECTION OF COWS.

In order to answer various private inquiries made by readers of the *Country Gentleman* upon this topic, I will give a convenient method for the dairyman to weed out and select from his own herd the choicest animals that come into his hands. It is well known that dairymen are seldom able to give any definite account of the comparative value of the individual cows of their herds. How much less is any one able to make a critical selection from the herd of another! There are very few who can tell, of the cows they milk, whether one gives 500 or 1,000 pounds more than another in a season. They know that one gives more than another, but they have no accurate idea of what the difference is. Yet it must be evident that this knowledge is of great importance, for it often happens that the whole profit of a herd is paid by one-half the number, the other half scarcely paying their keeping.

If the dairyman knew which paid and which sunk his capital or labor, he would soon sift out the dead-heads. The moment he began to note, accurately, their individual product, he would also begin to form a standard to which they must come to be worthy of retention in his herd. If the dairyman would but study his own herd, it would form a basis for improvement far beyond anything yet adopted. Almost every herd has some good milkers and profitable cows. These would at once become the standard to which he would strive to bring his whole herd.

The first point the patron of a factory would wish to know is quantity—the pounds of milk form the basis for his dividend. Many would be glad to know the pounds of milk given by each cow through the season, but think the labor would be too great in gaining this knowledge. I have adopted a simple plan of

Weighing Each Cow's Milk

every fourteenth day, from the beginning to the end of the milking season. This will give, practically, each cow's product for the whole season, and he can compare them all and know the exact value of each, so far as quantity is concerned. He should weigh the night and morning's milk each time, so as to have one day's milk. Now by adding together the amount of milk of all the days on which the milk is weighed, and dividing by the number of days, he will have the average pounds of milk given by each cow for every day in the season. Suppose the milk has been weighed 21 days, at intervals of two weeks; now divide the number of pounds given for all the weighings by 21, and you have the average

pounds of all the weighings, which is the average yield also of every day in the season. Now multiply this average by the whole number of days the cow has been in milk, and you have the whole amount given by the cow in the season. This gives you a most reliable standard of comparison, and the weighing is easily done with a pair of cheap spring scales, hung upon a nail in the stable, having a hook at the lower end upon which to hang your pail. At the scales have a little book, with a pencil attached. The name of each cow should be written on a page of the book, and against the name the weight of her milk is placed. In this way it takes but a moment to weigh the milk.

Test of Quality.

It is quite important in butter making to know the quality as well as quantity. You need to know the percentage of cream to determine the value of the cow for butter. And as the price of butter is influenced by its color and flavor, (and some think the color determines the flavor) your test should give both quality and quantity of cream. This is easily and cheaply done by filling a glass tumbler with the milk of each cow, and setting these tumblers, in a cool place, for the cream to rise. The transparent glass will show you the thickness of the cream and its color. You will have milk of each cow under inspection at the same time, and can thus make an accurate comparison. Both night's and morning's milk should be thus tested. In almost every herd cows will be found that give cream of a rich golden color, rivaling the Jerseys; and if a dairyman wishes to select the Jerseys from his own herd, this is the way to do it. This testing for quality often proves that the cow giving the smaller quantity of milk makes the most butter; and an hour's time will show him the comparative quality of the milk given by each cow in the herd.

Both of these tests—weighing and setting for cream—will give the dairyman a perfect standard of comparison to determine the value of each cow; and when he has done this, he will have cows for sale. How important that he should weed out the unprofitable cows and keep only those that compensate him for his labor and expense; and one day's time in a whole season will give him all this knowledge. *E. W. S., in The Country Gentleman.*

AMERICAN GRAPES AND WINE.

The last letter received from the San Francisco correspondent of the Baltimore *Sun* has the following brief and interesting notice of the grape product of California:

"The grape crop of California exceeds by half all former years of vintage. The wine presses and caskage do not increase with the enormous growth and fruitage of our vineyards. Even now, without a drop of rain for five months, and scarcely any dew, a hundred vineyards may be spotted from the hill top by the deep, brilliant green of their glistening foliage. But there is no poetry in the vintner's life. One in fifty having wine presses and a market established makes a good thing of it. But the majority can get at best but half a cent a pound—not enough to pay for culture. The pavements of San Francisco groan under the weight of grapes for sale at two cents a pound, in bunches to fill one's hat, and of quality of lusciousness far exceeding, take them as they run, the choicest of European selections."

The trouble of the grape culturists in California is not with respect to the quality of the grapes they raise—for that, as our correspondent states, will rival the choicest European varieties. It is in the want of a market. The grape in California is so prolific, the soil and climate so admirably adapted to it, and the extension of its culture so easy, that too many persons have embarked in its culture, and the consequence has been that for table uses the production is far in excess of the demand. If these grapes would bear the expense of land carriage, in competition with those that are the growth of the Middle and Southern States, they would find a ready sale in the populous cities of the Atlantic seaboard. But the cost of transporting them a distance of from three thousand to four thousand miles across the continent would make such a traffic unprofitable. The question now with the growers is what they are to do with their surplus grapes? They cannot convert them into wine, for there are not many growers who have the capital adequate to embark in its manufacture, or the nice skill required to make and store away to ripen wines of the better sort.

When even they have both the capital and the required skill, there is another difficulty to overcome. Some of the California wines will not bear a sea voyage. There are others, however, that will, and these, with California brandy, are to be had in many of the cities east of the rocky mountains. These latter wines are making their way slowly into public appreciation, but as they lack the age and the peculiar *bouquet* of the best foreign wines, *connoisseurs* do not take to them kindly. Nevertheless, we believe that California push and enterprise will yet make the grape culture profitable, and they will certainly spare no pains to bring California wines and brandies up to the foreign standard. At the present time some of the grape-growers are sun-drying certain kinds of grapes to convert them into raisins. Their success with the sweeter sorts has been sufficiently promising to warrant the hope that when this branch of the grape business is perfected and carried on systematically, California raisins will come into extensive demand, not only in the United States, but in other countries, where those from Spain, Calabria and Sicily now find a market.

THE IMPORTANCE OF EDUCATING HORSES.

Notwithstanding much has been said and written on the subject of breaking colts and handling vicious horses, and such men as Rarey, Williams, Magner and others have been all over the country and demonstrated to all the superiority of science and skill in handling horses over the old method of pounding and whipping them—still there are a great many who yet stick to the old custom of forcing them into submission by kicks and blows, and who think that all that is necessary to enable a man to break a colt well is to have plenty of courage, strength and a loud voice; and when they commence to break a colt, hitch him up and try to drive him before he is accustomed to the feeling of the harness or knows anything about the use of the bit or rein; and if he does not move right off before he has been taught to go, he is whipped; if he does not mind the rein the lash is laid on; if he stumbles on the rough ground he is "whaled;" if he whoas too soon when told to whoa he is kicked; and if he resents his cruel treatment the above is repeated. The consequence of such improper management is frequently some kind of a scrape, in which the colt is taught his first lesson in kicking or balking, or perhaps he runs away and receives a scare which it will take years to get over. On the other hand, should the colt, as is sometimes the case, prove to be very tractable, and not make any resistance, his owner, after driving him a few times, and getting him so he can drive him and not get upset, will call him "broke," when he is, in reality, not half drivable; and so, not being taught, he never learns anything more, only what he learns from ordinary driving. This manner of handling colts accounts for the many badly kicking and restive horses we have, and also for the vast number of awkward, unhandy and stupid brutes which we see driven every day. Now, although most any man can break a colt after a fashion, there are but few competent to educate a colt as he should be. A man to successfully handle and educate horses and colts, should in the first place be a natural horseman, and be possessed of that peculiar knack without which no one can be a first-class trainer. In the second place, he should have an unlimited stock of patience, and be able to control himself on all occasions; for a man that cannot control himself cannot control a horse. Besides, a man should be posted in his business, and be familiar with all the different systems of horse training, as taught by the most successful horse trainers. He should also be a man possessed of a kind heart, capable of inspiring confidence in the animal he is handling.

Now if there was in every town a man with these requisites, and he should break all of the colts raised in his town, the usual qualities of the horses of the country would be greatly increased, and there would not be so many accounts in the papers of broken ribs and bruised heads, caused by horses running or kicking. I hope the day will soon come when every one shall realize the importance of a more thorough system of educating horses, and when schools shall be established all over the land for instructing competent men to educate and handle horses; when such horses as now require a strong man to drive and control them, shall be rendered kind and docile, and be driven with safety and pleasure, and even without bit or rein; when competent veterinary surgeons shall take the place of our country "hoss doctors," and the many diseases to which horse-flesh is heir shall receive the attention which they deserve; when the law for the prevention of cruelty to animals shall be enforced in every instance of its violation, and the offenders punished as they deserve. When these things are realized, and not before, will man's best friend and most faithful servant, the horse, receive that treatment to which his services entitle him, and instead of being overworked, starved and beaten by some, and used as a means of gambling and cheating by others, he shall, by proper care and attention, together with judicious breeding, and especially by a thorough education, be made one of the greatest blessings ever given by the Creator for the benefit of man.—*A. T. Mapin, in Maine Farmer.*

PURE AND IMPURE WATER.

If there is any one subject connected with agriculture which requires more attention than another it is that of pure water for stock. We believe that many of the virulent diseases known under such names as black-leg, and murrain of various kinds, frequently, if not always, have their origin in impure water which the animals are compelled to drink. In many localities in this country a "mud-hole" filled with stagnant rain water is the only source of supply for farm animals during the long, hot summer, and it is no wonder that diseases of various kinds follow such treatment. The *Farmers' Gazette*, in treating of this subject, tell some wholesome truths, which it would be well for our farmers to heed. Although we have had of late some rain, which has certainly done much good, there is still a great scarcity of water in many pastures. We do not think that sufficient care is usually taken to provide against such a contingency, or to husband supplies of water when these are apt to fail in seasons of drought. We know that some maintain that sheep do not require water when on grass; but this is a great mistake, especially when the weather is so excessively hot and parching as we have recently experienced.

During a hot, dry summer which occurred some years ago, we found that in an extensive sheep grazing district ewes and lambs were in much better condition when they had full access to pure, running streams than was the case when the sheep pastures were not so well provided, the grass in both cases being in an equally burnt-up condition. But even when the weather has been cooler, the want of pure water in abundance tells on the health of sheep just as it does on cattle; and as overwet pastures have their own peculiar diseases, in like manner over-dry pastures engender disease which not unfrequently is attributed to other causes.

A friend of ours, who took an interest in such matters, measured, one hot summer, the

water consumed daily by a lot of cattle, and as it had to be pumped for them, the quantity used was easily ascertained. The result of his observations was that thirty-six head of cattle consumed daily about 900 gallons of water. Now, bearing this fact in mind, what must be state of cattle carried by railway and steamboat, when they are confined for twenty-four hours, and in some instances for periods varying in length up to sixty hours, without getting a drop of water all the time, not to speak of the terrible shaking which cattle experience during a journey by rail, and the fatigue caused by their being unable to lie down? Is it possible that animals treated in this way can arrive at the end of their journey in a healthy state, or that their flesh can be in a wholesome state for use as human food?

Every medical man knows that impure water is a fertile source of disease in human beings, and innumerable outbreaks of disease of a typhoid nature have been distinctly traced to this cause. In India the use of impure water is certain to be followed by choleraic diseases. In the fatal march from Mhow, the connection between the outbreak of cholera in the troops and the quality of water they drank was easily perceived. Nothing but the raging thirst, which well nigh maddened the men, would have tempted them to drink the water procured on the line of march. But they were forced to choose between an intolerable craving for water, and running the risk of catching choleraic diseases, and they chose the latter. Within twenty-four hours nearly all who had indulged freely in drinking the impure water were prostrated with cholera, and died in the proportion of eight to ten.

There does not exist two sets of sanitary principles, one affecting human beings and the other the beasts of the field. Impure water, imperfect ventilation, dirt, damp, and scarcity of food exercise injurious influences on the health of our domestic animals, just as those agents do in the case of human beings; and every practical man should therefore seek to remove those sources of evil as speedily as possible. A correspondent, who resides in a western country, states that it is most distressing to see cattle driven daily for miles along the dry, dusty roads in order to reach water; and if numbers of those cattle should afterwards succumb to disease, it will not be difficult to discover the cause. Splenic apoplexy is frequently caused by impure water, and also by an insufficient supply of water, even when it is pure. This is a blood disease, runs its course with great rapidity, and is exceedingly fatal. Hyposulphite of soda, given in the water which the animals drink, in doses of from two to four ounces, according to the size of the animal, will be useful as a preventive; but, of course, it can only be used when the cattle drink from troughs.—*Rural New Yorker.*

SENSATIONAL AGRICULTURAL WRITING.

Sensational literature is not confined to mere "society life." Horticulture and agriculture is full of it. Turn where we may, we find statements made, not so much because they are true, but because they attract; and even those which are true are often so outrageously clothed that one who ought to know the facts can scarcely recognize them. It is not even a habit which, growing unconsciously on a writer, may become pardonable—that is in many cases—for we have heard writers defend the style on the ground that without this exaggeration it was impossible to obtain the public ear. They will, therefore, tell you how you may get five tons of hay, fifty bushels of wheat, a hundred and fifty bushels of corn, or two hundred bushels of potatoes to the acre. They know it cannot be done, but excuse themselves on the idea that the startling figures will stimulate some one to try, and in the trial some good will come to him. Independently of the immorality involved in this way of putting things, and which furnishes the foundation stone for the inquiry, "Can a bad tree produce good fruit?" we have the experience of our own day and generation to show that this drawing of a long bow defeats its own intention, even when with a sort of honesty it is indulged in. We all remember the efforts of fifteen or twenty years ago, to push what was professedly to us the culture of the grape in this country. Statements of the most outrageous character were promulgated. Thousands of people invested money on the strength of these so-called facts and figures; but only in most cases to lose and suffer badly. But how about the ultimate good from this rotten foundation? We all know there was none. On the contrary there was a reaction. People became disgusted. Few persons planted grapes. Grape-culture was put back many years, and none discovered this more clearly than the grape-sellers themselves, many of whom, with their large stock of plants and no sales, were quite ruined.

Not about the grapes, perhaps, but in other ways, a similar exaggeration which then existed pervades agricultural writings. Here before us is a statement of one, that he has handled thousands upon thousands of trees in his time, when those who know the writer personally know that it is not so. The statement is made simply to convey the idea of vast experience, and in this way to give a force to the writing it is thought it would not otherwise possess. Yet the writer is a person of large experience in a certain way, and what he has to say deserves and would doubtless receive consideration from all whose consideration is at all likely to be of credit to the writer of the paragraph, or of any profit to themselves, without any exaggerated statement like that.

Another tells us there is no way in the world to make a profit on the farm to so great and to so certain an extent as the way he recommends. The writer is well known. He is still a worker in the land. But he does not grow that crop. It is known that he did grow it for a year or two, and that he dropped it for other things. Yet the statement he made he repeats, and hundreds follow his advice and fail.

There was once a father who had lazy sons, and who, on his death-bed, told them that in a certain ten-acre lot a fortune was buried. After his decease they dug the whole field over two feet. They found no treasure as they expected; but that ground produced such enormous crops that they were fully paid for their industry. There may be some who would excuse a deception of this kind; but in the case we refer to not even the "end justifies the means," for the end of the advice has generally been lost without any compensation whatever.

We might go on and continue our illustrations of this sensation literature in agriculture and horticulture in great variety, but will close with a reference to the repeated directions about mulching fruit-trees. There is no doubt that along the coast, where the seaweed is plenty, and perhaps in a few cases where vegetable material is unusually cheap and abundant, mulching has been done to some profit. And here and there in various parts of the country are people who, with one or two trees "mulched" with some material at hand, have found a benefit from the accident, for it cannot be called practice. A host of writers build on these facts, and write about "mulching orchards," as if they had large orchards so treated, and as if it were the best, if not the only good, course of orchard treatment.

We doubt very much if anyone, except in the very few cases noted, ever mulched an orchard of any size; or if they did, that they continued long to do so. The advantages may be often all that is claimed for the plan; but those who have the material and can do it, soon find that they can have the same good results at a far less cost in many other ways. And one way is by frequent "stirring" or "cultivating."—*Germantown Telegraph.*

Show this No. of *The Farmer* to your neighbor, and duplicate the subscription for 1877.

THE CARNIVEROUS PITCHER-PLANT.

Early in March the new leaves of the pitcher-plant (*Sarracenia variolaris*) begin to make their appearance, and soon after, the large yellow flower, with its drooping petals, is very conspicuous everywhere on the damp pine-barrens of Florida. It is one of the most remarkable of all our insectivorous plants, and destroys by far a larger number of insects than any carnivorous plant with which I am acquainted. The leaves are from six to twelve inches in length, hollow, and trumpet-shaped; they stand very erect, and the opening is covered with a rounded arching hood. Just below the hood the leaf is spotted with pure white, and these spots are surrounded by bright scarlet veins. The inner surface of the hood is lined with brilliant colors; finely reticulated veins of scarlet run over a yellowish ground. A broad wing extends along one side of the leaf from the base to the opening at the summit; the wing is bound or edged by a purplish cord, which also extends around the opening. This cord or edge of the wing is one of the most wonderful features of the plant.

From observations taken on the ground where the plants grew, I found innumerable insects were attracted to them. The flaunting yellow flower may lure many moths and butterflies to the plant, but the flower is not the attraction after they reach it. The cord that runs along the edge of the wing secretes a sweet fluid, and as the wing reaches to the base of the leaf, insects that crawl on the ground as well as those that fly are attracted to this sweet secretion. I noticed on some of the plants a line of small ants extending from the base of the leaf to the summit, feeding on the secretion; so numerous were they that they crowded each other, but all steadily advancing to the opening, down which they disappeared.

All persons who have observed ants feeding have probably noticed the regular order in which they move to and from their food. The aphides (plant-lice) produce a sweet secretion of which the ants are very fond. Linnæus, with his fertile imagination, called the aphides the ants' cows. The ants are very friendly toward the aphides, for they supply them with abundant food, on which they thrive. Now if we observe the ants feeding on this secretion from the aphides, we can also see that they form two regular lines, the hungry ones moving up the stem to take their food, and the satisfied ones returning down the stem; and very friendly and fraternal they seem, never getting in each other's way, but often greeting one another as they meet, putting their antennæ together as if communicating something, and then they pass on, each his own way. Mark the difference when the ants are found feeding on the sweet secretion of *Sarracenia variolaris;* now they crowd and jostle one another, and seem wild in their movements, and all are advancing in one line toward the summit of the leaf, on reaching which they disappear down the wide throat of the insatiable *Sarracenia.* No return line here.

This I observed on the pine-barrens, where the plants grew. I now took a large supply of leaves to my study, and placed them in an upright position in vases of water to keep them fresh, and opened the windows to admit the various insects that are swarming in the air at this season. Soon the room was well supplied with the common house fly. I now returned the screens to the windows, and sat down to watch results. A number of flies were soon attracted to the plants, and almost as soon as they tasted the secretion they acted strangely. It was astonishing to see how quickly it affected them. They became stupid, and did not notice my hand in close proximity, and they paid no attention to gentle efforts to shake them from the leaf. If I touched one it would fly a short distance, but invariably it returned to the leaf, and very soon it was buzzing inside of the tube, trying to walk up the dry, smooth surface, and ever falling back, until it was exhausted and still. It was no use to liberate them; I repeatedly took a leaf and turned the opening downward and gently

knocked it until I liberated half a dozen or more; but they were soon on the leaves again, evidently trying to straighten themselves. They would pass their legs over their wings, but they were unsteady on their feet, and seemed to be intoxicated. Every fly that I liberated eventually returned to the open mouth and walked in, as if fascinated by some spell.

In about two hours the room was cleared of flies—all lured into the fatal traps. I re-opened the windows to admit more, and among the flies came two or three yellow-jackets—wasp-like insects. These yellow-jackets are very fond of anything sweet, and very soon one found the tempting bait. It alighted upon a leaf, and commenced feeding about two-thirds of the way from the base. It seemed to relish the food highly, and ate eagerly and quietly for a few moments; but soon its wings began to flutter, and it proceeded hurriedly and wildly along the line of sweet until it reached the opening. Here it paused a moment to feed along the cord that surrounds the mouth of the tube, but its wings were still raised and fluttering. In a little more than a minute from the time it alighted it was a safe prisoner within, buzzing and fluttering and stirring up the imprisoned flies. On holding the leaf up to the light, I could see its frantic efforts to escape—trying to climb the smooth surface, but, like the flies, ever falling back, until it was powerless to move.—*Harper's Magazine.*

HEROIC FARMING.

Conrad Wilson, of New York, writes thus to the *Country Gentleman:*

The mode of culture and the liberal manuring practised by market gardeners, cannot, of course, be generally adopted by those who cultivate large areas of land. But I have always noticed that those farmers whose methods approach nearest to the standard of the garden, are the ones who obtain, as a rule, the largest yields and the highest rate of profit. It is true enough that to invest yearly in manure at the rate of fifty to eighty tons per acre, requires more faith and courage, as well as more money than the average farmer commands. Yet it is mainly in this intensive mode of culture that the market gardener finds his best renumeration. The man who cultivates half a dozen acres must get larger returns from each than those who cultivate from fifty to five hundred. To get seventy tons of cabbage from an acre, and other products in a similar ratio, the gardener can well afford to invest liberally in plant food and other expenses of culture. If he knows or can nearly determine, the value of each intended crop, he can generally calculate how much it will be safe to pay out in order to obtain it; and having made the calculation, he does not hesitate to make the investment.

Now, there is clearly no reason why the same general rule is not equally sound for the farmer. His business is subject to the same natural laws, and his crops are augmented by the same process. When the Hon. Henry Lane, of Vermont, by adding a few dollars to the cost of his beet crop, brought the yield up to forty-four tons per acre, and the cost down to six or seven cents per bushel, though he achieved no miracle, he showed that intensive culture is profitable for the farm as well as for the garden.

The grand fact to be considered is this: In all cases where manure is abundantly supplied and the tillage is thorough and deep, the soil responds in a corresponding degree, and becomes, in the hands of a skillful cultivator, simply a machine for converting chemical elements into food; and whether a man cultivates ten acres or ten hundred, the more plant food he supplies of the right kind (other conditions being equal), the larger will be the result; the lower the cost and the higher the rate of profit.

The last few dollars added to the cost of the crop is nearly always the secret of the extra profit, and sometimes makes the whole difference between profit and loss. All practical farmers profess to understand this, yet few of them have proved the courage of their opinions by reducing it to practice. And here is just the point where men of timid and conservative policy halt and hesitate, while the clear-headed, heroic farmer fearlessly meets the expense, and wins the prize.

There is in fact scarcely a crop raised on the farm that might not be materially increases with but slight additional cost, provided the owner could determine in each case the additional outlay needed, and the right place to put it. As this question is often easily solved, and not always as difficult as it seems, it challenges the attention of farmers, and well deserves farther discussion.

WHY LARGE CITIES ESCAPE THUNDERBOLTS.

We have long been of the opinion, and have occasionally expressed it, that the reason why large cities, especially American cities that are liberally supplied with water and gas pipes made of iron, and running from the upper floors of houses into the earth and communicating with still larger pipes from which their contents are supplied, owe immunity from destructive thunderbolts to the conducting power of these and other metallic agencies employed in such buildings. The iron thus used might not serve as an infallible protection against lightning were it not, perhaps, for the additional agency of the hundreds of miles of telegraph wires that pass along the eaves of houses in a large number of the most public thoroughfares, and occasionally even cross their roofs, or are conveyed at such elevations as to capture the fugitive lightning and materially equalize its distribution before it can concentrate at any given point.

The innumerable miles of railroad tracks which of late years have likewise extended over populous streets, undoubtedly contribute to this means of diffusing electricity and rendering it harmless. If this theory be correct, every house built of iron, or into the construction of which iron largely enters, would need no other lightning rod but a mere point long enough to afford the requisite protection to the area covering the roof, if made of non-conducting material, and another short rod attached to the lower portion of the iron edifice to carry off the electricity into the earth, if, indeed, that would be necessary under the circumstances. The introduction of telegraph wires, rail tracks, gas and water pipes into city houses, as well as the construction of large warehouses and workshops of iron, coincident with the disappearance of deaths or the discontinuance of serious losses of property by lightning, is an impressive if not a startling fact; and whether a *propter hoc* or only a *post hoc*, is, in a scientific point of view, entitled to serious consideration.

So fully were we struck with the momentous importance of the deductions drawn from this coincidence, or consequence, or whatever it may be, that when there was in this city a disposition to require the telegraph companies to convey their wires under ground, we foresaw a contingency that might deprive us of one of our most potent safeguards against the destructive effects of "Heaven's artillery," and hinted at the possible dangers we might invoke by insisting on that change.

Several years' observation, during which no deaths nor any serious destruction of property have happened within the sphere of the conducting power of any of the metallic agencies in question, has tended to confirm our belief on this subject, and although church steeples, flag staffs, and the apices of triangular skylights have felt the electric fury of passing thunder clouds, their position has been so far above the range of the conducting influence of the telegraph wires as to deny them any advantage from that source of protection, and the circumstances of the fluid confining its fury to the point struck, and involving no other contiguous non-conducting object in the demolition, would tend to still further confirm our theory, that the erratic lightning soon afterwards came in contact with some of those numerous transverse or perpendicular metal pipes or wires, that instantly robbed it of its force by accomplishing its diffusion, and ultimately delivering it, without further disaster, to the great terrestrial magnet.—*Pen & Plow.*

GEORGETOWN, Sept. 18, 1876.

PROF. S. S. RATHVON—*Dear Sir:* I sent on the certificate to the National Art Company. I received the chromatic paintings, "God's Promises," in good order, and was much pleased with the same, and feel it my duty to return you my sincere thanks and best wishes for your success in your business, for I value THE FARMER very much.—*M. B. M.*

We publish the above, not alone to show the writer's appreciation of our journal, but also to illustrate his opinion of the picture we advertised, and how cheaply and easily it may be obtained by all our subscribers. See advertisement on third page of our cover, September number.—ED.

OUR PARIS LETTER.

Farming on the Continent of Europe.

Correspondence of THE LANCASTER FARMER.

PARIS, September 21, 1876.

A circumstance very prominent in connection with continental agriculture, is the number of eminent scientific men who devote attention to its study. The desire evidently is to control the experiments of the laboratory by the experiences of the farm. Pure practice, alone better than pure science, can only be improved by this united system of work. The domain selected for scientific investigation in Germany and in France, is the rearing and feeding of stock, because here discoveries and ameliorations can be more immediately revealed and effected, and the practical fruits sooner reaped. Liebig, who broached so many ideas, did not overlook the important one of animal nutrition, but they are the views of Boussingault on this subject, which are more generally adopted in order to elucidate the mysteries of the nutritive changes which are accomplished in the living body, as founded upon the laws of rational alimentation. Hitherto we were most occupied with what stock eat; to-day the important point is not exactly what they consume, as how they assimilate it. "It is not what is eaten that nourishes, but what is digested;" hence, very naturally, investigation is being carried on to ascertain the degree of digestibility with the various races of animals, and the fluctuating circumstances capable of increasing or retarding that function. Now one of the most important of these circumstances is the nutritive relation between the nitrogenous and the non-nitrogenous matters. The more this relationship is narrow, that is to say, the more the feed contains of protein, for a certain quantity of carbonaceous matter, the more the food is utilized in the process of digestion. For the farmer's interests it suffices, not that his stock digest well what they eat, but it is essential that they derive the most profit from the digestive functions and the end they fulfill. Mere digestion does not ensure the useful employment of the food. For example, it is now known that the aptitude for fattening, so remarkably developed among several precocious races, is not founded upon superiority in digestive functions—all animals of the same species differ little in this respect—but upon a greater power of assimilation. In other words, tardy races live from day to day, expending what they receive, while precocious breeds reduce their organic wants to an indispensable minimum, accumulating rapidly their savings in the form of meat and fat. Further, it has been ascertained that precocious races are enabled to achieve this double advantage, small expenditure and great savings in the *utilization of digestion*, owing to their relatively smaller lung superficies as compared with tardy breeds. Professor Sanson has also demonstrated, that living weight for weight, the precocious eliminate less carbonic acid than backward races.

The scum from the sugar beet factories can be employed as a manure, and thus utilize the small per centage of nitrogen that it contains. But it would be well first to convert, by means of sulphuric acid, whatever sugar remains in the scum into alcohol—one ton of scum yielding 26 quarts of alcohol; the residue after distillation will still contain the salts of ammonia and the soluble azotized matters. Judge Belenet of Algeria, claims to have obtained important results from the use of granite and porphyry dust as a manure, which contain from 10 to 15 per cent. of potash, and have the property of fixing atmospheric ammonia.

White mustard has been largely sown this autumn as an aid to meet the penury generally existing in respect to fodder. It is so relished by milch cows that many peasants call it the "butter plant." It is sown in August on the stubble, if the soil be friable, and burrowed in, or sometimes the soil is turned over with a skim polysock plough, five pounds of seed to the acre; the plant can be consumed green till the frost arrives. Respecting the preservation of green maize

in trenches, discussion no longer takes place as to the utility or practicability of the process, but as to the stage when the maize ought to be cut; one party advocates the cutting when the plant is in flower, and another before the flowers even show. The majority inclines to the first view, as the maize is then not only richer in nutritive principles, but these principles are more uniformly distributed in the plant.

French agriculture is at this moment passing through a crisis, possessing features and lessons of a little general interest. Not unfrequently the agriculturist adopts a system of cultivation on which he counts to reap prosperity, and finds his hopes deceived; it often happens that after he has for a long time enjoyed success in producing a certain crop, he suddenly finds that there is no demand for his harvest. He must then change the processes of his farming. The farmers in several departments of the south of France are at present in the second dilemma; hitherto they have been prosperous in the culture of madder, but the prices of this plant have so diminished, owing to chemistry having discovered an equally excellent dye, that the culture of madder is not to be thought of. Then the phylloxera destroys the vineyards at the same time. The absence of water, of canals, for irrigating purposes, prevents the raising of forage, and the keeping consequently of stock, and the latter is ever in demand. The farmers are falling back on the culture of clover, grasses, and other plants for their seeds for general exportation.

The Gironde has ever been famous for its wine, and there are not a few for whom Saint Emilion, Midoc and Santerne are names as familiar as household words. The department has 325,000 acres under vineyards, producing annually sixty-six million gallons of wine. Many think that all wines under the name of "Bordeaux" or claret are alike, which is a great error, as even in the centres of districts famed for their vintage the quality of the wine is inferior. This anomaly is explained by the difference in the soil; above all in the sub-soil—the latter playing a preponderating part in the quality of the products. The best wines are obtained from the vineyards situated on the slightly elevated banks of the river Gironde, with a sandy surface, and above all a pebbly sub-soil. Well, in this rich garden of France, the phylloxera has made its appearance, and the anxiety of the proprietors of vineyards is profound. No efficacious remedy has yet been found to check the ravages of the bug, save flooding the vines to the height of twelve inches, after the vintage. Toxical agents, in addition to not being certain, are costly and difficult of application. The employment of American stocks as a means to furnish roots resisting the bug, increases in favor in the south of France, shoots from the fine native wines being grafted thereon—the *ecusson* plan of grafting, as practiced by M. Hortoles, being that in general use. The stock *Jacquez* is almost invulnerable to the attacks of the phylloxera. In Wurtemberg, however, where American stocks have been employed, all have succumbed save the *Isabella*.

The French Association for the Advancement of Sciences has opened its annual congress by an important discussion on beet root: Does stripping the root of some of its leaves, for feeding purposes, affect its saccharine richness. M. Corenwinder replies affirmatively, and to the extent of 4 to 5 per cent.; the removal of leaves induces a development of new ones, which absorb the elements of the carbon destined to form the sugar; also, roots with small leaves, he asserts, are less rich in sugar than a beet with large leaves. M. Claude Bernard, perhaps the first scientific authority of the day, asserts, that even supposing it be true that the leaves eat the sugar, it is not established that they form it. How then is formed that carbon which produces the sugar. He cannot precisely explain the phenomenon, but thinks it can be absorbed by the roots; and as there is a great similarity between animals and vegetables, it is quite possible that sugar is formed in the economy of the plant, as in the case with the animal.

Spring sowings of grain are falling into disfavor in this country, because in the months of April and May drought almost invariably exists; then winter sowings are able to husband the moisture in the soil, derived from the winter rains, by their vegetation forming a screen. Professor Haberlandt has published the results of a series of experiments respecting the sowing of wheat, rye, barley and oats in spring, from the commencement of May till the end of June, at intervals of a week, and watering all alike; the yield in grain in the case of wheat and rye had diminished, while the chaff and the straw augmented, ergot attacked the rye and rust the wheat; and while insects invaded the latter sowings, they kept aloof from such as were earliest made.

M. Majon has successfully freed his lucern from dodder by leaving at mowing time the parts of the field affected uncut. He then encloses sheep on these spots, till the lucern is eaten down, without, however, injuring the crowns of the plant; if some of these even be destroyed, the luxuriant growth of what remains will prove an ample compensation.

The question of the relative value of beet pulp has for some time been a fertile source of dispute. Dr. Kuhn asserts that there is not much difference, in a nutritive point of view, between cattle and sugar beets, but there is a notable difference in the value of the pulp according to the process adopted for the extraction of the juice; that is to say, the machinery employed. The hydraulic press yields a pulp *twice as nutritive* as that produced by the continuous press—both employed in France. Thirty pounds of hydraulic pulp, Dr. Kuhn values as the equivalent of fifty pounds of feeding beet. Care ought to be taken that the pulp purchased be exempt from foreign matters, such as hyposulphite of lime.

To prolong the duration of ropes and retard their decay, steep them in a solution of sulphate of copper—an ounce to a quart of water—and then either tar them or immerge them in soap suds—four ounces of soap per quart of water. In the latter case there is no smell.

OUR LOCAL ORGANIZATIONS.

Proceedings of the Lancaster County Agricultural and Horticultural Society.

The regular meeting of the Lancaster County Agricultural and Horticultural Society was held on Monday afternoon, (October 2d,) in the Athenæum rooms. Minutes were read and adopted. Present: Messrs. Calvin Cooper, Henry M. Engle, S. S. Rathvon, Levi W. Groff, Jacob B. Garber, Wm. McComsey, Martin D. Kendig, Johnson Miller, Henry Erb, J. M. Stehman, John Miller, Martin Miller, Peter S. Reist, Daniel Smeych, B. Frank Landis, John C. Linville, Adam M. Ranck. Mr. Engle made some corrections in regard to some statements wrongly reported in a previous meeting. Egyptian wheat, for instance, does not ripen too early. "Stubble" wheat was called some other name. Mr. Kendig, of special committee to revise by-laws, reported that the committee met at Franklin House, examined present constitution and by-laws, and, recommend the appointment of a new committee to revise the same. On motion, the committee was continued, and S. S. Rathvon was added.

JOHNSON MILLER, of the committee to visit the Berks county fair, reported a fine exhibition of fruits and stock.

MR. ENGLE, of committee to attend the Agricultural Congress, reported a very interesting meeting. Able men were present. Important essays were read and entertaining discussions arose. Harris, Allen, Flagg and other prominent persons took part.

MR. KENDIG, of committee on crops, reported a light potato crop. Apples have been dropping off. Seeding is backward on account of rain. He seeded down an old field with clover in September, and it is coming up nicely. He scattered the seed broadcast over the surface, and harrowed twice. The rain fall for September was 8 35-100 inches.

MR. PETER REIST said more cider had been made and apple-butter boiled than for many years. Sweet potatoes plenty.

MR. LINVILLE, Sadsbury. Wheat crop about 25 bushels an acre. Grass almost a failure on wheat ground. Due perhaps to intense heat, as grass under shade trees was good.

MR. ENGLE. Seeding very uneven. Many farmers not done yet. The rain fall at Marietta was 9 9-16 for September. Heaviest fall 3 inches on the 16th.

MR. COOPER. Rain fall 8 1-10 inches in his vicinity.

A. F. HOSTETTER, appointed for an essay, was absent at Ann Arbor.

An order of $2 was granted for the payment of the services of the janitor.

"How to Keep the Boys on the Farm."

This question, proposed by Johnson Miller, was taken up.

MR. ENGLE. Make home attractive by beautifying the farm.

MR. PETER REIST arose to an explanation. He disclaimed all personalities, of which he had elsewhere been accused. He then proceeded to discuss the question.

Talk to the boys from their youth, make the farm as attractive as you can, give them an interest in things as soon as they are able to appreciate the value thereof, show to them all the advantages a farmer has through hard labor over the mechanic or merchant. A farmer, however hard he has to labor, has merely to contend with the mother earth, and with animals, while a mechanic or merchant has to deal and combat with ill-bred men. Public men especially are subjected themselves to all kinds of abuses and misrepresentations. Worst of all, irresponsible newspapers publish lies for the mere sake of creating sensation. Give your boys a common education, and unless they have not brains equal to Daniel Webster, tell them they have none too much to make a first-class farmer. Tell them that a farmer can make himself as useful as any other man, that tilling the ground is the noblest work upon earth, that the country where labor is most respected is the most prosperous.

MR. KENDIG. Throw a charm around the homestead. Give the boys a practical education, teach them how to perform various mechanical operations, educate the hand as well as the head.

Mr. LINVILLE. It is not necessary to keep all the farmers' boys on the farm. Let them follow their bent. If a lad inclines to a trade or the counter, do not insist on his following the plow. Farmers do not read enough. They are not as a class intellectual. The long winter evenings afford excellent opportunities for culture. Place sound literature on the table. A farmer should be a scientists. He cannot be a profound botanist or geologist, but should have a general knowledge of these subjects. The New York *Tribune* and *Popular Science Monthly* should be in every farmers' hands.

Mr. MCCOMSEY. It is impracticable to keep all the boys at home. A farmer's sons, properly educated, will make good citizens anywhere. No finer field for mental development than on the farm. City life is too generally considered higher and more honorable. In the case of a small farm and large family, it would be inconvenient to attempt to retain all the children on so limited a space The homestead may be rendered so precious that the youth will not care to sunder the tender ties. Beautify home, and let peace and harmony prevail in the family. Encourage the lads. Make them companions. There is too much reserve between parents and children. Teach them from your own experience. Speak in a kind and fatherly manner. Home may be beautified in a variety of ways without much expense.

Mr. ENGLE. As boys improve, their ideas go beyond the limits of the farm. The trouble sometimes is, that lads become so absorbed in books and papers as to show a reluctance for work. The prevailing opinion is that men unfit for higher occupations may be farmers. But as the soil becomes exhausted, there is a demand for intelligent agriculture to improve the soil, increase its production, employ fertilizers, and every modern appliance.

In China the agriculturist has a higher position in public esteem, from his important services. Give the boy a small plot of ground for his own use, and a desire for its profitable cultivation will develop a healthy activity and interest. Encourage his deposits in bank. Give him time for his own operations. He will grow into a healthy business man.

Mr. GROFF. He found the daily papers, after his day's work was done, a refreshing retreat for the household. He would like to hear the President's explanation in regard to that sect that take no papers, and yet manage to retain the boys in the operation of the farm.

Mr. MCCOMSEY thought there must be a tie stronger than literature or beauty. The children are taught honesty and integrity by precept and example. Virtuous home training is the secret. Industry and economy are held up as the great habits of life. A taste for reading often conflicts with steady work in the field. Tales are more attractive than the harrow or the hoe. Our straight-coated farmers bring up their boys to regard honesty and steady work as the first necessity of prosperous agriculture.

Mr. COOPER spoke of the happiness and prosperity of the sect alluded to, and often wondered at the secret. We fail in our familiar duties to our children; should allow every facility for personal industry and indulgence, and use every effort to encourage their employment.

Mr. P. S. REIST. It is not right to advise all youth to remain on the farm, because there is a genius in other directions. Some of our best physicians and lawyers might have died in obscurity had they continued plodding at uncongenial work in the field. Daniel Webster, for example

Mr. ENGLE. There is a disposition in these peculiar denominations to keep their children from intellectual operations, and place great stress on the inculcation of the domestic virtues. They avoid contact with modern movements. They fear their influence on their religion and habits. Many of them have not been to the Centennial.

Mr. LINVILLE was sorry that the discussion seemed to show that the tendency of intellectual development was to draw from the farm. This is not correct. If the boy's mind is broadly cultivated, his views of the world and of his own profession will enable him to estimate agricultural life at its true value, and incline him to rest satisfied with its results.

On motion, the question of

"How to Dispose of Our Corn Crop."

was postponed for discussion to the next meeting.

On motion, the chair appointed a committee to report on fruits on exhibition. H. M. Engle, J. B. Garber and M. D. Kendig were appointed the committee.

SENATOR J. P. KOEBUCK presented the society several volumes of agricultural reports.

MR. ENGLE was sorry that Pennsylvania made so poor

An Exhibit at the Centennial.

He read a letter from Landreth, calling for contributions of fruit for display on the first and second weeks of October, and urged Lancaster county to do her part. He also read a paragraph from the *Tribune* of Sept. 27, praising the splendid exhibit of grapes by Mr. Smeych, of this city, at the Centennial. They comprised the Concord and other varieties. Let every fruit grower make his selections, and send them forward.

MR. COOPER announced that any specimens of tobacco sent to Israel L. Landis, Centennial Ground, B, 23, will be properly placed on exhibition. Send by Adams Express Company.

On motion of Mr. McComsey, a vote of thanks

was tendered Mr. Smeych for his creditable display of fruit.

Mr. McComsey urged the importance of a proper representation of our fruits.

On motion of Mr. Kendig, the chair was requested to appoint a committee of six to gather specimens of apples, pears and grapes, and forward not later than Monday next to the Centennial, as the representation of Lancaster county. The committee consists of M. D. Kendig, Manor; H. M. Engle, Marietta; Casper Hiller, Conestoga; Johnson Miller, Warwick; John C. Linville, Sadsbury, Daniel Smeych, Lancaster.

All persons having fruit for this purpose may leave the same at the Franklin House, North Queen street.

Seed Wheat and Fruits.

Several packages of winter wheat, Clawson White, were on the table for distribution. Johnson Miller's first sowing with the variety was successful, but the second was a failure. A field in Mr. Linville's neighborhood was this season badly fly-eaten. Adam M. Ranck agreed to take the packages for trial.

Prof. Rathvon, of committee on fruits, reported as follows:

D. Smeych: Grapes of the Creveling, Clinton, Rogers No. 3 and 19-33, Senasqua, Hartford Prolific, Black St. Peter's, Syrian, Black Hamburg, Maxatawny and Martha varieties.

C. Cooper: Catawba grape and Clyde Beauty apple.

M. D. Kendig: Sheldon and Seekel pears.

Dr. Lamberg: Krauser apple, two apples for name, and two peaches for name.

John Zimmerman: Late peaches, and H. Sener an apple.

Prof. Rathvon also read a communication from P. R. Freas, in regard to an apple sent to him for name. He called it the Summer pippin.

On motion, a committee of three was appointed to receive the fruits and ship them.

The chair appointed Ephraim Hoover, W. McComsey and Henry Erb.

An informal committee on tasting gathered around the table of grapes, and proceeded to pass judgment on the Rogers, Maxatawny, and Black Hamburg. Prof. Rathvon was chairman.

Adjourned.

Proceedings of Tobacco Growers' Association

On Monday afternoon, Oct. 9, at 2 o'clock there assembled in the rooms of the Linnæan Society, a very fair number of farmers and others engaged in raising tobacco in the county. The following persons were present: John M. Stehman, Aaron H. Summy, I. L. Landis, Levi Gross, Frederick Nedymire, Jacob M. Frautz, J. H. Hershey, Reuben Garber, Jacob Gamber, Adam B. Long, John M. Moore, Martin Peiper, Colin Cameron, W. L. Hershey, Martin Miller, Pierce Bard, Peter S. Reist, Harry Reist, and Henry Erb.

M. D. Kendig took the chair, and Andrew Lane was elected temporary secretary. On calling the meeting to order, President Kendig delivered the following inaugural address:

Gentlemen: In taking this uncalled for and unsolicited position, allow me to thank you for the honor conferred, in selecting me among so many more able and competent than myself, to act in the capacity of chairman of this, the Tobacco Growers' Association. But having accepted it, and realizing fully the deepest sense of conviction of the onerous and responsible duties resting upon me, I would ask your aid and sympathy, assuring you that my best efforts shall be enlisted in whatever may tend to make it a success. I do not intend here to encroach or trespass on your time by boring your patience with an elaborate address, as the object of this association was so fully set forth at a former meeting by our friend and co-worker, Mr. I. L. Landis, that I deemed it unnecessary to say or add much. We do not purpose, as some suppose, to combine our forces in opposition to the middle-men, and thus destroy our best interests; but we heartily welcome them all to purchase from us, as well as the manufacturer and shipper. The object of this society more fully is to encourage the grower in raising a better article, and thus not only add to his own interest, but advance the standard of the crop, and place us in every respect in competition with the heretofore precedence of the Connecticut leaf. We have the climate, soil, situation, and all that is necessary to attain this result; then why not get it? Simply because we are overreaching ourselves—putting out a larger acreage than we can carefully manage. This is one reason of so much inferior tobacco and a depreciated value. It is a deplorable fact that so many of our farmers follow this system, so detrimental to our common interests. Instead of cultivating and handling five acres well, they make an effort to put out ten, and in consequence fail to get a first-class article. Much might be said on the subject, as also on the best mode of raising plants, setting them out, cultivating, housing, curing, stripping and assorting, casing, constructing the best and most convenient curing houses, etc.; on which I will not dwell here. As stated before, I feel that you will bring them up in good time at your pleasure and discretion. In conclusion, I sincerely hope that every member of this society will use his best efforts the more effectually to promote and attain the object sought.

The president then read the constitution and by-laws offered by the committee appointed for that purpose. As finally adopted, the title of the society is fixed as "The Lancaster County Tobacco Growers' Association." Its aim is declared to be the promotion of the interests and advantage of the growers of the county; fixing the meeting of the society on the third Monday in each month; establishing the offices of president, vice-president, secretary and treasurer; payment of 50 cents as initiation and 50 cents yearly fees being necessary to membership.

Peter S. Reist moved that each member of the society be called upon for an essay or paper on some subject in connection with tobacco culture.

Against this it was urged that every member could not do this. Colin Cameron urged that if a man would raise a patch of tobacco, he could certainly tell how he raised it. If he can't, he is no better than the horse or mule that works in it with him.

Jacob Frantz contended that there were men whom he knew who raised as good tobacco as any raised in the county, and could not write a line intelligently. He instanced that by an illustration of a farmer paying taxes on $80,000, and who never received or wrote a letter. If we want to get the good farmers here in this association let us shape ourselves that we can get them here and keep them here. Because their address is not polished, nor their style graceful, we must not think ourselves better than they are, for we are not. So we must cultivate them socially.

An amendment offered by Colin Cameron passed, authorizing the appointment of a member each month who shall prepare an essay, which shall be open for general discussion.

An order of business was then adopted.

On motion, the officers of the association were appointed a committee to secure a place to hold the future meetings.

A few bills were ordered to be paid.

No vice president having been elected at the preceding meeting, Jacob M. Frantz and Jacob H. Hershey were nominated. Mr. Hershey declining to serve, Mr. Frantz was elected by acclamation.

Reports being called for, Mr. Landis, from the Centennial committee, reported that he had for several years urged the importance of an organization of this character. It now assumes shape. Since spring he had tried to have a display by growers at the Centennial, but had failed. At the last meeting the subject was discussed, and he was able to take down to the Exhibition 18 stalks, instead of 300 as he expected. Bucks county made such a display that they have been enabled to sell their whole crop at highly remunerative prices. What he had taken down excited very favorable comment, but there was no arrangements made for its proper display, and it suffered by comparison with what was there. Mr. Landis then continued with a statement of what the growers of Bucks county had done with tobacco inferior to that grown in Lancaster county. He thought that if the movement was made immediately he could no doubt secure space, and make a creditable display even at this late day.

Mr. Cameron stated that the Bucks county growers had built their own warehouses, and had been keeping their tobacco out of second hands.

Mr. Summy stated that the Virginia planters had the same arrangement, and sold their tobacco at auction by sample.

Mr. Landis would like to know if there was any desire to make a show, and in response Mr. Cameron said that all the members wanted to know was how much was wanted from each one; he would answer for them that the amount desired would be collected.

A motion of Mr. Cameron that Mr. Landis be authorized to purchase a case with a sign over it for the proper exhibition of Lancaster county tobacco elicited considerable discussion, which developed the fact that most of the tobacco was cured, and it would be extremely difficult to handle.

Mr. Frantz thought the intention of the organization was to teach its members how to produce a larger and better crop. For twenty years we had groped in the dark. After we have learned to raise this better tobacco, let us go to expense to exhibit it.

Mr. Cameron argued that the best way to do was for each one to send the tobacco down, and if enough goes there then let Mr. Landis buy the case to show it in.

The motion was then withdrawn, and the members given until Monday to determine whether any of the tobacco will be in proper condition to hand over to Mr. Landis.

Peter S. Reist was appointed essayist for the next meeting.

On motion, adjourned.

Centennial Biscuits.

Make good corn mush, just as if you were going to eat it with milk. When it is lukewarm take a quart of it and work in flour enough to make a stiff dough; make into biscuits, put in your bake-pan and set in a warm place over night; bake in a very hot oven, and you have the best and sweetest biscuits you ever ate. Eat while hot for breakfast.

AGRICULTURAL MISCELLANY.

Kentucky Blue Grass.

There are doubtless many farmers who think what is termed Kentucky blue grass thrives only in the State from which it receives one of its common names. But the facts are that it thrives in the Northern and Middle States, and we have no doubt, as the following would seem to show, that ere long some of our western prairies may be transformed into grand blue grass pasture.

The best farmers in the blue grass region of Kentucky generally regard an acre of this grass equal in value to an acre of corn.

When we take into consideration the cost or value of the labor in raising an acre of corn, the value of the blue grass will be more fully appreciated.

The intelligent farmer will make his blue grass pasture sustain a larger number of stock the year round in better order than the same number of acres of corn.

There is no crop which requires more intelligent management for profit than this grass. As it remains green and nutritious during the winter, there is no necessity for cutting and curing, and it is almost valueless for hay. To insure a good sward it never should be mown, and as it heads several times during the year one acre well set and allowed to seed will be sufficient to set a large pasture in a single season by allowing stock to graze upon it when the seed is ripe, and have access to shade woodland and water adjoining.

The writer of this lived in the blue grass region of Kentucky from 1837 to 1849, and during that time carefully observed the management of those pastures which gave to Kentucky a world-renowned reputation.

The success of the Alexanders, Van Meters, Vileys, Williams and other renowned stock raisers of Kentucky depended largely upon this important grass.

One of the Van Meters, of Bourbon county, purchased a farm at $100 per acre. There was not quite one-fourth of the farm in blue grass. The balance had been cultivated in hemp and corn. The woodland, as is usual there, was well set in blue grass, and afforded the winter food for the stock usually kept on the farm.

Van Meter raised no grain upon this farm, and by allowing his Durham cattle to graze upon the seeded blue grass and roam at will over the adjoining fields, the whole place was in an incredibly short time well set in grass; by confining the cattle to one pasture at a time, leaving the others to seed and form a mass of succulent, juicy rich food, a foot deep, literally a mass, a mat for fall and winter use, a larger number of cattle were kept fat the year round than was formerly kept by the old process of raising corn on a part.

Moving to Western Missouri in 1849, I found many of these blue grass farmers and their sons in Ray, Clay, Lafayette and Jackson counties. Clinton county, north of Clay, was a prairie sparsely settled, and little, if any, blue grass in the county.

The farmers of Clay and Ray, where blue grass was seen growing in patches on the roadside, and years after spreading over thousands of acres of unimproved prairie land, that was supposed to be unsuited to the growth of this most valuable of all grasses.

Two years after I visited Topeka and other portions of Kansas, where repeated efforts were made to start blue grass, and all seemed discouraged and disappointed.

Now, June, 1876, this grass is found in nearly all the lawns about the residences, and, unfortunately, before it is sufficiently set to form a heavy and rich sward, is being mown and the seed carried off in indifferent hay.

From the foregoing it will be readily seen that I regard as the most successful, and about the only successful way to seed blue grass pastures is to start a patch with care, then by grazing stock upon it and allowing them to roam over the pasture, scatter the seed and thicken up the sward.

Blue grass is especially valuable for winter grazing and where the prairie is fenced up it is important to have two blue-grass pastures, keeping one exclusively for winter use, alternating each year. By industriously and persistently pursuing this plan for a few years, Kansas will become celebrated as the blue grass region of the West.—*Cor. Rural New Yorker.*

Real Value of Natural Grass Land.

When it is so repeatedly stated that England is more than half in permanent grass, that within a few years a great deal more has been taken from the plowed portion never to be cultivated by the plow or turned over again, it ought to be convincing as to the profit from grass being more than from grain, and if a small island so over-populated as to require an immense importation of human food can increase her area of perpetual grass, there must be a vast advantage in leaving undisturbed by cultivation all the best land. Yet, here in America, all the fine tracts of the blue and other native grasses, which are well known to fatten cattle and sheep, or, in fact, every grass-eating animal, are broken up and plowed for the purpose of

taking all the plant food which the grass feeds on, to grow wheat to send away, thus impoverishing the country. For the money received for all the wheat does not enrich the inhabitants, as they have to pay all of it, and more added, to buy wool and cloth and clothing of all kinds, which wool would make, if the grass and virgin soil was spared to grow wool instead of wheat.

Let that quack farmer, Mr. Mechi, come over to this continent and see the havoc made by the plow, and he would never more blame the land-owners of England for their zealous protection of the meadows and pastures. Could anything be stronger proof of the real value of good natural grass land than the fact of farms having more than half grass, or fully two-thirds as mowings and pastures, being always more sought after than others. Moreover, it is notorious and beyond contradiction that a good farmer with capital, renting a farm of say 300 to 500 acres, with about the proportion of grass land stated, which he can never plow, is better situated than any who have all arable farms, and also, it can be added, in making more money than any farmer on this side of the ocean who owns his land. This is worth consideration, for he pays more taxes, has no protection, and his rent at least $10 per acre.

Good natural grass land in America, if not violated and robbed of its plant food, would pay well; for all the animals raised by its aid, all the butter, wool or meat produced are nearer clear profit than aught else, and men of capital who would, like English noblemen, hold this uninterruptedly in grass, only using such as was not so well adapted for permanency, would not have a quantity of unsalable soil on their hands. In the West, and especially in the Southwest, there are men who are what is termed "land poor." They own a great many acres, which they have rented to laboring men on shares and some at money rental, but in either case, the land gradually becomes weaker, and after a few revivals of clover, the deepest, best soil succumbs, and poverty results to the soil and to all owners who have not invested the cash as received.—*Working Farmer in Rural New Yorker.*

Destroying Weeds.

On looking back many years we see the progress which has been made in the mode of attacking them, in successive gradations. Half a century ago the common injunction was, to "pull up and remove carefully those which had gone to seed, to prevent the seeding of next year's crop;" to "be careful not to scatter the seed" which had already been born in abundance. This was regarded as good and careful management. But an improvement was made on this mode; namely, by not allowing the seed to ripen —their formation was to be prevented—an excellent idea it seemed to be. Under this improved treatment weeds were destroyed when half a foot high, more or less; but observing cultivators were not satisfied. They discovered that the labor of rooting out these full-grown or half-grown monsters was too great. They struck boldly, therefore, for the destruction of these intruders while they were only an inch high. The labor was decreased incredibly. There was a great difference in the force required to crush a delicate little organization as large as a cambric needle, and one a foot high, with roots like strong horns branching and penetrating the soil another foot, and lifting the plants of the crop when torn out. The improved mode lessened the labor ten, twenty or thirtyfold. The great point then was to take the weeds in time, and it was found to be better to pay a man five dollars a day to destroy them in their feeble and delicate condition, than fifty cents a day when stout and shading the whole crop.

But still further improvement was made, and this was to destroy the weeds before they came up, when they were just beginning to send out their minute white fibres from the seed. In other words, the steel rake, fine harrow or cultivator is passed over the surface while it is yet perfectly clean. The process consists in simply mellowing thoroughly the whole surface without waiting for any of them to make an incipient appearance.

Perennial rooted weeds, and Canada thistles, milkweeds, quack grass, etc., which spread mostly by the roots, may be thoroughly eradicated in a single season, and at little expense, by plowing often enough to keep the leaves perpetually under.

For annual weeds, kill them in earliest infancy, while minute and fragile, and easily swept off by myriads; and for perennials, never let a solitary leaf appear above the surface, and the work will be speedily and cheaply accomplished.—*Country Gentleman.*

This is the way to deal with the weeds that spring up in the garden of human life. Men lose much by letting them grow, even if they are determined to keep them from going to seed.

Sowing Grass Seed Alone.

Farmers as a class cannot be made to believe that grass seed will succeed just as well, and often a great deal better, if sown alone than with grain, in the usual way. If the land is rich and the following season is favorable to the growth of grass then a good stand may usually be obtained by sowing with grain; but if droughts should occur, the young, delicate grass is likely to be smothered or to perish for want of water. The grain among which it is growing being so much larger and more vigorous will appropriate to itself the bulk of the moisture and fertility of the soil.

The severe drought which has prevailed in the Atlantic States the present season, will make re-seeding of many thousands of acres necessary, and we suggest to those who have never given the sowing of grass seed alone a trial to do so this fall, and see if a better stand of grass cannot be obtained in that way than by the old doubling-up system. When grass and grain are sown together both must necesasrily suffer more or less from crowding, if not for lack of moisure, and as the grass is the weaker, it is injured most, the result being a feeble growth not worth gathering for hay, and of little value for pasture until the second year. But if the grass seed is sown alone in early autumn, or about the time of sowing winter grain, it will generally grow sufficiently rank to yield a fair crop of hay the following season, and will not be half so liable to be destroyed by droughts.

This system of sowing grass seed alone, may not answer equally well in all localities and soils, but it is being practiced by our best farmers, some of whom have expressed to us surprise at their own stupidity at so long practicing the old system. We have tested both systems time and again, and invariably the grass seed sown alone was far the best; hence the above suggestions to those who may have failed to get a good stand in their fields the present season. There is, however, this disadvantage in sowing grass seed alone, that one plowing and harrowing does not answer for two crops, as when it is put in with grain. —*N. Y. Sun.*

The Chinese Management of Roses.

It has been stated that the Chinese method of layering roses is sometimes more successful than ours. Late in the summer they select a vigorous shoot of the same year's growth and tongue it in the usual way; they put in a small pebble to keep the slit open, and bind a handful of fresh roses around the tongue, keeping it constantly dampened. In about six weeks it will have struck roots, and can be planted without disturbing the mossy covering. Many of the garden roses can be increased by suckers from the roots, which can be severed with a sharp spade in the autumn and new bushes formed of them. Budding roses is a simple process, by which amateur cultivators often increase their stock. A sharp penknife can do duty for a budding knife, and the handle of a toothbrush, if ground down smoothly, will answer for a spud to aid in lifting the bark. From the last of June to the last of August is the best time for this process, as the bark can then be more easily raised from the wood. Take a smooth stalk and make a horizontal cut across the bark, through to the wood, but not into it. From the centre of this cross cut make another straight cut down the stem, an inch or more in length. These two cuts should resemble a T. Slice off the bud you desire to propagate with one cut of the penknife, cutting it close to the main stalk. Now, with the edge of the spud turn back the stalk on each side of the straight cut and insert the bud on the wood of the little branch to be crossed cut. With a bit of soft yarn bind down the bark, leaving the point of the bud exposed. A handfull of dampened moss must then be bound round the stem, taking care to leave the tiny point of the bud exposed to the air. In six weeks the wrappings can be removed, but all other shoots must be kept from growing on the budded branch. By this means a rosebush can be made to bear half a dozen different colored roses.—*Scientific American.*

Bat Guano.

That a little creature, not very common in the north, could congregate in sufficient numbers to make extensive deposits of excrement which have a commercial value, seems almost incredible; but in numerous caves, from Virginia to Texas, are found deposits of this material, sometimes reaching 20,000 tons in extent, and yearly increasing. During the war it was thought to extract nitre from it for powder making; but though the manufacture was somewhat successful, the nitric acid was present in such small quantities as to render it so expensive as to be abandoned at the close of the war. The material has been used as a fertilizer to a slight extent, and is found to exert a considerable influence on the crops treated. The attention of Mr. McMurtrie, chemist to the department of agriculture, having been called to the matter, analyses have been made of samples collected. These are all of a similar light to dark brown color, according to the moisture, except those containing much insoluble matters, which resemble soil, of which they probably largely consist. The physical condition, when air dried, is excellent, both for handling and application, being highly pulverulent. The analyses fairly represent the average composition, which, according to the valuations of Professor Goessmann, the Massachusetts State Inspector of Fertilizers, adopted by the department, show them to possess a value of from $15 to $55 per ton for use as fertilizers. The values compare favorably with those of fish fertilizers, and even of Peruvian guano. Microscopical examination shows the material to consist largely of the hard parts of insects upon which the bats feed. Mr. McMurtrie wisely concludes: "With these facts before us, we may readily recognize the importance of the development of these deposits in the south, where fertilizing materials are so much needed and are so costly, and especially when they may be obtained for the mere cost of removal."

Seed Wheat—Its Preparation.

It is now time to make the best preparation possible for the fall seeding. An experienced writer in the *Maryland Farmer* says:

In our own experience, we always obtained the surest crop and largest yield when we carefully *brined* our seed. For want of better convenience, we always use a wash tub, or half of a tight barrel, carefully sawed in the middle; into this we put a bucketful of common salt, and pour in as much clean water as will dissolve or saturate it; then pour in as much good, sound wheat as the vessel will hold; in a few minutes, when it is fairly settled, skim off the light, foul stuff, and throw it into the swill tub; then stir and skim until no more light stuff would float on top of the brine, then take out the wheat, and spread it on the barn floor, or any other dry place, and sprinkle over it ashes, lime or plaster, to dry it for sowing.

Proceed in the same way with as much as you desire to sow, adding salt and water as may be necessary. With this preparation the seed comes up quicker and more evenly, while it is clear of weed seed and other foul stuff, and is less liable to injury from rust and insects.

It is also a good plan to use the Montgomery zinc screen or cylinder for cleaning the seed before putting it into the brine. These precautions carefully carried out will more than pay the cost and trouble in the clean, sound, increased crop.

The same beneficial results will be realized with rye, oats and barley. Some farmers prefer and use copperas instead of salt; but we always preferred the salt.

For seed corn, as a protection against worms and birds, undoubtedly copperas is the best, but either is useful.

Sending Plants to Sleep.

Several members of the Parisian Biological Society have recently been engaged in a series of experiments which seem to prove that everything endowed with life, whether animal, plant or ferment, is susceptible of being brought under the influence of anæsthetics —in other words, may be sent to sleep. It has been proved that the influence of anæsthetics extends to all the animal tissues, and last of all, to the central nervous system. Hence, it was argued, plants having tissues must also be subject to the influence of ether, etc. Experiments prove this to be the case. Germination is arrested by anæsthetics. The watercress, for example, germinates within thirty hours. Ether arrests germination in this plant, but does not destroy that faculty. It merely sends the plant to sleep, for germination recommences as soon as the use of ether is suspended. But the sensitive plant furnishes a still more striking illustration. Its sensitive faculty is rendered completely dormant by etherization, while the other living properties remain unaffected. On suspending the action of ether, the sensitive faculty of the plant is quickly restored. The capability of being sent to sleep is not confined to plants; it extends to ferments. Thus the ferment of beer, when submitted for twenty-four hours to the influence of ether, becomes perfectly dormant, but recovers its activity as soon as the anæsthetic action is suspended. In future the practical botanist must not pursue his cruel rambles without the assistance of one of the Chlorine family.—*Medical Examiner.*

Questions and Answers.

How can evergreens be made to grow stocky?

By nipping the tip ends.

How to prevent mildew on grapes?

Sprinkle them with sulphur.

What process is required to make good onion "sets" for next spring?

Sow onion seed now, thickly; allow them to get to the size of peas, then pull and dry them, and they will make fine "sets."

Thick or thin planting, which, for hedges?

Thick versus thin planting is the subject of many a controversy. An Iowa correspondent advocates thick planting. He says twenty thousand plants per mile of Osage orange is his rule for an Osage hedge.

Will smoke injure grapevines?

A paper read before the French academy of sciences recently asserted that vineyards in close proximity to limekilns are often badly injured from the smoke, and that in some instances the fruit becomes, in consequence, impregnated with noxious odors to such a degree as to unfit it for wine. The smoke from brickkilns has, according to other authorities, proved disastrous to grapevines.

What is a good remedy for hoof-bound horses?

Strong brine applied three times a day is recommended for foundered or hoof-bound horses. Wash the legs and pour upon the bottom of the feet.

A correspondent who believes in liquid manures for

small gardens wanted to know how to avoid the unpleasant odor that comes from the liquid manure.

Scatter a little plaster (gypsum) in and about the tank or barrels which contain it.

Value of Road Dust.

During the dry season of late summers, every country resident should secure several barrels of road dust. It is worth many times its cost as an absorbent. Those who keep poultry, secure by its use a valuable fertilizer, nearly as strong as guano, with none of its disagreeable odor. Place an inch or two of road dust in the bottom of the barrel; then, as the poultry-house is regularly cleaned, deposit a layer of an inch thick of the cleanings and so on alternately, layers of each till the barrel is full. The thinner the layer is, the more perfect will be the intermixture of the ingredients. If the soil of which the road dust is made is clayey, the layers of each may be of equal thickness; if sandy, the dust should be at least twice as thick as the layers of droopings. Old barrels of any kind may be used for this purpose; but if previously soaked with crude petroleum or coated with gas tar, they will last many years. If the contents are pounded on the floor into fine powder before applying, the fertilizer may be sown from a drill. Road dust is one of the most perfect deodorizers of vaults —converting their contents into rich manure. Place a barrel or box of it in the closet, with a small dipper, and throw down a pint into the vault each time it is occupied and there will be no offensive odor whatever. This is simpler, cheaper and better than a water-closet, and never freezes or gets out of order. Mixing the road dust with an equal bulk of coal ashes is an improvement, making the fertilizer more friable. *Country Gentleman.*

Mulching Grass for Winter.

The importance of this practice, to which we have just alluded, is not generally appreciated. Grazing short in Autumn is one of the very worst things that can be done to meadows and pastures. If any farmer will examine in spring such of his fields as have been closely grazed the previous season, he will find the grass slow and feeble in starting; but where a good growth has been left the previous autumn, the new grass will be found pushing strongly, while the grazed portion has hardly started. It is therefore of the utmost importance for early pasturage, that a heavy mass of grass remain to cover the ground in winter. It would be better to feed hay and meal to cattle through October and November, than to destroy the copious pasturage by allowing them to gnaw the plants down to the roots.

Some of the best stock farmers make it an important point to retain a mass of grass in their pastures a foot or more high for entering winter, or as much as would cut with a mowing machine nearly a ton to the acre. They have early and rich pasturage in spring. The importance of keeping meadows also free from cattle in autumn is obvious.

Manuring in Fall.

We have long since made repeated observations, confirming the truth that for many purposes manure is worth at least twice as much spread in autumn as the following spring. Yet the practice is not uncommon with farmers, who may have manure lying in their yards through the summer, to omit the drawing out till wanted the next season. Those who feed corn-stalks for fodder find it too long and coarse to apply in the spring next after feeding out, but the heaps into which it should be thrown will be well rotted by September. It is then in perfect condition to be drawn and applied. It does most good on grass lands; and if these are intended to be inverted next spring for corn, it will give at least double the results produced by spring application. It will impart a vigorous start to grass intended to remain in pasture or meadow. The advantages will be two-fold—it will increase the grass all through the growing season of autumn, and thus produce a good winter mulching for the roots, and the wash of the manure by rains will run down the roots and become diffused in a more perfect manner through the soil than could be accomplished by any mechanical means.—*Country Gentleman.*

Top-Dressing Wheat.

The same principle will apply with some variation to winter wheat. The roots should be protected where the soil and climate require it. In some places the natural growth of the leaves, if strong, is sufficient. Top-dressing with manure, at the time of sowing, answers a two-fold purpose; namely, imparting vigor, and shielding the surface of the soil. If grass seed is sown, the manure confers the same double benefit on the young grass. Wheat, growing on land which is sufficiently drained, is sometimes winter-killed by the sweep of sharp winds over the surface in the absence of snow. In such cases a thin sprinkling of straw, applied in autumn or as soon as the surface is hardened by freezing in winter, may be of much use. On a field of wheat fully exposed, we directed the man in charge to spread straw thinly over the whole surface early in winter. He did so on a part only. This part gave over twenty bushes per acre; the crop was not worth harvesting on the other part. This was an extreme case; but as the labor and expense is small, it is well worthy of trial even for small results.—*Country Gentleman.*

Beets for Cows.

Last year I raised a lot of mangolds and carrots. The mangolds were gathered first and put in the cellar; afterwards the carrots were gathered and corded up on top of them, so that when I began to feed them to my cow, the carrots came first. The cow gave about her usual quantity of milk, except the usual shrinkage on the accession of cold weather and being put upon dry fodder. Fearing that the beets would not keep as well as the carrots, and also thinking that they possessed better milk-producing qualities, I was anxious to get at them. Accordingly I removed part of the carrots and commenced feeding the beets, when, to my surprise, my cow began to fail of her milk until the deficiency reached to about one-third. Wishing to test the matter still further, I changed back again to carrots, when her milk increased to about the usual standard. The quantity fed was about the same in either case—about a half-bushel basket three-quarters full. If there is any difference, it was in favor of the beets.—*Cor. Rural New Yorker.*

Strawberry Plants.

It is not advisable to set strawberry plants later than the first week in September; but you will find a plenty of dealers in plants to tell you that they may be set as late as October; but it is your money they want, and to lengthen out the season of delivery. A dealer in strawberry plants says, "when set in October, one-third of a crop will be produced the next season." He ought to have said, "the plants will be but slightly rooted, many will be thrown out by the frosts of winter, and the crop of fruit the first season will be worth but little or nothing." When not set as early as I state they should be, wait till spring in all cases.

The Rotting of Celery.

Sometimes celery prematurely rots, which is generally owing to its rank growth just before it is put into the trenches in the fall. Another cause of rotting is dryness of the ground when it is lifted to put into the trenches, and a continued drouth three or four weeks after it is put in, which prevents it from starting roots. The rotting may be prevented by leaving some earth attached to the roots when the celery is dug up, setting the plants immediately in the trench, packing the earth firmly around the roots; and if the ground is dry apply a little water.

VINES growing strongly should have their laterals regularly pinched. Never allow any unnecessary wood to grow, as the strength spent on superabundant shoots should be concentrated in what is left to manure the wood, and also in the fruit.

DOMESTIC ECONOMY.

Oatmeal in the Household.

Baldwin's *Monthly*, for September, calls attention to the fact that in Great Britain children of all ranks are raised on an oatmeal diet alone, because it causes them to grow strong and healthful, and no better food can possibly be found for them. It is also quite as desirable for the student as for the laborer, and for the delicate lady as for her hard-working sister; indeed, all classes would be greatly benefited by its use, and dyspepsia, with all its manifold annoyances, can be kept at a distance. Oatmeal is more substantial food, it is said, than veal, pork or lamb, and quite equal to beef and mutton, giving as much or more mental vigor, while its great disideratum consists in one's not becoming weary of it, for it is as welcome for breakfast or tea as bread. It can be eaten with sirup and butter as hasty pudding, or with cream and sugar, like rice. The same authority says "it is especially good for young mothers, upon whose nervous forces too great a demand has been made, and they lose the equilibrium of the system and become depressed and dispirited. Oatmeal requires to be cooked slowly, and the water should be boiling hot when it is stirred in."

A chief reason for this excellent article of diet not being more popular in this locality has been the difficulty in properly cooking it. As the oat has been heretofore prepared and sold, it required fully an hour to properly cook it before it became palatable. Recently the Craigville Mills, of New York, have put an article of crushed white oats in the market, prepared with steam by a patent process, which can be converted into a delicious porridge by boiling only a few minutes, thus saving housekeepers all the trouble and vexation and perspiring over a hot fire, incident to the old process. It is claimed that this article contains fifty per cent. more available nutriment than other cereals prepared in the usual way, and will keep any length of time and in any climate. Those who have failed in producing a palatable dish from the ordinary oatmeal will do well to try the Craigville brand, manufactured by the Chicester steam process.

Making Good Butter.

The *American Grocer* gives the following directions:

1. Avoid worrying the cows in any way, or getting them exited.

2. Milk in a clean, well-ventilated place, free from all foul odors, and under shelter in rainy weather, letting the cows stand awhile, to drip and dry off, before beginning to milk.

3. Exclude all filth from the milk and strain as fast as milked. If it can be at once strained into the pan for setting, and the strain can be done without entering the milk-room, all the better.

4. The better way is to have the milk-room so arranged that its temperature can be kept uniformly at about 60 degrees, and then to use neither water nor ice around the milk. Then leave the temperature of the milk to sink gradually to that of the room. The cream will continue to rise as long as the temparature is falling, and more slowly afterwards. It will be up in forty-eight hours. It should then be skimmed and kept at the temperature of 60 degrees until it becomes slightly acid, then it is fit to churn. If any other method of setting is adopted, it should not be one to keep the milk sweet forty-eight hours, nor one which will not permit all the cream to rise in that time. It is more or less injurious, according to circumstances, to have the temperature of the room higher than that of the milk.

5. Never let cream get more than slightly sour before churning, and churn it at sixty degrees, with a motion equal to that given by thirty or forty strokes to the minute by a dasher covering three-fourths of the lateral space of the churn at the largest point.

6. Before the butter is gathered, and while in lumps about the size of wheat or buckwheat kernels, draw off or strain out the butter-milk, and thoroughly wash the butter with clear, cold water at about 55 degrees, but do not pack the butter together. Then sprinkle on and carefully stir in—still avoiding packing—about one ounce of salt to each pound of butter. Set the butter away in a sweet, cool place, not above 60 degrees, but below 25 degrees, until the next day, when it is ready to work and pack for market.

7. The packing should be done in clean, sweet packages; and if the butter is intended for long keeping, the packages should be air-tight. They can be made so by proper use of the brine.

8. Butter so packed should be kept at a temperature not above sixty degrees nor below fifty degrees, and in an apartment where there are no foul odors from vegetables, damp earth, or any other source.

9. The milk of sick cows or cows in heat should never be used for dairy purposes, nor milk known to be impure from any cause whatever.

10. If from any accident, neglect or oversight, a batch of butter is not perfect, it should not be packed for long keeping, but at once put upon the market and sold for consumption while in its best condition. But imperfect butter should never be made to eat.

How to Preserve Cut Flowers.

Mr. Niven, of the Botanic Gardens, at Hull, England, gives the following practical hints on this subject: "For this purpose nothing is better than rain-water, which should be changed every day, or every alternate day. Before arranging the flowers in the glass or flower-stand, trim the ends of the stalks with a sharp knife, so as to make a clean cut. The stems are often bruised in the plucking: the bruised part decays and renders the water sooner impure and unwholesome than would be the case were the water absorbed through a clean-cut section of the stem, which will perform its functions without decay till the flowers have faded. To guard against the possibility of any unpleasant smell, and for other reasons —seeing that water is an absorbent of noxious gases —if the flowers be intended for a close sick chamber let the water be changed every day; by this means any unpleasant smell will be avoided. Camphor has been suggested as a sort of disinfectant and at the same time as a material likely to prolong the beauty of the flowers. Its advantage is, however, more imaginary than real; therefore do not trust to it as a substitute for the small amount of trouble incurred in the simple process above suggested. Salt has also been used; but though it may not hurt some flowers, there are others which will be injured by it. In flower-stands where sand is used, and must necessarily remain for some time, mix with the sand one-eighth part in bulk of small pieces of charcoal, broken about the size of peas; this will keep it sweet for weeks."—*N. Y. Observer.*

The Dry Earth Treatment.

The dry earth treatment for ulcers is found quite successful. Large sloughy ulcers, after being washed, are covered with a thick layer of earth, over which wet paper is placed as a support, the whole being neatly bandaged. In a few days the ulcers begin to clear, and when the surfaces look healthy and granulating, a dressing made as follows is used: A piece of muslin the size of the ulcer is immersed in carbolic oil, in the proportion of one part acid to ten parts cocoanut oil; with this the sore is covered, and over it dry earth is placed, and then moistened earth and a bandage. In a short time the healing process manifests itself satisfactorily, while all odor is entirely removed.

A Cheap Carpet.

An Eastern lady says: Have any of you a spare bed chamber, seldom used, which you would like to carpet at a little expense? Go to the paper-hanger's store and select a paper looking as much like a carpet as you can find Having taken it home, first paper the floor of your bed-room with brown paper or newspapers. Then over this put down your wall paper. A good way to do this will be to put a good coat of paste upon the width of the roll of paper and the length of the room, and then lay down, unrolling and smoothing at the same time. When the floor is all covered, then size the varnish; only dark glue and common furniture varnish may be used, and the floor will look all the better for the darkening these will give it. When it is dry, put down a few rugs by the bedside and before the toilet table, and you will have as pretty a carpet as you could wish—a carpet, too, that will last for years if not subject to constant wear, and at a trifling expense.

I, myself, used a room one entire summer prepared in this way—used it constantly; and when the house was sold in the fall, the purchaser asked me to take up the oil-cloth, as he wished to make some alterations which would be sure to injure it!

How Do You Make Cider Wine?

This question is asked by a correspondent of the *Village Record;* and as it is unanswered we will undertake the task. The cider for this purpose should not be made until December, when it should be barreled and placed in a vault or other cool cellar, and left to remain there until February or early in March, when it should be bottled, using champagne bottles, well corked and wired; the cork should be driven down to an eighth of an inch of the mouth, so that the wire can grasp it. Use good-sized copper wire, which will require only once passing over the cork, provided it is well secured around the neck of the bottle. Then return the bottled cider to the cellar, laying the bottles on their sides, and it will keep for years. Be sure that the bottles are thoroughly clean, which must be attended to just before the bottling begins. Some persons—and it is the method of the North Jersey "champagne" cider-makers—*filter* the cider through sand before putting away in barrels. It is true this removes all sediment, but we cannot perceive that it adds to the flavor or keeping qualities of the cider.—*Germantown Telegraph.*

Directions for Calcimining.

Buy the best bleached glue if the walls are to be white or some light tint (if dark it is immaterial), and use it in the proportion of a quarter of a pound to eight pounds of whiting. Soak the glue over night In the morning pour off the water. Add fresh water, put in a pail and set that in a kettle of boiling water. When dissolved stir it into the whiting, adding enough water to make it, after mixing, of the same consistency as common whitewash. It may be tinted any color, and is applied with a whitewash brush. If the color is rubbed smooth in a little water, and then mixed with the wash, it will be more even. If the walls have been previously whitewashed, scrape away all that will come off, and wash with a solution of white vitriol—two ounces in a pail of water. The vitriol will be composed, forming zinc white and plaster of Paris, to which the calcimine easily adheres. It is important to dissolve the glue in a hot water bath, for if scorched by too great heat its tenacity is impaired or destroyed.

Useful Recipes.

To Pickle Gherkins: To every quart of vinegar allow one ounce of bruised ginger, half an ounce of whole black pepper, half an ounce of whole allspice, four cloves, two blades of mace, a little horseradish. Cover the gherkins with salt and water, and let them remain three or four days, take them out, wipe perfectly dry, and put them into a stone jar. Boil for about ten minutes sufficient vinegar to cover them, with spices in the above proportions, pour it quite boiling over the gherkins, cover the jar with vine or fresh cabbage leaves, and put over them a plate, set them near the fire, and let them remain all night. Next day drain off the vinegar, boil it up again, and pour it over them whilst hot, cover with fresh leaves, and let it remain till cold, then take away the leaves, and tie closely down with bladder to exclude the air. The vine leaves will make them green.

Timely Remedies: If mosquitoes or other blood suckers infest our sleeping rooms at night, we uncork a bottle of pennyroyal and these insects leave in great haste, nor will they return so long as the air in the room is loaded with the fumes of that aromatic herb. If rats enter the cellar, a little powdered potash, thrown in their holes or mixed with meal and scattered in their runaways, never fail to drive them away. Cayenne pepper will keep the buttery and store-room free from ants and cockroaches. If a mouse makes an entrance into any part of your dwelling, saturate a rag with cayenne in solution and stuff it into the hole, which can then be repaired with either wood or mortar. No rat or mouse will eat the rag for the purpose of opening communication with a depot of supplies.

For your winter wear don't think of bleached muslin, but instead buy substantial unbleached and whiten and soften it with chloride of lime before making up. Then by next summer it will be whiter than though the garments had been made of snow-white bleached muslin. For fifteen yards of muslin take half a pound of chloride of lime, tie it up in a bit of cloth and put it in a tub with three pails of cold water. With a stick move it about until it is dissolved, then take it out and put your unbleached muslin, which has been wet through and through, into the tub, and let it stand an hour, moving it about occasionally that it may be thoroughly soaked through with the lime water. Then wring it out and rinse through two or three warm waters and it is ready for the line.—*Ohio Farmer.*

It is generally conceded that chickens merely split open and broiled are dry and unsavory eating. I therefore give to the housekeepers of the *Rural* my recipe, which has been pronounced good by many. Clean the chickens nicely; cut them down the back; break the breastbone; wash, and wipe them dry; season them both in and outside with salt and pepper; place them in a dripping-pan with a little water; put it in a quick oven until they are a delicate brown on both sides; baste them frequently with butter; renew the water as it evaporates. When the chickens are done, remove to a hot dish; add a little more water and a teaspoonful of flour to form the gravy. Serve the gravy in a sauce-tureen, or in the dish with the chickens.—*Mrs. Rustic, in Moore's Rural.*

Peach cobbler is made in this way: Pare nice, ripe, juicy peaches, lay them in a deep baking dish, with plenty of sugar, and a tablespoonful of flour rubbed smooth in a little cold water. Cover the top with a crust made of one teacup of sweet milk, a little salt, one heaping tablespoonful of butter, one heaping teaspoonful of baking powder, worked thoroughly through flour enough to make a soft dough. Rub the butter through the flour; add the milk; mix quickly; roll out an inch thick, and bake in a moderate oven. To be eaten with cream and sugar. A crust made as the above is far more wholesome and digestible than ordinary paste made of water and *abominable lard.—Cor. Rural New Yorker*

Apple Tapioca Pudding: Soak one large cupful of tapioca, until soft, in water enough to cover it: butter the pudding dish, and have sliced into it some nice juicy apples, more than half filling the dish. Then add some sugar, and a bit of butter. Over this pour the soft tapioca that has been previously well soaked in either milk or water. Add a little salt, and sprinkle over the top a light grating of nutmeg. Bake until the apples are well done. Eat with cream and sugar, (or sauce of any kind, if preferred) and I think you will call this, as I have heard it called, "The Queen of Puddings." Sago can be used the same way.—*Cor. Chicago Tribune.*

To Boil Salmon: Put to each gallon of water six ounces of salt; use only sufficient water to cover the fish; bring it quickly to the boil, and allow about 8 minutes to the pound. You will always know when the fish is done by its separating easily from the backbone. Do not let it remain in the water after it is done. Drain it, and if not wanted for a few minutes, keep it hot by laying hot cloths over it. Serve on a hot napkin, garnish with parsley and lemon, serve with lobster or shrimp sauce. Plain melted butter is usually sent in a tureen with it, and a dish of sliced cucumbers.

Let your readers try this for ridding sleeping apartments of the pesky mosquitoes: Place a small quantity (about a tablespoonful) of "insect powder" in the middle of a plate or other vessel, and saturate the powder with essence pennyroyal; place it in the room and set fire to it. The alcohol burns, carrying with it the odor of pennyroyal, and afterwards the smoke from the insect powder, which, together, is "too many" for the little terrors, and they skip without settling their little bills.—*Cor. Indianapolis Journal.*

The *Practical Farmer* says: "The only cause for streaky butter ever occurring, in our experience, is the insufficient working of the salt through the mass. Unless great care is used, butter is always of different colors before the first working (after salting). Some portions will have little or no salt, and be of a lighter color, and the dairy-woman should work so as to mix these portions with that thoroughly salted, or she will have streaky rolls or tubs of butter. A very little care, when working the second time, will prevent this result."

Spiced Beef: Take some nice suet, or three or four slices of pork; fry in pot until it is a light brown, then lay in a piece of raw beef—brown it on both sides; then cover it with water and let it stew over a moderate fire five or six hours, according to the size of the beef; add an onion, two bay-leaves, half a teaspoonful of mace, a teaspoonful of whole cloves and allspice mixed; pepper, salt and vinegar to taste; add water as it boils away, so that there may be enough to make a gravy when the meat is done.

Stewed Mushrooms: Peel and cut the contents of two boxes of mushrooms, wash, pare, and boil them, put in cold water, and when cool take out and wipe dry. Put in saucepan with a lump of butter size of an egg and brown well. Add a pinch of flour, salt and pepper, and a small bouquet of parsley. Moisten with beef stock or tea and boil fifteen minutes. Then take the yelks of two fresh eggs, beat and add half a tablespoonful of white-wine vinegar when ready to serve.

To Clean Steel: Dissolve half an ounce of camphor in one pound of hog's lard; take off the scum, mix as much black lead as will give the mixture an iron color; rub the articles over with this mixture, leave it on for twenty-four hours, then dry with a linen cloth, and polish with a soft leather. Iron and steel goods cleaned in this way will keep clean and bright for months.

Iced Apples: Pare and core one dozen large apples; fill with sugar mixed with a little butter and cinnamon or nutmeg; bake till nearly done. Cool, and, if possible, without breaking, put the apples on another dish. If not possible, pour off the juice; have some icing prepared; lay it on the top and sides and set into the oven a few minutes to brown slightly. Serve with cream.

Macaroni Soup: Into a pan of fast-boiling water throw four ounces of macaroni, add one ounce of butter, and an onion stuck with a few cloves. When the Macaroni has swelled to its full size and become tender, drain it, and put it into two quarts of clear gravy soup; let it simmer for seven or eight minutes, and it will be ready for the table. Serve grated Parmesan cheese with it.

Tomato Catsup: Cut the tomatoes in slices, lay them in the kettle, sprinkle salt upon them, boil three quarters of an hour, and strain through a sieve; to six quarts of juice add two quarts of vinegar, one ounce of cinnamon, one of cloves, one of nutmeg, and a half an ounce of cayenne pepper, ground; then boil fifteen minutes.

Quince Jelly: Slice the quinces without paring or coring. Put them into a preserving kettle and just cover with water; put over the fire and boil until soft. Remove from the stove and strain off the liquor. To every gallon allow four pounds of white sugar, and boil very fast until it becomes a stiff jelly.

Domestic Yeast: Boil one pound of good flour, a quarter of a pound of brown sugar, and a little salt, in two gallons of water for one hour. When milk-warm bottle it and cork it close. One pint of this yeast will make eighteen pounds of bread.

A good coating for outside brick work is made by mixing clean river sand 20 parts, litharge, 2 parts, quicklime 1 part, and linseed oil sufficient to form a thin paste. It is also useful as a cement for broken stone, drying exceedingly hard.

Dry buckwheat flour, if repeatedly applied, will remove entirely the worst grease spots on carpet or woolen cloth, and will answer as well as French chalk for grease spots on silk.

A decoction of black walnut leaves is claimed to have the merit of keeping flies from horses if liberally applied.

Applied Science.

Destruction of Earth-worms on Grass-plots, Walks, etc.: Sprinkling grass-plots, garden-beds, etc., with clear lime-water, in damp weather, when the worms are near the surface, in most cases several times, is said to be destructive of the worms, while it is rather beneficial than otherwise to the vegetation.

Best Shape for Fruit Trees: The majority of a convention of German pomologists expressed a decided preference for the pyramidal form for fruit trees. The advantages claimed for it are the minimum of shade, greatest strength, avoidance of severe wounding of the tree, production of better fruit, and at the same time fewer disadvantages from storms, weight of snow, excess of fruit, theft, etc.

Fall in the Value of Amethysts: According to the *Journal of Applied Science*, the large number of amethysts that have been thrown into the market since 1872, from Brazil, has caused a great depreciation in their value. The first lots sent to Europe brought from five to six hundred dollars, per arroba, of 32 pounds weight; but as the quantity increased the price rapidly receded, and finally decreased to absolutely nothing. At present no offer can be obtained for any lots on hand.

Improved Mode of Closing Barrel Hoops: It is claimed that the ends of hoops on barrels may be securely joined with great economy of time and labor on the following plan, devised by Cattin: A small plate of sheet metal has two slits punched in it, in such a way that the hoops may be drawn through them readily in one direction, and are prevented from slipping out by the sharp edges of the plate cutting into them. The surface is rendered smooth by a blow with a hammer on the projecting ends of the hoops.

Soldering Platinized Glass Surfaces to Metals: It has been found by Dr. Ronzgen that glass can be more firmly affixed to metals by coating it with platinum, and soldering, than it can be by cement. The tinning of the platinum surface is very easily effected by means of a soldering iron and chloride of zinc. The excess of platinum coating may be

wiped off with filter-paper dipped in dilute hydrofluoric acid. The glass, of course, should be carefully warmed before applying the soldering iron. The platinum coating is said to adhere to the glass so firmly that a well soldered piece of metal cannot be removed without injuring the surface of the glass.

POLISHING-CLOTH FOR BRASS: A sort of linen was exhibited at the Vienna Exposition, which served the purposes of cleaning and polishing brass very well, and was at the same time cheap enough for general use. Investigations by Dr. Reichardt indicate that the effect is due to the presence of silicic acid and an alkali, and that the article may be prepared by impregnating some loose fabric, such as fustian, with a weak solution of water-glass, and then washing it thoroughly. A not inconsiderable amount of silicic acid will be retained, in a manner analogous to alumina in dyeing.

LITERARY RECORD.

THOMAS MEEHAN'S WHOLESALE PRICE LIST for the Autumn of 1876. Germantown Nurseries, Germantown, Philadelphia, Pa. An octavo pamphlet of eighteen pages. This is especially a tree-seed catalogue, including rare ornamental trees, fruits and flowers; wholesale and retail prices appended to each, and their common and scientific names given. Those desiring deciduous trees and shrubs, weeping trees, evergreens, vines and climbers, as well as hardy herbaceous plants, fruit trees, etc., will do well by ordering from so experienced and intelligent a source as Mr. Meehan. We commend these men and their stock to the consideration of our readers, not only on account of their reliability of character, but because the citizens of this county every season become more or less the victims of irresponsible strangers, who exhibit books and portfolios of illustrated fruits, plants and flowers, that very frequently turn out inferior or worthless in the end, subjecting their patrons to a loss of time and money.

DREER'S DESCRIPTIVE CATALOGUE OF BULBS, PLANTS, &c., with Directions for the Culture and Management of Bulbous Roots, for 1876 and 1877. Henry A. Dreer, Seedsman and Florist, No. 714 Chestnut street, Philadelphia, Pa.

A demi octavo pamphlet of 48 pages, on good paper and a clear mechanical print, and forty illustrations of the most attractive plants, rustic work, and implements. In this little work (little only by comparison with some of the large catalogues) are brought together all the surest, best tested and most enduring and beautiful of flowering and other plants, with the specific treatment of a large number of them, together with choice lists of flower and standard vegetable seeds. Mr. Dreer is an old and experienced flower and plant dealer and seedsman, and offers great inducements to dealers and amateurs, by making liberal discounts to those purchasing in quantity, and his $3.00, $5.00 and $5.50 collections are particularly attractive. Our readers might do a good deal worse by purchasing elsewhere.

MINERAL MAP AND GENERAL STATISTICS of New South Wales, Australia. Thomas Richards, London, 1876; finely colored and notated. It is very probable that before the Ides of November, a very large number of our citizens may manifest a desire to emigrate to some other region, and as the classic ground of "Salt River" may be over populated, nothing could be more desirable than New South Wales.

Just look at it. 24,840 square miles of coal lands, and 12,987,279 tons raised in one year. 500 square miles of diamond lands; 500 of silver; 600 of coal oil; 1,400 of iron ore; 6,250 of tin; 500 of lead; 13,650 of gold; and 3,200 of copper. The products of the coal oil, tin, gold, and copper lands in 1875 was 32,691,597 pounds sterling. The live stock of the same year, consisting of sheep, horned cattle, horses and pigs, was 26,293,231 head, and the produce of wool was 62,900,425 pounds; besides 684,258 gallons wine, 38,564 tons potatoes, 15,355,648 pounds sugar, and 6,129,018 bushels of wheat, corn, barley and oats. Surely such a country is preferable to the barren wastes of Salt River.

THE NATIONAL LIVE-STOCK JOURNAL for October is at hand, and is truly a magnificent number. It contains twenty-six elegant illustrations, drawn on stone, expressly for this number, by the distinguished animal artist, E. H. Dewey, which are intended as representatives of all the leading breeds of domestic animals as bred in America, in this our centennial year. The horse pictures are faithful likenesses of Lexington, Gov. Sprague, Donald Dinnie, and Apollo. Then follows a male and female of each of the leading breeds of cattle, making in all twelve cattle portraits. Then we have Cotswold, Leicester, Southdown and Merino sheep; Berkshire, Yorkshire, Essex, Chester White, Suffolk, and Poland-China swine; making in all a series of illustrations that have never been approached by any other journal of the kind in the world. In its entire mechanical execution, *The Journal* is a model of neatness and taste; while the character of its contents has uniformly been such as to have placed it, long ago, at the head of all journals of its class, in Europe or America. It is published by the Stock Journal Company, Lakeside Building, Chicago, Ills., at $2.15 per year.

PENNSYLVANIA RAILROAD SCHEDULE.

Trains LEAVE the Depot in this city, as follows:

WESTWARD.	Leave Lancaster.	Arrive Harrisburg.
Pacific Express*.....	2:40 a. m.	4:05 a. m.
Way Passenger†	4:50 a. m.	7:50 a. m.
Limited Mail*.....	9:25 a. m.	10:30 a. m.
Hanover Accommodation.	8:30 a. m.	Col. 10:00 a. m.
Mail train via Mt. Joy.....	11:20 a. m.	1:00 p. m.
No. 2 via Columbia.....	11:20 a. m.	1:20 p. m.
Sunday Mail.....	11:29 a. m.	1:20 p. m.
Fast Line.....	3:25 p. m.	4:50 p. m.
Frederick Accommodation.	3:35 p. m.	Col. 4:15 p. m.
Harrisburg Accom.....	6:10 p. m.	8:10 p. m.
Columbia Accommodation..	7:32 p. m.	8:10 p. m.
Lancaster Express.....	7:40 p. m.	8:10 p. m.
Harrisburg Express	7:45 p. m.	9:05 p. m.
Pittsburg Express.....	9:10 p. m.	10:35 p. m.
Cincinnati Express*.....	11:30 p. m.	12:45 a. m.

EASTWARD.	Lancaster.	Philadelphia.
Atlantic Express*.....	12:40 a. m.	3:10 a. m.
Philadelphia Express†.....	4:10 a. m.	7:00 a. m.
Harrisburg Express.....	7:25 a. m.	9:25 a. m.
Lancaster Express	7:50 a. m.	10:30 p. m.
Columbia Accommodation..	9.28 a. m.	12:30 p. m.
Pacific Express*.....	1:10 p. m.	3:30 p. m.
Johnstown Express.....	3:05 p. m.	6:00 p. m.
Harrisburg Accom.....	5:50 p. m.	9:00 p. m.

The Hanover Accommodation, west, connects at Lancaster with Limited Mail, west, at 9:25 a. m., and will run through to Hanover without change of cars.

The Frederick Accommodation, west, connects at Lancaster with Fast Line, west, at 3:25 p. m., and runs through to Frederick without change of cars.

The Frederick Accommodation, east, leaves Columbia at 12:30 p. m., arriving at Lancaster at 1 p. m., connecting with Pacific Express at 1:10 p. m.

The Dillerville Accommodation leaves Harrisburg at 5 a. m., coming via Mt. Joy, and arriving at Lancaster at 9:05, connecting with Lancaster train.

The York Accommodation, leaving York at 6:22 a. m., connects at Columbia, at 7:25, with the train leaving Marietta at 6:52 a. m., at Lancaster with the Harrisburg Express at 7:25 a. m.

The Marietta train leaves Columbia at 6:05 a. m., and returning, leaves Marietta at 6:25, connecting at Columbia with the York Accommodation, and at Lancaster with the Harrisburg Express at 7:25 a. m.

On Sunday there will be two sections of Pacific Express, east, the second section starting from Columbia at 12:30 p. m., making all the stops between Columbia and Lancaster, and the Johnstown Express stops from Lancaster to West Philadelphia.

The first section of Pacific Express, east, on Sunday, when flagged, will stops at Middletown, Elizabethtown, Mt. Joy, and Landisville.

*The only trains which run daily.

†Runs daily, except Monday.

$1 a Year { To subscribers in the county. SINGLE COPIES 10 CENTS. To subscribers out of the county. } $1.25.

Prof. S. S. RATHVON, Editor. LANCASTER, NOVEMBER 15, 1876. JOHN A. HIESTAND, Publisher.

CONTENTS OF THIS NUMBER.

OUR FENCE CORNERS

How He Keeps Clean.

"Blue Jeans Jimmy" Williams, the newly-elected Democratic Governor of Indiana, the great economist and lemonade objector of the House, has taken a bath. He went down to the bathroom the other day and actually bathed. When he was drying himself a happy thought struck him, and he asked the attendant how many towels they used in a day.

"Two hundred," replied the attendant.

"Cæsar and seed corn!" exclaimed the economist. "What in the name of four aces do you do with 200 towels?"

"They uses 'em a bathin', sir," replied the darkey.

"Two hundred men don't bathe here every day!"

"No, boss, but some of 'em they uses two an' three an' four towels whenever they bathe."

"Great Jupiter!" exclaimed the Goveruor-elect of Indiana. Is that possible? Why, boy, I have a family of eleven at home, and one towel lasts us a week."

"You must keep pretty clean then, boss," was the darkey's sagacious reply.—*Graphic.*

Chin.

A pointed or round chin indidates a congenial love. A person with such a chin will have a *beau ideal*, and will not be easily satisfied with real men or women.

The indented chin indicates great desire to be loved; hunger and thirst for affection. When large in women, she may overstep the bonds of etiquette, and make love to one that pleases her.

A narrow square chin indicates a desire to love; and is more common among women.

The broad square chin indicates a violent love; or at least devoted attachment.

The broad square chin indicates ardent love combined with great steadfastness and permanence of affection.

The retreating chin is indicative of the want of attachment, and but little ardor in love.

The chin, in its length and breadth, indicates self-control, self-will, resolutiou, decision, etc.

Carnivorous animals have the upper jaw projecting, while those of a graminivorous nature have the lower jaw projecting. In man with a projecting upper jaw will be found large destructiveness and love for animal food; when the lower jaw projects, then the love for vetgeable food.

☞ To fasten labels to tin cans, put a teaspoonful of brown sugar into a quart of paste, and it will fasten labels as secutely to the tin cans as to wood.

It is calculated that potatoes planted five inches deep will produce 30 per cent. more than those planted two inches.

Work "iron filing," "chips" and charcoal into the soil of your flower beds, and you will add greatly to the rich, bright coloring of flowers.

Never trim the hair from the ear of your horse. It is placed there by nature to protect the orifice and drum of the ear from insects, dirt and sudden change of the weather.

A rod of brick work, 272 superficial feet, 1½ bricks thick, or 4,350 bricks average work. One yard of paving, 36 bricks flat or 52 on edge. There are 384 bricks to a cubic yard, and 1,000 bricks, closely stacked, occupy about 65 cubic feet.

"Things is getting slouchaways in dis country; I declar' to grashus ef dey aint," said an old negro the other day. "Fust cum de cattypiller, den de chicken kollery, an' now hear cum de grasshoppers; an' I hear talk de udder day dat a nigger was pisened with a mushmillion. Looks like hard times."

A patriotic Servian has translated "Yankee Doodle" into his native tongue, and the air is so popular that it bids fair to become the national anthem of that struggling race. It runs as follows:

Yenghiatovitch Dhoodalvitski camerowsh totovw-
Ridingelensk onoviteh poncolowdosk; [nepki,
Stuckorelskeno fheatheromouk inter his hatoviteh,
Adensk calladarovask macharonitovenski.
The rest is awful.]

Requiem of Summer: The glory of the summer is over. The verdure of the hills has changde into the russet, purple, gold and brown of autumn; there is no balm or perfume in the sighing wind, and the grand orchestra of nature is attuned to melancholy notes, introducing the sad requiem of the dying season. Fading, fading! No dewdrop on the rose; no lowing kine, knee-deep in fragrant clover; no lotus hush at noon-tide; no groves, prompted by cooling breezes, wooing with outstretched arms the worn and weary to the shade of their soft aisles; no shadows chased by wayward zephyrs over rich harvest fields. The day breaks tardily, as if reluctant to look upon the saddening change, hurries to its end, and dies mid sombre shadows. Fading, fading! From dew to frost; from freshness to decay. Thus roseate youth gives place to wriukled age; so passes life away.

Cure for Choking Cattle.

Should cattle be at any time in danger of choking by reason of any foreign substance sticking in the throat, take of fine chewing tobacco enough to make a ball as large as a hen's egg; dampen it with molasses so that it can be compressed into a ball, and will adhere closely; elevate the animal's head, pull out the tongue, and crowd the ball as far down the throat as possible. In fifteen minutes it will cause sickness and vomiting, relaxing the muscles so that the potato, or whatever may be choking it, will be thrown up.

Four thousand eight hundred and forty square yards make an acre; a square mile, six hundred and forty acres. To measure an acre, two hundred and nine feet on each side make a square acre within an inch.

The Lancaster Farmer.

Prof. S. S. RATHVON, Editor. LANCASTER, PA., NOVEMBER, 1876. Vol. VIII. No. 11.

ANTS DESTROY CATERPILLARS.

"The Belgian official journal, referring to the ignorant conduct of those who destroy all kinds of birds and insects indiscriminately, insists on the necessity of children in primary schools being taught to distinguish between useful and noxious insects, and thus to exercise their destructive faculties against the latter only. The writer proceeds to say that the ant, which is very disagreeable and inconvenient in many respects, does excellent service in chasing and destroying caterpillars. A farmer who had noticed this fact and had his cabbage literally devoured by caterpillars, at last hit upon the expedient of having an ant-hill, or rather nest, such as abound in pine forests, brought to his cabbage plot. A sackful of pine knots, abounding in ants, was obtained, and its contents thrown around the infested cabbage plants. The ants lost no time, but immediately set to work; they seized the caterpillars by their heads. The next day heaps of dead caterpillars were found, but not one alive, nor did they return to the cabbages. The value of the ant is well known in Germany, and, although their eggs are in great request as food for young partridges, pheasants and nightingales, there is a fine against taking them from the forests. The ant is indefatigable; it climbs to the very tops of trees, and destroys an immense quantity of noxious insects."

We entirely commend the idea of using discrimination in the destruction of insects, and we are as entirely in sympathy with the sentiment of children, not only in *primary*, but also in *secondary* and *high* schools, being taught to exercise their destructive faculties against the noxious kinds only. We have advocated these views for many years, and have all along been urging that if an intelligent discrimination were exercised in the destruction of insects, the labors attending their diminution or extermination would be correspondingly facilitated. As an instance, it has been fully demonstrated that there are at least twenty species of insects, which, in one way or another, prey upon the eggs and the *larvæ* of the destructive "Colorado Potato-beetle," and to discriminate in favor of these will certainly afford a great help to their usefulness.

The following paragraph from the October number of *Field and Forest*, p. 69, illustrates that an additional species of these parasitic insects has been discovered, and time may yet develop a sufficient number to "checkmate" the Colorado beetle entirely.

"*Euschistes punctipes.*—This insect has been winning a name in Virginia, by preying upon the Colorado potato-beetle. We do not remember seeing its name in the list of the foes of the 'Spearman' before, and so hasten to enroll it."

This insect is one of the true Bugs (*Hemiptera*) and is allied to the "Spined Soldier-bug" (*Arma Spinosa*) and may be regarded as an additional parasitic help.

But, in the application of artificial remedies, either as a liquid or a powder, or in setting a self-operating trap for them, it is almost impossible to discriminate where the good and bad are mingled together, even if we are acquainted with the different species. And as to a trap, we cannot control the kind or number that may fall into it. The only compensation in such a case is, that in destroying *all* —both friends and foes—the extermination of the latter will not necessitate the presence of the former—having nothing more for them to do, we can dispense with their labors altogether.

The greatest use in being able to discriminate between noxious and innoxious insects, by learning to identify the species, as well as to acquire a knowledge of their habits, transformations, and modes of life, is in this, that we may thus know exactly what to think and do when we meet them. It will relieve us from unnecessary fears and anxieties in regard to them, and facilitate the labor of destroying our foes and shielding our friends. Entomological object lessons from a practical teacher, lectures on their habits, their forms, their whereabouts and their peculiar structures, in connection with a scientifically named and classified cabinet, in all of our schools, would go very far towards imparting the necessary knowledge on this important subject. If it is deemed necessary to impart such knowledge to the pupils of our schools as will qualify them for merchants, manufacturers, mechanics, engineers, lawyers, doctors, and other arts and professions, it cannot be less important to instruct them in matters so nearly related to agriculture, as practical entomology is now considered.

As to the Ant, however, as a destroyer of caterpillars, we cannot say that we have much confidence in their efficiency. It is true, ants generally seem to manifest a fondness for animal food; and a frog, a squirrel, or other small animal, buried in an ant-hill, may be nicely skeletonized in an incredibly short space of time; but, ant-hills are not always nor everywhere accessible. Moreover, ants are fonder of saccharine substances than they are of animal food, and it is our opinion that if they discovered a colony of *Aphids* discharging "honey-dew," in a garden, they would never touch a caterpillar or anything else, as long as the saccharine fluid was supplied. We have often noticed ants dragging dead insects or fragments of dead insects towards their cells, but we never noticed that they were particularly destructive to live insects, unless it might have been a mutilated or enervated specimen. Fossorial and solitary wasps are in the habit of supplying their young with the bodies of pretty large caterpillars, which they in some manner paralyze, and upon which their young subsist. But suppose we succeed in transferring an ant-hill to our gardens, and the ants destroy all the caterpillars, what then? They become so numerous in some localities that they, if they could be trained on animal or insect food, might do a good service to the "Truck" gardener or the Horticulturist. The thing, however, seems impracticable; nevertheless, it might be worth while to make an effort in that direction, whether we meet with success or failure, and report thereon immediately.—*Ed.*

A WORD FOR THE SNAKES.

Permit me to say a few words in behalf of these much abused animals. Not that some of them do not merit their abuse, but that there are those which do not and the whole class should not suffer for the bad qualities of a part. The whole class does, however, suffer from this cause, and it is almost impossible to find a single species of serpent to which some one will not impute venomous qualities. At the same time it is an established fact that in every country, Australia excepted, nonvenemous serpents exceed the venomous in numbers. Moreover, in all tropical countries the venomous snakes constitute a greater proportion of the entire number than they do in temperate regions, and in our favored land, especially in the Northern States, such as New York, the proportion of venomous snakes is very small. In the above mentioned State fifteen species of snakes are known; only two of these, the Copperhead and Rattlesnake, are venomous, and their bites rarely prove fatal if proper remedies are immediately applied. This, however, is often impossible, and as prevention is better than cure, the best plan to adopt is to learn to distinguish these species from all others. This plan I believe to be far better than the one now in vogue, especially among ladies; I mean the custom of running away with screams of terror at the sight of every snake, lizard, crooked stick or other innocent object which a fiction-trained imagination can convert into the semblance of a serpent.

Another undeserved charge is made against these creatures. It is that of viciousness. Here again a quality characteristic of the minority is ascribed to the whole class. Comparatively few of the non-venomous snakes are vicious and many of the venomous snakes do not possess this quality; thus, our northern Rattlesnake is not at all vicious, rarely biting unless it has received some real or fancied injury, and even then it rarely fails to give warning by sounding its ominous rattle. In Australia there is a snake which, though venomous, may be taken up and handled with impunity, as it is so gentle by nature that the idea of biting never seems to enter its head.

It is stated that snakes do a great deal of harm by destroying toads, frogs, birds, and other useful animals. This, I regret to say, cannot be denied; but that is no excuse for overlooking the fact that a few of our snakes really do a great deal of good and little or no evil. Such are the Grass-snake and Ring-snake, that subsist upon worms, slugs, and insects; one or two others also, about whose habits little is known, are probably content with the same humble diet. Another, the Ribbon-snake, chooses a more varied bill of fare, now dining on toad or frog, now condescending to put up with a dinner of large bugs or other insects. As to the large serpents that live on birds, frogs, etc., even they partly atone for the damage done in killing these useful animals, by the destruction of field mice, moles, chipmunks, and many other kinds of small, noxious rodents that infest our fields and gardens. However, only the first mentioned species, namely, those living entirely upon insects, can be reckoned among the farmer's real friends, and consequently among those that deserve encouragement and protection.

Before I close I must say a few words for a family closely related to snakes. I refer to lizards. Many are in total ignorance as to whether or not they are poisonous. For the benefit of such, let me say that there is not known to science a single lizard that is venomous; all are as harmless, and many as tractable as kittens.

Another point, concerning which some are equally ignorant, is the food of lizards. Many are unable to decide satisfactorily, when they meet with a lizard, whether it is their duty to kill it or let it go. Lizards, on account of the structure of their jaws, cannot swallow large prey, but are better adapted to feed upon insects, from which they almost exclusively derive their sustenance, so that any one who kills a lizard, instead of benefiting agriculture, is really injuring it. By all means encourage the lizards.—*Rural New Yorker.*

We could, and would, cheerfully endorse the above from the "*Rural*," but where's the use of any body putting in a "word for the snakes," so long as people are so deeply prejudiced against them. In Lancaster county we have but *one* species of snake that is venomous, in all Pennsylvania but *two*, and in the very face of this *fact* there is a strange *fancy* that there are at least a *dozen*.

About fifty-five years ago two rattlesnakes were killed in York county, opposite the town of Marietta, and it is very questionable whether any others have been seen, either in York or Lancaster county from that time down to the present, and yet, during that long interval,

hardly a year has passed that currency has not been given to some terrible snake story, and people were not wanting who would have been willing to substantiate these by oath or affidavit. Twelve species of snakes, at most, are natives of Lancaster county, and among them there is but one that is venomous, namely, the "Copperhead" (*Trigonocephalus contortrix*), and that one is mainly confined to the southern districts of the county, especially those that border on the Susquehanna. None of the other eleven species are venomous, and most of them are entirely harmless. The larger and older individuals among the Black-snakes, of which we have two species, are said to have attacked persons in the defensive, but all these stories rest upon "it is said," although some of them are probably true; but even if true, it by no means militates against the assumption that they are not venomous.

We would rather be bitten by a non-venomous snake at any time, than to be bitten by a cat, a rat, a squirrel, a mink, a weasel, a dog, or even a mouse, and should have less apprehension about a wound inflicted by such a reptile, than we would from one inflicted by any of the mammals named. The dental organs of the common pike are more formidable than those of any non-venomous snake we have in Pennsylvania, and are capable of inflicting severer wounds; and yet most people would rather subject themselves to the contingency of the former than they would of the latter. Black snakes, especially, are efficient "mousers," and share the arvicolian products of the meadows and the fields, with the hawks and the owls, but often the latter carry off both snakes and mice. Water-snakes are generally fishers and froggers, but the smaller species of land snakes, as well as the lizards, of which we have two species, confine themselves almost exclusively to insects and worms. In short we must try to live down and educate out, the deep-seated prejudices, which from our earliest infancy we foster against snakes. It is true, as there *are* certainly such things as venomous snakes, it would be prudent to be on the safe side, but we would hardly apply such a rule in our relations to other things. We would be apt to regard it as too indefinite —too hap-hazard. Nothing can so effectually dissipate our prejudices against snakes, as a knowledge of their histories, habits, anatomies, and other characteristics necessary in determining their species and families, and learning to discriminate between the venomous and the non-venomous species.

We conclude this chapter on snakes by quoting the following article, which originally appeared in the columns of the *Concordia Enterprise*, of Kansas. (Whether we are to understand that the paper, the editor, or the story, is an "enterprise," the reader may determine for himself.)

The "Blue-racer" alluded to in the article, (if true) we presume is what we call in this county the "Black-snake" or the "Racer"* (*Bascanion constrictor*) a species more slender than our common black-snake (*Scoptophis alleghaniensis*) a reptile that feeds on field-mice, moles, ground-squirrels, birds, insects, and indeed on almost any small living animal it can catch, when it is hungry. These animals are very particular in their diet, eating, or rather swallowing, nothing that is filthy, putrid, or dead.

As to the "adder" referred to, we know not what it is. The European adder (*Clotho arietans*) is venomous, but there is no snake in North America that we know of, that has received the common name of "adder." Can this be the "Harlequin snake" (*Elaps fulvius*) of the Western States? If so, then it has two short, erect fangs, and is venomous. Whether the "centennial snake story" is true or not, 3,000 snakes destroyed in one district, would be felt in the increased number of mice and insects for the next year following, at least. We have, as boy or man, encountered snakes of various kinds for more than half-a-century, and we never met one yet that did not attempt to run away from us. It is perhaps important that we should learn to distinguish the harmless and the venomous species, but their total destruction we do not think is wise.

*Perhaps the "Indigo," or "Gopher-snake" (*Georgia couperi*), about 3 feet in length, bluish-black above, and slate below.

Centennial Snake Story.

On Saturday last we were asked by Mr. Jonathan Fulford if we had "heard about the snakes." We hadn't, and he proceeded to tell us a story that we at first thought incredible, but which we were at last fain to believe and which we now know to be true, having seen the horrid sight, and can vouch with sworn affidavit if necessary, as can others who may have visited the scene within the past two weeks, as to the truth of what we have to relate.

On the 2d inst., toward evening, a young son of Mr. A. Thompson, who lives about eight and a half miles from town southward, was passing over a hill on the farm of Mr. Gibbs Myers, a neighbor, in quest of his father's cattle, when he accidentally stepped into a small hole, and, drawing his leg out quickly, drew with it several serpents. The sight frightened the lad, and he ran home and reported his experience. He soon returned, however, with another lad, and found that the hill-top was the home of a community of crawling reptiles, and before they left the spot they had despatched forty-six.

Day after day the work went on, until last Sunday the dead snakes were picked up and counted and placed in a pile near the mouth of the den. The number of 1,776 was counted, and still the work of killing goes on from day to day. We went to the place on Monday, accompanied by L. H. Smyth, and the astounding sight of near 2,000 snakes in one pile met our gaze, with live ones still in apparently undiminished numbers upon the hill. We killed fifteen in as many minutes and had enough, while two little lads were all the time at work. And the work of killing has been going on ever since, until now we hear that about 3,000 have been despatched, and there are hundreds, perhaps thousands, left!

The snakes are of the species called the blue racer, with a sprinkling of adders, and vary in size from the thickness of a man's finger, to that of his wrist, and in length from a foot to four or five feet. They ran with remarkable speed, and at first were cowardly, endeavoring to escape, and not much disposed to show fight. They are now, however, becoming vicious, and show fight, and at times get startlingly aggressive.

The above statement is absolutely true, and the sight is worth a pilgrimage to see.

Now, what is to be done? A work of extermination should be set about and carried to completion. A blast has been suggested; but something should be done to rid the neighborhood of such an ugly mass of possibly venomous reptiles. Let a plan be devised, a time set and a snake killing "bee" organized, to see what may be hidden in the gloomy depths of that horrid hill.—*Concordia (Kan.) Enterprise, Oct.* 20.

CENTENNIAL APPLES.

In looking over the pomological display at the Centennial Fruit Exposition, I noticed the different varieties of apples from the different States. The same varieties were differently colored in the different localities. Smith's cider, Wine Sap, Dominici, Hubertson's Nonsuch, Waggon, and Black Gilliflower, from Kansas, had very little of the usual red color; while North Carolina furnished some beautiful red apples, and of large size. Queen pippins 18 oz., Buff 20 oz., Phorr seedlings 12 oz., Hoover 16 oz., Clark's seedling 20 oz. By far the largest display was from Canada. Iowa had some fine *fac simile* specimens of apples in wax under glass. There was no separate exhibit of Pennsylvania fruit. There were individual exhibitors from different parts of the State, of which only a few apples were from Lancaster county. Mr. Daniel Smeych in addition to his grape exhibit at the opening had some very large pears, equal to Cobs. Mr. Satterthwait, from Montgomery county, had a fine display of apples and pears. He had the genuine Smith's cider and the largest Seckle pears I ever saw. The reason there was no separate State or county exhibition of Pennsylvania fruit, was because there was no appropriation made to defray the expenses of gathering and displaying it.

It would not have paid as an individual enterprise, to gather fruit and place it on exhibition, at our own expense. The State of Pennsylvania could have made as fine a display as any other that was represented, and even our own county could have made a magnificent display, but there was no encouragement outside of our own Society. Our Society would not ask—and perhaps if they had asked they would not have gotten—aid from our authorities, as we heretofore have met with little encouragement from them. Agricultural and Horticultural Societies, and their exhibitions have not met with the recognition or encouragement from the people that they deserve, nor yet from officials, or they would not have been refused the privilege of meeting in a public room, to the support of which the members contribute thier annual taxes. Lancaster county is as much a fruit county as any other in the State of which it is a part, and might have been second to no other district in Pennsylvania. The Fruit-growers' Association of Ontario, from Hamilton, contributed a great number of apples, of which 35 varieties were presented to me by Mr. Jno. Freed, their agent, and some few from Mr. Nathaniel Atkinson, of Ashville, North Carolina. I have brought and exhibited before our Society some of the leading specimens, and hope it may pass a vote of thanks to Messrs. Freed and Atkinson for the same. The State of Kansas made by far the finest display of all others. They had a fine large pyramid of apples and pears in the Kansas and Colorado building. Fine and large as their exhibit was, however, it was, perhaps, not as beautiful as some others of less size and variety, on account of the absence of the rich red color which is so essential in a show of fruit. They exhibited their fruit as an advertisement, to induce settlers to locate in their State. They had their own separate exhibition in their own building, as well as the one in Pomological Hall like many others, and that was one reason why the Hall was not filled up as it should have been.

The Canada, North Carolina and Michigan apples were exhibited on plates, sometimes in alternate colors. Some were beautifully red and yellow striped, and others of all the different shades of color. Amongst the Canada apples I noticed a large and beautiful red variety weighing from 15 to 20 oz., called the "Fill-basket." When I unpacked my apples, that was the first I looked for, but it was missing—like the Irishman's flea when I put my finger on it, it was not there—realizing in this case as in many others, that "there's many a slip 'tween cup and lip."

Unless the Alexandria is one of the same—as some contend, but which others dispute—I am minus a fine apple. I think the apple I have is not as large as the Fill-basket.

I also desire you to examine may native apples on the table, especially the Millport-Sheepnose, which bears every year a large crop. But it is not a long-living tree—overbearing is the cause.—L. S. R., *before the meeting of the Lan. Ag. and Hort. Soc., Nov.* 6., 1876.

[Mr. R.'s experience corroborates pretty much our own, on our visit to the Centennial pomological show. We regret that Pennsylvania and Lancaster county permitted other states and counties to carry off all the honors of the occasion, especially since they were so near and accessible, and moreover had an abundance of all kinds of fruit, and could have made as fine a display as any other on the continent. The want of an "appropriation" no doubt was a serious drawback, but this is hardly a sufficient excuse. The citizens and societies should have taken the matter in hand, and made a grand display "any how." But the opportunity has now passed, and Pennsylvania's record on this august occasion, will not read so well a hundred years hence.—ED.]

CELERY.

(Apium graveolens.)

No vegetable noticed in this volume has been more strikingly improved by cultivation than our garden celery. It seems to have been derived from a rank, worthless weed, known by the name of Smallage, which is found growing in marshy places, and on the banks of ditches, in Great Britain. The two plants are very dissimilar in their general appearance and habits, and while one is the favorite on the table of every epicure, the other is shunned as poisonous and disagreeable to the taste. The long, crisp stalks, and the mild, delicate flavor of the improved celery, remind the gardener how much has been done, and how much can hereafter be done, in his occupation, by skill and perseverance. Every such fact should stimulate him to increased diligence and enterprise. There are several varieties, the best of which are, probably, the *White Solid* and the *Red Solid*. Many other kinds to be found in catalogues, are highly recommended for their monstrous size, a quality that seems to depend altogether upon a favorable soil and unremitted attention.

CULTURE.—The celery prefers a soil that is deep, light, moist, and rich in vegetable mould, but not rank from the application of fresh dung. The situation ought to be open, and free from the influence of trees.

Early plants are often raised on a small hot-bed, made somewhere about the first of March. Only enough heat is required to bring them forward to a suitable size for removal to the open ground as soon as the weather will permit. For this reason the heap of dung need not be over eighteen or twenty-four inches in height, and the depth of mould should be just sufficient to prevent injury to the roots by the heat and rank steam. Water is to be applied in moderate quantities, shade given during the middle of the day, and air admitted freely in all pleasant weather. When the plants are four inches high, remove them to a bed of rich soil having a warm situation. Here they are to be set in rows, four or five inches apart each way. They should be watered and shaded as before, and at night receive the protection of mats or cold frames until all danger of frost is over. In this place, they will acquire size and strength for their final removal.

The principal sowing may be delayed until the first fortnight of April. The best position for the seed bed is a warm, sheltered border, but having a northern aspect so as to be free from the powerful effects of the noon-day sun. The ground should be finely pulverized, as the seed is so small that one ounce will afford ten thousand plants. We prefer sowing in drills six inches apart, and perhaps one-quarter of an inch deep. In very dry weather it is advisable to give a little water, both before and after germination commences. When the plants are three or four inches high, they are to be thinned out to four inches apart in the row, and those pulled up to be in another bed at the same distances. Water should be given until the roots become established.

Preparations for transplanting the early crops into trenches, must be made in the beginning of June, at the time when the leaves are about eight inches in height. The removal of the principal crop may be delayed some four or five weeks later. As before remarked, the celery prefers a rich soil, with an open exposure. The trenches should be at least two and a-half feet apart, ten inches wide, and fifteen inches deep. That they may be straight, it is a good way to stretch the line, and to mark out the sides by thrusting down the spade previous to digging the earth, which is thrown equally on either hand. In the bottom of each trench is to be placed four inches of well-rotted dung, together with about four inches of good loam, the whole being intimately mixed by the spade. The plants are carefully taken up from the nursery beds, and have their roots and leaves trimmed, besides being divested of loose straggling leaves and side shoots. They are then set six inches apart, in a row through the middle of each trench. Where they have been taken up by the trowel, with balls of earth attached, they seldom fail to do well. The work is most successful when performed in an evening, or in a damp, cloudy day. A bountiful supply of water should now be given, and, subsequently, from time to time until the roots become accustomed to the change of location. During the day, in order to prevent injury by the hot sun, the trenches must be covered, or rather shaded, by boards, brush, or corn-stalks; the gardener being careful to remove everything of the kind upon the approach of evening, that the regular deposit of dew may not be interrupted.

The soil ought to be often stirred by a small hoe or a sharp-pointed stick. When the plants have attained a height of ten or twelve inches, it will be time to commence "earthing up," as it is called. On a dry day, when the leaves are free from moisture, they are to be gathered together in the left hand, and held in an upright position, while the right one is engaged in drawing some of the fine soil up against them. At first, this ridge must be slight, and have the top rather hollowed, so as to catch the rain. The dirt should be rendered very fine before it is brought in contact with the stems, and drawn up in such a manner that none gets on the centre shoots so as to cause decay. This process is to be repeated every ten days or fortnight while the plants continue growing, and the quantity of dirt drawn up at a time to be gradually increased, until only about six inches of the leaves are exposed above the ridge. The stalks will be good for the table, when blanched to the height of twenty inches. With the crop intended for winter and spring use, the "earthing up" process must be commenced rather later in the season, because, when performed in extreme hot weather, premature decay is apt to follow. In taking up the crop, dig with the spade quite down to the roots, so that the stalks can be raised without being broken, which would diminish the beauty of their appearance upon the table.

Celery may be kept in the open air through the winter, by having boards, nailed together like the roof of a house, placed over the trenches. Another way is to take it up, when frosty weather sets in, and put it in a pit in some dry, elevated part of the garden. It is placed in rows about three inches apart, with the tops of the leaves just above the surface, and covered with a thick layer of straw to keep out frost, and a roof of old boards to shed the rain. A large bank of earth should be on the outside. By removing the straw, the stalks can be dug up with ease, at any time when they may be wanted for use. The plants are sometimes packed in a box of sand, and kept in the cellar; they will continue good and fresh for several weeks, but afterwards become wilted, losing that delightful crispness for which they are esteemed.

For seed.—The cultivator must either leave a few of the best plants—those which are solid and of a middling size—in the place where grown, or set them out in the spring, in rows two feet apart each way. The loose hanging leaves and side-shoots should be previously removed. The seed-stalks, if not supported by stakes, will be likely to suffer injury from violent winds. Water may be applied with advantage after the flowers have opened, at least as often as every second or third evening. The seed ought to be perfectly ripe before being gathered, and be stored in a cool, dry apartment.

Use.—The celery is a grateful addition to the winter table. Its tender, sweet and crispy stalks are general favorites. They are eaten as a salad, or simply with salt, or used in soups, stews, and sauces. They should always be freed from sand and dirt, before being carried to the dining-room. In Italy, the unbleached leaves, or seeds when bruised, are considered excellent for flavoring soups.

Celery sauce for boiled fowls, &c.—Wash the stalks, and cut them into thin slices about two inches long. Stew them till tender, in a little weak gravy or water. Season with powdered mace, pepper and salt. Then add the juice of a lemon, and thicken with a piece of butter which has been kneaded in flour.

To Stew.—Strip off the outer leaves of six heads, and cut the bleached parts of the stalks into lengths of about four inches. Stew the pieces in broth until they become quite tender, when you may add two tablespoonfuls of cream, together with a lump of floured butter. Season to the taste with salt, pepper and nutmeg, and let the whole simmer gently for a few moments.—*Shenk's Gardners' Text Book.*

["Celery sauces" and "celery stews" are not as common as they ought to be among the common people; indeed, the larger number of the people have no conception whatever in reference to this vegetable, other than to eat it raw, or in a hot or cold salad, or in chicken salad, in which it constitutes a conspicuous part. It is bound, however, at no very distant day, to occupy a more prominent position in our *role* of culinary preparations.—ED.]

THE CENTENNIAL.

The closing ceremonies of the great Exposition will find a place in the December number of the FARMER; in the meantime the following condensation of the proceedings of the 9th, which we find in the columns of the *Ledger*, may not be inappropriate, and may also be of interest to our readers. Long and exciting as the Exposition has been, and draining as it has been upon the pecuniary resources of many of the people, especially those located in the vicinity of the lines of public travel, now that it has come to a close, we feel a sort of regret to number it with the past:

"As a fitting preliminary to the close of the Centennial International Exhibition today, the Foreign Commissioners, with their staff officers, were entertained at dinner by the Centennial Board of Finance and the Centennial Commissioners. The foreign Commissioners were accompanied by the Ministers of their respective Governments to the United States, and by their Consul Generals and Consuls. The banquet was given at the beautiful hall of the Society of the Sons of St. George. The President of the United States presided. He was accompanied by the Secretary of State and several other members of the Cabinet. There were also present as invited guests the Chief Justice and several Justices of the Supreme Court of the United States, the Senators and Members of Congress present in the city, the Governors of Pennsylvania, Massachusetts, Delaware and New Jersey, the Mayor of the city, the Presidents of Councils, the Park Commissioners, and the Centennial authorities, with their heads of bureaus. While the last course was being served, Gen. Hawley, who was delegated for the duty, called the roll of the nations represented at the Exhibition, beginning alphabetically with the Argentine Republic. This was followed by Austria, Africa as represented by the Orange Free State, Brazil, China, Chili, Denmark, Egypt, France, Germany, Hawaii, Japan, Liberia, Luxembourg, Mexico, Netherlands, Peru, Portugal, Russia, Spain, Sweden, Switzerland, Siam, Tunis, Turkey, and Venezuela. The United Kingdom of Great Britain and Ireland, and the colonies of that kingdom in America, Asia, Australia and Africa, were reserved for the close. As each nation was announced, with appropriate and cordial introduction, there was enthusiastic applause, and each of them responded through a Commissioner or diplomatic representative of the country called. The ceremony and the occasion were most impressive, and both were well calculated to live for a long period in the memories of those present.

THE CROPS.

The digest of crop returns for October, as prepared at the Department of Agriculture in Washington, indicates a reduction in the yield of the wheat crop of nearly one-sixth, while the quality is somewhat superior. More accurate statistics may possibly be given after the results of threshing are more fully known. Every section of the Union indicates a reduced product except the middle States, which increased about 2 per cent. The New England

States fell off 4 per cent., the South Atlantic States 2 per cent., the Gulf States 27 per cent., the southern inland States 8 per cent., the States north of the Ohio river 14 per cent., the States west of the Mississippi river 27 per cent., the Pacific States nearly 2 per cent. These figures point to a yield of about 245,000,000 bushels. This, however, will be the subject of further examination and inquiry in the November returns. The October returns as a general thing indicate an advance in the wheat yield of those States in which the yield of 1875 has fallen below that of 1874, and vice versa; but in some States, especially in the northern, there is a falling off from even the reduced yields of 1875.

The rye crop of 1876 is reported 4 per cent. less than that of 1875, but in quality it averages somewhat above its predecessor. The barley crop of the country yields about six per cent. less than last year. In all the States east of the Mississippi river the yield is deficient, except in Connecticut, Georgia and Kentucky. A great falling off is reported in the middle States, in the States north of the Ohio river, and in the States between the Mississippi and Missouri rivers, and in Oregon, but in Kansas, Nebraska, and especially California—the largest barley raising State in the Union—have realized a large increase of yield, which, to a great extent, counterbalanced the short crops of the other States. The buckwheat crop is reported as full average or above in Rhode Island, Virginia, Arkansas, Kentucky, Ohio, Wisconsin and California; in the other States it is below average, the minimum, 50, being in Delaware. On the basis of the October returns the oats crop of 1876 shows a falling off of 23 per cent. Every section of the Union is deficient. The States reporting a yield equal to that of last year are: Pennsylvania, 102; Delaware, 109; South Carolina, 126; Georgia, 115; Florida, 107; Alabama, 110; Louisiana, 104; West Virginia, 113; Ohio, 102; California, 100. The condition of the corn crop in the New England States is a little above average.

The middle States, excepting Delaware, report a depressed condition from drought during the growing season and from heavy rains in harvest when the crop was not well ripened; in New Jersey and eastern Pennsylvania heavy storms prevailing about the middle of September prostrated many fields. The South Atlantic States, especially in counties near the coast, suffered serious injury to this crop from the September storms, with prostrated fields left uncut, while the heavy rains that followed spoiled a large amount of both grain and fodder. Maryland and South Carolina are full average, and Georgia largely above, but the deficiencies of Virginia and North Carolina cut down the general condition of this section to two per cent. below average. The crop in the Gulf States, on the whole, is about average, Texas reporting an especially fine condition. North of the Ohio river there is a deficiency on the whole, the low condition in Illinois and Michigan overbalancing the extra promise in the other States. Ohio reports a superior crop generally of good quality. In Michigan crops on low wet lands are reported very poor. Illinois is below the average, though several counties report the finest crop for years west of the Mississippi. The small deficiency in Missouri is more than repaid by the fine condition reported in all the other States. In Iowa crops were poor in low, wet lands and the condition in several counties reduced greatly by grasshoppers. In Missouri local damage by storms is reported, but low prices indicate an abundant yield in the larger portion of the State. Kansas is full average in spite of the grasshoppers and chinches, and Nebraska is considerably above.

LINNÆAN NOTES.

The experiment of killing the larvæ of *Pieris rapæ* with Paris Green mixed with flour, alluded to in my "Notes for July," has met with considerable success. Most of the members of our family were afraid to touch the cabbages to which the poison had been applied, but one insisted on preparing it, and ate a quantity of it for dinner, raw, with vinegar, and apparently with entire impunity. The poison had, however, not been applied for several weeks previous. Of course, care will always be necessary.

The same vegetable, raw, would doubtless be more dangerous than when boiled, as the water would take off the poison, if there were any.

The insect alluded to (*Pieris rapæ*) appears to be exceedingly hardy. I saw several active ones the day after the severe gale of October 17, 1876.

At this date (Oct. 23) I have found one of the *larva* alive, and flourishing upon a head of cabbage in the garden.

We are now eating freely of the cabbage to which the Paris Green was applied, and all hostility to it appears to be disarmed in our own family. I would suggest that the *Paris Green*, when applied at all, should be used at the very earliest appearance of the insect, in order to prevent, as far as possible, a second brood of the animals—that it should be applied in a *minimum* quantity of the poison to a *maximum* proportion of flour or powdered gypsum (plaster-of-Paris) and that the vegetable should not be eaten for several days after the last application, allowing two or three heavy rains to take place in the interval. Should there not be a rain, the heads of cabbage might be soaked in running water.

Persian Insect Powder.

In a recent magazine article, (A Lady's Visit to the Herzegovinian Insurgents—*Living Age, Aug.* 12, 1876,) I find the following: "Our road towards Gravosa lay through a country bright with almond and orange blossoms. One crop, of which we saw many fields, excited our particular attention. It consisted of a yellow-flowered plant, creeping thickly and closely over the ground, and we were told that this constituted the principal article of commerce of Ragusa, and was the far-famed "Persian insect-destroying powder," (the [2]botanical name of which we were not able to ascertain) which is principally grown on the shores of Dalmatia. It can be purchased at wholesale prices, and requires to be used in wholesale quantities, if you travel in the interior."

The September Storm.

The storm of September 17, 1876, was, according to Dr. G.'s recollection, the most severe one in this neighborhood for over fifty years. It was remarkable for the length of time that the wind continued to blow. There were very few, if any, electrical discharges. The temperature appeared to rise during the storm, the wind shifting about night-fall, from northeast to southeast. Fifty years ago, or more, a very destructive storm occurred in this locality.

Germination of Seeds.

The following is from the *Christian Register* of October 21, 1876: "The question of the possible germination of long-buried seeds is likely to be set at rest [3]by the germination of some poppy seeds, found by Prof. Hendrick in Greece, in some refuse slag of *Laurium* mines, over two thousand years old, heated to extract the metal. The plant, of a kind described by Pliny, but now extinct, has an abundant crop, with bright yellow flowers.

A Flat Seed-Beetle.

On the 13th of October I found on a locust-log a very peculiar flat [4]black insect, accompanied by its young, or some parasite, which clustered upon the under-side of its body—brown little things, active looking, like little spiders. The parent, (?) or largest insect, was inactive.

Insect Tenacity.

About October 10th I captured a fine specimen of *Danaus archippes*, and pressed the thorax; and also made a cut into it, as I thought, with my finger-nail. Then I pinned it down and pinned out the wings. Finding afterwards that it was still alive, and not having chloroform, I applied considerable oil upon the thorax and head. On the 15th of October I observed by the motions of the *antennæ* and the tongue that it was still alive. It lived for some days afterwards.

Butterflies may be kept alive for an indefinite period by feeding them with sugar and water.—*P. E. G., Enterprise, Lan. Co., Pa.*

[5]We have found Lepidopterous larvæ in every month of the year, active and feeding. On the 23d of October, we saw two specimens of the larva of *Philampelis satelitia*, which had just descended from a grape vine, and were crawling into winter quarters. Larvæ which do not mature before winter sets in, often survive the winter, and finish their larval development in the spring; and this is particularly the case with the various species of "cut-worms." When two or three soft mild days succeed each other during the winter, they will revive, come forth and feed, and we have seen them do this in December, January, February and March. There seems to be a suspension and revival of the animal function, as the temperature changes from cold to warm, and *vice versa*. On one occasion we found two specimens of a hairy caterpillar (*Aretiæ*) frozen in ice, and we cut them out; in doing so, one of them snapped in two like an icicle, the other we removed to a warm temperature, and within half an hour it revived and became as active as we find them in mid-summer. Even in the *imago* state some Lepidoptera must either hibernate in that state, or evolve from the pupa during mild winter weather. In February, 1874, Mr. Voigt of the *Lancaster Intelligencer* office, brought us a living specimen of *Pieris rapa*—"white cabbage Butterfly"—which flew into the office through an open window, and at the same time there were six inches of snow on ground. This is rather an uncommon occurrence.

[1. The *minimum* quantity of good Paris Green, is usually *one* part, and the *maximum* quantity of the diluting substance is *twenty* parts, well mixed together; *i. e.* one pound of the poison to twenty pounds of flour, pulverized gymsum, road dust, fine ashes, corn-meal, &c. Flour, on account of its adhesive quality, is considered the best. If the green is inferior, a less quantity of the dilutant will be required, but if it is very superior, twenty-five parts of the dilutant may be required. It should be applied when the plants are wet with rain, dew or artificial sprinking.

2. The "botanical name" of this plant, may be found in Mr. Stauffer's paper on "Insect Powder" on page 167 of this number of the FARMER.

3. We question very much whether evidence will "set at rest" the germination of long-buried seeds:. The paragraph is ambiguous. Granting the slag to have been two thousand years old; does it follow, as a matter of course, that the seeds were so old?

4. Doubtless *Hololepta æqualis*, belonging to the colopterous family, *Histeridæ*, sometimes called "Mimic-beetles." This insect is very liable to parasitic infestations, and we have frequentally found it under similar circumstances. The parasites are species of *acari*.

5. In the absence of chloroform, strong volatile ammonia is very effective in destroying the life of insects, if a bell-glass or tumbler is turned over them, preventing the escape of the ammonia.

For THE LANCASTER FARMER.

CARE OF YOUNG ORCHARDS.

This is the proper time to look after young apple-trees. As the late summer was very wet, and the latest post grass grew luxuriantly around the bases of the trees, that grass should at once be removed, to prevent the mice from nesting and harboring in the rubbish accumulated there. In such places these little animals are apt to gnaw off the bark—especially of young trees—upon which they subsist during the winter, and this they are as likely to do under a deep snow as when there is no snow.

It is still better to heap up the earth around the base of the trees, to make them sure against the depredations of the mice; and also rubbing the bark of the young trees with a bacon skin, in order to prevent the young rabbits from gnawing off the bark. It is true, there may be some objections to this greasing process, in that it may be an additional inducement for the mice to attack them: but if the grass and rubbish are carefully removed, the mice are not likely to harbor there. Another good remedy to prevent rabbits from skinning trees, is to prune them, and let the branches cut off lie on the ground for winter feed for the rabbits. If this greasing process is applied to young trees infested with the "bark louse," in the fall, the following spring would show a cleaner, fresher and hardier set of trees than where they are left an undisturbed prey to these lice.

If these precautions are carried into effect during the month of November, and the early part of December, it would save an immense amount of mortification next spring.—*L. S. R.*

snouts; broad, lengthy and extra deep bodies, very straight, square backs, the finest hams imaginable, and very small fine legs, set well apart; are full in the joint, with good breadth of chest, and have a remarkable capacity for taking on flesh. Their skin is fine; bones small. They possess an extra abundance of muscle or lean meat, and hence appear fat when in reality they may be nearly starved. They are very quiet and docile, and can be fondled by a stranger, and thus they waste no food in the building up of worthless parts, nor in wild, useless exercise. Hogs must be looked upon as machines for the conversion of grain, &c., into pork, and the breed which will give the most and best pork from a given amount of food should carry off the palm. Such is the well-bred English Yorkshire of to-day.

Harris on the Pig, on page 66, says: "No animal of the pig species carries so great a proportion of flesh to the quantity of bone, or flesh of so fine a quality as the small Yorkshire; or can be raised at so small a cost per pound;" that this is undoubtedly the case cannot be denied upon an examination of fine specimens, such as visitors can see any day at our farm, when a glance will show the extreme size and fine shape of hams, shoulders, and chops, with the ears, legs and tail incredibly small. We have seen them crossed with good satisfaction on a Chester White, and can recommend this cross for farmers desiring large porkers with superior hams.

"Second Queen of Yorkshire," whose portrait we give, is one of our finest sows—is now three years old; her picture accurately represents her when under one year old. Out of "Old Queen," by "Long Back." "Old Queen" was out of imported "Rose of Keilegh," by imported "Kettledrum." "Long Back" was out of "Lady Douglass," by imported "Major Miller."

There are many inferior pigs—Yorkshires, so-called, that are offered at "hard pan prices," but such are the dearest in the near future, when the corn is fed and the pork barrel nearly empty. We will sell sows in pigs, boars ready for service, and stock of various ages at as low prices as we can afford to breed, and ship the best stock.

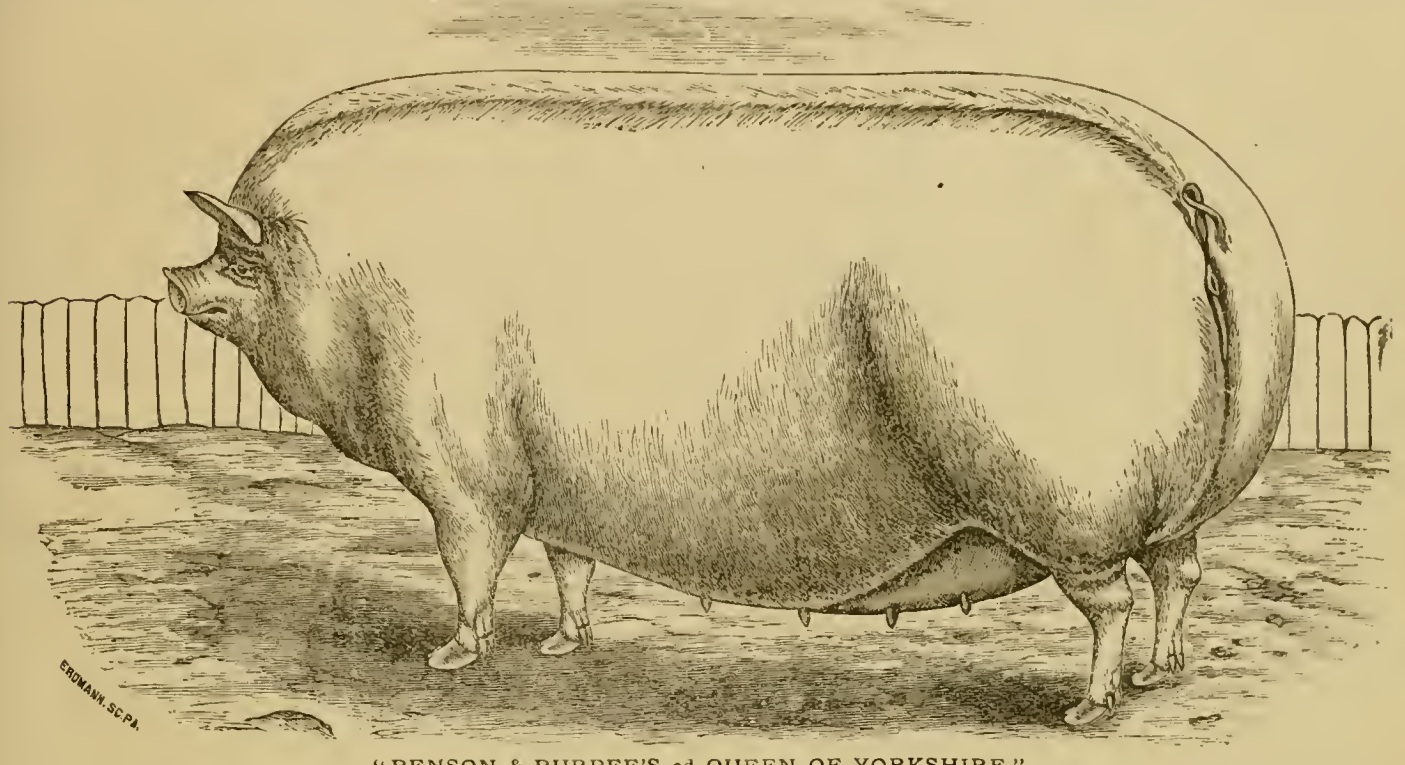
To show to what extent first-class stock is appreciated in the far West, we give you the following quotation from a customer's letter, Mr. Roswell Parkhurst, Missoula, Missoula county, Montana territory, writes us:

"I have the pigs home now and am delighted with them. I think as much of them as I do of my girl. I have given them a nice clean yard to run in and a clean warm bed, and this morning I have given them a good scrubbing with soap suds. They seemed to like it real well. The express companies took excellent care of them; took them out of the box every night from Corinne, Utah, up. At Missoula, the merchants and lawyers, and everybody else came to see them, and most everybody wanted them. They seemed to win all hearts. One man there wanted to pay me $100 for the boar alone; another offered me a good horse for him. One offered to deliver 100 bushels of good clean wheat at the mill for him. But I would not part with either of them; although they cost me $120. I have no grumbling to do, but thank you again for sending them."

Mr. P. paid us $30; the express companies $90. They had to go five hundred miles by stage. We find a great demand for thoroughbred stock this fall, especially hogs and poultry. Farmers are beginning to realize that good stock is money in their pockets, and the best panacea for hard times.—*Benson & Burpee, Philadelphia, Nov. 11. 1876.*

Mr. Wm. Weidle has again laid us under obligations for some luscious specimens of Beurre D' Anjou, and Beurre Diel Pears. We *saw* some very extraordinary fine pears at the Centennial Pomological Exposition, and we were also privileged to *smell* them; but as *taste* has more weight at any time than merely sight and smell, we are compelled to yield an award to Mr. Weidle's pears, and if the Centennialists are not satisfied with this, all they have to do is to afford us the opportunity for a more tangible demonstration of quality.

Beurre, according to the French Dictionary, means "Butter-pear," and *D'Anjou* means "of Anjou," a department of France; therefore, the literal English would be the Butter-pear of Anjou. So, whenever the term "Beurre" is used as an affix, it means one of the buttery kind of pears, and the suffix is the person, place or thing, after whom, when, or which it is named. And, according to the description of a very popular and distinguished character in our juvenile days, these pears "went down as slick as goose-grease, and goose-grease is as slick as *butter*, and butter is the slickest kind of *grease*."



"BENSON & BURPEE'S 2d QUEEN OF YORKSHIRE."

For The Lancaster Farmer.

YORKSHIRES.

Yorkshires are divided into three classes, large, medium and small breed—all originated in England. The large or mammoth Yorkshires will eventually attain a weight of 1,000 to 1,200 pounds, but are invariably hard to fatten—in fact it is impossible to fatten them young—they are long-snouted, have long legs, thin on the back and small hams. We have never seen one of this variety that we would own. The medium originated by a cross between the large and small. The small breed English Yorkshires are so called only to distinguish them from the unprofitable giants, and are a hog of fair size. They are better established, and breed more uniformly than any other known breed of swine. Being the "most thoroughbred hog known," they are the best to cross upon common stock, as they will impress their good qualities very decidedly upon their offspring. A litter of young pigs of first-class, pure blood Yorkshires are all remarkably perfect, and it is difficult to select a poor or misformed runt. They carry less offal than any other hogs. They make the most pork on the least amount of food. They often keep fat on grass alone. They fatten most readily at any age, and their meat is of the finest quality. These points of excellence, so unusually developed, are secured by the remarkable perfection of form and the nature of this breed. They have very short, deeply-dished

For The Lancaster Farmer.

THE DISSEMINATION OF PLANTS.

Two years ago I found growing on the roadside, not far from the campus of Franklin and Marshall College, a healthy, vigorous plant, which I at once pronounced a *verbena*. At first I thought it must be a peculiar growth of *verbena hastata*, but upon closer examination it proved to be, without the shadow of a doubt,

verbena stricta (beub.) or the Hoary Vervain, common in barrens from Ohio to Wisconsin, but never before known to grow in Pennsylvania. Since then I have watched the plant with a good deal of interest, and I find it is still growing in the same locality. Other individuals are springing up, so that although the present specimens seem somewhat depauperated, it is not unreasonable to suppose that the species will maintain itself upon our soil, and add a new plant to the flora of our State.

Where did it come from? How was it transplanted hither? These were the questions that naturally arose as soon as the question, What is it? was answered. Perhaps it was brought hither in *manure* from cattle cars. Railroads transport *live stock* in more than one sense of the word. Perhaps (and this seems more probable) it stole a passage by mixing in with western clover seed. True, in this case you might expect to find it in the field rather than by the roadside; but we cannot tell how many plants may have sprung up in the field; they should be cut down with the grass, and thus be prevented from blooming or bearing seed, and of course they would die unhonored and unsung. But a slight puff of wind, carrying one seed to the roadside, would give it a different destiny, and, perhaps, make it the progenitor of a sturdy race of verbenas to live and bloom in years to come.

Undoubtedly plants and animals were originally adapted to a particular soil and climate, and confined to a definite locality. The decree, "increase and multiply," looks to an internal, living power, lodged in the germ, capable of reproducing the original type, with more or less variation, in new individuals. But this power in the seed to reproduce after its kind, necessarily presupposes certain external conditions, which make the springing into life and consequent subsistence possible; such as, for instance, a certain temperature, particular degree of humidity, certain ingredients of soil and atmosphere necessary for the processes of nutrition and respiration. These external conditions vary continually as we pass from place to place, and hence it is that every country, yea every district, has its own *fauna* and *flora*. The Alpine flower pines away, withers and dies, when removed from its native soil. Our own *Epigæa repens*, or trailing arbutus, will only thrive in sandstone woods and hills. Very often great care is taken to transplant certain species and furnish all the requisite conditions of subsistence, and yet the results fail to be satisfactory, because of differences so slight that we fail to discern what is really wanting. The variations from the original type, above referred to, are no doubt intended to adapt the individual to different conditions; but there are limits beyond which the power of adaptation cannot stretch, and thus species of plants and animals have their boundaries, beyond which they cannot pass. However the seed of plants may be transported, in the stomach of bird or beast, borne along by wind or water, sticking to the hair of animals or the clothing of man, it can reproduce its kind only where the conditions of soil and climate are such as to afford room for its growth.—*J. S. S., Lancaster, Aug.* 26, 1876.

For The Lancaster Farmer.

THE DESTRUCTION OF NOXIOUS INSECTS.

The loss to the farming community through noxious insects is becoming more and more serious every year, and in nothing else is it more important that farmers should combine, than in efforts to secure the destruction of such insects, or at least, to diminish their numbers to such an extent as to leave the remainder comparatively harmless. In order to work to the best advantage there should be a regular and systematic plan adopted, and to accomplish the desired purpose, it must be based on the habits of the insects.

The following are some of the more destructive insects, and remarks on some of the ways in which they can be destroyed:

The Colorado potato bug (or beetle) hibernates through the winter, in a perfected state, in the ground and under rubbish. It flies as soon as comparatively warm days set in, and usually a long time before potatoes have pushed above ground. This is the best time to destroy them, as every bug destroyed at this time would have been on an average the progenitor of several thousand in that season. The only way of destroying any number at this time is the plan recommended in the *Scientific American* by Prof. Riley, and that is to slice potatoes, give them a good coating of Paris green, and strew them around places where no domestic animals can get at them, the potato patches of the year before being particularly suitable. At this time, also, if at no other, the bugs should be crushed with the foot whenever met with. I think the sliced potatoes might also be laid very profitably for them in the fall, after the potato vines are all dead, and there is very little for the bugs to forage on. The methods of destroying them in the summer have been so well discussed that it is not necessary here to repeat them, but I think to apply the Paris green dry mixed among flour, when the vines are wet, is the best, as the paste that is formed will stand a couple of pretty heavy rains. It should, however, be applied with one of the better class of machines, and it would pay to get one, in the saving of flour, Paris green and labor, in one season, even should there not be more than an acre of potatoes under cultivation.

The five-spotted sphynx is the insect that lays the nit from which is produced the tobacco worm. Some years there is but little damage done by the worms, but this season there were so many of them that it was nearly impossible to keep their numbers down, and some fields were as badly damaged as though visited by a hail storm. The efforts heretofore have been mainly directed to destroying the worms, but by destroying the insects themselves there is a great deal of labor saved, and an enhancement in the looks of the tobacco. If the farmer would see to it that a number of jimson-weed stalks would be left standing, he could each evening after sunset, kill with a plastering lath, many of the insects which come to feed at these flowers. I believe it is also recommended to take a thin preparation of honey water and strychnine, fill a spring-bottom oil can with it, and then squirt a little of the poison into the flower. The insect coming to feed will die in a short time. Other poisons can be used, but strychnine is the most deadly and surest. It is also stated that by making a fire in the tobacco field right after dusk, a great many of the insects will fly into the fire and be killed. After tobacco is cut off, the stumps should be plowed under, particularly if cut very early, as if left standing they throw up many sprouts, which become a nursery to produce a crop of insects for the succeeding year.

Wasps may not be looked upon by many people as an insect pest outside of their propensity to use their stings. If such people would sometimes see the way they damage peaches, grapes, pears, etc., they would soon change their opinions, and to make these pests more provoking, it seems they have a relish for the fine varieties just as well as human beings. In spring is the time to destroy wasps; by going on the garret on some warm spring day, scores of them can be destroyed at the windows. Of course, a wasp destroyed at this time will accomplish as much as destroying half-a-hundred later in the season. Last spring I destroyed over two hundred wasps in a few days time, and I do not believe that it took me an hour altogether to do it. Later in the season many can be destroyed by sweetening some water in a bottle and hanging it in a sunny place out of doors. The greatest objection against this is that at times many bees also fall victims. Whenever a nest is observed, wherever possible, it should be burned down after dusk. The best way to burn them is to tie some rags on a long pole and saturate them with coal oil. This gives a good flame without any sparks.

Hornets are as much of a nuisance as wasps, particularly at early peaches. There are two ways of destroying them to any advantage—sweetened water and fire as described for wasps.

The cabbage butter-fly and its larvæ (or worm) is more difficult to destroy than any of the preceding, as it is altogether out of the question to kill the worm by poison, and of all the remedies that have been recommended there is not one that is infallible except by picking them off by hand, which will take more labor to accomplish than the crop is worth, and is altogether impracticable where cabbage is farmed by acres. Where the cabbage piece is not large, such as persons have who grow for their own use only, the butter-fly can be killed pretty readily by taking some leafless branch with many twigs on and knocking them down with this. By a little pratice a butterfly can be hit at every blow. By doing this every few days when the butterflies are flying about most, there will soon be a preceptible decrease both in the insects and in the worms. Brush with leaves on, though others will do, are not nearly as good as those without leaves, as the leaves prevent a quick blow being given.

The cut-worm is the larvæ of some night moth, and is very destructive some years to all crops planted in the spring. As it is a night-flying moth there is only one way of destroying it and that is by building fires or putting up night hawks which are large lanterns made for this purpose. These moths and many other night-fliers are attracted by the light and are soon destroyed by dashing into the flames. I have heard old lime-burners state that in the times when wood was yet used for burning lime, there was a contant stream of insects dashing into the kiln every night as soon as set afire. If this was the case, and I have no reason to doubt it, there certainly ought to be some showing for it in the less number of cut-worms in the vicinity of kilns where they use wood only in burning whitewash lime.

There are many other insects which might be mentioned and the methods of destroying them, such as apple tree and peach tree borers, plum curculio, bee-moths, &c., but all these have been discussed in the papers for years and anybody that is interested in raising fruit, keeping of bees, &c., will have some book on that branch, and will find therein the best methods of overcoming such drawbacks.

There are many natural enemies of all the noxious insects, such as some insects feed altogether on the eggs or larvæ of other insects, for instance the soldier bug, lady bug, &c.; but birds are our best friends in this particular and since natural history has become more and more of a study, it has been found that there are very few birds indeed that are not more of a help than an injury to man. Some might single out the chicken hawk and yet for every chicken that a hawk carries off he no doubt catches dozens of mice. It has been going the rounds of the papers that in Scotland on account of the destruction of the hawks the mice became so plentiful as to destroy whole fields of grain as it was standing, but this is getting away from insects; but we will get there again by stating that a partial failure of the clover-seed crop in England has been ascribed to the same cause, but in this instance the mice killed the bumble-bees which are necessary to fertilize the clover blossoms from which I infer that the English save their seed from the first crop and not from the second, as the latter can be fertilized by bees.

These natural enemies of insects should be so thoroughly described that no one need ignorantly destroy any of them, thinking he did a good deed, but it requires the pen of the entomologist and ornithologist to do it.

This one thing must be kept in mind, and that is so long as all do not help all they can, there will be an insect plague in the country, and that the only way to keep most of them within bounds there must be a combined and systematic effort made, or the good one man may do will be spoiled by the negligence of another.—*A. B. K.*

For The Lancaster Farmer.

INSECT POWDER.

On the 2d instant (Nov., 1876) my worthy friend, S. S. Rathvon, proposed a visit to Quarryville. The weather was all that could be desired. Arriving at the terminus of the railroad, we stepped out, and off to the nearest wood, about three-fourths of a mile south —I, looking about for botanical novelties, my associate for beetles and insects generally.

Seated on a stump, I was examining a specimen of the too common White-weed, or Ox-eye Daisy, growing in that section, and no doubt introduced from Chester county. Dr. Darlington says: "This vile intruder is becoming a great nuisance in our country. In some districts the careless, slovenly farmers have permitted it to get almost exclusive possession of their pasture fields—rendering them quite white, when the plant is in bloom. Cows will occasionally crop a portion of the weed in our pastures; and I have heard it alleged that it contributes to the making of good butter; but my own observations induce me to regard it as utterly worthless. It is propagated rapidly, and is, moreover, exceedingly difficult to get rid of, when once fully established; so that one negligent sloven may be the source of a grievous annoyance to a whole community." I have observed this weed in various sections of our county, as far north as Elizabethtown.

But having given you Dr. Darlington's opinion, published in 1847, I will now add the cogitations I had on that stump, with a fine specimen of the plant in my hand, and my friend off digging out grubs and beetles at some distance. It was simply this: Botanically, it is known as a Chrysanthemum, Leucanthemum and Pyrethrum—all natives of the Old World. This White-weed Dr. Gray gives the specific name of "Vulgare," or the double name of Chrysanthemum Leucanthemum. It is closely related and similar to the *Pyrethrum carneum*, of which the celebrated Persian powder, for the destruction of insects, is prepared—introduced in France 1850, brought exclusively from districts in Persia and the Caucasus. It is now cultivated. It is stated that the amount of this powder annually used in Russia alone is about 500 tons! Just think of it! The parts used to make this powder are the dried flower-heads, gathered when ripe, on fine days, and dried by exposure to the sun. In drying they lose about 90 per cent. When perfectly dried they are reduced to powder. The powder should be preserved in sealed vessels of glass. The application is either made as a powder or as an infusion; the infusion is deemed the best for destroying insects. The smell seems to attract and stupefy them to death. The powder, when used, should be kept dry, or blown with a bellows over vines and plants infested by aphids, leaf hopper larvæ and the like.

I have before me a lengthy description of the wonders of this powder, by Willomot. It is certainly a good advertisement published in the *Technologist*; but given as matter of information, among other things he says: "The principal insects to which the powder of the Pyrethrum is destructive may be arranged under four classes: first, insects injurious to agriculture and horticulture; second, insects obnoxious to man and his habitation; third, insects destructive to certain substances, as wool, furs, feathers; and fourth, insects injurious to museums of animal and vegetable products, and collections of natural history." I shall not follow him in details, about the weevil, bark-beetle, wheat-fly, maggots, cocci, aphids, earwigs, spiders, ants, etc., protection of military stores and navy supplies, bakeries, etc. In short, having read this much, the great similarity of the two plants suggested the question: might not this weed, growing so profusely, and deemed wholly worthless with us, have the same efficacy, under the same preparation and application? Who knows? Will some one test this Ox-eye daisy or White-weed? I have never had either the energy or bump of acquisition to follow up suggestions; but in one or two cases I found others did profit by them, nevertheless—and they are welcome. There is no plant growing that is not of use to some of God's creation. The plant referred to is very "showy and *easy* of cultivation," says one author. Yes, rather easy; it cultivates itself freely, if simply left alone. I would advise our farmers to cut it down before it comes to seed, and keep cutting down until the root is exhausted and dies, as they serve the Canada thistle; or gather some, dry them, make them into powder, and see whether it is better than Paris green for destroying insects. Verily, it is worth making the experiment.—*J. Stauffer.*

For The Lancaster Farmer.

VENTILATION.

It is a pity that "doctors" should disagree on so important a subject. They are indeed of one mind as to the necessity of ventilation —a necessity felt and acknowledged by all who possess sufficient intelligence to know the importance of respiration; but when they come to tell us how to ventilate (I mean our dwellings, schools and churches) the disagreement begins. To know how to do a thing, is just as important as to know that it ought to be done. To the man who is anxious to secure a supply of good fresh air for himself and his family, it is very perplexing to be told by one "doctor" that the foul air must be removed from the upper part of the room or apartment, and by another just as positively that it must be removed from the lower part of the room, because it will all gather there. What is he going to do about it? Judging from the amount of what has been written on the subject, the question seems to be a difficult one. But perhaps it is not as difficult as it seems.

It is said by some writers on the subject that air once breathed is afterwards unfit for respiration, and that the problem simply is to remove the air which has thus become foul, and supply its place by that which is fresh and pure. This would no doubt answer the purpose admirably, but practically this cannot very well be done; it scarcely ever is done, because of a peculiar property of gases to which we shall afterwards refer. Nor is it absolutely necessary. The air always contains a certain proportion of carbonic acid, (the gas which makes the respired air impure) and as long as the proportion is small, it is comparatively harmless. As carbonic acid is all the time poured into a room where a number of persons are present, it follows that unless this gas can be removed as rapidly as it is introduced, the air will soon become unfit for respiration. This can be done by removing a considerable portion of the air in the room in a continuous stream, larger than that of the impure air introduced, and letting pure air take its place.

But where is the air most impure? From what part of the room ought it to be withdrawn, and where ought the pure air to be introduced? I hold that so far as the ventilation of a room which contains only a few persons is concerned, it makes very little if any difference. One "doctor" says, the carbonic acid is heavier than air, and therefore, the foul air ought to be withdrawn near the floor. The other says, the expired air comes warm from the lungs, is therefore lighter and rises; hence it must be allowed to escape through the ceiling, or from the upper part of the room. Both overlook one very important consideration, I mean that property of gases and liquids (most striking in the former,) which we call diffusibility. If I take a vessel which contains one cubic inch of carbonic acid, and place it at the bottom of another vessel which contains a cubic foot of common air, on opening the smaller vessel, its contents will immediately begin to spread all through the larger, and in a very short time the carbonic acid will be equally diffused through the larger chamber. The same result will follow, no matter what may be the nature, or specific gravity of the gases employed in the experiment. Were it not for this property of gases, all the carbonic acid in the atmosphere (supposing it to be made to have a uniform density from the surface of the earth to the top,) would sink to the ground forming a layer about thirteen feet deep. Next would be a layer of oxygen about one mile deep; next the nitrogen, about four miles deep. The diffusibility of the gases, however, makes them mix and spread themselves uniformly throughout the atmosphere. Only in very rare cases, where the air is altogether sluggish and large quantities of impure gases are present, will they collect at the bottom, as for instance carbonic acid in wells or in damp cellars where the air is not disturbed for a long time. Every whiff of carbonic acid exhaled into the air of a room, therefore neither rises to the ceiling (although its first tendency may be upward until it parts with some of its heat) nor sinks to the floor; it is diffused through the whole room, and cannot be removed at once. But if there is proportionately more carbonic acid in the room than outside of it, if a window be opened, or if there be an exhausting flue, the excess (providing it accumulates not too rapidly) will work its way out. To keep the air reasonably pure, therefore, it is necessary—1st, to keep the air in the room in motion; 2d, to secure a constant supply of fresh air in excess of the quantity needed for respiration; 3d, to provide a way of escape for the foul air.

Another matter, however, is to be taken into consideration. The air ought not only to be kept pure, but the room must also be kept warm in cold weather. Now it is unquestionably the case that warm air will rise towards the ceiling and cold air will sink towards the floor. By removing the air above, therefore, the warm air will be taken away, and the cold air will remain in the room. Hence it happens that persons often complain of cold feet, whilst the rest of the body is uncomfortably warm—a condition of things than which nothing can be more injurious. For the sake of comfort, and economy as well, let the impure air, then, be removed below, either by means of an outlet connected with a good smoke flue, or by means of a fan exhauster. In the case of school houses, churches, public halls, etc., we should consider the latter indispensably necessary, as that is the only way in which a sufficient quantity of foul air can be withdrawn to insure an abundant supply of fresh air. Whether the room be heated by means of radiators in the room, or by means of warm air conveyed into it from the cellar, the colder air will always be withdrawn, and thus the room will be comfortable.—*J. S. S., Sept.* 30, 1876.

For The Lancaster Farmer.

BENEFITS DERIVED FROM READING NEWSPAPERS AND MAGAZINES.

The benefits resulting to farmers and mechanics from reading newspapers and periodicals, was a subject of discussion at the last stated meeting (Oct. 2d,) of the Lancaster County Agricultural and Horticultural Society. There is, perhaps, more in the printing of public journals, and thence in the reading of them, than the majority of the people conceive. *First* the collecting and printing of the various items of public news, in the selecting of which great discriminating judgment is required; and *second* in the careful reading and digesting of the same, by their intelligent patrons. People of all classes and social conditions seek information, amusement, and places of pastime and enjoyment; and these, when rationally indulged in, should not be denied them; provided such enjoyments and amusements run in the right direction—indeed, if they do not, they cannot be regarded as rational. The enjoyment of pleasures and cheerful recreations add greatly to the common stock of health and happiness.

Children look forward to something more than mere physical labor, when they grow up and make choice of a secular occupation. They look for social intercourse, for company, for pleasant pastimes, news, and the acquisition of general knowledge. These legitimate desires are greatly facilitated by the aid of a good

common education. When we, in the exercise of freedom, choose, subscribe for, and read such newspapers and periodicals as will bring the daily, weekly or monthly news, and other reading matter, right to our doors—to our firesides—we are employing powerful auxiliaries to the progress of the mind. The farmer can read and acquire a knowledge of things pertaining to his own occupation; the mechanic to his, and the merchant to his, without traveling through all kinds of wind and weather to meet it, for it comes to his home, and greets him at his fireside. He not only obtains a knowledge of what is transpiring in his own country, around his own home, but also what is going on in other countries, thousands of miles away. We can now sit down and read in our daily papers—which are now to us what the telegraph is to the merchant—what is taking place in our own country and throughout the whole civilived world in a few hours or days after it has happened, and why not every person take the advantage of such facilities in common with the other people of the world? Think of the patient and persevering brain-work, the innumerable pens, and the incalculable number of types that are required to compose, to write, and to set up and print this vast amount of matter, and send it abroad throughout the world, as well as the ingenuity and the skill that are called forth in doing it.

But admitting the benefits and the utilities of the newspapers and the magazines as the mediums through which knowledge is disseminated, look at the perversions and abuses which characterize so many of them. Of such I would say, discard them altogether, and subscribe only for such as elevate the moral and intellectual taste of society, and in which you can repose the utmost confidence. Some newspaper and periodical publishers are entirely mistaking their calling, like that ultra class of foreigners who, when they come to this country, suppose that liberty means license—that here in a land of freedom they can slander, purloin and abuse with impunity, which every intelligent citizen knows is not the case. All such newspapers as meddle in private affairs, in libeling and abusing private individuals, should be discarded, and their conductors should be expelled from the fraternity of newspaper publishers.

In conclusion, I would respectfully and earnestly say to my friends, subscribe for, contribute to and patronize our own home papers first; and in which we find the news both from home and abroad. And in this connection I would add a special word in behalf of THE LANCASTER FARMER, which is principally made up of interesting and reliable matter, emanating from our own immediate friends and neighbors. Our home agricultural journal is edited and published by men of acknowledged ability, and whose moral integrity has never been questioned. It is one of the cheapest journals in the Union, and has a higher reputation abroad than it seems to have at home, which is a reflection upon us, not upon it.—*P. S. R., Oregon, Oct.*, 1876.

FORESTRY.

This subject is likely to assume more importance before the return of another "centennial," than it does at the present time; but even now it is justly receiving the attention of the larger, broader, and more liberal minds of American agriculturists: and, therefore, we make room for the following address delivered before the *American Association of Forestry*, by Mr. Burnet Landreth, on the Centennial grounds, in September last:

Mr. President and Gentlemen of the American Forestry Association:

The modern and doubtless correct idea of the road to perfection is by division and subdivision of labor, study and investigation; hence we see lawyers devoting their professional attention to jurisprudence as applied to commerce, others to land titles, even to criminal practice, as it is called, in which latter it is sometimes difficult to determine which is the greater criminal, the culprit at the bar or the professional who defends him. In medicine, some apply themselves to surgery; with others, all their powers of investigation are directed to the eye, or ear, or clinics; and we naturally call to our aid, when necessity requires, those who have achieved reputation in the special department which suits our case. In agriculture the reverse seems to be the popular rule; and mixed rather than specific farming is generally advocated—probably the presumption is that, whilst preparatory study and practice are requisite to form an accomplished member of a "liberal" profession, men are farmers intuitively, and knowledge, whether of the soil with its chemical constituents, of cereals, of cattle, sheep or swine, may be sufficiently understood without study or previous acquaintance. Never was a greater mistake; and the farmer who should uninstructed step behind the counter of a Stewart and direct the movements, would soon find his error, just as so many citizens have in the reverse case tested to their cost that there is no royal road to technical knowledge. It is not my purpose, however, to dwell on this phase of rural life—there is not one whom I address who does not realize the necessity of training, preparatory to successful husbandry.

What I desire now in an especial manner to direct attention to is a branch of agriculture which until recently has been almost entirely overlooked by us. I of course refer to Forestry. Heretofore the way to get rid of timber at the least outlay of labor possible, seems in many cases to have been the object aimed at; and we have gone on in that insane effort until now, whilst we are still in our infancy as a nation, our country is made naked, and the sources of supply of valuable timber, either for ship building, the mechanic arts or fencing, are so remote that had it not been for premature extension of railroads penetrating the inmost recesses of the forests, prices would have advanced beyond any reasonable measure of values, and have seriously impeded the constructive arts.

If we turn our eyes northward, from whence the valuable white pine lumber is exclusively obtained, we find that many thousands of acres which only a few years ago, comparatively, were covered with dense growth of this invaluable timber have been cut off; and they who cater for the timber market have receded almost out of sight, ere they could find further supplies. Maine, once by way of distinction termed the White Pine State, is now denuded; and mills erected for manufacturing pine lumber are content to saw spruce logs less than a foot in diameter; and to-day, were it not for the paralysis which has seized on industry, the price of white pine would be at least several times greater than ever within the memory of those whom I now address.

The same condition of affairs applies to hemlock, one of our valuable American trees, which, like the buffalo, is recklessly slaughtered for its hide, until shortly it must cease to exist upon our continent, unless the practice of this generation be radically changed. How sad to know that the noble hemlock is thus ruthlessly cut down for the simple bark which encases it—itself, many times left to lie and rot, a monument, perishable fortunately, of the profligacy of man, who, to supply a present want, recklessly destroys that which should be the invaluable heritage of his children.

Now, where is all this to stop? Legislation cannot be invoked to correct the evil. A man has a right to do in these particulars as his ideas of private interest prompts; and unless by moral suasion, and the argument be successfully enforced, that he is killing his own goose which is laying golden eggs, the error will doubtless go on to the bitter end; until every primitive tree within reach of market has been laid low, disregarding the fact that the annual increase in cubic contents and the certainty of enhanced prices present the best investment the present money values could be placed in. Fortunately, those of us who reside upon the seaboard have a resource not likely to fail; and the more especially not likely, in view of the large areas of once tilled land now being re-clothed by forests. I refer to the Southern Pine, of which there are several species, each of value in the departments of the coarser arts.

Those who, less than a quarter of a century ago, traversed our seaboard, beginning at Portsmouth, Virginia, and extended their route through the Carolinas, Georgia, and onward, could not fail, it is said, to be forcibly impressed by the apparently interminable forests of this valuable timber—stately trees in absolutely countless numbers—each representing a value which to a northern eye could be as surely estimated as the sheep on the hillside, or the cattle on the broad prairies. Alas! in most cases the denizens of these road-side forests have disappeared; and he who now makes the journey to which I have referred will find on tens of thousands of broad acres only the blackened and charred stumps of those once stately trees—the needs of the passing hour having compelled their improvident owners to convert them into ready money. We have only, however, to advance inward, westward of the coast line a few miles, to find ample store of similar timber, which lateral railroads are piercing; paving the way, as it were, towards the marts of the great cities. Happily, to restore the exhaustion of yearly demands, acres upon acres of corn and cotton fields, worn out by reckless tillage, and abandoned by the plough, are being reclothed by nature, to be sources of supply of yellow pine timber of immediately succeeding and future generations. *For this special variety nature is thus making ample provision.* So readily does it, the yellow pine, make itself at home in light or sandy soil, that within the memory of man the lower county of Delaware, and the peninsula bounded by the Chesapeake and Delaware Bays has been made the favorite locality of the common yellow pine, which has attained sufficient dimensions within the period referred to, to be cut for sawlogs—and this in a district of country where previously pine was absolutely unknown; the forests being exclusively of hard wooded trees. But we need other than yellow pine lumber; good as it is, it does not supply every want, and unless the science and practice of forestry be taught, those wants are destined to go unsupplied. It is to this special point I desire to invite attention, and in connection with it, and the subject of white pine in its northern habitat, I will here relate a fact which may, I feel confident is, destined to exert an important influence on the future sources of supply; indeed I do not hesitate to predict may prove the starting point to interests of fabulous extent, in the light of which cotton itself as a product exclusive to the South, may lose somewhat of its lustre. A gentleman of Virginia, a friend of mine largely interested in lands, a shipper of timber from the sea-board, therefore not inexperienced, discovered in his forest explorations what, for want of a better term, I shall call *a white pine settlement*, in the dense yellow pine forests of the northern neck of his State. In the midst of a group of white pines, extending over an area of five or six acres, stood a gigantic individual tree ninety-six feet high, eight feet four inches in circumference, three feet from the ground. There it stood and stands to-day, surrounded by seedlings from forty feet high down to seedlings of a year old, as the boundaries of the settlement are reached, numbering in the whole three to four thousand.

Here is a fact which cannot be questioned. It is like the testimony of the rocks. A bird of passage had evidently dropped a solitary seed at some period long preceding, which springing up had established itself in its new home, far distant from the region where nature had placed its ancestors. The mere fact itself of a white pine having fixed its abode and prospered in a remote locality is but a trifle—a circumstance of but little practical significance; but taken in connection with inferences not to be ignored, its value can hardly be over-estimated. The proof is made patent that, this tree of northern habit thrives equally

well with the southern pine (of which there are several species, commercially classed as Carolina)in the latter's native sand, and under the scorching sun of the south, opens a vista in forest tree planting, which those who look beneath the surface cannot fail to appreciate. *It is the index to future wealth of inconceivable magnitude.*

In the science of forestry trees are divided into two distinctive classes—one called *encroaching*, which perpetuate and increase themselves under favorable conditions; the other *receding*, which disappear before the advance of civilization. To the former of these the white, like the yellow pine, evidently belongs, a very important circumstance in connection with its proposed culture.

Already I have the satisfaction to announce, and desire the fact be placed on record, that my firm, which is interested in forestry, has embarked in the planting of the white pine on the seaboard of Virginia, and though the time is too short to state the actual success of such plantations, there is every reason to expect good results. If the question be asked, why plant white pine when the yellow springs up indigenously, spontaneously, on every abandoned cornfield of that region? The answer is simply, because there is no present possibility of a short supply of the yellow, and the white is under all conditions worth double the money in the market, and produced on the seaboard can be transported by water at immeasurably less cost than from the far north; beside, land without undergrowth, thus ready for planting, can be purchased at small cost; and it affords a prospect of recuperation for that section which no other industry presents. In a patriotic aspect it is therefore worthy of attention. Tens of thousands of acres, hundreds of square miles of worn out corn and cotton lands lie contiguous to the sea, whilst their owners stand with folded arms waiting for something to turn up. These lands won't pay for tillage in grain, and grass for pasturage is not enduring. To buy fertilizers is out of the question, and it is cheaper to emigrate to the rich bottoms of the Mississippi, where cotton is the desired staple.

Whilst the broad prairies of the West and the natural grass fields beyond the Missouri, and on the Pacific coast invite the immigrant from abroad, and the native seeking a new home, the South is likely to be overlooked. What then is to be done? Re-clothe the abandoned or at least neglected lands with forests, as in the days of the early English settlers, and the whole scene will have changed; prosperity will once more visit that region, and with accrued capital, better systems of tillage, and free schools established at every cross-roads, sectional differences will disappear, and we shall be henceforth a united people. In Europe forest culture—the planting of forests for timber—as all present know, has been long successfully pursued; and the practical processes are taught, I believe, at all the agricultural schools. Long ago, however, ere such colleges were established, no inconsiderable progress had been made in that direction by owners of large estates, notably in Scotland, where larch-planting was introduced in 1738, by the Duke of Athol, and so successfully prosecuted as to be familiar to you all. In Germany and France similar progress has been made; artificially formed forests being met with on every hand, the developed pines, spruces, and firs planted at uniform distances, and possessing symmetry of growth, the branches interlaced far over head, reminding one of the pillars of some stately cathedral. Now, what I desire on the present occasion is simply to drop a few hints which may induce reflection. I aim only at so much, not to instruct, for I am myself a student. If anything which I may say shall be found to bear fruit hereafter, I shall be compensated. Among other things I wish to start the inquiry whether in our classification of agricultural instruction the time has not come to teach *forestry* as a science—I say science because it is susceptible of exact results:—whether in the sub-division of rural interests, the practice of tree-planting should not be clearly recognized among the present and prospective industries of our people. Of course it is not to be supposed, for an instant, that all localities are favorable, alike promising profit. The manufacturer when he determines to locate his works seeks the point either where a ready market may be found, where the raw material is readily obtained, or where fuel for steam power or water power is at command—some one or more of these conditions are indispensable to success. So he who plants forests must use proper discrimination, or he will find either the accumulated interest on land, or the cost of reaching the market for his lumber, may eat up the natural accretion of a generation's growth. So, also, the planter must study the adaptation of special trees to his soil, exposure to climate changes, time which he can afford to await returns, and other circumstances incident to the enterprise. He must study and carefully study, too, the methods proceedure; the gathering of the seed and its preservation until sown, the proper time and method of sowing, whether it be in seed beds under sun screens, the young plants to be subsequently transplanted into nurseries preparatory to being permanently planted out, or as in the case of oaks, walnuts, chestnuts, and trees of similar character, the seed be planted in the field, or mountain, to remain undisturbed. In all these processes there is so much skill requisite, technical skill only attainable by practice and observation, that it will at once occur to the reflecting farmer or cotton planter, that he is probably unprepared to embark in the enterprise. Having been convinced of that fact he has already taken the first step towards success; the next will be, if he decides to plant, to employ the service of an *expert*—a class of men in this branch of industry not readily obtainable in this country. What then is to be done? Do not start till he is ready to send his son to an agricultural school where he may be taught the whole a b c to z, the alpha to omega, of forestry. Whilst studying *that* he will acquire knowledge of natural science, and other information invaluable in rural life. I am aware that agricultural schools under the patronage of State governments have not been uniformly successful; indeed, it is only candid to admit that they have in some cases, that of our own State of Pennsylvania included, been sad failures; but should we not profit by our experience in these particulars, and henceforth, like the skillful mariner, avoid the shoals? There are, however, opportunities extant for instruction, and it is our province to provide others without delay; failing such under special circumstances, the entering a youth for a term as a pupil in a well-conducted Nursery may accomplish all that is contemplated. In such an establishment he could, in two years at most, be initiated into the art and mystery of rearing trees from seed, the processes of culture, their care, preservation and transplanting; and if he were of an investigating, inquiring mind, he would acquire visions of nature which have never entered into the view of multitudes who take rank as successful farmers.

In England it has long been the practice of the commercial and manufacturing classes in search of greater security for their acquisitions than trade presented, and, perhaps, also in some cases to take rank as country gentlemen, to place sons with well-educated, accomplished farmers, to be instructed in the practical details of husbandry, preparatory to taking charge of landed estates in their own interest. May not that plan point out a method of teaching forestry; where competent men may give instruction in that especial branch, as well as in other pursuits of rural life—schools under the refining influences of home.

In days now gone by forever, it was the practice of Southern planters to send one of their sons to the medical school at the Pennsylvania University or Jefferson College. Here they passed two winters in attendance on the lectures, returning home with diplomas in their pockets, not in most cases to practice medicine as a profession, but prepared to minister to the wants of the plantation hands, and household servants. It might be difficult to estimate the influence on the intellectual character of an isolated rural community where one of these young men found his abode, imperfect as his education may have been, compared with the great field of knowledge unexplored. Now, in recommending farmers with the necessary means to send their sons as students to nurserymen, it is not with any expectation they adopt the nursery business as the pursuit of life, but simply to qualify them for the more profitable enjoyment of their paternal acres, to expand their views beyond the boundaries of the homestead, to occupy the high position which is an American farmer's birthright.

I trust this convention may be the forerunner of others, that a complete organization will be established, that subjects for essays to be read at subsequent meetings may be determined upon in advance, and that its influence be extended at home and conference be had with kindred associations abroad. I beg leave to lay upon the table of your chairman my credentials as a member of the Scottish Arboricultural Society, and that Society's representative at the Centennial Exposition.

DEFICIENT INGREDIENTS OF SOILS.

The following well considered remarks are from a circular lately issued by the Agricultural Experiment Station of Middletown, Connecticut:

The primary duty of the chemist is to make analyses and experiments and refrain from offering practical advice until his theories have a substantial basis of known facts. At the same time it may not be out of the way to offer a few suggestions for the thoughtful consideration of Connecticut farmers.

In saying that no plant can grow, no crop can flourish without an available supply in the soil of a sufficient quantity of each one of a certain list of substances needful for its food, and that the essential use of commercial fertilizers is to supply food which plants need and soils fail to furnish, we are simply repeating universally admitted facts. It is perfectly plain, then, that that those commercial fertilizers will be most economical which, in one way or another, supply these lacking materials in the needed proportions and the best forms, at the lowest cost.

We have, therefore, two most important problems to solve. First, what materials do our soils lack? second, by what applications of fertilizers or other means will their need best be supplied?

To answer either of these question fully and definitely, is very difficult; the first because of the difference in soils, and both because we do not know, and do find it slow work to discover definitely, the ways in which atmosphere and soils and fertilizers supply food, and plants use it.

It is sufficiently well settled that nitrogen, phosphoric acid, potash, sulphuric acid, lime and magnesia are the only ingredients of plant food which need to be supplied in fertilizers. The other materials, as iron, silica and chlorine, which plants remove from the soil, are, in so far as they are necessary for plant-food, furnished in abundance by every ordinary soil.

Generally speaking, we may accept the opinion commonly held, that magnesia may sometimes be lacking, that sulphuric acid and lime are more, and nitrogen, phosphoric acid and potash, most apt to be deficient in our ordinary soils. In one soil, one, in another several or all of these may be wanting.

It was once thought that the chemical analysis of a soil would easily reveal its deficiencies in plant-food. But later experience has shown this is at best a costly and defective source of information. Different samples of soil from the same field may vary widely in composition, and what is a still greater difficulty, chemical tests which make known the presence of a given ingredient in the soil, do not show whether it is in such a form that the plant can use it. And there are many pro-

cesses of vital importance to the sustenance of the plant, which are continually going on in the soil, but which the analysis does not reveal.

Most of our artificial manures are only special fertilizers. Guanos, phosphates, fish and bone manures and the like, contain more or less nitrogen, phosphoric acid and lime; the super-phosphates contain sulphuric acid also. With the exception of some to which the German potash salts have been added, very few of them contain any appreciable quantities of magnesia or potash. They supply part but not all the materials which soils may lack.

Many farmers find that guano, fish and other special fertilizers whose action is quick and stimulating, seem to leave their soil in a more exhausted condition than before they were applied. And the complaint is not uncommon that such fertilizers do not bring the same return as formerly.

May we not at least question whether the immediate effect of these special fertilizers has not been, in many cases, to aid the plant to use the more available stores of food in the soil, until these latter have become so far exhausted as no longer to respond to the stimulating action of the special manures?

If the above supposition be correct, it is clear that what such exhausted soils need, is something to supply, not only the nitrogen and phosphoric acid of the guano or fish, or bone, or superphosphates, or other special fertilizers, but also the potash and other minerals that these latter do not furnish.

Ashes are, for many soils, a standard fertilizer. Places where a tree or a brush-heap has been burned often show the effects of the manuring for years. It is a trite saying, that "the land never forgets ashes." Ashes supply directly all the soil ingredients of plant food except nitrogen. Their indirect action is also, very likely, not unimportant in rendering other materials in the soil available. Instead of wearing out soils, they strengthen them. May not this difference be due, in part at least, to the fact that they furnish the other ingredients of plant food that the guano and fish lack?

Stable manure furnishes all the ingredients of plant food. It is a complete fertilizer. Farmers do not complain that it helps to exhaust their land.

There are soils which, by applications of nitrogen and phosphric acid, in the form of guano, bone or nitrogenous superphosphates, may be made to bear good crops year after year. They supply of themselves the other materials needed. They have abundant stores of magnesia and potash, and so on, and by weathering, tillage, and the action of the fertilizing materials added, these are worked over from unavailable forms into those which the plant can use.

But such is not always the case. Among the exhausted and worn-out soils of New England there are a great many which lack more than nitrogen, phoshoric acid, sulphuric acid and lime.

This is very strikingly illustrated in the elaborate experiments of Prof. F. H. Storer, at the Bussey Institution at Jamaica Plain, Mass. These were made upon what Prof. Storer calls "a very good representative of the light, leachy soils that overlie gravelly drift in New England." In these experiments, which continued through a series of years, different crops were raised with different manures, the same crop being grown with the same manure, on the same plot, year after year. Those raised with fertilizers containing nitrogen and phosphoric acid only, showed very little good effect from the manuring, while the potash compounds brought the most satisfactory returns. As Prof. Storer says, the "crying want" of this land was for potash. There are doubtless many such soils in Connecticut.

Some time ago, an intelligent farmer asked the writer which were the better fertilizers—phosphates or potash salts? The reply was, and I knew no better one, "potash salts where potash is needed, phosphates where phosphoric acid is needed, and nitrogenous manures where nitrogen is needed. But if you do not know what your soil lacks, and want to make sure of a crop, and enrich your land at the same time, use your nitrogenous superphosphates and German potash salts together. The former will furnish nitrogen, phosphoric acid, sulphuric acid and lime; the latter, potash and magnesia. Thus you will have a fertilizer with all that the plant needs—a complete manure. At the same time, it is well to remember that you may feed your crops, not only directly by giving them these ingredients in guanos, phosphates, potash salts, and so on, but indirectly by rendering stores of plant food, present in the soil or atmosphere, available through tillage and the use of cheaper fertilizers. A little lime or plaster may sometimes be thus more valuable than an amount of phosphates or potash salts that would cost several times as much."

GOOD TILLAGE.

In the head-line of one of our agricultural papers may be seen every week the broad statement that "good tillage is manure." There is in this statement a good deal of truth very concisely expressed. While good tillage is not really manure, it is capable of greatly aiding manure in its work, and, under certain conditions, may be made in a great measure to take its place. There is no doubt that with good culture as large crops can be produced with a small quantity of manure as can be obtained with a much larger application of fertilizers and inferior tillage. It is a well established fact that very large crops have been grown on ordinary land without manuring, and that the only reason of this success was the thorough tillage which was given. Even worn-out fields have been made by extra culture to produce fine crops. Many years ago we read of an Irishman who bought a little patch of light land, which had been so thoroughly exhausted as to be considered incapable of producing a paying crop. He determined to sow the piece with rye, and long before the time for sowing he might have been seen almost every morning while the dew was on plowing the field. After awhile he stopped plowing, remarking that if he should plow it any more the rye would lodge. The neighbors thought this was a good specimen of Irish intelligence, and made a great deal of sport over it. They were confident that he would not get rye enough to pay for his work. But the rye came up and grew, and when a large yield was harvested the neighbors concluded that the Irishman knew a great deal more than they thought he did. They could not account for it; but the fact was before them, and they could not deny it. Finally they came to the conclusion that plowing when the dew was on was the chief cause of the large yield; but it was not the dew so much as it was the fining of the soil, which produced the heavy crop. Under the ordinary system of culture, the soil had become exhausted, but considerable plant food still remained in clods and lumps, which the rootlets of the plants could not penetrate, and consequently could not obtain. But the constant plowing and re-plowing of the field pulverized these clods and set the plant food free. The rye was able to obtain and utilize it, and consequently was very productive. A case somewhat similar once came under own observation. A man leased a tract of land, which was cold and wet and produced nothing but sour grass and weeds. He dug some ditches, plowed the land and harrowed it with a great deal of care, and planted it with corn. He had but little manure, and on much of the piece no fertilizer except plaster and ashes. But he finely pulverized the soil before planting, and cultivated and hoed the crop very often during the season. The neighbors were confident that he would not have any corn on that piece of land without manuring it; but he did obtain a fine crop, and when the piece was seeded down grass came in nicely and a good crop of hay was obtained. This was almost wholly owing to good tillage, for without manure the land would not with ordinary culture have produced half a crop. Such cases are common enough to prove beyond a doubt that good tillage is capable of largely increasing the production of the land, and farmers ought to take advantage of this. Of course we do not advise any one to neglect to manure his land, and rely upon good culture to produce good crops. All crops are obtained at the expense of either manure or soil, and if no fertilizer is applied they will invariably injure the land. The true way is to manure well and also thoroughly cultivate the crop. Thus the advantages of manure and culture may both be obtained.—*Homestead.*

AMATEUR FARMERS.

There are many men of means who follow farming as a recreation, and who, while still looking to profit and loss in some respect, still love to try experiments regardless of any immediate gain. These are called fancy farmers, and are often laughed at by more practical men. But they are a very useful class, and we sympathize with an exchange which thus speaks of them:

No class of men have been ridiculed so much, and none have done so much good, as those who are denominated fancy farmers. They have been, in all times and countries, the benefactors of the men who have treated them with derision. They have been to farmers what inventors have been to manufacturers. They have experimented for the good of the world, while others have simply worked for their own good. They tested theories while others raised crops for market. They have given a dignity and glory to the occupation of farming it never had before.

Fancy farmers have changed the wild boar into the Suffolk and Berkshire; the wild bull of Britain into the Short-horn; the mountain sheep, with its lean body and hair fleece, into the Southdown and Merino. They brought up the milk of cows from pints to gallons. They have lengthened the sirloin of the bullock, deepened the udder of the cow, enlarged the ham of the hog, given strength to the shoulders of the ox, rendered finer the wool of the sheep, added fleetness to the speed of the horse, and made beautiful every animal that is kept in service of man. They have improved and hastened the development of all domestic animals till they hardly resemble the animals from which they sprang.

Fancy farmers introduced irrigation and under-draining, grinding and cooking food for stock. They have brought guano from Peru and nitrate of soda from Chili. They have introduced and domesticated all the plants we have of foreign origin. They brought out the theory of the rotation of crops as a natural means of keeping up and increasing the fertility of the soil. They first ground up gypsum and bones, and treated the latter with acid to make manures of peculiar value. They first analyzed soils as a means of determining what was wanted to increase their fertility. They introduced the most approved methods of raising and distributing water.

Fancy farmers or fancy horticulturists have given us all our varieties of fruits, vegetables, and flowers. A fancy farmer in Vermont a few years ago originated the Early Rose potato, which added millions of dollars to the wealth of the country, and proved to be a most important accession in every part of the world where it was introduced. Another of these same fancy men originated the Wilson strawberry, and another the Concord grape. It was a fancy farmer that brought the Osage from Texas to the Northern States.

PLANTING LARGE TREES.

We were astonished to read a paper lately—a paper which most of us are accustomed to look to with a good deal of respect—an article against the planting of large trees. It was because people planted large trees that so many trees died. There was barely the ghost of a chance of success for any one who would plant a large one.

Then we are told what a large tree is in the

writer's mind. "An evergreen ought not to be over two or three feet high," and "from four to six feet is enough for a fruit or shade-tree." Now we are quite willing to admit that the trees which we sometimes see around here distributed by the peddlers, even these sizes are generally too large; large numbers dying from want of roots, the result of poor culture in the nursery, or from being dug with a plow or post-spade, and therefore what few roots they may have being left in the ground. It is more than likely the article we referred to was inspired by such trees as these. No wonder the writer is down on big trees.

Our Germantown gardeners will laugh at this idea of big trees; and so we judge will any one in the vicinity of any good nursery where the proprietor knows his business, and what should be done to make a tree have good roots, and how such trees should be dug. In Germantown, however, we can say from our own experience that it is a very common thing to see our gardeners planting trees from 12 to 15 feet high, and moving them successfully. Even our friend Elliott might set cedar trees fifteen years old with perfect success, when in the hands of some of these men who seem to have the power to make trees do just whatever they will with them. Of course, they will take good care in selecting good healthy trees; care in digging up all the roots; care they do not get dry before replanting; care to press the soil firmly in and about the roots; care in pruning them—and this last is a great point—and they rarely fail to live and grow well. The pruning is of course to be done judiciously. It is no use to plant a large tree and then cut it back to make a small one out of it. All the large branches are retained, and only the smaller and weaker ones cut away. As to the way in which these large trees are made successful, this has been several times explained in past years in the *Telegraph*, but we may give the leading points over again.

First, a healthy tree that has been removed before, and has not been crowded by other trees. Then a circle is dug from three to six feet away from the trunk, and down deep enough to get under the roots with a fork, only using a spade or axe to sever the deep tap-root, though a tree once removed already is not troubled with much of these. Then having comparatively all the roots, the weaker branches are cut away, and this is all that is required for the successful removal of large trees.—*Germantown Telegraph.*

THE EXPORTATION OF BEEF.

The development of the demand on Texas for beef to supply the markets of the world bids fair to reach proportions more extensive than anything that has yet been known. The guerrilla warfare in Cuba, in which the insurrectionists subsist on the few cattle that are already in the ever "faithful isle," has necessitated the adopting of the policy of slaughtering this beef for the use of the government troops, and to prevent its falling into the hands of the revolutionists, will soon exterminate this stock and increase the demand for American cattle. In addition to this, the steadily diminishing herds of cattle in the British isles are as steadily making room for the introduction of American beef, and it is not surprising that constant experiments are being made to perfect a system of shipping fresh slaughtered animals and obviate the difficulties of transporting cattle on the hoof to such a great distance; and we regard with great interest the progress of investigation in this line. We copy an account given by the Liverpool *Journal* of a successful shipment of fresh beef lately made from New York to that port, as follows:

"Among the latest of these meat importations into Liverpool was one brought by the Cunard steamer Abyssinia, Capt. Murphy. This consignment consisted of sixty carcasses, or between twenty-five and twenty seven tons of splendid beef, which was conveyed and delivered in the most perfect order and condition. As the conveyance of this consignment was conducted on a somewhat novel principle, a brief explanation of the circumstances under which it was managed, and the system of preservation adopted can hardly fail to prove interesting. The cattle were slaughtered in New York the day before the steamer sailed, and the meat was put on board on the morning of sailing, under overpowering and almost tropical temperature.

"The Abyssinia occupied about three days in crossing the Gulf stream, the temperature of the water being about 80 degrees, with a correspondingly warm atmosphere. Notwithstanding these severe drawbacks, the meat, when brought to Liverpool, was found to be as sweet and fresh as the day it was put on board. The mode in which this protracted preservation was perfected, under such trying circumstances, will now form an interesting matter of detail. The first step in the process was to fit up in the steamer a chamber thoroughly air-tight. This was done in the forepart of the vessel, immediately under the main deck, and it was carefully lined with felt to resist any radiation of heat from the external atmosphere, and around the walls of the chamber were placed a seried convolution of iron tubes, precisely similar to those employed in the process of heating a chamber or building with hot water; in this instance, however, the circulating water is cold, and kept cold by a constant supply of mixture of ice and salt, with which the supply cistern outside the chamber is filled. The water, cooled by this mixture, is pumped into the tubes, and forced through all the convolutions of the tubing, thus producing a continuous flow of cold water all round the chamber, to be again returned to the cistern, and after being there again cooled, forced again and again through the tubes. The beef, in half carcass, is suspended on hooks from the ceiling, and not permitted in any way or under any circumstances to come in contact with the sides or floor of the chamber. It is, therefore, continuously held in a dry atmosphere at a temperature ranging from 33 to 35 degrees, that being the temperature found most suitable for suppressing fermentation, and consequently for preserving the meat. The process, it will be seen, is strictly scientific, very simple, and thoroughly efficacious, as may be understood from the crucial test to which it has been subjected on the last homeward voyage of the Abyssinia, and it is one well calculated to promote a large and valuable trade."—*Houston (Texas) Telegraph.*

FRUIT AS A MEDICINE.

The irregular eating of unripe fruit is well known to be unwholesome. The regular and moderate use of well-ripened fruit is not so widely appreciated as contributing to health. Residents in regions where more or less malaria prevails, have discovered that nothing is a more sure preventive of its deleterious effects than a regular supply of fruit. A case is well known to us where a man with a family removed to the West. He had provided large quantities of well-dried fruit, and this was used regularly during the first summer. Although suffering many privations and exposures to hardships, this family escaped the prevailing epidemics. The second year, the supply of fruit being exhausted, the added comforts which they had secured did not protect them from disease. Many other similar cases have occurred. It should therefore be made a special object with all about to remove to newly-settled regions, and in fact to any other localities, to take with them or make provisions for the immediate planting of an ample supply of early-bearing fruit plants and trees, such as strawberries, currants, grapes, raspberries, dwarf apples and pears, and the well-known early bearers among larger sorts, such as Bartlett pear, Early strawberry, Baldwin and Porter apples, and many other sorts which will give crops while yet small.

But the fruit will not only prevent disease, but in some instances it has proved one of the best medicines to cure it. Many years ago a chronic cough, which had excited a good deal of uneasiness, was cured by daily eating ripe raspberries, recommended by a medical writer of high authority as an excellent expectorant. Severe colds are more apt to occur on the first cool and damp days of autumn than at other seasons. We have often cured these diseases on their first attack, by eating copiously of ripe watermelons. The beneficial effects of drinking freely of cold water on such occasions, are well known. Watermelons supply a larger quantity than one could easily swallow in any other way. We have not found these or the raspberry expectorant an unpleasant medicine to take. When visiting recently the Centennial grounds at Philadelphia, we had taken "a bad cold." Knowing that many had been made sick by drinking the bad water at that place, we resolved to secure both a benefit and a pleasure by using ripe watermelons instead, which happened to be abundant at that time. Their copious use performed a surprisingly rapid cure, with an escape from all the bad effects of the water. But it must be remembered that the common moderate eating will not answer the desired purpose; nothing but "heroic" consumption of this fruit will effect a prompt cure.

We mention these various facts as an additional inducement for the planting of fruit-trees and plants, in addition to the claim of comfort and the luxury of a constant succession of fruit through the year, as well as its important contribution to economy by reducing the expenses of the table.—*Country Gentleman.*

SOCIAL LIFE ON THE FARM.

There is hardly a city in the United States which does not contain more people than can get a fair, honest living, by labor or trade, in the best times. When times of business depression come, like those through which we have passed, and are passing, there is a large class that must be helped, to keep them from cruel suffering. Still the cities grow, while whole regions of the country—especially its older portions—are depopulated year by year. Yet the fact is patent to-day that the only prosperous class is the agricultural. We often witness the anomaly of thrifty farmers and starving tradesmen. The country must be fed, and the farmers feed it. The city family may do without new clothes, and a thousand luxurious appliances, but it must have bread and meat. There is nothing that can prevent the steady prosperity of the American farmer but the combinations and "corners" of middlemen, that force unnatural conditions upon the finances and markets of the country.

This is not the first occasion we have had for allusion to this subject, and it is not likely to be the last. The forsaking of the farm for the city life is one the great evils of the time, and, so far, it has received no appreciable check. Every young man, apparently, who thinks he can get a living in the city, or at the minor centres of the population, quits his lonely home upon the farm and joins the multitude. Once in the city he never returns. Notwithstanding confinement and the straightened conditions of his new life, he clings to it until he dies, adding his family to the permanent population of his new home. Mr. Greeley, in his days of active philanthropy, used to urge men to leave the city—to go west—to join the agricultural population, and thus make themselves sure of a competent livelihood. He might as well have talked to the wind. A city population can neither be coaxed nor driven into agricultural pursuits. It is not that they are afraid of work. The average worker of the city toils more hours than the average farmer in any quarter of the country. He is neither fed nor lodged as well as the farmer. He is less independent than the farmer. He is a bond-slave to his employers and his conditions; yet the agricultural life has no charms for him.

Whatever the reason for this may be, it is not based in the nature of the work, or in its material rewards. The farmer is demonstrably better off than the worker of the city. He is more independent, has more command

of his own time, fares better at table, lodges better, and gets a better return for his labor. What is the reason then, that the farmer's boy runs to the city the first chance he can get, and remains, if he can possibly find there the means of life?

It can only be found, we believe, in the social leanness or social starvation of American agricultural life. The American farmer, in all his planning, and all his building, has never made provision for life. He has only considered the means of getting a living. Everything outside of this—everything relating to society and culture—has been steadily ignored. He gives his children the advantages of schools, not recognizing the fact that these very advantages call into life a new set of social wants. A bright, well-educated family, in a lonely farm house, is very different material from a family brought up in ignorance. An American farmer's children, who have a few terms at a neighboring academy, resemble in no degree the children of the European peasant. They come home with new ideas and new wants; and if there is no provision made for these new wants, and they find no opportunities for their satisfaction, they will be ready, on reaching their maturity, to fly the farm, and seek the city.

If the American farmer wishes to keep his children near him, he must learn the difference between living and getting a living; and we mistake him and his grade of culture altogether if he does not stop over this statement and wonder what we mean by it. To get a living, to make money, to become "forehanded"—this is the whole of life to agricultural multitudes, discouraging in their numbers to contemplate. To them there is no difference between living and getting a living. Their whole life consists in getting a living; and when their families come back to them from their schooling, and find that, really, this is the only pursuit that has any recognition under the paternal roof, must go away. The boys push to the centres or the cities, and the girls follow them if they can. A young man or a young woman, raised to the point where they apprehend the difference between living and getting a living, can never be satisfied with the latter alone. Either the farmer's children must be kept ignorant, or provision must be made for their social wants. Brains and hearts need food and clothing as well as bodies, and those who have learned to recognize brains and hearts as the best and most important part of their personal possessions, will go where they can find the ministry they need.

What is the remedy? How shall farmers manage to keep their children near them? How can we discourage the influx of unnecessary—nay, burdensome—populations into the cities? We answer: By making agricultural society attractive. Fill the farm houses with periodicals and books. Establish central reading rooms, or neighborhood clubs. Encourage the social meetings of the young. Have concerts, lectures, amateur dramatic associations. Establish a bright, active, social life, that shall give some significance to labor. —*Every-Day Topics, by Dr. J. G. Holland.*

Feeding Animals.

In some parts of the country, through heavy crops and hard times, there is little market for apples. They should not be allowed to waste. They may be placed in heaps on the grass, and covered with straw or cornstalks, and will keep till winter; and if the straw is a foot thick, long keepers will remain uninjured till spring. In this condition they are readily accessible for feeding. Properly fed to milch cows, they largely increase both the quantity and the quality of the milk. Always begin feeding in small quantities and gradually increase the rations. Large quantities given at the outset, will do more harm than good. Nothing is in more danger of choking a cow than smooth-skinned, round apples. They must, therefore, be either passed through a slicing machine, or cut on the floor with a clean spade, ground sharp. Fed in connection with corn meal, they are excellent for swine. Horses fed on dry hay are benefitted by a few apples. Sheep eat them with avidity. A few in the hen-house are eagerly sought. In all these instances, they do more good than the mere amount of nutriment they contain.—*Country Gentleman.*

OUR PARIS LETTER.

Farming on the Continent of Europe.

Correspondence of THE LANCASTER FARMER.

PARIS, Nov. 1st, 1876.

The Department of the Nievre is celebrated for the rearing and fattening of cattle, and agriculture there, once so backward, is now the most flourishing in the realm. The farmers have become wealthy by abandoning expensive systems of culture and confining their attention to live stock. The enlightened agriculturists of France recognize two truths; that they cannot compete with America and other countries in the profitable raising of wheat, nor with Australia in the growth of wool. It is on the production of meat then, that attention is fixed, and for which the demand is unlimited and the competition nil. Wool is regarded but as an accessory. The question of improved breeds of cattle, and the precocious production of meat, are two subjects that occupy very seriously the attention of Continental agriculturists. Belgium seems to have taken a strange step to advance these ends; the provincial Council of Hainaut has decided, that henceforth no pure Durham blood shall be imported for ameliorating local races; the latter must be amended by a careful selection of the best local types. Thus reliable purity of descent, and aptitude for the butcher, are secondary considerations. The discussion continues to be interesting between Professor Sanson and his opponents, on the question of precocity. According to the Professor, it is the maturity of the bones that limits and stops the development of the flesh, &c., while the contrary view is, that it is the complete development of the soft parts that arrests the growth of the skeleton. Food acts in two manners; nitrogen tends to the production of flesh, phosphoric acid to that of the bones. M. Sanson lays down, that the acid pushes to maturity, by hardening the extremities of the bones, and thus checking the growth of tissue; not a few maintain, that the solidification of the bone is the natural consequence of the animal's fleshy structure having been completed, and requiring no more phosphoric acid to form new tissue; the acid concentrates itself in the tissue of the bones—the latter contains 30 per cent. of organic matter. The phosphoric acid accumulates in the extremities of the bones, as it collects in the seeds of plants, and the laws in both cases would appear to be similar—to grow at first, and when growth is over, to ripen. Maturity is thus the consequence and crowning of growth.

Roquefort is the Stillon cheese of France, and is prepared from sheep's milk. The race of milk sheep is very hardy, and is known by the name of Larzac; originally limited to wooded heights, the breed has been improved, by crossings and richer pasturages. The animal measures about four feet in length; its live weight is from 88 to 112 lbs., and yields 44 lbs. net of meat, and 2 of fat; its fleece weighs from 4 to 6 lbs., and the wool, very much in request by the cloth makers of the South of France, sells for 12 sous per lb. However the chief object of the sheep is for the production of milk to be converted into cheese; about 60 lbs. of the latter is the quantity prepared per each animal, which sells at the wholesale price of half-a-franc per pound; if to this sum be added 5*fr*. for the wool and 6*fr*. for the lamb sold to the butcher a few days after its birth, sheep milk-farming is not a bad speculation in France.

Much attention continues to be devoted to the subject of forage. Wheaten straw is largely consumed, but then it must be of a golden yellow, possessing a mild odor, and a saccharine taste; the stems should be thin, flexible and shining, and the ear garnished with its chaff. Straw that has been a long time threshed is only fit for litter. The best hay in this country, and perhaps the observation holds good elsewhere, is that which is produced on light, moist, but not wet, mountain soils; next such as is yielded by land more sandy than clayey; to be nutritive, hay ought to preserve its green color, to possess an odor agreeable and aromatic; the stems should be thin, supple, and difficult to break, possessing as much as possible their flowers and leaves, and in addition to a fragrant odor, to have a slightly sweet taste. Respecting bran, it is essential that it be fresh, floury, and agreeable to taste; it undergoes serious alterations in the course of three months, becomes bitter and heating; this fermentation is soon succeeded by putridity, and the bran quickly becomes a home for insects.

Lucern is a plant much calumniated of late on the Continent; it is reproached with being short-lived and unremunerative. Much of the culpability rests at the doors of those who do not bestow upon its culture much attention; it is liable to be attacked by dodder, but this need is the offspring of slovenly farming, so grow your own seed is the remedy. M. Beaucamp recommends that Lucern ought only to be cut twice in a season, the second aftermath to be grazed; this latter plan does not lay bare the crowns of the plant so much as the scythe does, and thus prevents the cold rains and snow from killing the root by festering it. He reaps 2½ tons per acre the first cutting, and half that quantity the second, and which sells for a total sum of 350*fr*. per acre. The success that has followed the employment of preserved green maize in trenches for winter and spring feeding, has naturally concentrated attention on the propriety of conserving red clover, rye and other precocious forage plants, to be placed in trenches during the close of May and early days of June, and thus become armed against the effects of a dry summer. The plan has been tried on several farms with success. Where rye is sown as an intercalary crop for spring green feeding, the custom in the north of France is, to chop it, and mix it with beet pulp; the cattle eat the mixture greedily.

France has at last her "Agricultural Institute," where the most advanced form of agricultural instruction will be imparted, to students already educated in various branches of human knowledge. The new Institute is on the eve of opening, and foreigners will experience no difficulty in obtaining permission to join the classes under stated conditions. It is not so much a new, as an old institution revived, having been founded in 1848 at Versailles, and suppressed in 1852 by the Empire. Agricultural education is given in France in the farm schools, which is the primary stage, and where only the children of the peasants and artizans are expected to attend; then follows the "regimal" establishments, of which there are two, perhaps three would be a more correct classification, for the Grignon school fulfils all the conditions of one, as well as being more practical. The Montpellier and Grand Jauan colleges represent the regioual type, that is a school where the agricultural processes in the different zones or regions of France, would be specially studied. The new Institute will be very scientific in its aims, and will have an experimental farm of 120 acres in the vicinity of Paris at its disposal; it will not teach general sciences; it will take mechanics, chemistry, physics, and physiology, in their technical relations with modern agriculture. The German Empire has perhaps a monopoly of this superior agricultural knowledge, and it is to her 10 agronomical Institutes, and 174 secondary farm schools, that she owes much of her rapid progress in rural economy. Austria possesses two of these superior Institutes; Hungary has four, but not of so advanced a character, and Sweden possesses five. Agriculture is undergoing to-day what is common to every other science—a revolution; it is becoming more an industry, where affairs must be conducted with promptitude, activity, and intensity; it must invent, transform, renew itself; adopt scientific methods, powerful and rapid processes. The strength of agriculture does not resemble that of the ancient Egyptians—in sitting still.

The sugar beet industry, like the plant's physiology, is in a confused state. Owing to the strange summer, and our stranger autumn, this year's beet harvest is compromised; the culture of the plant has diminished, in its special districts, by 30 and 50 per cent., so that one-half the factories are closed, or only working half-time; not more than one-fourth of the total quantity of sugar will be produced this year, as compared with the preceding ones; fiscal difficulties have not a little to do with the result, but a short yield—ten tons per acre of roots, has also its influence. While some are advocating the cultivation of small roots for sugar purposes as being most suitable, the Eure Farming Society encourages the contrary by prizes. Again, high manuring has been hitherto accepted as lessening the per centage of sugar, and affecting the crystallization of the juice. Messrs. Champion & Pellet, from their careful experiments, conclude the opposite. Finally, two celebrities, Claude Bernard and Coenninder, are of contrary opinions as to how the sugar and the salts localize themselves in the cells of the roots.

Another but too open question is the best means to destroy the vine bug; the phylloxera are extending their ravages; there is no cure, but a multitude of proposed remedies. The point now is to ascertain where the bug cannot be found; winged, it has been discovered lately on the cobwebs that are so plentiful in vineyards, and even on the fruit itself—a hint for the exportation of grapes. Having failed to poison and to starve the insect, efforts are made to induce it to feed on red maize, planted between the vines, and new legislative measures are threatened against the plague. The vintage has been completed in excellent conditions—dry, warm weather; the wine will be of excellent quality, but the quantity, owing to spring frosts, will be sensibly reduced. Some proprietors have thus lost four-fifths of their annual yield.

In France the law prohibits the establishment of a pig-sty in a village of 150 inhabitants, and of a cow-house where there is a population of 5,000; perhaps in point of salubrity, there is no difference.

In Belgium, flax is often visited by a disease, which destroys the plant within 48 hours after being attacked. Growth is suddenly checked, the flax etiolates and dies, and the crop has to be ploughed down. M. Ladureau attributes the cause to a deficiency of potash in the soil, and finds vegetable ashes an excellent preventive.

M. Laperiere cures the lung disease, or stops the contagion, by fumigating the cattle; burning 30 grains of sulphur per cubic yard of air in the sheds.

In the State of New York any person making or using a barrel for the sale of potatoes, apples, or quinces, which shall not contain equal to 100 quarts dry measure, is liable to fine.

OUR LOCAL ORGANIZATIONS.

Proceedings of the Lancaster County Agricultural and Horticultural Society.

The November meeting of the Lancaster county Agricultural and Horticultural Society was held in the Athenæum rooms, on Monday Nov. 6th, at 2 o'clock, p. m.

Members present: Messrs. Martin D. Kendig, Henry M. Engle, Jacob B. Garber, Levi S. Reist, Casper Hiller, Jacob Bollinger, Johnson Miller, Levi W. Groff, P. Frank Landis, Webster Hershey, Reuben Weaver, John B. Erb, John M. Stehman, Daniel Snyder, Simon P. Eaby, Henry Erb, Elias Bomberger, Simon A. Hershey, S. S. Rathvon, Wm. McComsey, Peter S. Reist and Henry F. Hostetter.

The committee on by-laws were not prepared to report as they desired, and asked to be granted either more time or be discharged.

On motion the committee was continued.

Levi S. Reist, who attended the pomological display at the Centennial, read a paper on the same.

Mr. Engle reported on the condition of the crops that they did not differ much from the last report. There has been a lot of late seed sown, but it is remarkable how well it looks. The corn is an average crop. Good keeping winter apples are not as abundant as was expected. The early sowing does not look as well as it did two weeks ago.

Mr. Groff reported that the crops look well in the section that he lives.

Mr. Miller agreed with the report of Mr. Engle.

Mr. Erb, of the Committee of the Centennial fruit display, reported that fruit had been sent, but he had not heard anything from it.

The rain fall for the last month was reported at 2.30 and 2.31.

Mr. Hershey reported that he finds the late sowing better than the early sowing.

The question: "In what way can we dispose of our corn crop to the best advantage," was then discussed.

Mr. Reist would convert the corn into pork and beef.

Mr. Bollinger said, it is a question we should know something about, as farmers. He encourages his men to feed it into stock. It should be turned back again on the farm. It is his theory and his only one. He did not know whether it is the best financial view or not; he has been quite successful. Every farmer that looks to the interest of his farm should convert it into manure. He encourages stall feeding cattle.

Mr. Engle said the general practice of Lancaster county was to feed it into stock. This is important to keep up the fertility of the soil. The corn can be turned to better account, as far as dollars and cents are concerned, by feeding it to milk cows. It would return more on an average than feeding oxen or steers. The demand for cheese and butter has never been met. We need not have any fear that choice butter would be overstocked. You would make a good sum on butter and manure at the same time.

Mr. Bollinger said he keeps two cows, and that he has kept an account of what they eat in a year. They have eaten $98 worth of rough feed. He has realized in one year $104, besides supplying the family. Thinks he has as good butter as any in the county, and yet he does not get more for it than those who have bad butter. The storekeepers make no distinction. After we have paid hire for butter, there is nothing in it.

Mr. Engle thought that there is an opening for good butter somewhere. In other counties they get their prices for good butter, and why can they not be had in this county?

Mr. Miller thought that corn is not the proper food for milk cows. More can be realized by feeding it to the cattle. He also advocated the feeding of some bran.

Mr. Engle thought we feed poor cows to too great an extent. Those who realize money select good cows.

Mr. Eaby remarked that the difficulty just stated is a fact not only among butter makers, but among farmers. You will find that persons in the Lancaster market have their customers, and get 3 or 4 cents per pound more than others for good butter. In some places the way to improve the land is to pasture it with sheep. He thought there was a great deal of a bad quality that comes to market that should not. It may result from ignorance or inexperience.

Mr. Reist agreed with Mr. Eaby in regard to feeding sheep, and with the gentleman who advocated the feeding of bran.

Mr. Hershey thought the corn crop is the most important we can raise. He has found that those who have attended market have not as fertile farms as those who have fed steers. To feed corn into cattle is the most lucrative; you may raise good butter but you cannot get the market for it.

Mr. McComsey did not believe it probable or profitable to convert half of the corn crop of Lancaster county into butter. He believed in feeding it to the stock on the farm, and if you do not realize directly more than one half, you will realize more than half indirectly. A friend of his, a few years ago, bought an impoverished farm that did not support him. He got in debt. After much reflection as to how to get out of the difficulty, he made up his mind to increase his debt in improvements, lime, etc. As soon as he was able to provide corn for cattle he bought them, and in a few years more than doubled the price of the farm, and was free from debt. Other of his neighbors did the same thing with much success.

Mr. Hiller thought that this matter of keeping stock is not profitable. He would not keep more stock than is absolutely necessary, if he were farming. Sell all your grain and buy your manure. To sell one-fourth of your grain, and convert three-fourths into manure, is rather expensive. We spend entirely too much money on our stock.

Mr. McComsey said the gentleman seems to count that that fed into stock is entirely lost, except that turned to manure. The sale of the beef is where the profit lies.

Mr. Miller said that plowing down the clover would improve our farms. Our farmers have entirely too much stock running about. His opinion would be that stock raising in this county will not pay. Keep as little stock as possible.

The president thought that it was pretty well decided not to keep the corn on the farm. He had tried the cattle in the fall, and fed them, but it hardly ever paid him. Had tried cows and it was not satisfactory. He had tried a coarse breed of pigs, and they did very well. He got a better breed, and he was satisfied with the result. He believes in turning it into pork. You ought to realize thirteen or fourteen pounds to the bushel.

At this stage a random discussion took place, which culminated in a controversy as to whether animal or vegetable food was the more healthy.

On motion, Mr. Engle was chosen to prepare an essay on "Vegetable vs. Animal Food."

Mr. McComsey, of the committee of the Pomological exhibition, reported, that your committee appointed at the last meeting to receive, pack and forward to the Pomological Exhibition, on the Centennial grounds, such fruit as might be presented for the purpose, respectfully report that a large number of very fine samples of most of the best varieties of apples now cultivated in our county were presented, which were carefully packed and forwarded as directed.

A bill of expenses for shipping the same, amounting to $2.10 was ordered to be paid; also the services of the janitor.

The fruit sent to the Pomological Exposition at Philadelphia from this county and by whom was as follows: Daniel Schmeyeh exhibited the following variety of apples: Northern Spy, Newtown Pippin, Pippin, Green Pippin, Maiden Blush, Juic Bite, Jeffries, Smokehouse, Bellefleur, Red Streak, (two varieties) Swarr, Pennock, Pound, Baldwin, German Sweet, Summer Rambo, Rambo, Pennsylvania Red Streak, Northern Spy, Romanite (two varieties,) and two varieties not named. The same gentleman exhibited pears as follows: Pound Pear, Vicar of Wakefield (four varieties,) Holland, Duchess, Henderson, and ten other varieties.

M. D. Kendig sent the York Imperial, Baldwin, Rhode Island Greening, Golden Russet, Pennock's Red Winter, Spitzenberg, Smokehouse, President, Bellefleur, Golden Pippin, Red Streak, Fallowater, White Vandever and Wine Sap.

E. S. Hoover sent the Smokehouse, Red Streak, Fall Pippin, Bellefleur, Fallowater, Rambo, Pennock and another variety not named.

Henry Erb sent the Pound, Sweet Fallowater, Spitzenberg, Romanite, Golden Russet, Winter Smokehouse, Fall Smokehouse, Striped Smokehouse, Sweet Habecker, Swiss Pippin, Wine Sap, Rambo, Sweet Rambo, and another variety not named.

But the committee has not yet been officially informed, how it was received, what disposition was made of it, or what degree of merit was accorded to it.

The display of apples on the tables on this occasion was perhaps the finest that had ever distinguished an ordinary meeting of the society. Mr. Casper Hiller had the Belmonte, Ben. Davis, and others. Mr. H. M. Engle had also some fine varieties. There were also other exhibitors, but somehow their names and also the names of their apples either did not come into the possession of the reporters, or were mislaid.

Mr. Jacob Bollinger had some very fine apples on exhibition at this meeting, and Mr. L. S. Reist also had on exhibition seven varieties of his own fruit, as well as about twenty-five varieties of Canada apples, and a few from North Carolina, which he received through the kindness of Mr. John Freed, of Ontario, and Mr. Nathaniel Atkins, of Ashville, N. C., to whom the society accorded a unanimous vote of thanks. Among those from Canada were the 20-ounce Pippin, Cayuga, Redstreak, Alexander, Gravenstein, Swarr, Spitzbergen, Rhode Island Greening, Cat-head, Hawthorn, Robertson, Sweet-Pippin, 20-ounce apple, and other varieties of note. Among those from North Carolina were a 12-ounce apple, called the Huber, a very black variety, a large red apple, and a sweet Pippin of very peculiar quality outside, just as if sugar was oozing out through its skin. These apples were a part of those which Messrs. Freed & Atkins had on exhibition at the Centennial Pomological show at Philadelphia, and were very interesting as an illustration of the difference between apples of the same varieties grown in different localities of our country.

Mr. Engle read the act of Assembly relating to a State Agricultural Board, and it was moved to appoint a delegate to the same.

On motion, it was agreed to designate by ballot who shall be the appointed by the chair.

Messrs. H. M. Engle, Johnson Miller, and Jacob Bollinger were placed in nomination. Mr. Engle received six votes, Mr. Bollinger four, and Mr. Miller two.

Mr. Engle was therefore appointed by the chair as the delegate.

Mr. H. F. Hostetter, of Oregon, was proposed as a member of the society, and after signing the constitution became a member.

Mr. Eaby reported that H. M. Engle, Jacob M. Stauffer and Israel Landis, have contributed a sufficient number of books, amounting to $10 in value, to entitle them to life membership of the society.

On motion, the society then adjourned.

The Bee Keepers' Society

This association met statedly Monday afternoon Nov. 13, in the Athenæum, Vice President J. F. Hershey, in the chair:

President: A. H. Shock, W. B. Detweiler, D. Lintner, John Kepperling, S. Garber, L. S. Fleckenstein, J. F. Hershey, H. H. Myers, P. S. Reist, President.

An order of business was then adopted as reported by the committee.

J. F. Hershey and L. S. Fleckenstein discussed the question of the best mode of hiving a natural swarm and prevent them from leaving after the swarming, and both thought that it could best be done by contracting the entrance so as to allow the workers to get out.

Mr. Myers thought that if the queen was an old one it would also get out and had kept an old queen of his in a wire bag.

Mr. Hershey though the best way to make worker combs was to take out the capped or brood combs.

Mr. Detwiler found that it made no difference whether the queen was an old or young one.

Mr. Myers' experience coincided with that of other speakers, but although this is done there will, nevertheless, be some drone combs.

Mr. Detwiler said he had found that the bees would gnaw off some of the worker combs and build drone combs. "Can bees be wintered with success, without pollen," was discussed affirmatively by W. B. Detwiler and J. F. Hersey, who said that the old bees did not need the pollen, but feed it to the young bees.

Mr. Hershey thought that too much sun in winter time warms the bees and if they go out in snowy seasons they may get lost. Every few days he found it advisable to warm up the bees.

Mr. Detwiler said that he had noticed that, in old fashioned hives which the sun struck all the day round, the bees generally wintered first-class. He intended to experiment this winter with an eastern exposure.

Mr. Fleckenstine said that he had his hives shaded last winter and did not allow the sun to warm them up until the temperature of the air was warm enough in the shade to tempt the bees out.

"Should bees be wintered in the Middle States as in the western or northwestern States," elicited discussion by Messrs. Hersey, Myers and Detwiler, who concluded that our bees do not need the protection of the cellar or burial as is done in the western and northern cold and windy region. If the hives are put in the cellar they will mould.

P. S. Reist stated that he was very unsuccessful in "cellaring" his bees over winter, but he had much better success when his bees were surrounded with ice.

Mr. L. S. Fleckenstein detailed a failure he had experienced in buying bees.

H. H. Myers said that he had fed his bees with an inverted bee feeder, and put grass and hay in front of the entrance and was unable to prevent bee robbing. He had finally turned his hive around and thus prevented it, the robbers missing the entrance at the usual place.

Mr. Detwiler had thrown hay in front of the entrance, and the robbers had to crawl in and were attacked by the swarms and kept off. If a swarm becomes cowardly and will not fight he thought nothing could be done. He had experimented with one of these peaceable swarms by thus taking off a mile or so for a couple of days. Anointing the entrance with coal oil had often been used successfully. He believed that simply confining the robbers in with the swarm was not a good way.

Mr. Fleckenstein thought that careless feeding was often the occasion of robbing.

Messrs. Hershey, Myers and Detwiler, argued against the contraction of the entrance and believed in letting them fight it out. Otherwise the closed entrance will make them hot and excite them in their endeavor to escape from the hive.

In the discussion of the question, "Can we easily

overstock our country with bees," J. F. Hershey did not know how much it would take to overstock the country, but he had found that his swarms laid up as much honey as when there were none or few hives in the neighborhood.

Mr. Fleckenstein thought that the fever was not quite so high as to endanger the overstocking of the country.

Mr Detwiler went at it on a mathematical calculation and comparison of the number of clover-heads and the number of bees and came to the conclusion that it would be almost an impossibility. His hives averaged as much when he had forty as when he had only six.

The next question, "How does a queen know when passing over the comb, worker or drone that she must lay a worker egg in a worker cell, and a drone egg in a drone cell," proved too abstruse for definite settlement by the association, and the members pretty generally "gave it up."

On motion the association adjourned to meet on the first Saturday in May, 1877

DOMESTIC ECONOMY.

Eating too Much.

A long experience and observation in life induce us to add our testimony to the views presented in the annexed paragraph from Tinsley's *Magazine:*

"Nobody ever repented of eating too little," was the sage remark of an old gentleman on the verge of ninety, next to whom the writer had the pleasure of sitting at dinner the other night. The host was pressing him to take more, and urging him in the usual phrase: "Why, you have eaten scarcely anything!" Now, it is to be assumed that the old gentleman's words indicated one of the by-ways to good health, to which he had traveled through his long life, and to which he owed his present remarkably hearty condition; so it was suggested to him interrogatively that he had always been a small feeder. "Yes," he answered, "ever since I was two or three and twenty; up that time I was a weakly young fellow enough, and I used to make the great mistake of trying to eat and drink as much as I could, in the hope of becoming strong. All my friends and the doctors backed me in my error, but fortunately I found it out in time and 'knocked off—as your modern slang has it—more than half my usual amount of stimulants. I gave up the idea of making myself strong, and merely strove to make myself well, and I was contented with eating just as much as I could digest, and no more. Of course it took time and experience to discover the precise limits; I could not adopt the golden rule of always leaving off with an appetite, because I never began with one, but by persistently erring on the right side, I got hold of one of the great secrets of life—the secret of knowing when one has enough, and after a year or two I became so much better that I used to find myself ready to eat a meal at any time and actually acquired an appetite. Then once found, I never destroyed it, but always determinately rose with the feeling that I could eat more. Naturally temptation grows stronger, but I was firm. I did not behave ungratefully to my stomach and immediately presume upon its increased powers by overloading it. I did not live to eat, but only eat to live; and behold me! I have no need to be very particular as to what I eat, even at my time of life; I have only to be careful not to eat too much." Here, indeed, is the great secret of a great deal that is amiss with many of us. We are in the habit of eating too much, more than our digestive organs can tackle, and that which is not assimilated more or less poisons. The system becomes overcharged, and gives any latent tendency to disease within us every facility for developing itself. The question is not so much what to eat, as what quantity to eat, and nothing but a sharp look-out kept by ourselves can give us an answer.

When and Why Lamps Explode.

We take from the *Scientific American* a few hints that journal gives as to the danger arising from petroleum lamps:

All explosions of petroleum lamps are caused by the vapor or gas that collects in the space above the oil. When full of oil, of course, a lamp contains no gas, but immediately on lighting the lamp consumption of oil begins, soon leaving a space for gas, which commences to form as the lamp warms up, and after burning a short time sufficient gas will accumulate to form an explosion. The gas in a lamp will explode only when ignited. In this respect it is like gunpowder. Cheap or inferior oil is always most dangerous.

The flame is communicated to the gas in the following manner; The wick tube in all lamp burners is made larger than the wick which is to pass through it. It would not do to have the wick work tightly in the burner; on the contrary, it is essential that it move up and down with perfect ease. In this way it is unavoidable that space in the tube is left along the sides of the wick sufficient for the flame from the burner to pass down into the lamp and explode the gas.

Many things occur to cause the flame to pass down the wick and explode the lamp. 1. A lamp may be standing on the table or mantle, and a slight puff of air from the open window or door may cause an explosion. 2. A lamp may be taken up quickly from a table or mantel and instantly exploded. 3. A lamp is taken into an entry where there is a draught, or out of doors, and an explosion ensues. 4. A lighted lamp is taken up a flight of stairs, or is raised quickly to place it on a mantel, resulting in an explosion. In these cases the mischief is done by the air movement—either by suddenly checking the draught, or forcing air down the chimney against the flame. 5. Blowing down the chimney to extinguish the light is a frequent cause of explosion. 6. Lamp explosions have been caused by using a chimney broken off at the top, or one that has a piece broken out, whereby the draught is variable and the flame unsteady. 7. Sometimes a thoughtless person puts a small sized wick in a large burner, thus leaving considerable space along the edges of the wick. 8. An old burner, with its air draughts clogged up, which rightfully should be thrown away, is sometimes continued in use, and the final result is an explosion.

Sleeping Warm.

I believe it is impossible to have too much pure air, but it is possible to have the air colder than feeble persons can breathe with comfort or with safety. For hardy persons there is no danger in cold air, provided they have plenty of bed-covering, and keep their mouths closed. It is unwholesome for any one to sleep cold. One of the hardest things for feeble persons to endure, is getting into a cold bed to sleep. It draws so much upon the already low vitality, that before the cold bed is warmed, its occupant is so thoroughly chilled that it is almost impossible to get warm again. In this way the system is unnecessarily taxed, and the general health reduced. When one must sleep in a cold room, it would be better to wear flannel night clothes, (warmed before putting them on, and perhaps with woolen stockings for night use in exchange for the stockings worn all day,) or to have the bed warmed before entering it. This can be done with warming-pan, or by rolling a jug of hot water about between the sheets.

I find by experience that children rest more quietly in rooms well ventilated, though the air is quite cold during the night, than when they sleep in warmer and closer rooms, and I think it well to accustom their lungs to cold air in this way. It is very undesirable to make hot-house plants of our children. They should be dressed so warmly, both by night and by day, that they can be comfortable in rooms moderately cold.—*Cor. in American Agriculturist.*

How to Keep Bouquets Fresh.

There are various receipes for keeping bouquets fresh. Some people stick them in moist sand, some salt the water in the vases, and others warm it; others, again, use a few drops of ammonia. My rule is, to *cool the flowers* thoroughly at night. When the long day of furnace-heat has made the roses droop and their stems limp and lifeless, I clip them a little, and set them to float in a marble basin full of very cold water. In the morning they come out made over into a crisp beauty, as fresh and blooming as if just gathered. All flowers, however, will not stand this water cure. Heliotrope blackens and falls to pieces under it; azaleas drop from their stems, and mignonette soakes away its fragrance. For these I use dry, cold air. I wrap them in cotton wool, and set them on a shelf in the ice-chest? I can almost hear you laugh, but really I am not joking. Flowers thus treated keep perfectly for a week with me, and often longer.—*S. C., in St. Nicholas for November.*

Good Wives.

The story is told, that in the early life of Commodore Vanderbilt, his wife was a most frugal and faithful helper. From the money given her for household expenses, she saved what she could, and so a handsome little sum was accumulated. When, at length, her husband saw a chance to purchase a ferry boat, and so to lay the foundation for what became so great a fortune, he lacked some ready cash. "How much do you need?" said the good wife. The sum was named, and to the husband's surprise she produced the full amount, which had been saved by her skill and prudence.

When Marshal Bazaine was sentenced to banishment to one of the forts of France, his youthful and attractive wife determined to go with him. Her friends attempted to dissuade her from going, but she replied, "When my husband was in honor, I shared it with him, and shall I not also share his banishment?"

Cleaning Window Glass.

Painters sometimes leave spots on window glass when painting the sash. A lady who knows informs us that benzine applied to such places, and allowed to remain awhile, will render it easily removed by scouring. She says she has also heard, but has not tested it, that a strong solution of soda applied hot, will be equally efficacious.

Fine Pumpkin Pies.

Pumpkin Pie—I.—One pint of stewed pumpkin, four eggs, one quart of milk, one large cup of sugar, half a teaspoonful of ginger; when your pie is ready to go in the oven, grate a little nutmeg over the top of it; this quantity makes two pies.

Pumpkin Pie—II.—Take a Boston or Hubbard squash, and cut, peel, and remove seeds and pulp. Then cut in very small pieces, and wash with cold water in a colander. Stew in a porcelain lined, covered vessel, without water. Cook slowly; stir frequently, to avoid burning. When cooked, pass the squash through a colander to remove any lumps. To a quart of squash add a quart of milk, four eggs, teaspoonful of salt, six tablespoonfuls sugar; nutmeg, cinnamon and ginger to taste.

Pumpkin Pie—III.—Boil a small pumpkin until soft; strain, and when cold add a quart and one-pint of milk, two cups of sugar, five eggs, level teaspoonful each of cinnamon and ginger, and a pinch of salt. For crust, three small cups of flour for three pies, one-half cup of shortening and salt; mix with cold water, and roll very thin.

Pumpkin Pie—IV.—Mash very fine with hand one-and-a-half cups of boiled pumpkin—using only the chunks of pumpkin, none of the water; then mix with that a heaping tablespoonful of flour, rubbed smooth with a little milk—one egg, three cups of milk, a teaspoonful and a half of lemon extract or ginger; salt, sugar to taste, and bake in a good-sized pie plate with a good wall of crust built up around the plate. It is a good way to cook the pumpkin not to put any water into the pot. If set on the back part of the range the heat will draw out the juice of the vegetable; it will then steam done, and no straining will be necessary; only be careful not to let it burn. The above is the quantity for one pie.

Pumpkin Pie—V.—Boil and mash half a pumpkin; strain off the water until quite dry; then add a pint and a half of milk, five eggs beaten light, half a pound of sugar, quarter of a pound of melted butter, half a pint of brandy, and large tablespoonful of ground cinnamon; put in pastry crust, and bake as a pie. This quantity will make six pies.

Corn Cribs.

Farmers must be prepared to have crib room for their corn. A good corn house costs but little, and every farmer should have one disconnected with other buildings to keep out rats. There is probably no better way to build on than upon durable posts, about two feet above the ground, placing pieces of zinc on the tops of the posts, projecting all around about eight inches. Movable steps should be made for the door, to be removed a few feet after coming out. It is quite as well to build a corn house with perpendicular sides as it is to build in the old style of slanting at the bottom, to protect the corn from storms. Let the roof project over three or four feet, and the corn will be protected enough. A temporary crib may be made of rails laid upon cross pieces at the ends, six or eight feet high and five or six wide, with boards laid upon the top so as to shed rain. The corn should be raised about a foot from the ground by a loose, open flooring.

Keeping Eggs.

Slake one pound stone lime in two gallons water. When cold add one pint salt. Stir well and let the mixture thoroughly settle. Place the eggs in a stone jar, pointed ends downward, and pour over them the clear liquid without disturbing the sediment. Be sure that the lime water covers them. Close the jar tightly, and do not disturb until wanted for use. Be careful to break each one into a dish separately, as there will always be found a few which the lime will penetrate, but the proportion is very small. This recipe will preserve nine dozen eggs.—*Cor. Mass. Ploughman.*

Hard Soap.

Take of purified grease and sal soda each six pounds, and of stone lime three pounds. Put the sal soda and lime into an iron vessel. Pour on four gallons of hot water; let it slack and settle. Put the grease into a kettle, and carefully dip out your lye formed by the sal soda and lime, and boil with your grease for twenty-five minutes. Pour into moulds or wooden tubs. It is an excellent cheap hard soap. Salt grease must not be used. I have tried it for five years. If it does not immediately form soap when boiled, pour in a gallon or so of fresh water. Try it and report your success.

If the grass on your lawn is too thin and sparse, the whole surface may be loosened with a sharp steel rake (or a fine sharp harrow on a large scale) and grass seed sown; and its germination and growth will be greatly assisted if the whole surface is dressed with a fine compost before sowing and raking.

Harrowing cannot be repeated too often. If the cattle have trampled the meadow, harrow it. If it is baked, harrow it. If you want a good crop, harrow it.

A Wholesome Drink.

Oatmeal in water, in the proportion of a quarter of a pound of oatmeal to three quarts of water, is recommended as a refreshing drink. The meal should be well boiled, the mixture cooled, and water added to keep up the proportion. With a bit of ice this is said not only to quench the thirst, but to keep up strength. Without ice, when ice can not be had, it is still palatable, if entirely cool. It is said that it is used in many iron foundries and manufactories in England. The meal should be well shaken through the water before drinking.

Warmed-up Mutton.

Cut off the meat carefully, throwing aside all stringy pieces, mince finely, and season to taste with pepper, salt, and, if liked catsup, and finely chopped onion. Moisten with some rich stock, or the gravy left over, after taking off the fat which has risen on the top and cooled. Put it on a dish and cover over with mashed potatoes, scored roughly across the top if you like, or smoothed over and washed on top with a little melted butter. Brown it in the oven a fine dark golden color, and serve very hot.

Mucilage.

An excellent mucilage or paste may be made from the gum that oozes from cherry or plum trees in the summer season, and dries upon the bark in lumps. By picking off this gum and dissolving it in water, in a paste cup or wide-mouthed bottle, it forms a valuable mucilage, very adhesive, and is always ready for use. It requires a day or longer for this dried gum to dissolve in cold water, but it can be dissolved sooner by heating it. By keeping a small paddle or brush in the vessel containing it, it will be found very convenient and useful in every household.

Bread Sponge.

Six potatoes boiled and mashed while hot, two tablespoonfuls of white sugar, two of butter, one quart of tepid water. Stir in this three cups of flour, beat to a smooth batter, then add six tablespoonfuls of yeast. Set over night. In the morning knead in sufficient flour to make a stiff spongy dough. Knead vigorously for fifteen minutes. Set away to rise, and when light knead for ten minutes; mould out into moderate-sized loaves. Let rise until they are like delicate or light sponge cake.

Beef and mutton cost about three cents a pound in Servia, a turkey fetches a shilling, a pair of fowls may be had for six cents, and a draught ox only costs from $10 to $12. Native tobacco and wine are similarly cheap, but bad.

A tablespoonful of ammonia in one gallon of water will often restore the color of carpets, even if dissolved by acid or alkali. If a ceiling has been whitewashed with the carpet down, and a few drops should fall, this will remove it.

It is said that a coat of tallow applied to rubber boots will draw out the sulphur and render them much less liable to crack.

GENERAL MISCELLANY.

A Good Word for the Hog.

He is one of the pachydermatous or thick-skinned animals, of which the existing genera are the elephant, the hippopotamus, the hyrax, the tapir, the hog. The elephant, which once spread in countless herds to the polar regions, is now confined to the woods of the tropics; the rhinoceros, yet more rare, is limited to the hottest regions of India and Africa; the hippopotamus, one of the hugest of living quadrupeds, is confined to the largest rivers of Africa; the tapir merely lingers in some of the forests of intertropical countries; but the hog survives the revolutions of countless ages and is reproduced in countless multitudes in every region of the earth.

However groveling and mean may appear his habits when reduced to the degradation of slavery, yet he is not destitute of sagacity, nor unsusceptible of attachment. When he lives in the cabin of the peasant, he loses much of his rudeness, suffers himself to be caressed, and recognizes his protectors. Instances are known in which the hog, for the purposes of exhibition, has been brought to perform a number of feats, displaying a marvelous degree of docility.

Intractable, rapacious and selfish, as we are wont to esteem this animal, no mother is more tender to her young or more resolute in their defense. Hogs are not insensible to natural affections; they are gregarious and social, warming one another with their bodies in cold weather; and, when assembled in herds manifesting the utmost sympathy for one another's sufferings. Should one give signal of distress, all within hearing rush to his assistance; they gather round their comrade and fiercely assail the largest animals that have injured him. In Calabria, where they are grazed in herds, the keeper uses a kind of bagpipe, which, when at sunset they are to be driven homeward, instantly collects them from all parts. In certain villages there is a common swineherd; in the morning, when he sounds his horn, all the pigs rush forth and follow him to the place of feeding; in the evening they return under his guidance, and when they enter the village each runs to his own sty without mistake. In some of the Southern United States, it is usual to turn the pigs into the woods, but to collect them together once a week, by giving them salt and maize, or other favorite food. At the very hour they are to receive their weekly present, they reassemble from all parts without a straggler. They have the sagacity always to discover the food that suits them, never being, like some other animals whose senses are blunted by domestification, poisoned by the plants they find in the wild state. Their exquisite senses of smell and touch direct them to earth-nuts and other roots, acorns and the like, which are found buried in the ground. They are conscious of an impending storm, and carry straw as if to shelter themselves from its violence. They are agitated when the wind blows violently, screaming and running to the sty for shelter, which has given rise to this singular saying of the country people, that "pigs see the wind." The explanation is, that the hog dreads wetness and cold, and is eminently sensitive to coming changes of the weather.—*Prof. Low, in "National Live Stock Journal."*

Autumn Care of Lawns.

During the latter part of summer, the lawn needs less frequent mowing than in June and July; and as cool weather comes on in autumn, the grass nearly ceases growing. After this period, the mowing should be suspended, or not repeated more than once, to allow a strong growth for winter protection. If cut short late in autumn, wherever the surface is exposed to the sweep of winds, the grass will be injured in vigor, and it will not assume that fresh green appearance in early spring that will be seen whenever there has been a good winter protection. Some discretion must be exercised, however, for too long and too dense a growth will tend to weaken the plants beneath by smothering, and in well sheltered places less covering is needed than where the lawn is more exposed to winds. Or, if a top-dressing is intended, the grass should be cut short for two reasons: this application itself will afford protection; and if the grass is cut, the fertilizer will more directly reach the roots.

It sometimes happens that in consequence of sterile spots of earth, there are patches where the grass has made a poor growth. This defect may be remedied by top-dressing well with a steel tooth rake and sow heavily of additional grass seed.

Manure is too often applied in large lumps. In this condition it is of little value. A part of the grass gets none, and a part is smothered by the heavy mass. It makes little difference whether old or fresh manure is applied, provided it is finely broken up and evenly spread. A uniform thickness of one inch over the whole surface, will be a very heavy dressing—half an inch will be quite effective. Where the lawn is extensive, the lumps of manure may be finely pulverized and evenly spread by using a smoothing harrow, more rapidly than twenty men would do the work by hand. In the absence of manure, a dressing of fine soil an inch thick will be useful in many cases; and when the surface is slightly uneven, this dressing may be placed in depressions only and thus restore an even surface. Sand alone, used for this purpose, will be useful to the grass, and may be more easily and evenly applied. When the weather has been dry enough to leave the roads dry, one of the best and most easily spread of all kinds of top-dressing, for small lawns, is sifted road-dust; for being finely pulverized and mixed with a portion of the droppings of horses, it may be applied with accuracy in a uniform coating, and half an inch in depth will show its effects on the green grass.—*Country Gentleman.*

Chemistry of the Fattening Process.

A lean cow or ox is in a very different condition, chemically considered, from fat animals of the same kind. In the first place the poor animal consists of about two-thirds water, the fat one of only half, that is in total weight. A fat animal is in a dry condition, a poor animal is like some of our bog meadows, very wet. When the fattening process begins, water commences to disappear, and fat or suet takes its place; and the increase in bulk during the process is largely of adipose of matter. It is curious circumstances that, during fattening, the proteids, or nitrogenous compound, increase only about seven per cent. and the bone material, or inorganic substances, only one-and-a-half per cent.

The cost to a farmer of fattening an ox is much greater at the close of the process than at the commencement; that is, increase in bulk or dry weight at that period is much more costly. If it costs three cents a pound for bulk for the first three months after a poor animal is put in the fattening stall, it will cost five cents the last month. If, then, a farmer consults his money interests, he will not carry the increase in fat beyond a certain point, provided he can turn his partially fatted animals to fair advantage. Farmers have, perhaps, learned this fact from experience and observation, and hence comparatively lean beef abounds in our markets. While this is of advantage to the farmer, it is very disadvantageous to consumers of the beef, for the flesh of a fat animal in every case is much richer in fixed, nourishing material than that of the lean, and it is never good economy to purchase lean beef. It is better to purchase the poorest parts of a fat animal than the best of a lean one. The best piece of a fat ox (the loin) contains from 21 to 28 per cent, more fixed material than the corresponding piece in a lean one, and curiously enough, the worst piece in the lean animal (the neck,) is the richest in nourishing material. The flesh of the neck improves very little in fattening, hence, economy considered, it is the best portion to purchase, as its value is in a measure a fixed one.

Horse flesh is as nutritious, considered as food, as that of the ox or cow. The relation of nitrogenous to fixed material is rather higher in a horse than in an ox, and amount of water is less. There is no good reason why horse flesh should not be used as food. It is prejudice alone which prevents its employment. It is a regular article of sale in the meat markets of Paris at the present time.—*Journal of Chemistry.*

Protecting Garden Roots.

As winter approaches there comes up the annual question what shall we do with the roots? The farm has its turnips, beets, perhaps carrots and various other things; the garden has cabbage, celery and loads of other things. In all these questions there must be various answers. How best to preserve them will depend on how we want to use them, and the convenience at command. Take celery for instance: If we are to use it in large quantities and often, we must have some place for it very easy of access; but if we only want a little now and then, we need not go to half the trouble as in the other case. What to do, and how to do it, can be best understood by seeing just what we want to accomplish.

Now, to preserve these roots well, we must keep them from growing; for they are so constructed as to sprout with very little heat. The nearer we can keep them to freezing point without actually freezing, the better for the roots. Again, water is an enemy if the temperature should be much above freezing. So it comes down to this, that whatever will keep roots so that they will not wither from too great dryness of their surroundings, and will keep them cool, but not freezing, is the perfection of a plan.

Now, some may have a cellar, some a barn, some nothing but boards or leaves to keep off water and frost; it is all the same in principle to keep cool, not frozen, and a little dry.

In keeping cabbage, the water is very apt to get in between the leaves and to be troublesome when any kind of protection is tried in the open ground; but this is guarded against by turning the cabbage upside down. Celery is much the best if it can be kept out in the ground to the last possible moment. If there are leaves or some light material at command to cover with, so as to protect against the first frosts, it may be left out till near Christmas to advantage. It is as cool as can be wished under such circumstances, and just free from frosts, the very best condition possible. Indeed, if covering enough can be had to keep out all frost, and no great amount of it required at any one time, it might be best to leave it out all winter, choosing the chance to get enough out at a time to last a couple of weeks. If it is wet, snowy, cold, or something or another, however, when we want to get at the vegetables, a cool place under cover is far the best if we can command it.—*Germantown Telegraph.*

Sheep—The Outlook.

The *Farmer's Friend*, in commenting on the general outlook of sheep husbandry, gives the following very sensible advice:

Farmers who keep large flocks of sheep should not dispose of them hastily, in view of the low prices they bring, and the cheapness of wool, as we are not always to have such times as exist at present. Probably in two or three years the prices will advance 50 per cent., from the fact that large portions of our wool growers will either go out of the business, or greatly reduce their flocks, no matter how much they are advised to "hold on." In some cases it will be well to get rid of your poorest sheep, and thus reduce your flocks somewhat; but our advice is to reduce your flocks as little as you can, and make them pay the expenses of keeping till prices go up. During the last thirty years there have been a half-dozen ebbs in the prices of sheep and wool, and yet those breeders who "held on" came out all right. What you need most is good breeding rams; and we annex what an old sheep-raiser says: "The best bred and best formed merino rams may now be had for $50 to $100, and the long-wools or Downs are quite as cheap; and when we reflect that we may have fifty to one hundred lambs from a single sire, what a waste of money it is to use an inferior, flat-sided ram because he can be had for $10 to $15! The defects of a bad sire, used for a single season, will be visible in a flock for many generations, so that the injury done cannot be estimated; and the services of such an animal will never be accepted by an intelligent breeder, if tendered as a gratuity.

The selection of the breeding ram, where mutton is produced, must be from the long-wools, or the Downs. If we make choice from the former, we must be careful to have an animal of stout and robust constitution. These sheep have been so generally forced with artificial food, so that many of them lack the hardiness required for the farmer's purposes. What we must have, is a straight, round barrel, on short legs, with short, stout neck, and vigorous, masculine appearance about the head. The body should be well covered with a long and lustrous staple, of uniform quality. If the selection be of the Southdown breed, we should have the same general form as here described, but we ought to have a more compact and snug carcass, with a good deal more weight for bulk than in the long-wool breeds.

Portable Pig-Pen.

The writer has used the following plan for a cheap and portable pig-pen for store-pigs, and finds it very convenient. It consists of two portions—the sleeping box and the yard, both portable, but not fastened together. Two men can lift each part separately and carry it into fresh ground when the yard needs cleaning out, and weeds, rubbish and potato tops can readily be thrown into the yard from a cart.

The yard is made of inch spruce fencing strips, four inches wide, ten or twelve feet long, nailed to three by four-inch posts, placed at the corners and in middle of each side. As the posts do not enter the ground, two men can easily lift the yard and carry it to fresh ground. Five strips are used on each side, with three inch spaces between the strips. On one side of the yard two of the strips reach only half way, leaving an opening from the yard to the sleeping box. A trough of 1¼ inch spruce, 5 inches wide, nailed together at right angles, is used for feeding in the yard.

The sleeping box is matched boards, four feet by six feet on the floor, thirty inches high in the rear, and forty-two inches high in front, which is partly open, and stands against the opening in the yard. The roof slopes from front to rear like a lean-to shed, and there are two handles at each end, by which two men can lift it for removal. This box stands on legs, which raise the floor eight inches above the ground, keeping it dry in wet weather. By littering it well the pigs will thrive in quite cold weather. But this arrangement is intended chiefly for summer use, when we generally carry a larger stock than can be accommodated in the more comfortable winter quarters. Eight or ten pigs just weaned are put in one yard, but as they grow larger a smaller number only should be allowed. The yards will need removal and cleaning but once in two or three weeks. This plan could be used perhaps by those farmers who feed their pigs on growing clover, removing the pens daily, much on the same principle as the English farmers feed their turnips and other crops to sheep in the so-called "hurdles." Yard and box together will need about 250 feet of spruce lumber, and can be made in half a day by an ordinary man who can handle tools.—*W. Philbrick.*

Dairy vs. Creamery.

A correspondent of the *Southern Agriculturist* writes that, in his opinion, dairy butter should be better than creamery. He says:

With good cows, good pasture, good water, good milk room, good utensils, good milkmen, or milkmaids, and good attention, I believe the advantage is with the farm. Why not? Will some one please tell me wherein the factory has one single advantage over the farm dairy? The trouble lies at home with each one. If cows are pastured in low, wet localities, where coarse swamp grasses prevail, where the water is full of organic life, putrid and foul, good butter is impossible. If the cows are old, run down, ill used, badly milked by dirty, slovenly hands, good butter cannot be made. If the utensils used are not of the right material, are not kept clean, and the milk room is full of bad odors, the same result is certain. And finally, if the milk is not churned at the right time good butter is out of the question. There is no stopping place from beginning to end where a lazy, shiftless person can throw off responsibility.

Absolute cleanliness, purity of food and the strictest attention are essential. Knowing this, is it any wonder we have so much poor butter? Wherever natural facilities combine with proper effort, there is no trouble. And energy of determination will often overcome natural obstacles; but when slovenly habits and ignorance combine with natural disadvantages, poor butter always results. Let farmers and their wives think of these things. Serious thought begets action.

I would urge all farmers who make a really superior quality of butter, to hunt a market for it. A market can easily be found. There are hundreds of comparatively wealthy men in all our larger country towns, who will be glad to pay a fair price for a good quality of butter. Hunt them up and supply them regularly every week. Besides making money by it, the knowledge that you get an extra price will have more influence upon your neighbors than all the wordy arguments that could be presented.

Fall or Spring Planting.

Novices are sometimes puzzled as to the comparative merits of fall or spring planting of trees and vines. Possibly the locality and soil may sometimes make a difference, but generally, if the work is well done and soil is in proper order, I think there are several advantages in fall planting. One is that there is not so much hurrying work—the planting season extending from the fall of the leaves until the earth freezes or the weather becomes too cold to work with bare hands. In 1866 I planted 240 pear trees early in December with most excellent success.

A second advantage is, that the fall planted trees get an earlier start in the spring than those planted in the spring and, of course, have a longer season for growth. Some contend that fall-planted trees are apt to be displaced by high winds and the settling of the soil about them, but no such result need be apprehended if the work is done right. Every root should be placed as nearly in its natural position as possible and fine earth carefully packed about it with the fingers; no two roots of any size should be left to touch each other, and when all are covered the upper earth should be trodden down carefully, and then not much future settling need be apprehended.

With these precautions, including the proper pruning of the tops to correspond with the amount of roots, planting at either season is safe enough. It is specially important that this proportion between roots and tops should be maintained, because, by leaving too much top, the amount of leaves, which are the lungs of a tree, make a draught on the roots which they may be unable to supply. In that case, a feeble and stunted growth will be the result, and in some cases an early death even after a full show of foliage. It is always safe to cut back pretty thoroughly at the time of transplanting; the tree will be more certain to live and do well and will the better maintain an erect position until the roots are well established.

How to Manage Cuttings.

In reply to a correspondent, the *Floral Cabinet* gives the following directions in regard to the making and managing of plant cuttings:

In selecting a cutting, a great deal depends upon a judicious choice; if the slip is too young and full of fresh sap, it will fade away from too much evaporation; if it is too old—hard and woody—it will take a great while to strike root.

You must take a cutting that is perfectly ripened and is from a vigorous shoot, yet a little hardened at the base.

It is also essential to have a bud or joint at or near the end of the cutting, as all roots strike from it; and the nearer it is to the base, the greater your chance of success.

Plant your cuttings in common red pots, filled half full of rich loam and two inches of sand on top (scouring sand will do, but not sea sand); wet this thoroughly, and put on the cuttings around the edge of the pot, for if the bud or joint comes in contact with the pot, it seems to strike root more quickly. Pull off the lower leaves before you plant the cutting. Press the wet sand tightly about the tiny stem, for a great deal of your success in raising the cutting depends upon the close contact of the sand with the stem. When the cuttings are firmly planted, cover them with a glass shade if possible, as it will greatly promote growth of the plant.

Moisture, light and heat are the three essentials to plant life—without them no cutting will start.

Shade for two or three days from the sunlight, but don't let the sand become dry; then give all the sun you can obtain, keep up a good supply of moisture, and you can hardly fail to root most of your cuttings.

Treatment of an Unmanageable Horse.

A beautiful and high-spirited horse would never allow a shoe to be put on his feet, or any person to handle his feet. In an attempt to shoe such a horse recently he resisted all efforts, kicked aside everything but an anvil, and came near killing himself against that, and finally was brought back to his stable unshod. This defect was just on the eve of consigning him to the plough, where he might work barefoot, when an officer in our service, lately returned from Mexico, took a cord about the size of a common bed-cord, put it in the mouth of the horse like a bit, and tied it tightly on the animal's head, passing his left ear under the string, not painfully tight, but tight enough to keep the ear down and the cord in its place. This done, he patted the horse gently on the side of the head, and commanded him to follow; and instantly the horse obeyed, perfectly subdued, and as gentle as a well-trained dog, suffering his feet to be lifted with impunity, acting in all respects like an old stager. The gentleman who thus furnished this exceedingly simple means of subduing a very dangerous propensity, intimated that it is practiced in Mexico and South America in the management of wild horses.—*N. Y. Commercial Advertiser.*

THERE is a vast difference in the flavor of eggs. Hens fed on clear, sound grain, and kept on a clean grass run, give much finer flavored eggs than hens that have access to stables and manure heads, and eat all kinds of filthy food. Hens feeding on fish and onions flavor their eggs accordingly, the same as cows eating onions or cabbage, or drinking offensive water, imparts a bad taste to the milk or butter.

Hens that Don't Set.

The non-setting varieties of fowls comprise the different kinds of Hamburgs, Spanish, Leghorns, and Polands, and also some of the French fowls, yet we often meet with individuals of the foregoing breeds which are medium setters. Non-setters, if well bred, will not give one confirmed case of setting among fifty birds, though they sometimes set for a few hours or a week. These correspond to the setting fever of the incubating breeds. The instances of fowls setting steadily, although belonging to a breed of pure non-setters, show reversion to the primitive type when incubation was universal. A cross between the different breeds of non-setters will produce a race that will set as regularly and persistently as any fowls. Some crosses between breeds are very desirable, but non-setters should be kept pure, or the trait which constitutes their principal value will be lost. Where many fowls are kept, it is better to have the larger part consist of some non-setting breed. A great saving may be made in a setting breed to produce a few good mothers. The rest, say three-quarters of the whole of your stock, should be of some breed of non-setters. It is as easy to take care of 200 non-setting hens during the warm season as 100 of a setting variety.—*Poultry World.*

Ducks.

The *Poultry World* lately contained some excellent directions for raising ducks. Of the four kinds, to wit: Aylesbury, Rouen, Cayuga, and Pekin, all good kinds, the writer values them in the order they here stand. A pond is not necessary for successfully raising ducks, yet they will not thrive in confinement, but should have the range of pasture or meadow. Only from two to four ducks are allowed to each drake. They should be fed only once a day, in the evening, and there will be no trouble in their coming in. In hatching the eggs they should always be placed under hens, and several broods should be put together. Ducklings should never be allowed the free use of ponds or streams before they are six weeks old, but kept in a dry yard with good shelter. Feed corn and oats ground together and wheat bran in equal proportions mixed and scalded. Raw meal is to be avoided; earth worms are beneficial, and should be supplied them daily; also beef liver and other cheap meat may be cooked and chopped for them, and fed stewed in the broth while it is boiling, but no whole or uncooked grain should be fed to ducklings until they are well-fledged. After that, cracked corn, or whole and other grain may be alternated with the soft food, which must be continued.

Rye for Winter Pasture.

Experience proves that no kind of pasture pays as well as rye sown for early spring feeding. It comes in before any other herbage, and is a real treat to cows and other stock, after having been kept on dry fodder and such like food all winter, as is too common with most farmers who fail to supply themselves with root crops. One who has for many years been in the habit of sowing rye for the purpose indicated with the very best results says that, if sown in August, or even in September, will produce abundant yield of delicious herbage for all kinds of stock in early spring or in some quarters late in the winter. It is especially valuable for the calves and colts and lambs and milch cows, and indeed for all kind of stock. All you have to do is to plow the ground and sow the seed; they will pluck it. You need not harvest it for them. The green rye keeps the bowels open, the blood in good condition, and the animals growing with great rapidity. If the cornfield is so that it can be pastured, nothing will pay better than to sow it in rye. Put a man on horse with a seed bag and let him sow the rye. If a heavy rain soon falls, or moist weather soon follows, the rye will come up without running through the cultivator, but in case of dry weather the cultivator must be used to cover the seed.

Farming Without Stable Manure or Stock.

We have previously referred to the successful farming of Mr. Prout, an English farmer, says the *American Agriculturist:*

His system is to grow continuous crops of grain, roots and clover, entirely by the use of artificial fertilizers. He keeps no stock except the work horses, and the crops are sold upon the fields when ready for harvest, the purchaser harvesting and carrying them away. This exceptional manner of farming is made profitable by Mr. Prout, and some of the crops sold this season are the eleventh in succession upon the same fields. Although the season has been remarkably unfavorable, the yield and prices of the crops were satisfactory. Barley was sold at an average price of $40 per acre, the purchaser to cut and carry it away. The wheat crop bought from $42 to over $54 per acre. Oats realized $32 for a crop damaged by wet weather, up to $48 per acre for those in better condition. For 11 acres of mangels $11, per

acre was bid, and $115 for 8 acres, but they were not sold. As these last prices were the value in the ground unharvested, the root crops seem to be more profitable under this system, than even the grain crops.

American Poultry.

An English paper quotes the following from the *American Poultry World*, and thinks it indicates that American poultry knowledge and caste is far ahead of that of Europe:

We are breeding in America at the present time, all varieties of domestic fowls, undeniedly the finest poultry stock in the world. In the last two years, and especially during the past season, more really first-class fowls have been grown in the United States than ever before, beyond comparison. We do not speak of any particular variety of stock, although the Cochins and Brahmas have been bred most extensively without doubt. But the Leghorns, the Spangled Polish, the Houdans, and other French fowls, the Dominiques, the new "Plymouth Rocks," and the games of all kinds—not to forget the numerous beautiful little bantams also—have multiplied largely all over the country. Thousands of superb specimens have been produced for standard stock that are a credit to the producers, and which have very largely enhanced the intrinsic value of American-bred poultry as an item of solid national wealth. This is a most encouraging outlook, not only for the ambitious American fancier of poultry, but for all who take an interest in this important branch of our rural economy.

Fall Cuttings.

The fall season is a much better one for taking off cuttings than any other, and there is a large number of plants that can be propagated in this way. The currant, gooseberry, quince and the grape among fruits; and the privet, honeysuckles, wiegela, forsythia, mock-orange and many other things among ornamental shrubbery. Indeed, there are so many things among these hardy plants, &c., that will grow well in this way, that it is much easier to give a list of the things that will not grow from fall cuttings, rather than the things that will. The great difficulty is that they draw out of the ground by freezing and thrawing. To avoid this the cuttings need not be set out at once in the ground, but they may be tied into bundles, each after its kind, and buried under ground till spring, and then put out in rows where they are to grow. Of course they must be looked after early in the spring, or the buds will sprout and rot. In sandy land, or earth that keeps good hold of things, cuttings may be put in at once.

Beets for Cows.

Last year I raised a lot of mangolds and carrots. The mangolds were gathered first and put in the cellar; afterwards the carrots were gathered and corded up on top of them, so that when I began to feed them to my cows, the carrots came first. The cow gave about her usual quantity of milk, excepting the usual shrinkage of the occasion of cold weather and being put upon dry fodder. Fearing that the beets would not keep as well as the carrots, and also thinking that they possessed better milk producing qualities, I was anxious to get at them. Accordingly, I removed part of the carrots and commenced feeding beets, when, to my surprise, my cow began to fail of her milk until the deficiency reached about one-third. Wishing to test the matter still further, I changed back again to carrots, when her milk increased to about the usual standard. The quantity fed was about the same in either case—about a half bushel basket three-quarters full. If there was any differences, it was in favor of the beets.—*Cor. Rural New Yorker.*

CRAWFORD COUNTY, Pennsylvania, has in operation fifty-eight factories, producing 6,310,000 pounds of cheese; Erie county, twenty-two factories, producing 2,610,000 pounds of cheese; Mercer and Venango counties, eleven factories, producing 647,700 pounds of cheese. The aggregate in the four northwestern counties of Pennsylvania is 101 factories, producing 9,557,700 pounds of cheese.

LITERARY RECORD.

"THOUGHTS HEAVENWARD," a royal 12 mo. pamphlet of 56 pages, by J. R. Hoffer, editor of the *Mount Joy Herald*; printed at the *Herald* office, Mt. Joy, 1876. Price 25 cents. This little work is substantially a portion of a series of papers contributed to the *Herald* by Mr. H., on moral and religious subjects, which had their beginning in the year of our Lord 1868, under the title of "OUR DIARY," and which are still continued. In the advancement of our temporal interests, it is a matter of momentous importance, that we check our heedless career, and also devote our "mind and soul" to the contemplation of our spiritual aims and ends, and we know of no similar work, of equal accessibility, that would be so effectively a great spiritual and moral help, as these daily productions of Mr. Hoffer, now first brought together in pamphlet form.

PENNSYLVANIA RAILROAD SCHEDULE.

Trains LEAVE the Depot in this city, as follows:

WESTWARD.	Leave Lancaster.	Arrive Harrisburg.
Pacific Express*	2:40 a. m.	4:05 a. m.
Way Passenger†	4:50 a. m.	7:50 a. m.
Limited Mail*	9:25 a. m.	10:30 a. m.
Hanover Accommodation.	9:30 a. m.	Col. 10:00 a. m.
Mail train via Mt. Joy	11:20 a. m.	1:00 p. m.
No. 2 via Columbia	11:20 a. m.	1:20 p. m.
Sunday Mail	11:29 a. m.	1:20 p. m.
Fast Line	3:25 p. m.	4:50 p. m.
Frederick Accommodation.	3:35 p. m.	Col. 4:15 p. m.
Harrisburg Accom	6:10 p. m.	8:10 p. m.
Columbia Accommodation.	7:32 p. m.	8:10 p. m.
Lancaster Express	7:40 p. m.	8:10 p. m.
Harrisburg Express	7:45 p. m.	9:05 p. m.
Pittsburg Express	9:10 p. m.	10:35 p. m.
Cincinnati Express*	11:30 p. m.	12:45 a. m.

EASTWARD.	Lancaster.	Philadelphia.
Atlantic Express*	12:40 a. m.	3:10 a. m.
Philadelphia Express†	4:10 a. m.	7:00 a. m.
Harrisburg Express	7:25 a. m.	9:25 a. m.
Lancaster Express	7:50 a. m.	10:30 p. m.
Columbia Accommodation.	9.28 a. m.	12:30 p. m.
Pacific Express*	1:10 p. m.	3:30 p. m.
Johnstown Express	3:05 p. m.	6:00 p. m.
Harrisburg Accom	5:50 p. m.	9:00 p. m.

The Hanover Accommodation, west, connects at Lancaster with Limited Mail, west, at 9:25 a. m., and will run through to Hanover without change of cars.

The Frederick Accommodation, west, connects at Lancaster with Fast Line, west, at 3:25 p. m., and runs through to Frederick without change of cars.

The Frederick Accommodation, east, leaves Columbia at 12:30 p. m., arriving at Lancaster at 1 p. m., connecting with Pacific Express at 1:10 p. m.

The Dillerville Accommodation leaves Harrisburg at 5 a. m., coming via Mt. Joy, and arriving at Lancaster at 9:05, connecting with Lancaster train.

The York Accommodation, leaving York at 6:22 a. m., connects at Columbia, at 7:25, with the train leaving Marietta at 6:52 a. m., at Lancaster with the Harrisburg Express at 7:25 a. m.

The Marietta train leaves Columbia at 6:05 a. m., and returning, leaves Marietta at 6:25, connecting at Columbia with the York Accommodation, and at Lancaster with the Harrisburg Express at 7:25 a. m.

On Sunday there will be two sections of Pacific Express, east, the second section starting from Columbia at 12:30 p. m., making all the stops between Columbia and Lancaster, and the Johnstown Express stops from Lancaster to West Philadelphia.

The first section of Pacific Express, east, on Sunday, when flagged, will stops at Middletown, Elizabethtown, Mt. Joy, and Landisville.

*The only trains which run daily.

†Runs daily, except Monday.

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Prof. S. S. RATHVON, Editor. LANCASTER, DECEMBER 15, 1876. JOHN A. HIESTAND, Publisher.

THE FARMERS HOME ORGAN.

The Lancaster Farmer;

A MONTHLY NEWSPAPER,

DEVOTED TO AGRICULTURE, HORTICULTURE, DOMESTIC ECONOMY AND MISCELLANY.

PRACTICAL ENTOMOLOGY

Made a prominent feature, with special reference to the wants of the Farmer, the Gardener and Fruit-Grower.

Founded under the auspices of the Lancaster County Agricultural and Horticultural Society.

Edited by Prof. S. S. RATHVON.

THE LANCASTER FARMER has now completed its seventh year—the last having been under the auspices of the undersigned as publishers. When we assumed the responsibility of the publication one year ago, it was with a determination to make such improvements during the year as would place the Farmers' Organ of this great agricultural county in the very front rank of publications of its class. That we have done so, our readers will bear cheerful testimony. But our work of improvement is only fairly begun. We propose to make the volume for the Centennial year still more interesting and valuable than its predecessor for 1875. In this, however, we need the co-operation of every friend of the enterprise. To make it a success, every one who now reads THE FARMER should at once send us at least one new subscriber.

The contributions of our able editor, Prof. RATHVON, on subjects connected with the science of farming, and particularly that specialty of which he is so thoroughly a master—entomological science—some knowledge of which has become a necessity to the successful farmer, are alone worth much more than the price of this publication.

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JOHN A. HIESTAND,
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LANCASTER, PA.

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CONTENTS OF THIS NUMBER.

OUR FENCE CORNERS

PATENT HEN-PERSUADER.

In a tiny country villa lived our Blobbs, but all alone;
Never wife or chubby children this staid bachelor had known.
Yet—for hearts *must* cling to something—he had made himself a pet
Of a little snow-white pullet, with her wings just tipped with jet.
Daily feeding and caressing, these had won the pullet's heart;
Following close her master's footsteps, seldom they were far apart;
And his love grew deeper, stronger, with the passing of each day—
"Wiser far than any woman," wicked Blobbs was wont to say.
Near by rose a wondrous structure—architects their brains had racked—
Cross between a Chinese temple and a cruet-stand, in fact.
This the pretty pullet's dwelling; here she hastened every night;
Perched on high, became a *rooster* till the dawning of the light.
One sad day a Yankee peddler, glib, persuading, passing by,
Gazed at Blobbs and that poor pullet with a calculating eye.
From his wagon's deep recess, drew out, smiling wickedly,
"Johnson's Patent Hen-Persuader:" then to guileless Blobbs said he:
"Here's a marvelous invention! In this box you see a nest;
Hens at once will lay an egg here, lured to do their very best.
Then behold! this sliding bottom lets the egg drop out of view,
And the hen, somewhat bewildered, lays at once egg number two!"
'Twould be useless to repeat all that this wily peddler said;
This suffices. Blebbs, unwary, by his specious tongue misled,
Bought the "Patent Hen-Persuader," set his snow-white pullet on,
Locked them both within the hen-house ere he went to town that morn.
Business then engrossed him fully, till, with num'rous cares beset,
Who can wonder that the pullet and her nest he should forget?
Nothing all day to remind him: but returning late at night,
Flashed a sudden recollection, and his cheek grew pale with fright.
Rushing madly from the station, straight he sought the hen-house door,
Called his pet in tones entreating—Ah! she'll never answer more!
Full of gloomiest forebodings, in he dashes; finds the nest
Overflowing with its treasures—yes, she'd done her level best.
Forty-seven eggs! and near them head and tail and wings still lay,
For the poor ambitious pullet thus had laid herself away!

Harper's Magazine.

"Going to War."

The man who wants to go to St. Petersburg and enlist in the Russian army to fight the Turks was at the Central depot yesterday to see about his railroad ticket. With his hat on his left ear, pants in boot-tops, overcoat belted tightly around, and a fierce twist to his moustache, he walked up to the ticket window and asked:

"What time does the train leave for Russia?"

"Five o'clock," answered the agent, never smiling in the least.

"Good! What's the fare to St. Petersburg?"

"Five hundred dollars."

"Too much. I'll give you $400.

"We have but one rate," said the agent.

"And you won't let me go for $400.

"Couldn't do it."

"Then I won't go. I'm a patriot from head to foot, but I can't let no railroad swindle me. I'm the bloodiest kind of a border wild cat and Russia wants me bad, but that hundred dollars opens a great gulf between us.

A COUNTRY youth, who desired to know how to become rich, sent a quarter in answer to an advertisement, and received the following valuable recipe: "Increase your receipts and decrease your expenditures. Work eighteen hours a day, and live on hash and oatmeal gruel."

A CONTEMPORARY asks: "What are the street lamps for?" The man who doesn't know what a street lamp is for is hardly fit to sit in an editorial chair and mould public opinion. Street lamps are for weary young men to recline against at midnight, when they forget their way home.

AN Irishman with a heavy bundle on his shoulder, riding on the front of a horse-car, was asked why he did not set his bundle on the platform. He replied: "Be jabbers, the horses have enough to drag me. I'll carry the bundle."

The Lancaster Farmer.

Prof. S. S. RATHVON, Editor. LANCASTER, PA., DECEMBER, 1876. Vol. VIII. No. 12.

TO OUR PATRONS.

This number ends the eighth volume of the *Farmer*, and it finds our institutions, our country, and our Journal, in a very peculiar situation, commercially, financially, politically and morally. Whatever else may be wrong, *we*, during the year of our Centennial advent, have labored as faithfully as we knew how, to enlighten, to benefit, and to instruct our patrons and readers, and if we have failed to do this, it must be attributed to the head rather than to the heart—to a want of *ability*, rather than to a want of *will*. We have received many kind and encouraging words, both from home and abroad; but it may be that there were many more good wishes and good wills towards us, that were never manifested in a material or practical form; and lacking these, our usefulness has been circumscribed, our strength enervated, our labors unrewarded, and our very existence rendered precarious. But, we make no complaint, and under all these adverse circumstances, we have endeavored to "possess our soul in patience."

From a combination of adverse causes, we are not enabled to record either an entirely fruitful, nor yet a pecuniarily profitable year, (1876) to the agriculturists of our county, or the country at large; and yet, we think there is abundant reason to be thankful that things have been no worse. When we look abroad and see the suffering, the devastation, and the death-demon in war, in pestilence, in famine, and in the furious cyclones, which have visited other lands, we discover that our special gratitude is due to *Him*, who has so signally preserved us during the past year—a year ever to be remembered as the centennial of our national being, our jubilee, the ultimation of the grandest international exposition ever witnessed by the world.

For the encouragements, the favors, the contributions and condescensions vouchsafed to us by our patrons, we desire to express our unfeigned thankfulness, and we assure them that there are many passages and incidents in our intercourse with them, that will be long and fondly remembered.

If we have ever said, done, or written anything that seemed to them amiss, we interpose the plea of inadvertence—*sans* sinister intent—and the general imperfections incidental to unregenerate humanity.

Although business depression and financial disaster have continued throughout our beloved country during the year now coming to a close, we still hope our patrons may have had occasion to join in the national thanksgiving recommended by the President of the nation and the Governor of our good old commonwealth; for, in the main, we perhaps have been blessed beyond what we deserved; and, as the Saviour's natal day is fast approaching, and will soon be upon us, there will be additional cause for a season of adoration and thanks—thanks for those "glad tidings of great joy" which were proclaimed "to all the people," nearly nineteen centuries ago. If the blessings of that great occasion do not reach us as individuals, the fault will be with us, and not with Him who came "to seek and save." And finally, as we will not have another opportunity to address you within the present year, we embrace this occasion to wish you "*A Merry Christmas and a Happy New Year.*"

THE PAST, THE PRESENT, AND THE FUTURE OF THE LANCASTER FARMER.

As this, so far as we *know* at this writing, is probably the last number of this journal that will appear, under its present auspices, we deem it our duty to say something about its origin, its progress, and its final destiny.

In the spring of 1868, some of the members of the *Lancaster County Agricultural and Horticultural Society* conceived the idea of publishing a YEAR-BOOK, to contain the essays read before said society, as well as the important reports on grain and fruit culture, and the standing resolutions that relate to the permanent interests of the same; and made suggestions to that effect at the April meeting of that year; when a committee of five was appointed to take the matter into consideration, and to report thereon at the next stated meeting—the writer of this being the chairman of said committee. When the committee came together to consider the subject, it was concluded that if the contents of the work were of any importance to the farmers, it would be too long to wait a whole year before they could have an opportunity to consult the proposed book, and therefore a member suggested that it ought to be published quarterly and the committee reported so to the society.

When the committee made its report at the following May meeting, a member of the society suggested that it would be better still if the work could be published monthly, and the subject was recommitted for report at a future meeting; and the society, as a committee of the whole, was authorized to canvass for subscriptions. The subject was continued through the summer of 1868 and progress was from time to time reported. At the October meeting the committee reported that a sufficient number of subscribers had been received to justify a beginning of the publication, at least; but the society did not feel sufficiently compact in its organization to assume the responsibility of the publication, and the matter was deferred to the November meeting. The late STUART A. WYLIE, who, in the meantime had been consulted upon the subject—as well as other printers—attended that meeting, and when the matter was brought up, and he saw the difficulty in the way, he proposed to print the journal on the responsibility of his firm (Wylie & Griest) if the society would endorse the publication and appoint an editing and a publishing committee, thus relieving the society from any expense—he to realize his compensation out of the subscriptions and the advertising patronage.

At the December meeting of the society (7th) it took definite steps with reference to the publication of the LANCASTER FARMER—the name previously adopted—accepted Mr. Wylie's proposition, and named Jacob B. Garber, H. M. Engle, Levi S. Reist, Dr. W. S. Diffenderffer, Dr. J. H. Musser and S. S. Rathvon, as editorial committee; and Dr. P. W. Hiestand, H. K. Stoner, Jacob M. Frantz, Casper Hiller, Levi W. Groff and Alexander Harris, as publishing committee; and early in January, 1869, the first number of the journal appeared, "under the auspices of the Lancaster County Agricultural and Horticultural Society," obligating itself to publish monthly the essays read before the society, and a synopsis of its proceedings. With the understanding "that the entire membership of the society, to whose patronage the paper was indebted for its existence, would constitute itself *a committee of the whole*, to collect material for its subsistance," the journal went into operation, and was issued in royal octavo form, with as fair a prospect of success before it as usually inures to enterprises of the kind, and during that year everything seemed to indicate that it had a prosperous career before it—a contingency never fully realized. As "too many cooks spoil the broth," or, "what is *every*body's business is *no*body's business;" therefore, at the completion of the first volume, the editorial and publishing committees were dispensed with, and S. S. Rathvon and Alexander Harris were appointed editors by the society, and they also, in connection with Mr. Wylie, became the publishers. As many of the subscribers on the original list had only volunteered their names for one year—"merely to encourage it in starting"—the *Farmer* had greater difficulties to contend with in its second, than it had in its first year.

This was almost equivalent to no encouragement at all, for who ever dreamed of *beginning* such a publication without a thought of *continuing* it? Such an ephemeral enterprise had better never been entered into. But by extra efforts this contingency was partially overcome, and the publication was continued, but not without a struggle and some sacrifices, both on the part of editors and publishers.

At the completion of the second volume, S. S. Rathvon discontinued his relation as one of the publishers of the journal, but continued as senior editor; and his place in the publishing firm was supplied by John B. Develin. Subsequently Mr. Wylie also withdrew as a publisher, and during a few months the work was temporarily conducted by *Develin and Harris*—Mr. Harris also continuing as junior editor.

At the commencement of the fourth volume, Messrs. Harris and Develin entered into a definite partnership, in which only Mr. Develin's name appeared in the journal as publisher, and Rathvon and Harris as editors; and this relation continued until January, 1873, at the commencement of the fifth volume, when Mr. Develin became the sole publisher and S. S. Rathvon the sole editor, and Mr. Harris retired. During the publication of the sixth volume, Mr. Develin acted as associate editor, in addition to his other function, and, on the completion of that volume, he transferred all his "right, title and interest" in the journal to the firm of PEARSOL & GEIST, editors and publishers of the *Daily* and *Weekly Express*, by whom it was continued until the end of the eighth volume, (December, 1876) having been changed from an octavo to a quarto form, with various other improvements, apparent to its patrons on a very casual observation.

From the last two numbers of the FARMER our readers and patrons will perceive that the Express Printing and Publishing Establishment has passed into the hands of a new proprietor; and in these very peculiar and uncertain financial and commercial times, prudence will dictate retrenchment in business affairs. Therefore, for reasons which will be made manifest in the following, our journal will be very probably discontinued; all will depend upon whether or not a *satisfactory* arrangement can be made. Therefore, if no number for January, 1877, appears within that month, the journal may be considered dead.

Our connection with the LANCASTER FARMER as its editor was rather inadvertent, and our long continuance as such altogether unexpected. Not that we had no love or no will for the occupation; for, under certain circumstances, and with no other conflicting duties to interpose, we would rather have liked it, and probably could have been more efficient in it. It is said that "some men are born great, some achieve greatness, and others have greatness thrust upon them." We may say that the editorial mantle was thrust upon us. Not violently, however; but through the earnest wishes of our friends in the *Society* we permitted it to be thrown upon us. At the time, however, we verdantly supposed that our function would be only a temporary one, and that time would develop an abler and more worthy incumbent. But that time never came—not because a competent successor could not have been found, perhaps, but because no one cared much to enjoy the responsibilities and emolu-

ments of such a *reversed sinecure*. Hence we labored on as best we could under the circumstances, and if we indulged in any future hope, it was rather a hope to be relieved from our burden of responsibility than any settled hope of compensation.

We are far from saying that no other man in Lancaster county *could* have labored as we did to sustain the FARMER, but it is exceedingly questionable with us whether, in these grasping and avaricious times, any other man *would* have done so. As it is, we have "burned the midnight oil" for eight of our declining years without the least *pecuniary* compensation; and on the whole, we do not think the publishers realized much more, if even so much. At the lowest rate of editorial compensation, our services were worth three hundred dollars a year—indeed, we know many who do not perform half the labor we did, who receive five times that amount. Therefore somebodies in this county, this State, this country, or this world, owe us just *twenty-four hundred dollars*, which we leave on interest at six per cent. But we were not without *some* compensation. We labored for the moral, social, intellectual, domestic and physical development of a class of men in our country who have been deservedly pronounced "the founders of our civilization," and the higher the mental plane they occupy, the higher the civilization resulting from their example. If our services have not been recognized or rewarded, it may have been because they were not apprehended; therefore, "nobody's to blame." But we had also other compensations. We are rather a defective talker, and for thirty-five years have been afflicted with an infirmity which has in a great measure disqualified us for that free and affable social intercourse, which is so essential an element in the intercommunions of our fellow beings; and, through the columns of our journal and the newspaper, we have enjoyed the luxury of talking *to* and *for* our friends, our patrons, and the people, which we could not have otherwise enjoyed. But that is not all, we have had the commendations of the press, and the approbation of men of intelligence and culture both far and near; and why it was that a journal such as the *Farmer* for the past two years has been, could not be sustained here in Lancaster county, is an enigma which we shall not attempt to unravel. We apprehend it will be many a long day before a similar enterprise is undertaken. The typographical execution, the general matter, and the mechanical "make-up" was far above the average agricultural journals of the country. The enterprising publishers for the past two years did their duty nobly, but they could not carry such an unprofitable enterprise through the financial waves that overwhelmed them.

And now we take a final leave of our friends, our patrons, our contributors, and our associates—so far as our intercourse was effected through the columns of the *Farmer*-with many pleasant recollections of the past, but not without some regrets; and in conclusion we would beg leave to suggest that if a community desires to prosper, lessen its taxes, diminish its number of paupers and criminals, let it pay more regard to home enterprises of the various kinds which are originated by its people; otherwise, it must be constantly drained and impoverished. Suppose every consumer in Lancaster county were suddenly to become independent of the farmer population and were to purchase all their produce in New York or Philadelphia. It would enervate farm enterprise, destroy the home market, and bring a return of those days when there was no inducement to produce because there was no one to consume. True, large and staple crops could be transported to other markets, but this would not compensate for the loss of that local traffic so essential in the supply of their daily wants, and the consumption of their daily surplus produce. The rule that covers our local economies in trade, also covers the prosperity or decay of our local journals. If ye *know* these things, happy are ye if ye *do* them.—EDITOR.

THE GOOSEBERRY.*

(Ribes grossularia.)

England seems peculiarly adapted, by the coolness and moisture of its climate, to the successful culture of this fine fruit. In Lancashire and the adjoining counties, there are annual meetings of the gooseberry growers, at which prizes, ranging in value from ten shillings to as many pounds sterling, are awarded among the exhibitors. It is true, that the size and weight of the berry are, as a general thing, considered of greater importance by the judges, than its excellence for culinary purposes. An account of each meeting, giving full descriptions of the prize sorts, is afterward published in a small volume called "The Manchester Gooseberry Book." In its wild state, as found in the northern part of Europe, the berry is half an inch in diameter, and weighs only one quarter of an ounce; but under the influence of high culture, it has in some cases attained a diameter of two inches, with a weight of one ounce and a half. Such is the effect of horticultural exhibitions.

Although thus successful in Great Britain, the foreign gooseberry, owing to the difference in climate, cannot be naturalized in the southern part of Europe, or of the United States. Indeed the crop often fails in what are called the northern States. We have several native varieties, which undoubtedly might be made worthy of attention, as being better suited to our long, oppressively hot summers, than any which could be imported from England. A result so desirable should lead to the thorough investigation of the subject by our intelligent gardeners. We believe that nothing but skill and perseverance is required to accomplish as much in this country as has been already accomplished by the humble cottagers of Lancashire.

The number of varieties which have been produced in England, is really surprising; of the thousands raised from seed, the catalogue of the London Horticultural Society enumerates one-hundred and forty-nine that are worthy of notice; while Lindley gives a list of over seven hundred which have been distinguished at various times by prizes. The following sorts are certainly among the very best: of the reds, the *Crown Bob*, the *Red Warrington*, *Houghton's Seedling*, and the *Champagne;* of the yellows, the *Yellow Champagne*, the *Early Sulphur*, *Gorton's Viper*, and the *Golden Fleece;* of the greens, *Parkinson's Laurel*, the *Green Walnut*, the *Jolly Tar*, and the *Jolly Angler;* and finally of the whites, the *White Smith*, *Wellington's Glory*, the *Bright Venus*, and *Crompton's Queen of Sheba*. The difficulty of making any selections like the above, will be readily appreciated by the reader.

CULTURE.—New varieties are raised from seed, but the old established sorts are propagated by cuttings, in much the same way as the currant. These cuttings are taken in autumn, just before the leaves fall, or as soon as the frost is out of the ground in spring, from the strongest and straightest shoots of the last season's growth. They should be of healthy appearance and about twelve inches long. If you propose training them as standards, you must cut out with a sharp knife, all the buds, except three or four at the upper end, in order to prevent the appearance of troublesome suckers around the main stem. Experience has shown, however, that the bushes will be longer lived, and much more productive, when permitted to sucker moderately, than if the whole support of the top be drawn through a single channel. By a judicious system of pruning, the bearing wood will be frequently renewed, and the sap will not be wasted upon that which has become old and barren. The cuttings should be inserted about half their length, in a bed of rich, moist soil, situated on the north side of a fence, or in some shaded spot. The dirt is to be firmly pressed around them, and again the following spring, if they appear to have been at all lifted by the frost.

In the second year after, they will probably have become so well rooted that they may then be removed to their final location. Being exceedingly sensitive to heat and drought, they require a soil which is at once deep and moist. It ought to be subsoiled or trenched, before they are taken from the nursery bed. Richness is also an essential requisite, and, in addition to a liberal application of dung at the outset, a generous top dressing should be dug in around the roots in every succeeding autumn. The situation must be open, and away from the injurious influences of trees. It has been said on good authority, that when the bushes are planted near a whitewashed fence, they are not so liable to suffer from mildew, as they would be in an open compartment. Transplant during any mild, pleasant weather in autumn or spring. To prevent their shade affecting vegetables growing in their neighborhood, it is a good plan to put them on the sides of the principal paths, or in a border that is not wanted for other purposes. Let them stand in rows, between three and four feet apart. The ground should always be kept in good tilth, light and porous, as well as free from weeds and grass.

Thorough pruning is considered very essential to the successful growth of the gooseberry. It is best performed in autumn, when the leaves have fallen, and the position of the branches is thereby better exposed, or at any time during the winter and spring, before the buds get to be much swollen. The rules to be followed in pruning are learned only from personal observation or experience; and we can but suggest a few leading hints, the application of which must, in every case, be governed by sound judgment and discretion. Old and unproductive wood should first be removed, as that absorbs sap without rendering any equivalent; while the young shoots are to be shortened and reduced in number, so as to admit the light and air freely to every leaf, without which the perfection of the fruit cannot be expected. With a little practice in the use of the knife, this winter pruning can be so performed as to give the bushes a very neat appearance, and to secure an abundant crop in the coming season. At the same time, the ground ought to receive a generous application of manure, to ensure its fertility, and add to the security of the plants against disease.

The "mildew," as it is termed, proves the most serious obstacle to be encountered by the American gardener. It does not exist in the cool climate of England, and is only occasionally known in the extreme northern parts of our own country. But, in the middle States, as we go towards the south, we find the crop very uncertain. When partly grown, it suddenly becomes coated with a grey mildew or scurf, which in a short time destroys its value. The berries should be picked as soon as may be after the appearance of the disease, and

*On this subject, a writer in the November number of *Science Gossip* has *this* to say: "The name (*Ribes grossularia* is evidently connected with the French *groseille*. The name *ribes*, says Dr. Hooker, is an Arabic word wrongly applied to this genus. The common name, gooseberry, is probably a corruption of crossberry, grossberry, or gorseberry, from *gorse*, furze. If this be the true derivation, it must be so named from the prickly nature of the shrub, or from the hairs on the fruit. Another explanation of the term *crossberry* is, that it refers to the triple spine, which often presents the shape of a cross."

The specific name *grossularia* gives rise to the term GROSSULARIACEÆ an order which includes the currant family, among which are enumerated the gooseberry, wild gooseberry, smooth wild gooseberry, swamp gooseberry, fetid currant, wild black currant, red currant, buffalo currant, white currant, and other species and varieties. *Grossularius*, and *Grossularian*, are from the Latin *Grossulus*, a small unripe fig. Pertaining to or resembling a gooseberry; a translucent garnet of a pale green color. Although this may all be interesting enough to the theorist, or the analytic reader, it may be of very little importance to the practical culturist. It may be sufficient to him to know the best varieties, their mode of culture, and how to keep them from mildew and destructive insects. There is not as much importance attached to the gooseberry as a "small fruit crop," in this country, as there is in England—not as much perhaps as there will be long before the advent of our *second centennial*.—ED.

either used in the cultivator's own kitchen or carried to market. How is this obstacle to be overcome? Being local and confined to particular districts, it never can be entirely. All remedies that have been proposed, are partial in their effects. High culture—or, keeping the soil rich and in good tilth, accompanied by a judicious system of pruning,—is most important. Wood ashes are sometimes sifted on the leaves, while lime and sulphur are dug into the soil. The most efficient remedy is covering the ground with a layer, ten or twelve inches in thickness, of salt-hay or seaweed. In places where these cannot be procured, litter or straw can be used in their stead, by being sprinkled with small quantities of fine salt or brine. Spent tan around the bushes is good to prevent the attacks of the destructive caterpillar.

USE.—The fruit is deservedly held in high esteem for culinary purposes. In fact, its name is derived from the circumstance of its having been in olden times considered an indispensable accompaniment to a green goose.

In its unripe state, early in the season, it is made into sauces, tarts, pies, puddings, etc; while, when fully matured, some of the choice varieties are very acceptable for dessert, and make good preserves. In every form it is wholesome, as well as pleasant to the taste. It makes a very excellent wine, which is said to be so near equal to champagne, that it often passes for that among inexperienced judges.

To Preserve Green Gooseberries.—Fill a bottle with the green fruit, and let it stand a few minutes in a vessel of boiling water. Cork and seal it immediately after being taken from the water, and keep it in a cool cellar, with the neck downward.

Gooseberry Pie.—Pick the heads and stems from unripe gooseberries, and rub them with a towel for the purpose of cleaning them. Fill a dish with them, and add a little water, together with sufficient brown sugar to correct their acidity. Cover with puff paste, and bake for upwards of an hour. Some persons stew the fruit in sugar before putting it in the plates; so that it requires less baking.—*Schenk's Gardener's Text-Book.*

INSECT LONGEVITY.

Just how long the life of an insect may be continued, from the many special instances which have come under the observations of amateurs and men of science, it would be very difficult to determine. As a general thing the famous "striped apple tree borer" (*Saperda bivittata*) lives at least three years, and these years are mainly spent in the *larva* or grub state. The greatest longevity among insects occurs in the order COLEOPTERÆ, (beetles) and among the LONGICORNIA, (long horns) and SERRICORNIA (saw-horns), divisions of that ORDER, nearly all the subjects of which are wood-borers in the *larva* state, but just how long these *larva*, respectively, live in that state, would be difficult to determine, except perhaps in a few instances. Some we know are limited to one year, some to two, three, five and seven years, and isolated instances are known where their lives have been prolonged far beyond those periods; but whether this is normal or abnormal, we are not prepared to affirm. "Circumstances alter cases," and there may be something in surrounding circumstances that has a modifying influence upon the general habit. Messrs. Kirby and Spence, the distinguished British entomologists, relate, in their works, several cases of extraordinary longevity among wood-boring insect larvæ, one of which was in an old "deal table," very probably for twenty years. A similar case has been brought to our notice within the present month, and although we have recorded one or two cases of the kind elsewhere, we know of none that exceeds this in length of time. Mr. John Best, boilermaker and machinist, of this city, purchased from the late Wm. E. Heinitsh a Grover & Baker Cabinet Sewing Machine in 1860 or 1861, which has been in use in his family from that period down to the present time. Of late years Mrs. Best has heard a "ticking" or "clicking" noise about the machine when it was not in motion, which was attributed to the ominous *tick* of the "death-watch," which is so frequently heard in old frame or log houses; but she never suspected that this noise proceeded from the machine. The cabinet surrounding the sewing machine is made of a dark, hard wood, finished up and oiled, such as cabinets usually are. The inside casing, the drawers and the bottom, are made of pine, stained a dark color, and oiled or varnished. A few days ago, on taking out one of the drawers, it was found to contain a large quantity of white debris or dust, and this led to a thorough examination of the premises, when it was discovered that the said sides and bottom were perforated, and, in fact, perfectly "honeycombed," by a species of wood-boring *larvæ*. On applying the finger to the bottom it was found soft and yielding almost as a sponge, the inside having been eaten in small longitudinal galleries, interlacing each other, leaving only the outside upper and lower surfaces entire, with the exception of a few holes in the lower side. No larvæ of any kind were found, but from one of the burrows a dead coleopterous insect was secured, and this was preserved and presented to us by Mr. Best. Contrary to our expectations when our attention was first called to the subject, this insect did not prove to be what is generally known among entomologists as the "death-watch beetle," which belongs to the genus *Anobium* (family PTINIDÆ), of which there are at least twelve species in the United States, the most common of which, perhaps, are the *notatum* and *carinatum* of Say, and the *obesum* and *errans* of Mulsheimer. These insects are nearly all small and inconspicuous, and their larvæ are wood and dried plant borers. On the contrary, the insect which was so damaging to the cabinet of Mr. B.'s sewing machine belongs to the genus *Hylotrupes* (family CERAMBYCIDÆ), of which there are only three or four species, and the most common of which are the *bajulus* of Linne, and *bullatus* of Haldeman. The family to which this individual belongs is included in the section or division LONGICORNIA, or long-horned, and are usually distinguished by their long and slender *antennæ*, members which are supposed to possess a peculiar economy in insect life as organs of feeling, touch and hearing, and as a means of communication with each other. When two ants meet, they seem to shake hands by touching each other's *antennæ*. We have not access to the original descriptions of these insects, but as this individual is not a *bajulus*, we infer that it is a *bullatus*. It is half an inch in length, is a female, and has the ovipositor exserted about an eighth of an inch. The color is a blackish brown, the thorax nearly black, with two elevated shiny tubercles, and margined with white, downy hairs. The larvæ of all the Longicornia are white, footless grubs, the anterior portion of the body much thicker than the posterior portion, the head black or brown, and armed with a stout, short and sharp pair of cutting teeth, or jaws; and they are all wood or stalk-borers, and some of them very injurious to fruit trees; the two most common instances in this locality being the apple and the linden tree borers. Species not indigenous to this locality are often brought here in pine and other lumber from the interior pine regions of the State.

Now comes the question of the longevity of this insect. From recorded data to which I have access, we find that Mr. Heinitsh was an agent for the sale of Grover & Baker sewing machines as early as 1861, or about sixteen years ago, at which time, or prior to it. Mr. Best purchased this machine. It is not known how long it was in possession of the manufacturer before it came into the possession of his agent, nor how long he had the lumber before it was manufactured into a cabinet for the machine, nor yet how long it may have been in the lumber yard before it came into the manufacturer's possession. Nor is it probable, if possible, that the eggs were deposited in the box *after* it was manufactured; therefore, oviposition must have taken place previously. If we understood Mr. B. rightly, the ticking noise was heard about the machine within the last year. We must therefore conclude that the longevity of this insect—as *larva*, *pupa* and *imago*—was normally or abnormally prolonged to at least sixteen years, unless we conclude that the females deposited eggs within their burrows, and several generations succeeded each other therein, a contingency of which we have no certain precedent among *Longicornia*. We might, perhaps, have felt compelled to adopt this latter conclusion, had we not been cognizant of a similar instance in this city, in which a single specimen of* *Monohamus titillator* had issued from the foot of a sofa seven years after it came into the possession of the owner, and the presence of the *larva* of which had been recognized for several years by the small heaps of debris found near that foot every time the furniture was removed in house-cleaning. We do not think that we are to unqualifiedly infer from this circumstance that the normal longevity of *Hylotrupes* is sixteen years, for there may have been retarding conditions affecting its development, situated as it was, that would not have existed out in the open air, or under more favorable circumstances. It exhibits, however, a wonderful adaptation of means to ends in the economy of insect life and physical development; and is an illustration, in part, of that functional suspension which often occurs in the insect world, when the surrounding circumstances are unfavorable to their progressive development, and yet not of such a nature as to destroy their vitality. Instances of this kind are numerous, but it is not necessary to mention them here.

In conclusion, we may be permitted to say that no significance whatever is to be attached to the presence of the *true* "death-watch" beetles (*Anobiæ*) other than what may be attached to any other wood-boring beetle, except that their presence in great numbers is exceedingly hurtful to the timbers in which they are located. All the ominous premonitions implied in their ticking noise is to the effect that your premises are injuriously infested by their *larvæ*, if not the mature insects, and that some measures should be adopted in order to effect their extinction. We have a distinct recollection of having frequently heard the ticking of the *death-watch* in our boyhood (we wish we could hear it now), and although we were admonished that it was an "ill omen," and presaged a calamity of some kind—death in the family for instance—yet we never knew such contingency to follow, as an effect of which it was a premonitor. We presume any wood-boring insect might produce a similar noise; at least, it seems that the insect alluded to in the foregoing sketch produced such a demonstration.—*R.*

PENNSYLVANIA FRUIT GROWERS SOCIETY.

This old and first-class association—which by the way was formed in this city about seventeen years ago—will hold its annual session in Lancaster on the third Wednesday (17th) of January, 1877, and we hope our people will give it a cordial welcome. Whenever and wherever this society has met, it has always elicited the interest and the most profound respect of the public. It is composed of the most solid and eminent men in the State among those who have devoted their energies and their minds to the subject of fruit-growing; an occupation alike honorable, useful, healthful and elevating. Lancaster county has some intelligent, enterprising and energetic fruit-growers, but it lacks that vigorous organic effort, through which alone she could ever expect to occupy that fore-ground of which she is so clearly capable. She also lacks that unflinching perseverance so necessary in achieving success in any calling. We have not yet seen a programme of their proceedings for the approaching meeting, but if it only makes an ordinary

*Also a *Longicornia*, belonging to the family SAPERDIDÆ.

approximation to its former gatherings, it cannot fail to diffuse much useful knowledge. Fruit-growing, as the years move on, is becoming a more important branch of human husbandry than it formerly was, and as the wheel of time presses forward, her claims upon our social economy are becoming daily more urgent. It is to be regretted that in our city, there are so few who take a working interest in her local organization. We hope that with the beginning of our second century, the subject will become worthy of the epoch.

For The Lancaster Farmer.

CABBAGE.

What use to waste space to print, or time to read, anything about cabbage? Stop a bit; in this Centennial year we want to know about ye olden times. I came across a premium receipt for making SOUR CROUT several hundred years ago, and I think it is worth republishing for the benefit of our readers. Remember, cabbages were a favorite esculent vegetable with the Romans and our Saxon ancestors. I learn from an ancient record, that "an agreeable pickle was made, by cutting them (the head, I suppose,) into six or eight pieces, according to their size, putting them for a few moments into boiling water, and then plunging them in vinegar, which, especially at first, should be occasionally changed, throwing in a little salt each time. In this form they are an excellent antiscorbutic, and are found a valuable sea-store.

I will now copy verbatim the old mode of making "sour-crout," which seems worthy of all imitation save the "boots;" in that case, I would recommend the wooden stamper. The record says: "The Germans and other northern nations have a still more salutary and pleasant preparation, which they call sour-crout. With an instrument made for the purpose," (a cabbage cutter,) "they cut the head of a large variety (*brassica capitati maxima*) into small shreds, and then lay them on a cloth to dry in the shade. They afterwards put these shreds into a common cask, open at one end, and if it has contained wine or vinegar, it will be more favorable to the necessary fermentation; otherwise the inside should be rubbed with a little leaven of old sour-crout. The cover of the open end should be strong, that it may sustain a large weight, and should have a handle fixed in the middle that it may be readily put on and taken off. A quantity of very fine sea salt should be procured, in the proportion of two pounds to twenty cabbages. A layer of this salt is first evenly spread at the bottom of the cask; on this is placed a layer of the shreds six inches thick. A man in strong boots, well washed and very clean, then goes into the cask and treads down the mass till it is reduced to the thickness of three inches. Similar layers of salt and shreds of cabbage are put in and trodden down in their turn, till the cask is nearly full, but the last layer must be of salt. Some large fresh cabbage leaves are then laid on, and covered with a wet cloth; and on the cloth is put the cover of the cask, pressed down by heavy weights to prevent the "crout" from swelling and rising during the time of its fermentation. A seasoning, either of juniper berries, or which is much better, of caraway seeds, is mingled with the cabbage, but not with the salt, and an empty space of about two inches is left at the top. The shreds are soon deprived of a part of their vegetable juice by the pressure. This fluid, which naturally rises to the top, is green, turbid and fetid, and is drawn off by means of a cock placed two or three inches below it. A new brine is then added, which also soon becomes foul, and is drawn off in the same manner. After these operations have been continued twelve or fifteen days, more or less, according to the temperature of the place, the liquor will remain clear and sweet; but care must be taken that there be always about an inch of brine at the top, and that no space be left between the cover of the cask and the cabbage, which will otherwise acquire a putrid, offensive smell. Sour-crout well made, and well kept, has a very pleasant acid taste, especially if it be washed after it is taken from the cask, and mixed, before it is served up, with a little vinegar. In has been found highly serviceable in long voyages, as a preventive from the sea-scurvy."

Many of our farmers understand the art of making sour-crout, but I question if any follow up the rules laid down thoroughly in all its details—if any have a superior mode—always excepting the "boot part." In short, many may improve by considering the above receipt as made and approved of at least one hundred years ago. In this fast age, we we do things up in a hurry, and too much at a single jump, and fail to have the full benefit of the experience of those who were more slow and sure. An English lady, fond of sour-crout, begged me to inform her how it was made. This I did, and presumed others might wish to know.

I have so far, simply copied from an old record found in the hands of but a few individuals. I will futher remark that as a botanical student, the genus Brassica is a very remarkable one; for instance all the varieties of Borccole or Ka'e, such as the Green curled Scotch, German greens, or Sprouts, Cottagers, Siberian, the Abergeldie, superfine Variegated, Tall Green Curled and Cæsarean, or Jersey of the Catalogues, all well marked varities, are derived from *Brassica Oleracea acephalo*, LIN. The Broccoli, eleven marked varieties, under as many distinct names, are derived from the variety *Brassica oleracea botrytis*, LIN. Brussels sprouts, four varieties, from *Brassica oleracea bullata*, LIN. The true Cabbages, have twenty-six well marked varities—twenty-seven if we add the Savoy (Dwarf Early Ulm,) all derived from the variety—*Brassica Oleracea capitata*, LIN. Several species were originally known to grow wild—and from one or both, all the numerous sorts have sprung through cultivation. Brassica oleracea is indeed the parent of all the sorts. It is not generally known that in the island of Jersey, from the effects of particular culture and of climate, a stalk has grown to the height of sixteen feet, and "had its spring shoots at the top occupied by a magpie's nest. The woody stems are not unfrequently from ten to twelve feet in height, and are there used as rafters" and as walking sticks. We are thus reminded, says Darwin, "that in certain countries plants belonging to the generally herbaceous order of the cruciferæ are developed into trees." An article on "Cabbage Timber," in *Gardener's Chron*, 1856, P. 744, quoted from Hooker's Journal of Botany, says: "A walking-stick made from a cabbage-stalk is exhibited in the museum of Kew."

We thus see that a cabbage-stalk may become a formidable club—while a squint at the diversity of the cabbages, under cultivation may be food for thought, and to some English readers the good old way of making sour crout may be new, and induce them to try it, and have reason to be thankful for it, which is all respectfully submitted by—*J. Stauffer.*

For The Lancaster Farmer.

CHEERFUL DOTTINGS FROM LEOLINE.

Dear Editor: You will please excuse me for not writing more at this time. *Merry Christmas* will soon be upon us, and I must make all the little ones glad; and that will require work yet, on my part. Permit me, however, in advance, to wish you a "Merry Christmas and a Happy New Year.

Buckwheat Cakes.

1 quart buckwheat flour; 1 pint wheat flour; 1 teaspoonfull of good baking soda; 1 teaspoonful of fine salt. Mix all well together. Now add thick milk enough to make a thin batter. Bake on a griddle, not too hot, nor too cold, as much depends on that. If you get all mixed rightly, they will be light and spongy.

Another Formula.

1 quart buckwheat flour; ½ pint of wheat flour; 1 teaspoonful of salt. Mix all well together, and add luke-warm water enough to make a pretty thin batter, and add a teaspoonful of good yeast. Stir all well together and set aside in a warm place, and in two hours the batter will be light enough to bake.

Corn Cakes.

1 quart of good corn meal; 1 pint of wheat flour; 1 teaspoonful of good soda; 2 eggs beaten up light; 1 teaspoonful of salt. Mix all with good buttermilk, not too thin. Bake on a griddle, and if properly manipulated, you will pronounce them excellent.

LEOLINE.

If we were the female head of a house, coming from such a practical source, we believe we should adopt the above without hesitation. At any rate, we shall make an attempt to "hurry up those cakes," in our own family,

The *micaceous sand*, from Shrewsbury twp., York county, Pa., sent us by our fair correspondent contains some minute flakes, that have the appearance of gold, and some of them may be gold, but we incline to the opinion that they are all of a micaceous character. They differ widely from the gold-flakes we have from California. Gold is never found brittle or flexible—it is always tough and malleable. Nearly two hundred years ago the English colonists found large quantities of this mineral about Jamestown, Va., and shipped it home to England for gold, but it proved otherwise. Possibly a seam of it extends up through Virginia and Maryland, and "crops out" on the surface in York county, and other localities.

Substantial.

The heart of the editor has been made glad by the generous *Thanksgiving offering* of his fair correspondent, LEOLINE, for which he desires to express his unqualified gratitude. Such kind consideration can only emanate from the mind and heart of woman, and is a solace for the many weary hours we have devoted to the almost bootless task of catering for the moral, intellectual, and economical elevation of our readers. The fruits of POMONA, were lucious and generously fragrant; the *Apium*, crisp and healthful; and the *Castanean* contribution, vividly recalled

> "The days when we went *chestnuting*,
> A long time ago."

She may rest in assurance that her bounty will be "twice blessed"—blessing the giver as abundantly as the receiver; for such outward manifestations cannot be otherwise than the dictates of a benevolent nature, which have their fountains in the inner chambers of the heart.

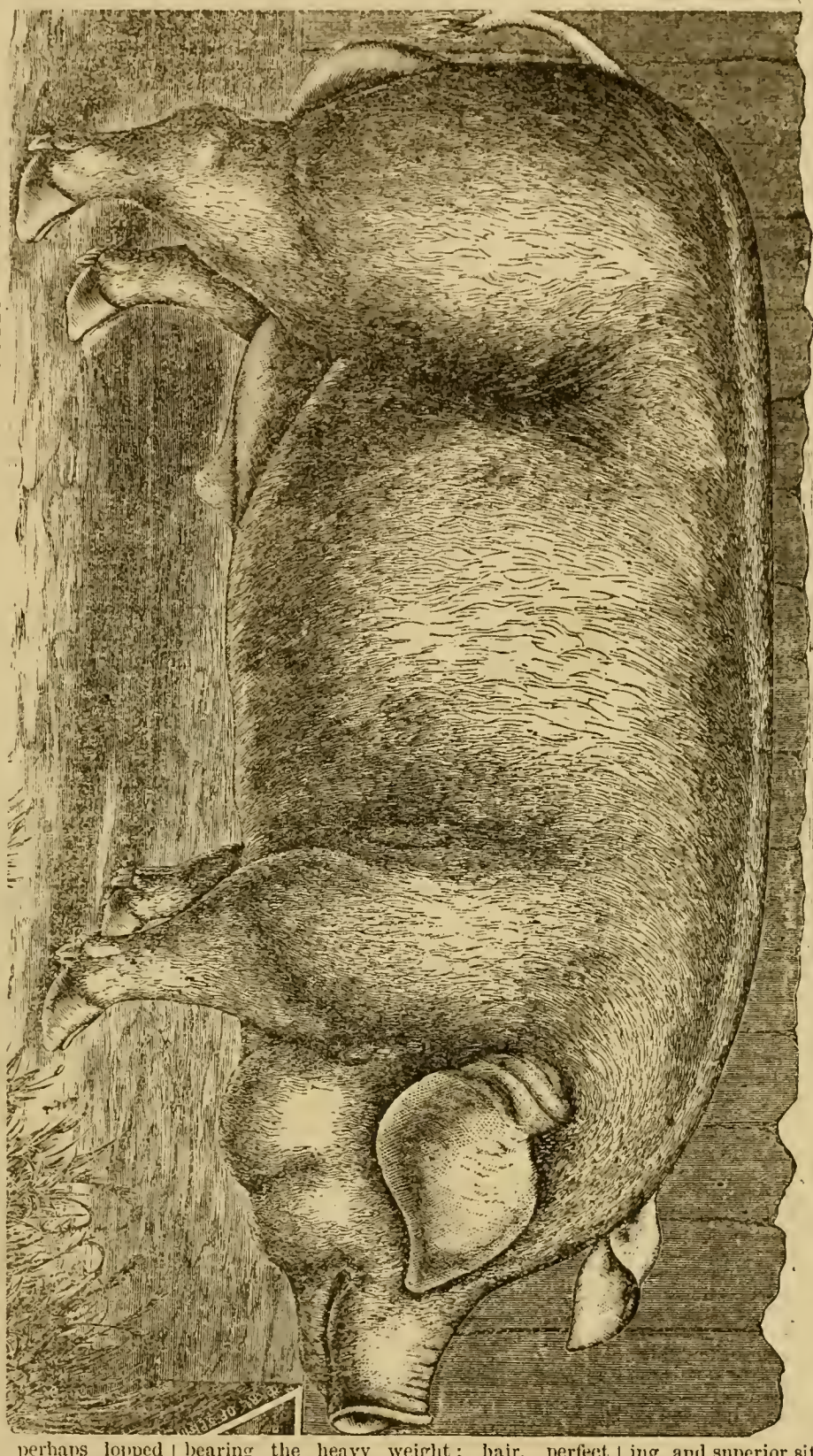
Public Acknowledgment.

We cannot close this volume without making it the occasion to return our sincere thanks to those friends who have from time to time favored us with their valued contributions to our columns, and especially to Messrs. Jacob Stauffer, Jacob B. Garber, Walter Elder, Henry M. Engle, Levi S. Reist, Peter S. Reist, A. B. Keiss, Wilmer S. Bolton, John C. Linville, John B. Erb, W. A. Burpee, Wm. H. Spera, F. R. Diffenderffer, W. L. Pyle, M. B. Eshleman, C. L. Hunsecker, Jacob Bollinger, and also to "Leoline," and a number of others, who have laid us under obligations for valued assistance.

We shall always, with grateful feelings, remember the pleasant relations existing between us; and hope that they may not become weary in well doing, but that they may contribute to other local journals on such topics as interest the agriculturist, fruit-grower and gardener, should our literary intercourse terminate with this number, which seems to be now foreshadowed. In any event, we feel that it is neither their fault nor ours.—ED.

CHESTER WHITE SWINE.

Chester White Swine, now so widely celebrated and deservedly popular, originated as a distinct breed in Chester county, Pa., hence their name. In the year 1818 there were brought into this county from Bedfordshire, England, by Capt. James Jeffries, a pair of choice pigs, which were sent to his farm near the county seat. Some of the more enterprising farmers of the neighborhood resolved to commence the improvement of their hogs, which they did by crossing the young pigs of this pair upon the best formed and most desirable native stock to be obtained. Their progeny likewise, as a result of the most judicious crossing and selecting for a number of years, the present valuable breed of Chesters was established. Some thirty years ago, upon the introduction of the Suffolk and Berkshires into this country, some of the Chesters were crossed with them; but after a short trial both were rejected, not being considered any improvement upon the Chesters, which were then steadily bred as near perfection as increasing skill and untiring zeal could secure. Chester Whites are invaluable on account of their large size, fine forms, ready fatting qualities, good bacon, docility and prolificness. They will readily weigh 400 to 700 lbs. at twelve to fourteen months old—one thousand pounds is no unusual weight to be attained by well fattened "old porkers." They are gentle, quiet, and easily kept. They are *not* liable to mange, as some prejudiced breeders, or those who have "axes to grind" on other grindstones, so positively state. We have proved this not only with our own hogs, but also by close observation of the herds of other careful breeders. The Chester Whites are also a well and thoroughly established breed, with well defined characteristics to which they breed very true—as true as the Berkshires or Poland Chinas. There is no doubt that the fame and good name of the Chester Whites have suffered considerably by the shipments of certain unprincipled dealers, men, such as will be found in every business, who would buy up worthless mongrels, whose only pretense to the genuine was their white color and perhaps lopped ears, and palm them off for the "Genuine Chester County Whites." There are as poor hogs in Chester county as anywhere in America, and we have sold the pure stock of Chester Whites in this very county at *fancy prices*. We breed the very best blood in America, warranted *Simon pure*, and ship only first choice pigs, not akin, which cannot fail to retain the enviable reputation enjoyed by Mr. Burpee in his past shipments. The Genuine Chester Whites, such as we breed, have the following prominent characteristics:—Head, very short and broad between the eyes; ears, medium, and projecting forward; neck, short and thick; joint, large and full; body, lengthy, deep and "well ribbed out," giving ample room for large, sound lungs; back, broad, and very straight; hams, large, full and deep, with fine bone; legs, short, and well set under the body, of strength sufficient for bearing the heavy weight; hair, perfect white and spotless; skin, fine and thin; tail, neat, and small in proportion to size of body. The Chester Whites are prolific breeders and excellent sucklers. The boars are ready for service when five months old; the sows could then be put to the boar, but it is always best to let them attain larger size before breeding—in this manner, and by breeding from pigs out of the third or fourth litter, the large size, united with fine bone and form, is kept up, and constantly improved. We give herewith an illustration of our fine Chester White Boar, "Earl of Springton Manor," than whom it is the opinion of competent judges there is not a finer boar of his age in Chester county to-day.—*Benson & Burpee, Philad.*



EARL OF SPRINGTON MANOR. Specimen of Benson & Burpee's Springton Manor Herd of Chester Whites.

SELECTION OF BREED.

In selecting the breed of hogs, if a pure breed is desired (and all intelligent farmers appreciate the value of thoroughbred hogs) the purchaser should consult the locality, markets, &c. If a breed is desired for early marketing, the English Yorkshires or Essex are well adapted. If for large size, ready fattening qualities, superior lard, the Chester Whites are unrivalled, and thrive well on only ordinary care. The Yorkshires are a finer hog and require more attention but are invaluable for crossing on mongrel stock or sows of coarser breeds. The Poland Chinas and Berkshires, are just the hogs for farmers in the West, where they are turned out to shift for themselves, to feed on nuts, &c. For this purpose also the Jersey Reds are excellent porkers. The Berkshires give a superior quality of lean meat, but not so heavy a carcass as the Poland China. Farmers must also consult the tastes of their neighbors. If white hogs are all the rage, then purchase a breeding stock of the finest to be procured from reliable breeders, and you will have ready sale for the young stock at remunerative figures. Likewise should Black Hogs be the rage. Remember, always buy the best. A few dollars is nothing on the original cost of a pair of pigs compared with the vastly increased amount and value of the pork produced.

PLYMOUTH ROCKS.

They are very large and of good shape, very plump bodied with full breasts. They mature early and make large broilers for the early spring market. They are very superior table fowls, having also bright yellow legs, free from feathers. They are good layers and combining as they do in a wonderful degree the economies of large size, prolific laying, and superior sitting qualities, we do not hesitate to recommend them as a fowl for utility and profit. These fowls are out-and-out an American breed, having been originated and perfected here.

And they are a production of which American Fanciers may well be proud; for of all the favorites known in the fowl category, these are more than all others entitled to be called the "Farmers' Fowl."

For The Lancaster Farmer.

VEGETABLE VS. ANIMAL DIET.

Mr. President and Gentlemen.—The discussion at our last meeting terminated in a motion requesting me to prepare an essay on the subject just announced. It is with diffidence, on the one hand, yet with confidence, on the other, that I accede to the request. You are well aware that it is up-hill labor to advocate the unpopular side of any question, no matter what arguments may be presented; but the hope of sowing seed that may possibly produce some good fruit, should always be sufficient inducement to earnest labor in whatever field circumstances may place us. My first request is that you give me an unprejudiced hearing; second, that you will conclude an impartial judgment in the case. It is not reasonable to expect that this essay will convert one from flesh-eating, nor fully convince any that they could possibly get along without the use of flesh diet. Your essayist, however, is confident of his ability to demonstrate beyond question that there are stronger arguments on the vegetarian side of the question than any of you who have not investigated the subject have ever dreamed of.

As a rule, we are disposed to judge and decide matters from a standpoint of custom and habit, rather than upon their real merit. If mankind had always been, or were now in a normal condition, custom and habit might be a sound basis from which to argue this, as well as other questions. If man's appetites and cravings were a just criterion, then the question of vegetarianism could not be sustained. From a Bible standpoint we must conclude that man in his primeval state subsisted simply on fruits, which sustained human life in its greatest perfection. We have no evidence that his expulsion from Paradise caused any physical changes so as to make him carnivorous, or even omnivorous; and we therefore assume that he remained, if not simply a fruit-eater, at least a vegetable-eater, until after the deluge, during which period he attained a greater age than ever since. The plea that after the flood he received permission to eat flesh, does not prove any change physically, except that life was shortened, and we consequently assume that he remained by nature a vegetarian. The Scripture passage generally quoted in support of flesh-eating is, at best, somewhat obscure. However, from the period of the flood to the present day, flesh-eating has prevailed to a certain extent among certain nations, peoples, communities and families; but at the same time there have existed families, communities, and almost entire nations without resorting to flesh, and, so far as physical development, endurance and longevity are concerned, the preponderance is in favor of the latter. In fact, the most feeble and diminutive people we can now think of are the Esquimaux, who are exclusively flesh and fat eaters.

When Moses led the children of Israel through the wilderness, and provisions seemed to run short, they began to murmur, and longed rather to die by the flesh-pots of Egypt than from hunger in the wilderness. Food was at once provided as if by miracle, in the shape of manna and quails. No doubt life might have been sustained by the former alone, but as the perple were hankering after flesh, it was also provided, evidently to satisfy their clamoring. But mark the result. A great plague was the consequence, by which multitudes died with the flesh of quails between their teeth. The place was given an appropriate name, because there they buried the people that lusted.

Both sacred and profane history record instances of prominent men who lived without flesh. The prophet Daniel and his companions are interesting subjects in this consideration, as many persons want Scripture evidence in support of any doctrine. When Nebuchadnezzar required a number of the most promising young men in his realm to be educated for the first offices under the king, they were to be without blemish, such as had ability to stand in the king's palace. Daniel and his three Jewish companions were among those who stood a preliminary examination. Provision was made for their diet and drink from the king's table. When it came to the point of eating and drinking, Daniel and his companions declined partaking of what was provided for them, and requested to be fed on pulse and water. The overseer of the students feared the wrath of the king in case these young men should appear emaciated when they would be presented before his majesty, but they prevailed upon a ten days' trial, after which the overseer allowed them to continue their choice diet for a term of three years, quite a reasonable time to test the effect of a vegetarian diet. Now as to the result. When they were brought before the king, he found these four young Hebrews above all the rest, and not only first among the students, but ten times better than all the magicians and astrologers in all his realm; consequently, they were assigned the highest positions under the said monarch of the world. Evidently they continued their diet which sustained them so well.

There have existed in nearly all ages of Jewish history, organizations, as well as individuals, which excluded flesh-diet altogether. It is therefore evident that there were many of those classed in Holy Writ as God's people who did not consider flesh essential to their well-being; at least, they did not consider it a positive command from God. May we not reasonably conclude that, like the bill of divorcement granted by Moses and rather countermanded by Christ, flesh-eating was allowed on account of the hardness of man's heart. The command to Noah after the flood may have been simply for an emergency, as it required some time for the earth to produce food, and he being directed to take into the ark seven pairs each of the clean animals, would seem like making provision for this very condition of things. So much for Bible vegetarians.

Profane history gives us many instances of men eminent for learning, endurance and longevity, who abstained entirely from flesh diet, some of whose dietic habits were extremely simple. It would require much time and research, and would extend this essay far beyond reasonable limits, should I enter into details. I shall, however, quote from a few reliable authors in support of vegetable diet. Mr. Horsell, of London, England, has published a work in which, among other extracts from ancient authors, we find the following: "It is a notorious fact that one half of the inhabitants of our globe live on vegetables either from necessity or from choice. The hundreds of millions of Southern Asia are for the most part vegetable eaters. The ancient Greeks say Porphyry lived entirely on the fruits of the earth. The ancient Syrians abstained entirely from every species of animal food. By the laws of Triptolemus, the Athenians were strictly commanded to abstain from all living creatures. The Romans were so fully persuaded of the superior effects of vegetable diet, that aside from the examples of many of their good men, they publicly countenanced this mode of diet in their laws concerning food. Plutarch says it is best to accustom ourselves to eat no flesh at all, for the earth affords plenty not only fit for nourishment, but for enjoyment and delight."

And again, you ask for what reason Pythagoras abstained from eating the flesh of brutes? For my part, on the contrary I am astonished to think what appetite first induced man to taste a dead carcass; or what motive could suggest the thought of nourishing himself with the flesh of animals which he saw the moment before bleating and walking about? How could he see an impotent and defenceless creature slaughtered, skinned, and cut up for food? How could he endure the sight of the convulsed limbs and muscles? How bear the smell arising from the dissection? Whence happened it that he was not disgusted and struck with horror when he came to handle the bleeding flesh, and clear away the clotted blood and humors from the wounds? We should therefore rather wonder at the conduct of those who first indulged themselves in this horrible repast, than at such as have humanly abstained from it. Dr. Whitlaw says that "all philosophers have given their testimony in favor of a vegetable diet, from Pythagoras to Franklin." "We might also have quoted from Plato, Plutus, Plutrarch, Porpyhry, Cyrus the Great, Lord Bacon, Sir W. Temple, Lord Kairns, Prof. Dick, Sir E. Home, Pope, Sir Isaac Newton, Howard, Shelley, Linnæus, Cuvier and others." The same author quotes a list of names of persons of rather modern times whose ages varied from one hundred to over two hundred years, who invariably lived temperate and abstemious lives. Their food was very simple and generally vegetable. He also argues that according to natural laws, health and longevity are man's lot, that we owe to God, His Church, and the world, the longest and best life that we can live, and are under the most solemn obligation not to hinder or shorten it.

Now would not a little sound sober reflection lead us all to conclusions similar to those just quoted? Because the habits and customs of mankind are as we now find them, is no proof that they are the best, or that they are as they should be. In order to arrive at truth and right we must go behind perverted appetites and good natured errors.

Experience should have taught every one of us that it is much easier to float with the popular current, than to return and correct errors. We are too apt to reason from the basis of our feelings and appetites, never dreaming that they are often so abnormal and perverted as to have become almost a second nature.

The prevailing and erroneous idea that we must partake of stimulating food and drink to give strength to the system, is so strongly impressed upon our minds that it requires thunder tones to shake up the accumulated rubbish. The accepted conclusion, that in order to do hard labor man must eat flesh; might long since have been exploded even among its strongest advocates, had they only given the other side a fair trial; but we could now no more persuade our laboring men that they can accomplish a full day's work without meat, than we could 40 years ago have convinced our harvest-hands of their ability to do a day's work without a certain quantity of whisky. The result is our harvest-hands now can do better and more work in a day, than they possibly could have done under whisky regime. The laborers of those days were no less positive of the necessity of whisky stimulants, than those of our day are of flesh stimulants.

The positive testimony as to the ability of men and women in all ages and climes to accomplish any amount of necessary labor without any flesh diet, should indeed be sufficient to convince the most skeptical flesh-eater. "But" says the latter, "I have eaten it so long and am so fond of it that I could hardly leave it." Just so, your strongest logic originates from your stomach instead of your brain. Again, he will say, "what are all these animals here for if not to be eaten?" Well, if you must eat everything that you don't know what it is created for, you will have your stomach so full that you will hardly reason at all. In reply to the latter. I will simply say that had our animals not been nursed and domesticated, they would have receded with other wild animals as civilization advanced.

We do not argue that the flesh of some healthy animals is innutritious or unhealthful, but claim that the vegetable kingdom will yield a full supply of food best adapted to man's nature and well being, and without exciting our carnivorous propensities. Of all the abominations in our dietetic system, the swine plays the most conspicuous part. A scavenger by nature, but by domestication is considered by many one of the sweetest of morsels, almost without exception scrofulous, frequently measly, and often full of trichinæ,

it is not a little surprising that he continues to be so much an object of admiration, and such an indispensable article of food. My own observations of hogs slaughtered during a period of forty years has convinced me that not one in twenty is free from a diseased liver. The exemption of the Jews from scrofula, is by good authority attributed to their disuse of the greasy animal. This fact alone should be sufficient to very greatly curtail its use, if not cause its entire disuse as food. The corn required to fatten a hog will furnish more than twice the amount of nutritious food, (without the scrofula, measles or trichinæ,) than the average of hogs will after being slaughtered.

The analyses of the ablest chemists show that all the cereals and leguminous products contain generally from two to three times the amount of nutriment that the best flesh meats do. Facts are on record of men performing most active muscular labor upon a strictly fruit diet. The exemption from epidemics and diseases generally is especially claimed by vegetarians. The Society known as "Bible Christians," of whom quite a number reside in Philadelphia, embraces in its creed total abstinence, not only from intoxicating drinks, but also from tobacco and flesh diet. Its pastor, Rev. Dr. Metcalf, in answer to an inquiry replied, that when the yellow fever raged in Philadelphia, not one of their members was taken with the epidemic, although a large proportion of them lived in its midst. He at the same time reported that one of their members was considered the strongest man in Philadelphia.

The plea that man must have animal food in cold weather and in cold climates proves simply that he can consume it with more impunity than he can in a high temperature, not that he cannot live and flourish without it. England being in a high latitude, it would necessarily follow that its people must have a large proportion of flesh. But here we find a flourishing vegetarian society, embracing men and women of quite advanced ages and above ordinary intelligence, who are enjoying health to a greater extent than the average of any other class in the kingdom. During the Crimean war, captured Russian soldiers were found to have in their haversacks rye bread, with a few other simple articles of food, but no meat. The French and English surgeons expressed the surprise at their speedy recovery from wounds which were considered fatal to their own soldiers.

According to some of our home savans it would hardly be possible for man to fully develop in these cold regions without flesh; yet more robust soldiers than Russia has turned out are nowhere to be found. The testimony in favor of the vegetarian diet is really inexhaustible, but time and space forbid its extension. Whether we view the subject from a Mosaic, or from a Darwinian standpoint, is it not reasonable, that as man approaches his maker his carnivorous propensities are necessarily weaker, for we can hardly imagine a flesh-eating being above man.

The Psalmist in reference to the manna given to the Israelites in the wilderness says, "God gave them of the corn of Heaven" and "Man did eat Angel's food." Whatever the food may be, if any, of a higher order of beings, it is conclusive that it was not the carcasses of dead animals. Do we not all agree that it is man's prerogative as well as duty to lift himself as far as possible above the grovelings of the Carnivora? Think of slaughter houses among a high order of beings. Contrast our present with the feelings of earlier years, when yet tender, how our sympathies were excited, how our pleadings were given, and oft times our tears flowed in behalf of the victim about to be killed, whether a pig, a calf, a lamb, or a fowl. But like the criminal, as we advance our finer feelings become blunted until we can behold with complacence the very acts at which we formerly shuddered. Is it not passing strange that our appetites will get the better of us, that we can become so hardened as to gloat over the remains of the very victim that we formerly so deeply pitied? A more pleasant recollection is when our appetites were more nearly normal, (although born from parents with perverted appetites) when those luscious fruits, so beautiful to the eye, so tempting to our natural appetites, made such pleasing impressions as to get the advantage of our better nature, to cause our hand to reach the fruit, forbidden only because it was not ours.

But whether ours by right or otherwise, oh how delicious those berries to our then unperverted appetites, those cherries, peaches, plums, pears, or apples, even when only half ripe they seemed to fill an aching void!

How many of us have lost that keen relish for nature's most luscious productions, and have instead acquired appetites that hanker after things that were once so repulsive to us, things against which our finest sensibilities at first revolted, but have now established a kind of second nature upon which we labor so hard to base our dietetic nature. The testimony and reason in favor of vegetarian diet is really inexhaustible, but time and space forbid its extension. May I not claim to have made some impression worthy of your consideration? May I not invite your serious attentions to this matter, for the benefit of yourselves and posterity?

For The Lancaster Farmer.

FODDER—CORN, AND THE CONCLUSIONS ARRIVED AT.

Within the last few years farmers have been trying different plans to increase the supply of winter food for their cattle, as the usual crops of hay and corn-fodder are not enough to keep the increasing number of cattle kept.

Various corps, such as peas, oats, &c., are cultivated for dry fodder, but for this section of country corn has been preferred on account of the quantity of fodder produced and the short time it takes to bring it to a size fit for cutting. The corn is usually sowed in rows 3 feet to 3½ feet apart, using from two to three bushels of corn to the acre.

For some years a great many hay fields have not had any clover, on account of the freezing out of the latter, and as most farmers sow only timothy and clover, they were disappointed in a second-crop (after-math,) and many of them plowed the sod as soon after haying as possible, and sowed it to corn. Many of them have done so under the impression that merely taking off the fodder is not hard on the land, believing that the grain part of a crop is what exhausts the soil mostly.

An instance showing what effect the raising of fodder-corn has on the soil, came under our observation during this and the preceding summer. A field laid down to timothy and clover failed in the latter, and it was determinded to plow under the timothy stubble as soon as the hay was off, but a severe drought setting in, the field could not be plowed until about the middle of July, and as it was considered nearly too late, only a part was planted, which produced about 1½ tons per acre of the very best fodder-corn. According to the opinion of some this would not have been a serious draft on the soil, as there was no grain produced, the greater part of the fodder not having even panicles, but the effect on the crop the present season was very marked. The whole field was put into corn, and where the fodder-corn was not raised a large crop of corn was taken off, the stalks also being very tall and stout; where the fodder-corn was raised the stalks were of good size, but low in comparison with other parts of the field, and the yield of shelled corn at least 20 bushels less per acre.

The amount of the more important fertilizing materials that would have been taken from the soil by 20 bushels of corn, are about as follows: phosphoric acid 6 lbs.; potash 3¾ lbs.; nitrogen 17¾ lbs. The 3000 pounds of fodder-corn removed about the following amounts: phosphoric acid 11½ lbs.; potash 50 lbs.; nitrogen 17¼ lbs. It will thus be seen that the crop of fodder-corn removed much more of phosphoric acid and potash, and about three-fourths as much nitrogen as the 20 bushels of corn would have taken. The commercial value of the above fertilizing materials removed, is about $3.25 more in the case of the fodder-corn crop, but this was probably very heavly balanced by less stalks and leaves on the corn crop.

In a pecuniary point of view the result was a failure. The fodder was considered worth $15.00 per ton, or $22.50 per acre; the cost of seed, cultivation, curing, &c., $10.00, which would have left a balance of $12.50; but the 20 bushels of corn the present season would have sold for $10.00, and the amount of corn-fodder was probably worth less the $2.50 this season than if no fodder-corn had been raised. Had the manure that was made by feeding the latter been applied this spring on the corn ground, I have no doubt the result would have been satisfactory in every way.

From the above we draw the following conclusions:

1. That with the exception of nitrogen a crop of fodder-corn removed more fertilizing materials than an ordinary crop of corn.
2. That on ordinary to medium good soils, only absolute necessity should drive a farmer to raise a fodder-corn crop on the above plan.
3. That the manure made from such fodder must be returned in season for the next crop to insure a full yield in the latter case.—*A. B. K.*

For The Lancaster Farmer.

WHAT SHALL WE EAT.

There is nothing unclean of itself, but to him that esteemeth anything to be unclean, to him it is unclean. One believeth that he may eat all things, &c., but another alloweth it not. Let not him that eateth despise him that eateth not, and let not him which eateth not judge him that eateth. Circumstances alter cases, and persons are governed to a great extent by what is to be *had* that is eatable. As Christ said, "Eat such things as are set before you," &c.; "Behold, all things are clean unto you," &c.; and Paul says, "For neither if we eat meat are we the better, neither if we eat not are we the worse; whatsoever is sold in the shambles, that eat, asking no question, for the earth is the Lord's, and the fullness thereof. If any bid you to a feast, and ye be disposed to go, whatsoever is set before you, eat, asking no question. And there came a voice to Peter saying, Rise, Peter, kill and eat. But Peter said, Not so, Lord, for I have never eaten anything that is common or unclean. And the voice spake unto him again the second time, "What God hath cleansed, that call not thou common," &c. Now, I allow that it would be better for many persons if they would eat less animal and more fruit as food. But there is a large class of people that cannot have the fruit all the time, and must depend upon animal food to give strength and "stick to the ribs," as we sometimes say. But then we should try to have our animals as free from disease as possible. There is no need of our hogs being nearly all scrofulous and diseased in their livers, &c. They can be kept as pure as any other animals, if properly cared for. Now, we read of some commanding to abstain from meats, which God hath created to be received with thanksgiving of them which believe and know the truth. For every creature of God is good, and nothing to be refused, if it be received with thanksgiving.—*John B. Erb, Lime Valley.*

ROOM FOR MORE SHEEP.

Last year we paid foreign countries fifty millions of dollars for woolen goods and eleven millions of dollars for manufactured goods. When we have in the country twelve million more sheep than we have now, we shall only produce the wool we used; and yet there is no country on earth where sheep could be raised so profitably as in the United States. But we are coming every year nearer to supplying our own markets with the wool they demand. In 1875 the wool clip of the country was nearly 200,000,000 pounds, while in 1860 it was only 65,000,000.

BEEFSTEAKS AND PIES.

Everybody except cannibals and the Ashantee consumers of steaks from the living kine, prefers well prepared food to the other kind. There is no farmer's boy who eats a greasy lump of shoe leather fried in a pan and called a beefsteak, who would not prefer a well-broiled porter-house from the hands of a good cook. Here, then, dear madame, is a point of departure. Well cooked food is not only more toothsome, but it is more nutritious. Your grandmother would have scorned a fried steak. Pork fried in its own juice is another thing. Yet the American beefsteak, the national dish for breakfast, is generally fried. It is often of a pale measly complexion. Its dry and hard surface is vainly irrigated with lukewarm grease, in which lumps of soft butter float—pardon, madame, the unsavory details which imperious truth imposes. Is that proper food for a human being? Yet the average American human being is subjected to it in the great multitude of honest homes. Can you do nothing about it?

Then pies. Even that dismayed Frenchman could not deny that we have as many pies as religions, and he would be a bold Frenchman, also, if he asserted that we are as fond of our religions as of our pies. Pies, indeed, there must be. They are as ancient as Thanksgiving, and the pie on the table of that great day was as constituent a part of it as the minister in the pulpit. Nay, what is the festival itself but a humble and pious offering of thanks for the copious harvest of pie—in its original material? Indeed, the more metaphysical inquirer might justly ask, as he surveys the autumn fields, gorgeous with the massive pumpkin, what is it there for except to make pie? It is as manna fallen upon the earth. It is a celestial hint of pie. It is a heavenly command of pie. There is a time in the life of the contemplative American when he perceives in himself nascent doubts of pie. He may even go so far as to protest that heavy white dough, "shortened" with heaven and the lard pot know what, is not wholesome food. But what said the learned and eloquent Rufus Choate, when his mouth fairly watered at the luxury of the forecastle and galley of a half-starved coasting smack? "On Monday, gentlemen, the wholesome and toothsome duff; on Tuesday the nutritious and delicious dundy-funk;" and in the climax his rapt eye beheld the vision, the very transfigured material of pie, although he called it by a kindred name, when he exclaimed, "and on Wednesday, gentlemen, with his own hand, with his own paternal hand, the captain dealt out to them squash; not the cold and shriveled vegetable of our northern clime, but the gorgeous, the luxuriant, the exuberant squash of the tropics."

Think, madame, that you deal with this esculent—squash or pumpkin, it is all the same; concede that the German will surrender his sauer-kraut, the Scotchman his oatmeal "parritch" the Irishman his potato, the Italian his macaroni, the Frenchman his frog, as soon as the American his pie; waive all the arguments against pie as pie; yet are you not morally bound to consider the nature of crust, and can you, as a friend of truth, assert that the white, soggly slab of "duff" that underlies your pie is either wholesome or toothsome? The question that comes to you is, can't yon brown it? Can't you make it dry and crisp without too much reference to the lard pot? When it is apple with which you are concerned, the responsibility is greater, for, so to speak, your apple-pie wears a full suit; it has a coat and trowsers, an upper and a lower garment; and, dear madame, since "it is not always May," why should the innocent fruit be always clad in white? Brown it, madame, brown it!

These are simple hints, but they involve health, comfort, and progress. Let us regard what has been said as a first lesson—studies, if you please, for beginners. Devote your energy to securing a juicy broiled steak, dry and mealy potatoes, brown and not buttery pastry, and light, thoroughly baked bread—"only these and nothing more"—and not your children only, madame, but all wearied souls who have been long watching for the dawn, will rise up and call you blessed!

EXHIBITION NOTES.

In the installation of the exhibits from the various nations, numerous changes were necessarily made in the original allotment of spaces in the five Exhibition buildings. The following is a return of the amount of space actually occupied in each building, obtained from the chiefs of bureaus, by permission of Director General Goshorn. The figures are taken from data compiled for the official reports of the bureaus—the very comprehensive report from the Main Building being prepared by Mr. Henry Pettit, Chief of the Bureau of Installation. The amounts in this, as in all the other reports, are given in square feet.

Main Building and Annexes.

COUNTRIES.	Total in Main Building.	Total in Mineral Annex.	Total in "Carriage Building.	Total Space Occupied.
Great Britain and Ireland..	54,155	.....	4,130	58,285
Canada	24,118	.....	1,015	25,133
India	3,208	.....	.....	3,208
Straits Settlements	22	.....	.....	22
South Australia	1,536	.....	.....	1,536
Queensland	3,406	.....	.....	3,406
New South Wales	4,213	.....	63	4,276
Victoria	5,167	.....	.....	5,167
Tasmania	1,372	.....	.....	1,372
New Zealand	1,664	.....	.....	1,664
British Guiana	344	.....	.....	344
Gold Coast	279	.....	.....	279
Archipelago of Seychelles. ..	282	.....	.....	282
Trinidad	267	.....	.....	267
Jamaica	722	.....	.....	722
Bahamas	472	.....	.....	472
Cape of Good Hope	645	.....	.....	645
Bermudas	494	.....	.....	494
Total United Kingdom	102,456	.....	5,208	107,674
Orange Free State	1,058	.....	.....	1,058
France	45,460	.....	.....	45,460
Germany	29,625	.....	237	29,867
Grand Duchy of Luxemburg	247	.....	.....	247
Austria and Hungary	24,727	.....	164	24,891
Russia	11,141	.....	672	11,813
Norway	6,959	.....	.....	6,959
Sweden	17,799	.....	.....	17,799
Denmark	2,662	.....	.....	2,562
Netherlands	15,948	.....	.....	15,948
Belgium	15,598	.....	.....	15,598
Switzerland	6,693	.....	.....	6,693
Italy	8,943	.....	140	9,083
Spain, Cuba, Philippine Islands	11,253	.....	.....	11,253
Portugal	5,988	.....	.....	6,988
Turkey	3,347	.....	.....	3,347
Egypt	5,026	.....	.....	5,026
Tunis	2,015	.....	.....	2,015
Japan	17,831	.....	.....	17,831
China	6,628	1,594	.....	8,222
Brazil	6,899	.....	.....	6,899
Chili	3,424	.....	.....	3,424
Argentine Republic	2,861	.....	.....	2,861
Peru	1,462	.....	.....	1,462
Hawaii	1,575	.....	.....	1,575
Mexico	6,567	.....	.....	6,567
U. S. of America.				
Alabama	114	232	.....	846
California	449	.....	404	853
Connecticut	9,337	339	1,915	11,591
Delaware	124	223	2,205	2,552
District of Columbia	200	.....	.....	200
Florida	48	.....	.....	48
Georgia	74	.....	.....	74
Illinois	3,267	525	1,188	5,010
Indiana	1,871	510	466	2,847
Iowa	247	442	12	1,389
Kansas	13	.....	.....	13
Kentucky	247	1,074	58	701
Louisiana	80	.....	5	85
Maine	1,042	.....	209	1,251
Maryland	1,320	91	154	1,566
Massachusetts	18,763	365	2,073	21,201
Michigan	1,280	980	614	2,874
Minnesota	14	.....	.....	14
Mississippi	90	.....	.....	90
Missouri	1,069	524	181	1,774
Nebraska	2	.....	.....	2
New Hampshire	600	.....	223	823
New Jersey	5,330	337	1,801	7,468
New York	34,187	1,819	8,216	44,192
North Carolina	178	.....	.....	178
Ohio	5,228	1,703	1,705	8,106
Oregon	30	.....	.....	30
Pennsylvania	47,185	5,550	9,233	61,968
Rhode Island	2,946	.....	234	3,180
South Carolina	21	.....	.....	21
Tennessee	87	323	.....	410
Texas	19	.....	.....	19
Vermont	465	43	169	677
Virginia	289	336	.....	555
West Virginia	303	.....	15	318
Wisconsin	235	675	67	967
Wyoming	.....	61	.....	61
Bureau Offices	2,214	138	3,013	5,363
Intermediate passageways	85,928	220	36,016	121,164
Total United States	224,826	16,501	68,646	309,973
Grand totals all countries..	688,928	18,096	75,057	682,080

Machinery Hall.

Total square feet of occupied space:

Great Britain	33,298	France	1,129
Russia	5,967¾	Canada	4,300
Brazil	5,056	German Empire	10,098
Belgium	9,375	Austria	1'248
Denmark	585	Switzerland	288
Sweden	3,186	Italy	288
Spain	1,224	United States	308,210

Memorial Hall and Annexes.

Relative space in square feet, covered by each of the contributing nationalities on both wall and floor of Memorial Hall and its two annexes—Pothographic Hall and Art annex:

	Paintings. Wall space.	Sculpture. Floor space.
United States	46,829	2,360
Great Britain	12,163	339
France	18,115	463
Germany	8,031	493
Austria	4,646	115
Spain	2,960	95
Italy	4,500	7,423
Pope Pius	80	.....
Belgium	5,514	320
Netherlands	4,956	.....
Denmark	538	17
Sweden	3,637	76
Norway	1,439	26
Russia	2,162	75
Canada	2,319	28
Mexico	3,296	77
Brazil	1,496	74
Argentine Republic	684	.....
Australia	126	.....
Japan	128	.....
Total	123,619	11.981

Horticultural Hall.

Square feet of space occupied within the Hall and in the grounds at either end of and around the Building:

	In-doors.	Out-doors.
England	1,050	8,000
Spain	1,840	8,500
France	100	19,500
Netherlands	.....	6,700
Austria	.....	800
Victoria	330	.....
Jamaica	320	.....
Germany	120	.....
San Domingo	76	.....
Sandwich Islands	50	.....
New Zealand	50	.....
Bermuda	50	.....
Total*	3,965	43,500

* The balance of the occupied space, which has not been definitely ascertained, is credited to the United States, having been improved under the general supervision of the Centennial management.

Agricultural Hall.

Square feet of space occupied by the exhibitors from nations represented:

Argentine Republic	3,468	Liberia	1,536
Austria	2,392	Netherlands	4,276
Brazil	4,668	Norway	3,090
Canada	10,387	Portugal	6,182
Denmark	806	Russia	6,893
France	15,743	Spain	6,061
Germany	4,878	Sweden	2,603
Great Britain & Ireland.	12,224	Venezuela	1,220
Italy	4,280		
Japan	1,665	Total for. countries	92,372

United States of America.

Connecticut	480	New Hampshire	360
Delaware	286	New Jersey	912
Illinois	501	Ohio	350
Indiana	501	Oregon	691
Iowa	1,566	Washington Territory	288
Massachusetts	760	Wisconsin	480
Michigan	1,235		
Missouri	501	Total	9,236
Nebraska	425		

Collective exhibits of Central Pacific Railroad (including three States) 1,501

Grand total of occupied space 103,209

The exhibits of the United States, private and collective, covered 157,315 square feet, the whole area of the hall being 434,305.

The above figures are, of course, exclusive of the occupation by different Governments of special buildings and their assignments in the Shoe and Leather, Women's Pavilion and other independent buildings.

In order to prevent the presence of crowds, while avoiding the importunities incident to a free pass system, the Director General has decided to continue the regular admission fee.

A telegram was received by Col. H. B. Sandford, Commissioner for the British display, directing him to present to the Pennsylvania Museum and School of Industrial Art, a napkin spun by her Majesty, Queen Victoria, and a screen worked by her Royal Highness, the Princess Beatrice.

At a meeting of the Board of Directors of the Permanent Exhibition Co., held in the

Board of Finance building, a partial organization was effected by the appointment of Clement M. Biddle, as President, and E. A. Rollins, Treasurer. The general features of the proposed re-arrangement of space in the Main Building were discussed, and plans showing the portions to be occupied by the principal sections were presented and partly perfected. It is proposed to reserve the entire open space in the centre to the north of the music stand, heretofore occupied by English and French exhibitors, as a place for musical entertainments. Directly to the east of this some 25,000 square feet have been allotted for the educational exhibit and the book trade. An application from the Book Trade for 10,000 square feet has already been received. Immediately adjoining this display on the east will be that of the machinery, while the space directly opposite the music section has been assigned to the fine arts. To the west of the music the beautiful ceramic display will be stationed, and further on the agricultural division. The State collective exhibits will be arranged in order in the south-western portion, and the shoe and leather exhibit in the northeast extremity. Music, education and ceramics are thus far prominent features of the arrangement of the new exhibition. Waiting rooms, large reception rooms and all necessary conveniences for the public will be supplied, the aisles, with the exception of the main aisle, being widened.

Information was received of the intention of the Commissioners of these countries to donate to the new Exhibition some of the distinguishing features of the display of Sweden and Belgium, and the frame work surrounding the exhibits of Spain, Denmark, Norway, etc.

A banquet was given at the West End Hotel by the President of the Austrian Commission to the Centennial officials and municipal authorities of Philadelphia.

Lieut. General Saigo Tsukumichi, of the Japanese imperial army and Vice President of the Japanese Centennial Commission, bade farewell to Gen. Hawley on Saturday and, in the evening entertained various members of the Centennial management at a banquet at the Reform Club Rooms. On Monday he left for San Francisco en route to Japan.

HOW TO CURE AND PACK SEED LEAF TOBACCO.

Messrs. Tappan & Allen, of Baldwinsville, New York, give the following instructions to the tobacco growers of New York, assuring them that if they follow the plan they will succeed in raising as good tobacco as that of Connecticut and Pennsylvania. Experienced growers and packers in Lancaster county need no instructions, but the unexperienced will be benefited by following the rules here laid down:

Taking the Plants Down.

Take the plants down only when you are satisfied they are thoroughly cured, and when the weather is moist, with a favorable air for moistening the leaf to condition. The stem of the leaf should be thoroughly dried out before taking the plant from the poles. Take down with great care, and commence stripping immediately after taking down, to prevent the heating and consequent matting of the leaf in the stalk bank.

Strip the leaves off the stalks immediately after taking the plants down and put them either in bundles of five to eight pounds each or in banks preparatory to assorting. In no case allow the leaves to remain on the stalks after taking down from the poles.

Stripping.

Strip in *three qualities*—unless the crop is too poor to warrant you in doing so. Strip the first quality so the leaves will be of uniform length and size in the same hank, selecting all the nearly or perfect leaves, and leaving out the imperfect ones for the second quality.

Colors.

Put dark colored leaves by themselves in the same hank, and light colored leaves by themselves also in separate hanks. Positively put the leaves of the same length and size, (and no short ones), in the same hank. The poor, inferior, and "ground leaves" should be placed in the third quality.

"Fat tobacco" should not, under any circumstances, be put into any quality whatever. Throw it away with the stalks. If, as sometimes may be the case, you chance to have tobacco on hand too wet to be merchantable, place all such by itself. Do not mix it with any tobacco in condition. Never spray or sprinkle, nor wet tobacco. Water will most certainly spoil it. Besides, it will "water streak it," and permanently injure the *texture and market value of the leaf.*

Steam kettles in stripping rooms should be avoided. The steam destroys the leaf, causing it to turn black.

Size of the Hank.

They should not exceed one and one-fourth inches through at the butts. Make them small, neat and uniform in size. Put 15 to 17 leaves into a hank, according to the growth of the tobacco. Do not bind the butts with wet or fat leaves. Tie down close to the ends of the butts to make as long a show of the leaves in the hanks as possible.

Placing the Hanks in the Banks.

Bank the first quality immediately after it is stripped, so it will not dry out. Manage the other qualities with the same caution. Bank in a dry and secure place. Place the hanks one by one in a round straight form into the bank as nicely and neatly as your skill can direct you. Give the butts air on either side of the bank. Place good coverings over the top of the banks, with suitable weights to hold the boards in their places.

Strip tobacco as early in the fall or winter as its condition will allow, and endeavor not to delay the stripping too long. Too long a delay in stripping is apt to make several conditions of the leaf—some *dry* and some *over-dry* leaf. If possible, make the leaf uniform in respect to moisture. Do not allow the leaf to sweat in the bank. If the tobacco shall sweat in the bank, the leaf is apt to be "stringy," especially if the bank is overhauled or handled when it is in a sweat.

Casing.

Tobacco should be put into the cases when the weather is warm and moist, and with the utmost care. Four hundred pounds should be put in a case. The tobacco should be weighed in, and the case should also be *exactly* weighed—the weight placed in plain red chalk figures on both ends of the box. *The peculiar condition and thinness or thickness* of the leaf may sometimes make it necessary to vary the number of pounds required for each case.

Sizing.

When you case tobacco, "size up" the hanks; that is to say, put hanks of like lengths and colors in the same case. If dark-colored hanks, put all such of even size and length in one case, and make it a full case. Put all light-colored hanks, also of the same length, in a case by themselves. Put all short and small hanks, of the same or nearly the same length, in cases by themselves, bearing in mind the selection of colors.

Mark the first quality plainly with red chalk, "AA;" the second quality, "A," and the "C."

If there are mixed cases, mark them distinctly with the number of pounds of each quality contained in the cases. Keep a small memorandum book with a true account of the number of pounds of the respective sorts you have, with such remarks added as shall seem valuable to buyer and seller.

Size of Cases.

The case should be made of pine lumber, well seasoned, with two-inch corner-pieces, and thoroughly nailed, three feet six inches long, two feet and six inches high, and two feet and six inches in width—all these measures to be computed from outside to outside of the cases. The lumber should be one inch thick. Keep the case dry.

When you pack your tobacco away in the cases, place the boxes on the sides invariably. Always case the hanks so they will be placed *lengthwise* of the case—all qualities the same. If the tobacco is too short, fill the centre of the case with tobacco also, with the butts in all instances on the outside of the boxes.

BUTTER CULTURE.

Pisciculture is a business of such recent origin that it is still regarded by the public as an interesting novelty. More novel, more curious, and far more interesting is the business of butter culture, which, like pisciculture, is an aquatic industry. Extensive butter-beds have been planted in the Thames, at London, and are yielding large and profitable harvests. Within a few years we may expect to see the slow old-fashioned methods of the cow and churn wholly superseded by the more rapid and surer results achieved by river butter culture. Dairymen will retire from the butter arena, and, under the supervision of able and intelligent Boards of Butter Commisioners, the growth of butter will be brought to such a degree of perfection as to place that useful compound within the reach of the poorest household in the country.

The London *Medical Examiner* of a late date contains an interesting description of the process of planting and growing butter. The butter culturist selects a nice muddy locality in the bed of a river flowing through a large town, and carefully plants his butter-seeds. The bed must not be more than a foot below the surface of the water at low tide, and it must be constantly swept by a strong current. Butter cannot be grown in a pure mountain stream, but only in a river which receives a large amount of sewerage, by which the butter-plants are nourished. Having selected an eligible bed, the butter culturist sets out a number of small globes of the size of a filbert, made of cork, hair, and woody fibres. As is well known to analytical chemists who have experimented upon the common butter of boarding-house tables, these small globes contain all the essential ingredients of butter except its oleaginous parts. Of course, the butter culturist is not strictly confined to the use of cork, hair, and woody fibres, but may also add hair-pins, and buttons in quantities to suit his own tastes. Having, however, decided upon the first ingredients of his butter, he plants his seed-globes in the mud of his butter-bed, placing them upon short but stout stalks either of wire or wood. The seed rapidly germinates, and, under the genial influence of the sewage, the plant soon reaches maturity. When fully ripe, it is gathered by boys with bare legs and carried to the butter-presses, where it undergoes certain refining processes. The ripe butter-plant presents the appearance of a ball of dark-colored wagon-grease, through which hair, particles of corks, and bits of woody fibres are woven, by the action of the tide. Its oleaginous particles are, of course, derived from the refuse grease which finds its way from kitchens and manufactories into the sewers; and, though the ripe butter-plant is neither palatable nor attractive in its appearance, it is readily transformed by a cheap process of refining and flavoring, into as vigorous, substantial butter as the most exacting boarding-house keeper could desire.

The *Medical Examiner* remarks that "the process by which this questionable fact is ultimately manufactured into an article of food unobjectionable to the eye and palatable to the taste is necessarily exciting public curiosity." All judicious people will agree that to indulge one's curiosity concerning the manner in which any kind of butter is made, is worse than idle. The wise man eats butter and drinks his beer without seeking to know their origin. Were the boldest of us to try to trace the pedigree of pure Orange county butter back to the cows of the Brooklyn distilleries, the result might be extremely disastrous. That way madness lies. Between butter and

science there is an irrepressible conflict, and if we are not ready to abandon butter altogether, we must put blind faith in its truth and purity, and resolutely decline to pry into its origin. There is no half-way between the humble acceptance of butter and the total rejection of all edible grease, and those persons who, according to the *Medical Examiner*, are curious as to the process of converting the fruit of the butter plant into an article of food, are entering upon a path which will lead them to reject all butter and to deny the very existence of lard.

If, under the fertilizing influence of sewage, a little hair and a trifle of woody fibre and cork can be made to develop into butter, it is quite possible that many other articles of food can be thus artificially propagated. The chemical basis of much of the sugar of commerce is admitted to be sand and starch. Is it not quite possible that, if small globes of sand and starch were to be planted in the Thames, they would grow and blossom into brown sugar? Might not pure corn-fed lard be grown from germs of bristles, dashed with brine; and is it not possible to sow a handful of buttons and bits of dog-collars with the well-founded hope of reaping a harvest of hash? The ordinary boarding-house kitchen gardener will doubtless look upon these suggestions as wild and impracticable, but now that we know that the Thames sewage, when tickled with hair, will laugh into butter, it would be rash to reject as impossible any horticultural scheme which relies for its success upon the marvelously fertilizing power of London sewage.

Of course, there are timid people who, after learning that butter culture is an established industry, will decline to use any butter unless they are personally cognizant of its close connection with some reputable cow. Is, then, the cow cleaner than the river in which she wades, and is the stable more savory than the sewer? These are questions which each one must settle for himself; but except in those cases where one's butter is obviously stronger than one's faith, it is probably best to eat it boldly, and to waive the question of its origin as one of those things which no prudent fellow should try to find out.—*N. Y. Times.*

THE SOIL OF FLORIDA.

The second-rate pine lands, which form the largest proportion of Florida, are all productive, and can by a proper system of cultivation be rendered much more valuable than the best lands in Texas. These lands afford fine natural pasturage; they are heavily timbered with the best species of yellow pine, and are for the most part high, rolling, healthy and well watered. They are generally based upon marl, clay or limestone. They will produce for several years without the aid of manure, and when "cow penned" they will yield two thousand pounds of the best quality of sugar to the acre, or about 300 pounds of Sea Island cotton. They will besides, when properly cultivated, produce the finest quality of Cuba tobacco, oranges, lemons, limes and various other tropical productions, which must, in many instances, render them more reliable than the best bottom lands in more northern States. Even pine lands of the "third" rate, or most inferior class, are by no means worthless under the climate of Florida. This class of land may be divided into two orders, the one comprising high, rolling, sandy districts, which are sparsely covered with a stunted growth of "black jack" and pine, the other embracing low, flat swampy regions, which are covered with invaluable timber. The former of these, as is now ascertained, are owing to their calcereous soil well adapted to the growth of Sisal hemp, which is a valuable tropical production. This plant (the agave Sisalana) and the agave Mexicana, or Mexican hemp, also known as the maguey, the pulque plant, the century plant, &c., have been introduced into Florida, and they both grow in great perfection on the poorest pine lands of the country. As these plants derive their chief support from the atmosphere, they will, like the common air plant, preserve their vitality many months when left out of the ground. It is scarcely necessary to add that the second order of third rate pine lands, as here described, is far from being useless. These lands afford a most excellent range for cattle, besides being valuable for their timber, and the naval stores which they can produce. There is one general feature in the topography of Florida which no other country in the United States possesses, and which affords great security to the health of the inhabitants. It is this: that the pine lands, which form the basis of the country and which are almost universally healthy, and nearly everywhere studded at intervals of a few miles, with hammock lands of the richest quality. These hammocks are not as is generally supposed, low, wet lands; on the contrary they are high, dry, undulating lands, that never require either ditching or draining, varying in extent from twenty to twenty thousand acres, and will probably average nine hundred acres each. Hence the inhabitants have it everywhere in their power to select residences in the pine lands at such convenient distances from the hammocks as will enable them to cultivate the latter without endangering their health. Experience has satisfactorily shown that residences only a mile distant from cultivated hammocks are entirely exempt from malarial disease, and that the negroes who cultivate the hammocks and retire at night to pine land residences, maintain perfect health. Indeed, it is found that residences in the hammocks themselves are generally perfectly healthy after they had been for a few years cleared. In Florida the diseases which result from these clearings are as stated above, generally of the mildest type, simple and remittent fevers, while in nearly all the other Southern States they are most frequently of a severe grade of bilious fever.

More again, L. W. G.

HOW CIDER IS MADE.

Fifteen years ago New Jersey furnished the bulk of the cider required for this market, New York State farmers making very little. At that time two brands of Jersey cider, the "Harrison" and the "Canfield," had gained almost a national reputation and made a great name for Jersey cider, with which that made in New York State could not compete. Now the bulk of the cider sold in this market comes from this State and but little from Jersey. The "Harrison" brand is still to be had in limited quantities, and is highly prized by connoisseurs in cider. Some years ago a shrewd Jerseyman discovered that by distillation a product could be obtained from the apple peculiarly acceptable to the palate of the average Jerseyman, and since then Jersey "Apple Jack" has become as popular as Jersey cider once was. The consumption has increased so rapidly that growers of apples find a large outlet at higher prices among the distillers than among cider makers; hence as Apple Jack making has increased in Jersey, cider making has decreased.

Good cider is made from selected apples, sound in every respect. Some of the best brands are made entirely from hand-picked selected apples. Doubtless many of the readers of the *American Grocer* remember the old fashioned lever press, run by the farmer's old horse, where apples in all conditions of decay were mashed. This is now gone by; cider making has become an art. Instead of the old press the "Jersey Grinder" is now used to reduce the apple to a pulp. This machine consists of a hopper, holding about one barrel of apples. At the lower end of the hopper is adjusted a solid cylinder, having knives set in lengthwise. These knives are pieces of steel about one-sixteenth of an inch wide, and the edge flat, the sharp corners doing the cutting. By this process the apples are cut to a fine pulp. As fast as the apple is ground, it is sent to the presses to press out the juice. The old fashioned way, which is now abandoned, was as follows: First a layer of straw, then about six inches of ground or mashed apples, then successive layers of straw and apple until the press was full. The layers of apples are called "cheeses." Now, instead of straw, "Atlantic A" cotton is used being cheaper, as it can be used repeatedly, makes cleaner cider, as it retains the small particles of apple which pass through when the straw is used. After the juice is pressed from the pulp there are several ways of preparing it for market. If it is to be sold at once as sweet new cider, it is barreled and shipped at once, and sold on arrival for immediate use. This, at this season of the year, will keep sweet about a week, the trade being only among local dealers, and the cider never being shipped any distance. Some manufacturers, after it is barreled, will let it stand over night, then insert the spigot well up to the centre of the head of the barrel, and thus draw off only that portion which has settled most and is clearest, and which will sell at enough more to pay for the extra trouble.

About November 1st dealers begin to put away cidar for "fining" or "clarifying" for the winter and following summer's trade. For winter stock the "leaching" or "sand fining" is generally used. This, it is said, makes the sweetest cider, and it will keep well into the early summer. For leaching a kind of clay or sand is used, which must be free of all mineral substances. The clay or sand used is found in a bed near Millville, Mass.; it is the only kind known, and sells at $1.00 per barrel. The "leach" is prepared as follows: A pine box is provided 12 feet long, 6 wide, 2½ high, with a false bottom about two inches above the lower one. The sand is spread in the box, about six to ten inches thick, packed hard, and a cloth stretched over it to prevent any particles of apple or other substances from passing through. Before used it must be washed. Water is poured in, which percolates through, first running dirty and discolored, but finally clear as crystal, which is a sign that the sand is ready for use. When large quantities of cider are made the liquor is run into tanks from the pressing machines and allowed to stand from eight to ten days. After fermenting it is run into the leaches and comes out cleaned of all impurities. Then it is barreled, and will keep all winter and even up to early summer. This process is now the one most generally in use, and makes, it is claimed, the sweetest cider. It is also a quicker process, and this year new cider was in the market as early as the middle of September. For bottling, after being well settled it is drawn off into bottles, some of which, for immediate use, are charged with carbonic acid gas, but it is said that if allowed to stand it will itself generate in twenty or thirty days sufficient gas to make a good, lively champagne cider.

The second process of clarifying is by isinglass or fish sounds. Isinglass (Russian is the best) is prepared as follows: Any certain quantity is broken up, placed in a vessel, and water poured on to cover it, Day by day more water is added, until the isinglass is all dissolved. Of this one ounce is sufficient for a forty-gallon cask of cider, by thinning it down with water until it makes about half a gallon. This is turned into the barrel, the cider being violently stirred in order to thoroughly mix. At this preparation sinks it carries with it all foreign substances. Fish sounds are also used to a great extent, and are prepared as follows: To a certain quantity of sounds add sufficient cider vinegar to cover them. This "cuts" them, and in about twelve hours makes a thick paste. Then it is worked through a fine seive, which reduces it to a jelly-like consistency. For a forty-gallon cask about one ounce is required. This should be thinned with cider from the same lot to be clarified until it makes about one-half gallon, and added and stirred the same as when isinglass is used. This makes a cider that will keep in summer. Some manufacturers claim that one ounce is too much, as if too much is used it will affect the flavor of the cider,

and this is said to be the cause of the strange flavor sometimes to be met with in cider. Experience only can determine the exact quantity.

Cider is now largely made on the "mill system," the same as cheese is made by the factory system, the owners of the mills buying the apples of the farmers, and in some instances taking on consignment and dividing the profits, *pro rata*, made on the cider produced from them.

Cider to be clarified by the above processes should be allowed to stand about ten days to ferment and settle, then the clarifying material is added, and, after settling, the cider is ready to be drawn off into other casks or bottled.

The city saloon trade is a large portion of the trade. For this trade cider is put up in three, five, ten and fifteen-gallon kegs. For the Southern trade, in half barrels, twenty-eight gallon packages and bottles.—*American Grocer.*

HOME AND HAPPINESS.

If there is a desire which is shared by all the human race it is the desire of happiness. Indeed, this may be said to be the foundation of all desires, or rather that which embraces and includes them all within itself. The eagerness for wealth, the thirst for fame, the yearning for applause, the longing for affection, the hope of excellence—all have their roots in the natural desire for happiness. It is because some one of these things seems to us, to hold us to hold out the best promise for happiness that we are solicitous to gain it; otherwise it would lose all hold upon us. This is not wholly a selfish desire. Deep down in the heart of each man and woman dwells the wish for others' happiness as well as his own. It may be weak for want of active effort; it may be obscured by the larger presence of self-interest; but it is *there*, and if nurtured and developed is one of the richest sources of earth's enjoyments. The readiness with which a community will respond to the needs caused by some sudden emergency is alone sufficient proof of the universal existence of this desire. Yet in our daily common-place life it is apt to sink into the background and be crowded out by the too prominent and absorbing cares and ambitions which have self for their centre.

There is one source of happiness which is seldom, if ever, fully appreciated or made to yield half the delicious enjoyment it is capable of affording. We allude to *home life*. There are more exciting pleasures, more impetuous gratifications, more bewitching attractions, but nowhere can we find more solid and permanent happiness, more calm and enduring satisfaction, more innocent and gleeful joy, than in a family home where love reigns supreme. One cause of this lies in the perfect naturalness of its relations. There is nothing forced or arbitrary about the grouping of this assemblage. The father and mother have been drawn together, it is to be hoped, by mutual affection. The children, bringing with them new interests and new joys, have found, one by one, their appointed places and their glad welcomes. It is no artificial assembly, gathered together for some avowed purpose, and dissolved when that purpose is gained. It has, indeed, no direct mission to fulfill outside its own boundaries. Its existence and happiness, and mutual good of its members, are its sufficient aims. Each member, it is true, has other relations and duties to the outside world, but the family, *as a family*, is a litte world in itself. All the socialistic enterprises which have striven to supplant this institution have failed, simply because they were warring against one of the strongest instincts of human nature; that which draws father, mother and children under one roof-tree and around one hearthstone.

Another cause of the happiness which family life is capable of shedding may be found in the importance with which each member is invested. We all love to feel ourselves centres around which others revolve; but comparatively few in society can have this experience. Most of us are ever circling around others, and are thus reminded of our own insignificance; but at home each one is a centre. No matter how obscure or petty his life may seem in the out-door crowd, let him once enter the sacred portal of home and he becomes of consequence. His health, his interests, his prospects are here discussed with avidity, his tastes are consulted, his affection prized and his whole being seems invested with a higher duty.

It is true, however, that many families do not realize this happiness. Sometimes this is because they lack the vitalizing power of love, without which family happiness must wither and die as surely as the plant without the sun. More commonly, however, the love is there, but obscured and shadowed by numberless little vexations, tempers and discontents. The husband truly loves his wife and would risk his life for her without a moment's hesitancy; yet he continually sacrifices her happiness to his own self-will or ill humor or selfish indulgence. The wife is sincerely attached to her husband, and in any great issue of life would be his staunchest supporter; yet she carelessly makes him the victim of her fretfulness or extravagance, or neglects to make a cheerful and inviting home for his weary hours. So with parents and children; strong cords of affection bind them together; but the harsh reproof or the stern denial on one side, and the sharp retort, or the sullen silence on the other loosen the bonds and destroy the beauty of the relation. It is not great griefs that mar the harmony of family life. It is little faults, little neglects, thoughtless words, selfish exactions, bad habits. There are many things that we crave, that we can never acquire, but a happy home is accessible to whoever will take the pains to obtain it. It does not require much money, deep culture, great genius nor marked talents; it *does* need love for its main support, and the constant expression of that love in kindly deeds, gentle words, and willing self-denial.—*Philadelphia Ledger.*

FARMERS' CLUB NOTES.

I knew a farmer, not remarkable for his careful management of manures, nor in fact for thrifty farming, and he occupied a farm rather worn by previous bad management. In a few years past it has been noticed that he gets crops of wheat actually larger than his neighbors get, and the improvement attracted notice, so I called on him to ascertain what means were employed, and was informed that the improvement was due to use of plaster on his wheat in the fall, the rate of the application being about two bushels to the acre. He had taken no other steps to improve the yield of wheat, but this practice had been kept up through several years, with results as stated.

On a former occasion I recommended farmers to prepare their own phosphates, but I have seen no reasons for modifying my opinions. It is relatively cheaper to make up a considerable quantity, as I have already shown, and I therefore say it would be better for the farmers of a neighborhood to join. Ground bone may be adulterated very much without betraying by its appearance the wrong. So I say it is better as well as cheaper for farmers to prepare their own phosphates. As to how to apply them, I have only to say there is no better way to drill the fertilizer in with the seed.

Rye for fodder makes probably the best early feed that can be obtained, but it must be cut before it gets too ripe, or stock will not eat it with relish. It can be sown in the summer on rich ground, and will make considerable good feed from an acre. It is said that if it be sown then it will not head in the same season, but I never yet waited long enough to see how it would be. I do not believe that anything can be procured to take the place of corn fodder, taking all things into account. A neighbor of mine has this season grown some German millec, but it did not come up to his expectation, growing very large and coarse stalks with but few leaves. It seems very innutritious, but when it comes to be fed it may prove better than it looks. I have never yet succeeded with Hungarian grass as a soiling crop. It will not produce a quarter as much fodder as corn, nor do cattle or horses like it as well. I have grown eight tons of dry corn fodder per acre, and the total expense did not exceed $12 per acre for labor and seed. If any one has plenty of time to take care of the crop I think the best substitute that can be raised is beets. But they take a large amount of work during the early part of the season, and to be very successful there must be a great deal of hand-hoeing done in a root crop. And then there is much more trouble and risk in keeping them for winter and spring feeding. Yet an acre of beets, on good ground, well taken care of, will produce a great amount of excellent feed for cattle and hogs. I have nearly wintered store hogs on sugar beets, and kept them in good growing condition all the time.

GREEN FIELDS IN THE MOON.

When the moon is at the full, the assisted eye readily distinguishes on her face certain dark gray spots more or less sharply separated from the brighter portions. Through the telescope these spots appear as broad, level spaces resembling terrestrial seas. Indeed, the earlier observers mistook them for seas, and by that name (Latin, *mare*) they are known to this day. They are not seas, however, but ancients sea-beds, now probably, nearly, if not quite, destitute of water; vast arid basins like the Sahara, or the great interior Utah basin of our own continent.

Examined more closely, these dried-up sea-beds are seen to have a rolling surface like some of our Western prairies, or to be traversed by numerous long ridges, resembling the wave like sandhills which give so marked and peculiar an appearance to the deserts of western Australia, the leveler portions being dotted with low mounds interspersed with small crater pits. In many places formations of an apparently alluvial character abound, while the ancient coast lines show distinct traces of water action. Two of these lunar plains—Mare Humorum and Mare Chrisium—are walled in completely by lofty mountains, presenting stupendous precipices in the vanished sea. The larger *mares* are more like ocean beds. They run together as terrestial oceans do, and sometimes merge into the brighter continental regions, without distinct line of demarcation. In other places they show a rugged coast line, rising into cliffs and peaks, and pierced at times by valleys and ravines.

One of the most conspicuous of these lunar ocean beds, also one of the deepest, is known as the Mare Serenitatis. Its area is nearly 125,000 square miles. Within its dark gray border, from thirty to eighty miles wide, is an extensive inner plain which at times presents a fine, clear light green tint, with a central streak of pure white, the green area lying lower apparently than the gray exterior. The green tint is difficult to catch, except under favorable conditions, and is much weakened by the effect of numerous small white round spots and gray ridges.

Another of the moon's green plains was discovered by Madler in the Mare Humorum, already mentioned. This is one of the smallest as well as most distinctly bordered of the dark gray plains. Its area is 50,000 square miles. The greater portion of its interior is distinctly tinged a dusky green, sometimes very marked, affording a strong contrast with the pure gray of the borders and high enclosing ridges. On the west the green area extends nearly to the edge of the *mare*, but elsewhere, as in the Mare Serenitatis, it is separated from the border by a narrow, darker gray fringe, except on the northwest, where the gray and green areas merge insensibly into each other.

Still another area of green is observed in the Mare Chrisium, one of the most conspicuous of the moon's dark plains. It is com-

pletely enclosed, and is, perhaps, the deepest of the lunar *mares*. Its area is 78,000 square miles. Its general tint is a gray mixed, with an unmistakable tinge of green, especially under high illumination. The verdant hue is seen to best advantage for several days before and after the moon is full.

These and other color changes on the face of the moon—as, for instance, the darkening of the great ring plain of Plato, with increasing light, and like changes in certain long, winding lunar valleys—led Beer and Madler to suggest that they would indicate vegetation, were vegetation possible on the surface of the moon. But having accepted Bessel's conclusion that there could be neither air nor water on the lunar surface, and consequently no life, those much respected selenographers could not entertain the hypothesis of lunar vegetation, however strong the evidence might seem.

But Bessel's opinion is inconsistent, not only with the conditions on which he based his calculations, but also with the results of more recent studies of the state of the moon's surface. So far from being an airless, waterless desert, a changeless mass of dead matter, like so much volcanic scoria, the moon is now known to have an atmosphere of considerable volume and density, to present abundant evidence of physical activity and change, and to have in all probability water enough to make life easily possible on its surface. The moon is dying, but very far from dead. Being so much smaller than the earth, it has run its course more rapidly, but is still a good way off from that goal of ultimate deadness to which so many astronomers have theoretically assigned it. There is not the slightest adequate evidence of the popular view, and "its truth would be admitted by no astronomer who had devoted sufficient attention to selenography to enable him to thoroughly realize the probable present condition of the moon."

Such being the case, the hypothesis that the moon's green plains derive their color from vegetation seems to be impossible or absurd. The evidence is not of a character to justify a positive assertion that the mythical man in the moon may have abundant pasturage for his cattle; but his case ceases to be absolutely hopeless when a thoroughgoing selenographer can say, as Neison does, that the moon may possess an atmosphere that must be regarded as fully capable of sustaining various forms of vegetation of even an advanced type; that it does not appear how it can justly be questioned that the lunar surface in favorable positions may yet retain a sufficiency of moisture to support vegetation of many kinds, and that, in a very considerable portion of the entire surface of the moon, the temperature would not vary sufficiently to materially affect the existence of vegetable life.—*Scientific American.*

SCIENTIFIC AGRICULTURE.

The report on commercial fertilizers, by Professor P. Collier, member of the scientific commission of the United States to the International Exhibition at Vienna in 1873, has appeared in the form of a pamphlet of sixty-seven pages, and is replete with interesting matter. It gives a large number of statistics concerning the trade in fertilizers in Europe and America, their sources, character, value and cost.

The report of Professor Collier coincides fully with the common experience in Europe and in this country in showing that there is a grear deal of fraud in commercial fertilizers; that at the same time the bulk of what is in the market is good, and that the only method to prevent frauds, enable the farmer to make sure of getting reliable wares, and at the same time to improve the general quality of the wares, as sold, rests in control systems based on chemical analysis.

The fertilizer control system introduced in Connecticut by the State experiment station is working very satisfactorily. A considerable number of low-grade and fraudulent fertilizers have been examined, and their character exposed. One article, for instance, which had been sold for $55 per ton, a discount from the regular price of $60 per ton being made "to introduce the article," proved to be nearly one-half sand, and to have a commercial value of about $8 per ton. Several parties who had bought and tried the article, on learning the result of the analysis, refused payment, a considerable sum of money being thus saved to the victims of the fraud. Arrangements are made whereby responsible dealers sell their goods under supervision of the station, guaranteeing their composition, and holding them at all times subject to examination by the station. Purchasers have also the privilege of having the fertilizers they buy analyzed at the station at small cost or for nothing.

The important question as to the form of nitrogen most suitable for the nutrition of plants has been studied by Lehmann, who has lately experimented with buckwheat, maize, and tobacco, supplying nitrogen in some cases in the form of nitrates, and in others, in the form of ammonia salts. He concludes that some plants require ammonia in their first period of vegetation, and nitric acid in the second, but that ammonia may, by oxidation in the soil, produce the nitric acid needed.

Of the many new ways in which science has of late come to be applied to agriculture, one of the most interesting, as well as most useful, is in the investigation of seeds. In 1869 Dr. Nobbe, director of the agricultural experiment station at Tharand, in Saxony, commenced the study of seeds in common use in Germany, and founded the first "seed control station." How much of good has come from this may be inferred from the fact that during the seven years that have since elapsed over 4,000 samples of seeds have been examined at Tharand; that adulterations have been discovered, most ingenious in character, harmful in effect, and remarkable in amount, so much so as to work a by no means inconsiderable injury to the agriculture of the country; and that some twenty-seed control stations have been established in Germany, while others have been either founded or projected in Denmark, Austria, Hungary, Holland, Belgium and Italy. Among the adulterations found are old seeds that have lost their power of germinating seeds of either useless or noxious plants, sometimes killed and sometimes fresh, and even pieces of quartz rock, ground, sifted and colored to imitate genuine seeds.—*Harper's Magazine.*

OUR LOCAL ORGANIZATIONS.

Proceedings of the Lancaster County Agricultural and Horticultural Society.

The regular monthly meeting of the Agricultural and Horticultural Society, of Lancaster county, was held in the Athæneum rooms on Monday afternoon, Dec. 4, President Cooper in the chair.

The following members were present: Messrs. Calvin Cooper, Henry M. Engle, Martin D. Kendig, Johnson Miller, Wm. McComsey, S. S. Rathvon, Jacob Bollinger, J. Frank Landis, Webster Hershey, C. L. Hunsecker, Mr. Hershey, John C. Linville, E. S. Hoover, D. W. Swartz, Peter S. Reist, Levi S. Reist, John Buckwalter, Simon Eby, John B. Erb.

The committee appointed to revise the Constitution and By-Laws of the Society, reported that they had finished the work assigned them, so far as related to the Constitution. On motion the Constitution was read by sections, and after a few corrections, was adopted. The committee was continued to revise the By-Laws, to report at some subsequent meeting.

The report of crops being next in order, Johnson Miller said that the grain looks rather poor in his section. Yellow patches showed that the Hessian fly had made its appearance.

Messrs. Engle and Kendig stated that no material change was noticed in the appearance of the crops since the last meeting. Both these gentlemen report the amount of rain fall during the last month at about 4 inches.

Several other members from various sections of the county, reported the appearance of the Hessian fly in the wheat, and that the early sown wheat was the principal source of attack.

H. M. Engle read an essay on "Vegetable vs. Animal Diet." He did not expect to convert or convince any person that they could get along without the use of flesh diet. Matters are generally judged and decided upon custom and habit rather than real merit. Man, in his primeval state, subsisted simply on fruits, and he remained a vegetable eater until after the deluge, at which time he reached a greater age than has ever since been attained. After the flood, man commenced to eat flesh, and his life was shortened. Flesh eating has prevailed to a certain extent in some nations ever since, but when compared with those nations who do not resort to flesh meats, the preponderance is in favor of the latter. He referred to Moses and the children of Israel; how they would have rather died by the flesh pots of Egypt than from hunger in the wilderness, but they were saved by food sent them in the shape of manna and quails. They could have been sustained by the manna, but they clamored after flesh, in consequence of which a plague visited them and multitudes died with the flesh of the quails in their teeth. The case of Daniel and his Jewish companions, who lived on a vegetable diet for three years, was instanced, as also other Biblical references. Men eminent for learning and longevity, who abstained entirely from flesh diet were mentioned, as well as many quotations from vegetable authors in support of a vegetable diet, one of which stated that over one-half of the inhabitants of the earth, either from necessity or choice, subsisted on vegetables. The ancient Greeks, Athenians and Syrians, never ate flesh, and the hundreds of millions of Southern Asia live entirely on the fruits of the earth. The Romans also preferred vegetable food. He could not understand what appetite first induced man to taste of a dead carcass. Every philosopher, from Pythagoras to Franklin, had given this testimony in favor of a vegetable diet. According to natural laws, health and longevity are the lot of man, and he is under the most solemn obligation to his God, his church and the world not to injure or shorten it. The idea that we must partake of stimulating food and drink to produce strength is erroneous, and we could now no more induce a laboring man to believe that he could do just as great a day's labor without the use of meat as we could convince, forty years ago, our harvest hands of their ability to do a day's work without their due allowance of whisky. Harvest hands do more and better work now than under the whisky regime. The essayist thought the positive testimony as to the ability of men and women in all ages and climes to accomplish any amount of necessary labor without the use of flesh diet, was enough to convince the most skeptical. He would not have it said that all flesh food was unhealthy, but claimed that the vegetable kingdom yielded enough food, which was best adapted to man's nature and well being, and which would not excite our carniverous propensities. The dangerous use of swine flesh was severely commented upon, and after stating that the testimony in favor of a vegetarian diet was really inexhaustible, he closed by inviting the serious consideration of all to the subject, as it benefited them as well as their posterity.

John B. Erb believed that circumstances often alter cases. A great many persons eat what they have, and never think of what they should eat. Several scriptural quotations were referred to, such as when Christ said "eat such things as are set before you," and the voice saying to Peter, "rise, kill and eat." He believed in the eating of flesh, as many persons were so situated that they could not have vegetables all the time. If animals are properly cared for, they can be kept free of disease.

C. L. Hunsecker believed in the remarks made by Mr. Erb, and spoke at some length in favor of a flesh diet. He thought there was nothing so good as a nice piece of beefsteak or turkey, and when they are on the table they will tempt any one to eat—even a vegetarian.

Ephraim Hoover thought experience should teach one what he ought to eat. He sided to a great extent with the essayist, and yet he believed there were some persons—those who are compelled to do out door work almost constantly—who could not do without animal food. He did not believe in the eating of swine flesh, and said if he had the power he would banish it entirely from the earth.

Simon P. Eby did not agree altogether with the essayist. He did not think that the people of the temperate zone could do without animal food, as in winter seasons they needed something, like clothing, to warm them up, and the only remedy in this case, he believed, was animal food. The men who rule the universe are sustained by a mixed diet. The great trouble is the majority of people do not know when to stop eating.

Wm. McComsey said the fact that three-fourths of mankind die under twenty-one years of age, invests the subject of diet, now under discussion, with interest and importance, as we may, perhaps, through the investigation, learn something of the causes which lead to the early death of so large a proportion of the human family. Whilst he was not sufficiently skilled in science to tell the precise effect of particular kinds of food upon the human system, or its influence upon our mental, moral and physical development, he did not believe it was owing so much to the kind of food we eat, but rather to ignorance of the science of human physiology, and violations of the laws of health, which caused their great mortality.

He believed our Allwise Creator had provided for all his creatures, wherever found, the kinds of food best adapted to their wants. In the torrid zone we find the inhabitants subsist chiefly upon fruit and vegetable food, to cool the system and enable it to endure heat, whilst in the frigid zones we find them subsisting almost entirely upon fat and animal food, to enable them to endure the rigid climate. We live in a temperate zone, and seem to require both vegetable and animal food, the latter to enable us to endure the great changes of temperature to which we are exposed. We also find the temperate zones amongst the consumers of mixed food—both vegetable and animal—the highest mental, moral and physical development. Mr. McCumsey did not believe that longevity with us depended entirely upon the exclusive use of vegetable food, but through moderation, a temperate use of all things, and a strict observance of the laws of health, millions more than now do might live to a cheerful and happy old age.

JOHNSON MILLER moved that the discussion of the essay be continued at next meeting. Agreed to.

A vote of thanks was tendered the essayist for his able production.

A committee of three was appointed to secure a room for the use of the Pennsylvania Fruit Growers' Society, which meets in this city on the third of January. This society was organized in this city about fifteen years ago, and has been holding meetings annually ever since. The committee consist of Messrs. S. S. Rathvon, Wm. McComsey and Levi S. Reist.

H. M. ENGLE announced that a meeting of the Tobacco Growers would be held in the Athæneum rooms on the third Monday of this month.

A letter was received from A. T Goshorn stating that the fruit represented by the Society at the Centennial received an award.

Adjourned.

Tobacco Growers' Association.

This association met statedly in the Athenæum Rooms, Monday afternoon, Dec. 18th, at tws o'clock, M. D. Kendig, of Manor, in the chair, and W. L. Hershey acting as Secretary. Members present—Messrs. A. H. Summy, M. D. Kendig, I. S. Landis, Peter S. Reist, Ephraim Hoover, Colin Cameron, Henry Myers and W. L. Hershey. Visitors present—J. F. Landis, J. Huber, Henry Landis, John Garber, H. M. Engle, Andrew Landis, A. Groff, A. Ritter and Reuber Garber.

The first business before the meeting was the discussion of the Constitution, Colin Cameron wanting it in sheets, with a book for the registration of the names of members. He thought the constitution imperfect and unsatisfactory.

PETER S. REIST thought it might be subscribed to in its present shape, and be amended afterward as necessity required.

The constitution was then adopted.

CROP REPORTS

being in order, Colin Cameron, of Maytown, remarked that early in the season growers in his district thought the crop would be had, but the reverse had been the case. Early and late tobacco grew well, but the worm destroyed much of the late crop. He believed it to be a mistake to attempt to raise too much acreage. Men who planted only two acres had almost invariably raised the best crop. The tobacco of his district was of good color, and prices ranged from 15 to 25 cents.

A. GROFF, of Strasburg, was not so well posted as he should be, but this he knew, that the early planted had five large leaves, of good quality—particularly that grown on sandy soil. His section had grown an extensive crop, some of which was destroyed by the worm. Some leaves had eggs on when put in the sheds, and dripped very extensively. Choice lots sold in his vicintity at 28 and 30, and the growers feel much encouraged with these prices. He saw no reason why Lancaster county should not outstrip Connecticut, and he referred in terms of praise to our immense warehouses. The association, he thought, might build warehouses of their own, on the combination principle, and they could place their tobacco in them in charge of competent persons.

PETER S. REIST said that tobacco sold in his district at from 15 to 25 cents—or at about 20 all around. He did not intend to say much, having joined the association in order to learn from others.

HARRY MYERS, of East Hempfield, was called on, but said he knew little of the crop in his district, that Ephraim Hoover knew more, and he called upon him.

Mr. HOOVER believed that the tobacco in the vicinity of Petersburg and Rohrerstown would compare favorably with the best in the county, which was saying a good deal, he thought. The tobacco worm had been had in both places, but the growers kept their patches well cleared of the pest, so that little tobacco was lost after it was in shed. The color of the leaf was all right. He referred to many farmers now building houses on their farms expressly for tobacco. In Manheim township the tobacco was also very fine. He had heard of lots that had been sold, between Lancaster and Lititz, for $25 all round.

I. L. LANDIS now moved that visitors present be asked to make a report. Adopted, and John Garber, of Maytown, having been called on, said he believed growers could do better with their tobacco by casing it. Eastern manufacturers could then see exactly what they were buying, when they came here, and growers would not be obliged to take low prices in order to make up for shrinkage.

Mr. KENDIG, of Manor, said that his observations of the crop had been about the same as those of the gentlemen from other sections of the county. There had been a very fair growth, and it was now curing nicely. He hoped all growers in this county would take a lesson from the worm with which they had been afflicted—not to overreach themselves in the future—not to put out more tobacco than they could handle. He agreed with the gentleman who had just spoken, that many farmers put out too much acreage in tobacco. He believed in raising the standard of tobacco in this county, and then fancy prices could be demanded and obtained.

REUBEN GARBER, of Silver Springs, West Hempfield township, reported the crop in his district to be excellent in condition. The color was good, but they had some little trouble with the hanner worm.

A. H. SUMMY stated that what he first planted turned out good, the second planting not so good, and the third crop had been cut by the worm a good deal. He had found horse manure an excellent thing for low, heavy ground.

M. N. BRUBAKER, of East Hempfield, reported an excellent crop in his vicinity, though it had been hurt by the worm. He did not now raise tobacco. He had started with 1000 plants and failed. If he had taken 500 hundred he might have succeeded, and he agreed with the President, that there should be less acreage.

PETER S. REIST, essayist for the day, read an interesting essay, giving many interesting statistics on the tobacco trade. He gave his experience in raising the weed, and threw out many valuable hints and suggestions. The essay was practical throughout, and want of space alone precludes its publication in full.

The essay brought out a discussion, which was participated in by Colin Cameron, W. L. Hershey, Eph. Hoover, I. S. Landis, Harry Myers, M. D. Kendig and Peter S. Reist. The subjects discussed were the worm, and how to circumvent it; the black rot, and its cause; and what is the best fertilizer. On this latter question, which was the principal topic, there were a variety of opinions. One used lime, another bone manure, another hog manure, another hen manure—all of them having proved good, by the actual experience of those present. The question as to whether the manure manifested itself in the flavor of the tobacco was considered, the general opinion being that it did not. Colin Cameron thought, however, that in order to be on the safe side, the land should be manured early, in order to give the manure plenty of time to be thoroughly worked in. If there *was* anything in the theory that hog manure made strong, disagreeable tobacco, this would most likely prevent it.

Under the head of new business, I. L. Landis said he had done as much as one man ought to have done in order to have Lancaster county tobacco represented at the Centennial. He, with a few others, had made a little display there, and he had every reason to believe that it had done the tobacco-growers of this county some good—that it would send buyers here. He now suggested that an effort be made to get up an exhibit from this county for the permanent exhibition at Philadelphia.

Mr. Summy suggested that each member bring a sample along to the next meeting for this purpose, which was concurred in.

COLIN CAMERON was appointed essayist for the next meeting.

I. L. LANDIS submitted the following referred questions: What variety of tobacco pays farmers best? What kind of fertilizers are best for tobacco land? How may plants be raised most successfully? How should tobacco be stripped and prepared for the market, and into how many sorts should it be made? The last question was selected for discussion at the next meeting, and A. J. Groff, of Paradise, was appointed to answer it.

After approving a bill of $1.00 for advertising meeting in THE EXAMINER AND EXPRESS, and a bill of $7.20 for subscriptions to the "Tobacco Leaf" and "The United States Tobacco Journal," the association adjourned to meet on the third Monday in January.

DRIED EGGS.

A new industry—that of drying eggs—has been set on foot at Passau, on the Danube, and the Prussian military authorities are about to give the product a trial for soldiers' rations. The London *News* says several German chemists are very sanguine as to the success of the experiment, and they pronounce dried eggs to have lost none of their valuable properties by the gradual evaporation of the water contained by them in their original state.

DOMESTIC ECONOMY.

Household Recipes.

COLORED HOSE,

now so fashionable, should be laid in strong salt water before being washed the first time. They will never fade or "run" afterwards.

TO CLEAN WINDOWS.

Wash first with a sponge and good soap suds; then rub with a dry cloth, and lastly polish with a newspaper—it is superior for the purpose to chamois skin. Mirrors may be done in the same manner.

FOR A SITTING ROOM,

flowers and patterns cut from chintz, pasted on, then varnished. If tastefully done they look exceedingly well. The jars should be selected with small mouths, to conceal the contents of the jars as much as possible.

SCRAP JARS,

for parlor, drawing room or library. These are very useful and ornamental to put waste paper or clippings in. For a drawing room a china one is most suitable; for the library we have seen the common unglazed jars used, painted in oil, to imitate china, and afterwards varnished.

TO REMOVE GREASE SPOTS

from carpets, spread the spot over very liberally with dry buckwheat flour. In a few hours brush off. If the spot has not entirely disappeared a second application will do it. Or a brush, common brown soap and cold water will remove the spots, but hot water should never be applied.

MARBLE MANTELS

that have become badly discolored by smoke may be made perfectly clean by the application of benzine. Put it on liberally, then rub off with a clean flannel. If one application does not do it effectually a second will. Never apply soap to marble; it takes off the polish; but grease spots may be removed by the application of powdered magnesia.

TO CLEAN OIL CLOTHS,

add a little milk to the water in which oil cloths are washed, but never use soap. It removes the gloss as well as the dust.

A little milk added to the water for washing dishes is far better than soap, we have been told, but as we do not know this from experience, we give it for what it is worth.

AN INEXPENSIVE BLUING FOR CLOTHS.

Dissolve half an once of Prussian blue and one-quarter ounce of oxalic acid in one quart cold water; ready for use in twenty-four hours. It can be made in same proportion for large families or hotels and will be found superior to that which comes already prepared in bottles. We have used this for years and found it very satisfactory.

TO WASH WOOLEN BLANKETS,

put into a good suds, made of common brown soap, with a few spoonfuls of aqua ammonia added. Rub no soap on the blankets, as it shrinks them, but have the water as hot as the hands can bear. When clean, pass through the wringer by folding four times lengthwise. Then put into another hot suds, with the ammonia added. Rinse in this, but not in clear water. It makes the wool much whiter and softer than when clear water is used. Shake the blankets well, stretch them evenly, and hang smoothly in the sun to dry.

TO CLEAN ZINC.

Zinc that is used under stoves should never be dampened. If it becomes soiled or dim, rub with a flannel and a little fresh lard. In this way it will always look as new and bright as when first purchased.

Equal parts of turpentine and ammonia makes one of the best of

WASHING FLUIDS

without injuring the clothes; a few spoonfuls added to a tub of water.

If smoothing irons become rough, rub them on a piece of beeswax tied in a piece of linen. Keep it always on the laundry table for use.

TO POLISH FURNITURE

use equal parts of boiled linseed oil and kerosene. Apply it with a flannel, and rub dry with another flannel. It will remove all white marks and scratches, and should be kept always ready for use. It gives a room a fresh appearance to rub all the furniture with this preparation. One feels well rewarded for the labor. If any white spots are so firmly fixed that the polish does not remove them, it can be done by rubbing with turpentine, then holding a hot shovel over them.

TO REMOVE PEACH STAINS FROM TABLE LINEN.

For years we used "salts of lemon" and various acids, but a person remarked to us: "All your labor is useless. Wait till the peaches are gone and the stains will also be gone." We thought this utterly foolish, but decided to try it; and, sure enough, when the peaches were gone, the stains had disappeared. The idea, in itself, looks ridiculous; but does not the table linen get enough regular washing to take out almost any stains in the course of one

peach season? We have noticed the same is true of grape stains, or of almost any other kinds of fruit. This is very true, and if remembered may save much useless labor.

THE NICEST IRONING

and polishing we have had done, and it was not to be surpassed, was done without the addition of butter, lard, candle or anything else to the starch, which should be first moistened with cold water, then stirred while the boiling water is added. Boil a few minutes and it is ready for use without any seasoning of any kind, but a willing hand, well applied, with plenty of lubrication about the elbows. Use large regular flat-irons for plain parts, but small round edged ones for smaller parts and places, and the whole process is much facilitated.

TO CLEAN PRESERVE AND PICKLE JARS.

Any good housekeeper will have these thoroughly cleaned, when emptied of their contents, before putting away. To do this, throw in a good handful of washing soda, fill up the jar with boiling water, cover and let stand for an hour. Then wash in the soda water, scald and rinse in two boiling waters and wipe dry. If any odor remains repeat the process.

To clean bottles, put a dozen large tacks in with strong soda water, shake well, and everything adhering to the inside of the bottle will at once disappear.

SAGO CREAM SOUP.

An old fowl that is only fit for the stock pot makes delightful stock for this soup, and it may either be boiled till every particle of goodness is extracted, or if a less strong soup is wanted, it may only be boiled till tender, and the meat afterwards used up in some of the made dishes where a white meat is required. Add to the stock while boiling, some white pepper and a blade of mace. Strain and skim the stock; this last operation is best done with what is called kitchen paper, a most useful article, and of which a supply should be at the command of every cook. Lay the paper on the top of the stock and draw it off; the fat on the top will adhere to it, and the process should be repeated till the paper comes off free from grease. For every 2 quarts of stock take three ounces of sago or of tapioca, wash it in hot water, and boil it in the stock for one hour. Break the yelks of two eggs in a basin, and add to them half a pint of cream or milk; pour into it gradually a little of the hot soup, then turn it all into the remainder of the soup and heat it up, taking care it does not boil. The stock for this soup may be made of rabbit, or of veal, or of a mixture of all three.

BEEF STEAK PUDDING.

Cut up 1¼ pounds of beef into neat steaks. Dip the chopper in cold water and beat them a little to flatten them and make the meat more tender; roll them up with a little pepper and salt inside. Line a pudding basin with a suet crust made in the proportion of 6 ounces of suet to ¾ pounds of flour. Take care to put the crust quite down to the bottom of the basin, or the pudding will break. Cut the crust off even with the top of the basin, lay in the meat; if liked add some chopped onions, half fill the pudding with cold water, cover over the top with a lid of paste reserved for the purpose, having previously wetted, or better still egged the edges of each. Tie up in a pudding cloth wrung out of boiling water and sprinkle with flour. Boil for at least three hours. A couple of sheep kidneys sliced and added to the pudding, very much improves the flavor of the gravy, and, if liked, three-quarters of a teaspoonful of baking powder may be added to the crust; but it should be borne in mind that whenever baking powder is used, the utmost expedition in finishing up is necessary, as fermentation commences from the moment water is added.

Pumpkin Pies.

We generally have them made of squash at our house, but always call them pumpkin; it sounds so much better. Squash is a dreadful name, and the man who invented it ought to have had a big Hubbard hurled at his head, as Ichabod Crane was served with a pumpkin, in the legend of Sleepy Hollow. But pumpkin is altogether a different word, whether it adorns a bill of fare, is woven into poetry, as Whittier did in the charming verses which we published a few weeks ago, or is flattened into "pu-u-n-kin," as genial Robert Collyer does it. It is one of the old fashioned vegetables that has held its own among upstart rivals for a hundred years. Precious little help has the pumpkin had from the propagating gardeners who are so intent on improving nature's production in other fields? The pumpkin is of the same honest, home-spun, self-made sort of vegetable vagabond it was when it straggled through the cornfields, and dotted the autumn landscape with spots of golden color, in the pioneer days when luxuries were not necessities, and wants were few. They pretend to say that the quality had deteriorated, like some strains of blood in men whose heads this useful vegetable has most uncharitably been made to symbolize, and that the flesh is white and poor compared with what it was in former years. Yet this may be merely the croak of old-time worshipers. But, whether made "true to name," or of sq—sh, a pumpkin pie, if rightly made, is a thing of beauty, and a joy—while it lasts. We know there is an attempt made by certain super-civilized writers—of the sort who order for dinner "a little tea-ah, and toast, waitah, and a chicken's wing,"—to make abstinence from pie a test of refinement. Some of them haven't gastric juice enough to digest anything but a weak wash of some sort; but others are just putting on airs. We wouldn't trust some of the fellows who make a virtue of abhorring pie, alone with a whole one behind the kitchen door—even at a eleven o'clock at night. A well made pie, of the right sort, is a good deal more wholesome than half of the modern messes concocted as a concession to dyspeptics, who charge upon healthful food the natural results of their own sin and ignorance, in working without exercise, sleeping too little, and neglecting other normal conditions of right living. But to return to our pies. As we have said before, we scorn to make a cook book of these columns, with our present supply of technical knowledge. But we do know that for a good pumpkin pie you want plenty of milk, just enough eggs, not too much pumpkin, a lump of butter and judicious sprinkling of spices—principally cinnamon and ginger. The concoction, when ready for the oven, should be about the consistency of good thick cream. Pies that cut out only a little less firm than a pine board—those that will "wabble" without breaking, like a piece of leather—and those that run around loose on your plate, are alike to be avoided. About an inch thick strikes us a good depth for the filling; two inches is better than the miserable, thin plasters one sometimes sees at boarding houses, that look, for all the world, like pumpkin flapjacks. The expressive phrase "too thin," must have come from such lean parodies on pumpkin pies. With the pastry light, tender and not too rich, and a generous filling of smooth, spiced sweetness—a little "tremble" as to consistency, and delicately browned on top—a perfect pumpkin pie, eaten before the life has gone out of it (say three hours after baking) is one of the real additions made by American cookery to the good things of the world. We have our opinion of the man who would get up dissatisfied or cross from a dinner topped off with a quarter-section of such a pie. For the first pumpkin pie of the season, flanked by a liberal cut of creamy cheese, and a glass of cider fresh from the press, we prefer to sit down, as the French gourmand said about his boiled turkey—"with just two of us, myself and the turkey!" Company is apt to distract the attention—and subtract from the pie.—*Golden Rule.*

Starting a Fire.

A scientific paper tells us that "All housekeepers have at sometime realized the difficulty of lighting a fire in a still, damp morning, when the chimney will not draw, and vigorous blowing proves ineffectual. Science explains the trouble as caused by the difficulty encountered in overcoming the inertia of the long column of air in the pipe or chimney, by the small column of air that can be forced up through the interstices of wood and coal, at the bottom of which the fire is kindled. This may be remedied by first lighting a few bits of shavings or paper placed upon the top; thus by the heated air's forcing itself into the chimney and establishing there an upper current, the room is kept free from gas or smoke which is so apt to fill the room, and the fire can then be lighted from below with good success." This is all very well, but who wants to go to the top of the house to put fire on the chimney top?*

Very often the smoking comes from the mass of material composing the fireplace being cold and damp. All this has to be heated before any draft goes up the chimney, and is the cause of smoking oftener than it is often thought of. In these cases but a very little fire should be made before the main one is started. We have known of cases where the firelighter has reported impossibility to get draft, go on like a "good fellow" after some one has amused himself for a few minutes in throwing in pellets of newspaper to the stove successively as one would be nearly burned out. As soon as the cylinder gets a little warm—all the heat it wants—it is willing for the wood and coal to take its turn.

*It will be much better when it is understood that the top of the coal and wood is meant and not the top of the chimney.

Eggs.

If an increase of eggs is desired in the poultry yard, before large sums of money are expended in the purchase of everlasting layers, we would recommend the keeping of no hens after the first, or at most, a second year. Early pullets give the increase, and the only wonder is that people persist, as they do, in keeping up a stock of old hens, which lay one day and stop three, instead of laying three and stopping one; in some parts of England it is the invariable rule to keep the pullets only one year. Feeding will do a great deal—a surprising work indeed—in the production of eggs, but not when old hens are concerned; they may put on at but they cannot put down eggs. Their tales are told, their work is over; nothing remaining to be done with them but to give them a smell of the kitchen fire, and the sooner they get it the better. Of course, there are some old favorites whose lives can be spared as long as they can send forth their representatives. Judicious mating, by which we mean the advantage of a comparatively youthful cockerel, may be the means of even exhibition poultry making their appearance from the egg of the good old hen, and here we have the exception on the rule upon which we rely. —*London Agricultural Gazette.*

Useful Notes.

Scattered thickly over France may be seen posted the following notice from the Minister of Agriculture:

This placard is placed under the protection of good sense and public decency.

THE HEDGEHOG lives on mice, small rodents, slugs and grubs, animals hurtful to agriculture. Don't kill the hedgehog.

THE TOAD, farm assistant; destroys from twenty to thirty insects an hour. Don't kill the toad.

THE MOLE, is continually destroying grubs, larvæ, palmer worms, and insects injurious to agriculture. No trace of vegetation is ever found in its stomach. Does more good than harm. Don't kill the mole.

THE MAY BUG and its larvæ or grub, mortal enemy of agriculture; lays from seventy to eighty eggs. Kill the May bug.

BIRDS. Each department loses several millions annually through insects. Birds are the only enimies able to contend against them victoriously. They are great caterpillar killers and agricultural assistants. Children, don't disturb their nests.

Children will be paid 25 centimes for every 500 May bugs placed in the hands of the grade champetre.

Oatmeal in the Household.

In Great Britain children of all ranks are raised to an oatmeal diet alone because it causes them to grow strong and healthful, and no better food can possibly be found for them. It is also quite as desirable for the student as for the laborer, and for the delicate lady and her hard-working sister. Indeed all classes would be greatly benefited by its use, and dyspepsia, with all its manifold annoyances, can be kept at a distance. Oatmeal is more substantial food, it is said, than veal, pork or lamb, and quite equal to beef and mutton, giving as much or more mental vigor, while its great desideratum consists in one's not becoming weary of it, for it is as welcome for breakfast or tea as is wheat or Graham bread. It can be eaten with syrup and butter, like rice. It is especially good for young mothers upon whose nervous forces too great a demand has been made, and they lose the equilibrium of the system and become depressed and dispirited. Oatmeal requires to be cooked slowly, and the water should be boiling hot when it is stirred in.—*Baldwin's Monthly.*

How to Clean Marble Top Furniture.

It may be of some value to housekeepers who have marble top furniture, to know that the common solution of gum arabic is an excellent absorbent, and will remove dirt, &c., from marble. The receipt is from the *Scientific American*, and the mode of application is thus stated by that paper: First, brush the dust off the piece to be cleaned, then apply with a brush a good coat of gum arabic, about the consistency of thick office mucilage, expose it to the sun or dry wind, or both. In a short time it will crack and peel off. If all the gum should not peel off, wash it with clean water and a clean cloth. Of course, if the first application does not have the desired effect it should be applied again. Second, make a paste with soft soap and whiting, wash the marble with it, and then leave a coat of paste upon it for two or three days. Afterward wash off with warm (not hot) water and soap.

LIVE STOCK.

Crossing for Improvement of Common Sheep.

A correspondent asks us the following question: "What is the best cross upon our common sheep for quality and quntity of wool, for the general market and for weight of carcass?"

This inquiry can be replied to from so many standpoints, that an opinion in favor of either of the recognized breeds requires certain explanations. A cross of the long wool—say Cotswold Leicester, or Lincoln—will insure an increase of carcass to nearly or quite double the value of the common, or native dam. The fleece will have additional length, considerable improvement in style, and a perceptible increase in weight. The improvement in length and lustre will add to its market value.

A cross of middle wool, say Southdown, Shropshire, &c., will add greatly to the quality of the meat, somewhat less, though considerable, to its quantity, will thicken somewhat the fleece, and give it slight additional weight, without adding much to its value per pound.

A cross of the American merino will make a marked improvement in fleece, adding to all its desirable characteristics, except that of length. The weight, in many instances, will be doubled, while in any other than an anomalous condition of the market, the value per pound will be somewhat increased. The size of carcass will not be increased, though its compactness and symmetry of outline will be greatly improved.

With the average farmer the more satisfactory results will be secured by a cross with the long-wool breed or the fine wools. The one will show its chief improvement in the carcass, the other in the fleece, though the merits of neither will be confined to these prominent characteristics.

As a rule, the least satisfactory results will be derived from a cross with the "Downs"—this, not from any defect in the breed, *per se*, but rather from less diversity in size in the one and character of fleece in the other. Sheep from this cross may reasonably be expected to withstand the hardships, sometimes privations, incident to the lot of the flock when compelled to work its living off the average farm, with better results than would be realized from a long-wool cross simply treated—and, for "roughing it," would prove nearly equal to the results of the Merino cross.

In view of these considerations, added to some minor ones, that may be classed as results of taste rather than experienced as a general conclusion, we would advise a cross of the Merino in preference to the others referred to—always with the recommendation that the best rams within reach of the means of the flock-owner be used—and that none of the male animals of the cross be used as sires, no matter how near the desired standard they may approach.—*National Live-Stock Journal.*

Sheep as Fertilizers.

In 1865 I had a field of ten acres that had been mowed ten years in succession without a particle of dressing put upon it; the grass had nearly died out, and nothing was to be seen but a white weed and yellow weed, or buttercup and ox-eyed daisy. The soil was a clayey loam, canting a little to the south and west, was in the smoothest possible condition, without stump or stone, and bordering upon a stream of water. In the spring of the same year I put upon this ten acres forty one year old sheep without lambs. These sheep kept everything down as smooth as a barn floor. The next year I put on the same number and kept them on until time to come to the barn. They were not taken from the field at any time during the season, neither did they have any grain of any kind, but were in splendid condition. They were grade Merinoes.

In the spring of 1867, I noticed that the field looked green the last of April and the first of May, so much so that, in consulting with my neighbors, I was induced to keep the sheep off from it and let it come up to grass for the scythe. The field in the meantime had been sowed over with a light dressing of plaster, about one bushel to the acre, and a small quantity of grass seed, timothy and redtop. Nothing else has been done to the field in any shape up to the present time.

Now for the result. The first year after taking the sheep off I had the greatest yield of grass that I ever had from any of my fields under other treatment, and of the best quality, a mixture of timothy, redtop, white clover, and some grass that I cannot name. Hardly a head of whiteweed or yellowweed was seen on the field.

But what was most remarkable to me and my neighbors is, that the field has continued to produce bountifully up to the present time, which is eight years since the sheep were taken off; and to-day (August 2) the field is tented thick with bunches of the very best hay averaging over one ton to the acre. I have since sold the field to one of my friends, and I asked him yesterday if he expected to get another crop from the field without dressing it again. His reply was, "Yes, I expect to get several more yet."

Now, Mr. Editor, what I wish to impress upon the minds of the farmers is this, that instead of running wild about raising fast horses and getting up cheese factories, it is better for them to give more attention to sheep husbandry; for if we put them upon our impoverished lands, it in fact costs nothing to keep them during the summer season, as they more than pay for their cost in reclaiming these lands.

Let each farmer decide for himself what breeds are best for him to keep. It depends upon our nearest market. The grade Merino will do better on short pastures than any breed that I am acquainted with. —*A. G. A., in Germantown Telegraph.*

To Learn a Horse's Age.

The Journal of the Farm tells how to know the age of a horse as follows: The colt is born with twelve grinders; when four front teeth have made their appearance the colt is twelve days old, and when the next four come forth, it is four weeks old. When the corner teeth appear the colt is eight months old; when the latter have attained to the height of the front teeth it is one year old. The two-year-old colt has the kernel (the substance in the middle of the tooth's crown) ground out in all the front teeth. In the third year the middle front teeth are being shifted, and when three years old these are substituted by the horse teeth. The next four teeth are shifted in the fourth year, and the corner teeth in the fifth.

At six years the kernel is worn out of the lower middle front teeth, and the bridle teeth have now attained to their full growth. At seven years a hook has been formed in the corner teeth of the upper jaw, the kernel of the teeth next at the middle is worn out, and bridle teeth begin to wear off. At eight years, the kernel is worn out of the lower front teeth, and begins to decrease in the middle upper front. In the ninth year, the kernel wholly disappeared from the upper middle front teeth; the hook on the corner has increased in size, and the bridle teeth lose their points. In the tenth year, the kernel is worn out of the teeth next to the middle front of the upper jaw, and in the eleventh year the kernel has entirely vanished from the corner teeth of the same jaw. At twelve years old, the crown of all the front teeth in the lower jaw have become triangular, and the bridle are much worn down. As the horse advances in age, the gums shrink away from the teeth, which consequently, receive a long narrow appearance, and their kernels have become metamorphosed in a darkish point, gray hairs increase in the forehead and over the eyes, and the chin assumes the form of an angle.

The Hog Bouncer.

The above is the name of a simple device invented by the cattle yard men at West Albany, New York, to induce hogs to move from the cars in which they are transported in the yard. Pigs, as a rule, are not of accommodating dispositions, and when it comes to prevailing upon a car-load of them to move along upon a narrow gangway, the first ones that start upon the plank are apt to decline to proceed further, and so block the egress of the rest. This necessitates an astonishing amount of patience and beating, besides unlimited strong language, and, of course, often delays a cattle train for some time. The new invention for persuading the animal to pass on is a hog bouncer, made by bringing one end of the gangway plank to a firm support; then under the other end two double car springs are placed. A powerful lever and spring catch complete the device. Before the car door is opened, the platform is carried down so as to compress the springs by the lever and the catch is hooked. The hogs are then allowed to pass along the platform, and, so long as they move along properly, the plank is undisturbed, but as soon as a crowd congregates and vociferously objects to going further, the catch is sprung. One end of the platform flies about three feet upward, and the result is a shower of living porkers, shot over the heads and upon the soft bodies of the drove. They are seldom injured, but vastly astonished, and it is needless to add that the blockade is at once dispelled. The drover finds this device, ridiculous as it is, very useful in saving time and trouble, especially when, as often is the case, large numbers of cattle trains are arriving and leaving.—*Scientific American.*

A Collection of Beautiful Pigeons.

We had the pleasure of examining a flock of beautiful pigeons, owned by Mr. Charles E. Long, and kept by him in a large and well arranged loft over his place of business in North Queen street, Lancaster, Pa. Mr. Long has been raising these birds for a number of years, and his loft now contains over one hundred fancy pigeons, embracing many valuable varieties, among which are English Pouters, Crested Calcutta Fantails, red, blue, black and yellow Magpies, red and yellow fringed Turbits, English Carriers, African Owls, Swallows, Trumpeters, Archangels, Jacobins and other highly prized specimens. Mr. Long exhibited many of these birds at several of the Poultry Exhibitions last season, and carried off a large number of prizes. Twelve or fifteen pairs of them were entered for competition at the great "Centennial Poultry Exhibition" which was held in Pomological Hall, on the Centennial grounds, on the 27th of October. This was no doubt the largest display of the kind ever held, and the competition very great. Mr. Long is, however, willing to trust his birds upon their own merits, and we have no doubt he will be successful with them.

Arab Horse Maxims.

Let your colt be domesticated and live with you from his tenderest age, and when a horse he will be simple, docile, faithful, and inured to hardship and fatigue.

If you would have your horse to serve you on the day of trial, if you desire him to be a horse of truth, make him sober, accustomed to hard work, and inaccessible to fear.

Do not beat your horses, nor speak to them in a loud tone of voice; do not get angry with them, but kindly reprove their faults; they will do better thereafter, for they understand the language of man and its meaning.

If you have a long day's journey before you, spare your horse at the start: let him frequently walk to recover his wind. Continue this until he has sweated and dried three times, and you may ask him whatever you please, he will not leave you in difficulty.

Use your horse as you do your leathern bottle; if you open it gently and gradually you can easily control the water within, but if you open it suddenly the water escapes at once, and nothing remains to quench your thirst.

Observe your horse when he is drinking at a brook. If in bringing down his head he remains square, without bending his limbs, he possesses sterling qualities, and all parts of his body are built symmetrically.

Four things he must have broad—front, chest, loins and limbs; four things long—neck, breast, forearm and croup; four things short—pasterns, back, ears and tail.

Best Food for Swine.

What would be the best food for swine in summer would not answer the same purpose in winter. In summer, such food should be given as would keep the animal in an improving condition, and would cause it to lay on a little fat, but not so much as to cause it to suffer from heat, as a fat porker undoubtedly does. Cooling foods, such as plenty of young clover and bran and middling slop, is what we use much of, not forgetting to give regular and abundant supplies of fresh, cool water. In putting up swine for exhibition purposes, we have tried many different kinds of food for the fall exhibitions, but we have found none so desirable as a slop made of corn and oats ground together, one-third of the former, by measure, to two-thirds of the latter. One of the best ways to prepare it is to scald it at night and feed it next morning; put on the mass only enough of hot water to thoroughly moisten it, and then cover up the barrel tight, so it can steam well, and make the mass mellow and nice by morning. If it is found undesirable to scald it, moisten the mass with water, and then put in one or more pans of sour milk—thick milk or clabber—to cause it to sour by the time it is used. We use both or either plan, and find them both good. As an ordinary summer feed, we have found them both good, and to answer almost all purposes—as experience has abundantly proved that breeding stock should not be very fat, only in healthy, vigorous condition. The refuse from the truck patches, such at tomatoes, cabbages, etc., come nicely into play for summer food in connection with the above slop, as also do apples—windfall—pears, etc.—*Swine and Poultry Journal.*

Lice on Colts.

Lice may accumulate in great numbers before they are discovered. Sometimes they are diffused all over the skin; at other times they are confined to the mane, the tail and parts adjacent. The horse is frequently rubbing himself, and often the hair falls out in large patches. There are many lotions, powders and ointments for destroying lice. Mercurial ointments, lotions, or corrosive sublimate, and decoctions of tobacco, are so dangerous that they never should be used, Refuse oil or lard, rubbed on a lousy beast of any kind, immediately destroys the vermin, and there is no danger to be apprehended from this application. It merely occasions the hair being earlier in the spring, and requires a little extra attention in housing such animals as have been affected. Vinegar mixed with three times its bulk of water, is also a good application and not dangerous. It is most irritating, but the irritation soon subsides and does not sicken the horse; tobacco often will. Next day the skin should be examined, and wherever there is any sign of living vermin, another application should be made. Two days afterwards the horse should be washed with soapy water, warm, and applied with a brush that will reach the skin without irritating it.—*Golden Rule.*

Saddle Galls.

A correspondent of the *Country Gentleman* gives the following remedy for saddle galls: "I have been riding almost constantly since 1869, and sometimes had very bad galls on my horse from the saddle, caused almost invariably by riding either during a rain or in damp and foggy weather. Prevention is important. I find the best thing to be a coarse saddle blanket, made by putting one or two burlap sacks under the saddle; they being cool, and admitting a partial circulation of the air through the spaces of coarse fabric. The saddle should be removed always at noon, and back washed with cool water. To cure an ordinary gall, first wash thoroughly with castile soap and water, and then apply the bruised leaves of *Datura stramonium* (Jamestown weed); this usually reduces the inflammation rapidly. An ointment can be made by mixing the juice with common lard. An old gall, leaving a lump, I would treat with vaseline and iodine; ½oz. of the crystals of iodine to 2oz. of vaseline; mix; apply once a day for 3 or 4 days, then apply vaseline alone. Continue this until cured. The above applies as well to collar galls."

Sparrows.

How much longer will there be sparrow clubs and aparrow prizes? They must be the want of observation. A new light broke in upon my bailiff yesterday as he saw flights of sparrows busily engaged in our field of green peas appropriating the "louse" which was injuring the plants and stopping its growth. I am a great believer in birds and poultry as farmers' friends, and this belief has been produced not only by reading the opinions and facts of others, but from 30 years of close observation of their habits. My gardener was an inveterate enemy to birds, and destroyed their nests in my shrubbery, and in consequence there was always a complaint of grub and other destructive insects; but when I put a veto against the destruction, my garden was well filled with uninjured produce. In fact, if you have grub and insects in your garden, stock it with birds or poultry, and you will no longer complain. In very dry weather, when worms and insects are scarce, you must protect your fruit. Just now I see lots of my poultry among the young mangold or tares, "appropriating" my enemies. But I have so often said that my best corn crops are within 50 feet of the fowl-house, where the crops, from the day of their sowing until harvest, undergo poultry examination, that I will not again trouble you with details. One must have confidence with only a bushel an acre of seed-wheat at their mercy. Let me warn those who do away with all their hedges that there should be belts or shrubberies, not only as breeding places for birds, but also as shelter from strong prevailing winds. —*North British Agriculturist.*

Jonathan Dorwart's Fancy Poultry.

The Reading *Eagle* has this to say of a former Lancasterian, father of Mr. Henry Dorwart, of THE EXAMINER AND EXPRESS: "Jonathan Dorwart, President of the Berks Country Poultry and Pet Stock Association, has at present 18 White Leghorn and 15 Brahma chickens in two yards in this city, besides some 40 chickens in the country. During the past year he lost only three fowls by sickness. Some years ago he was engaged in importing fancy stock from Europe, and bought as high as $3,000 worth of poultry in a year.

The highest price he ever received for a trio of imported fowls was $75. He had a Brahma hen that laid as many as 144 eggs without stopping. He feeds his fowls principally corn, oats, wheat, bran, ship-stuff, corn meal mixed with meat gravy. He feeds them raw meat three times a week and raw cabbage once a day.

He has a box in the yard in which he throws egg shells for the fowls to eat. The standard food is corn in the morning, oats at noon and wheat in the evening. He says that hens will lay eggs sufficient to pay for twice the cost of their food. As soon as the young are hatched he sends them to the country to be raised.

Light in Stables.

Neither cattle nor horses should be stalled in a dark stable, as all animals require light in the day time. A horse kept for months in a stable would be liable to become blind. In regard to light in swine pens, a writer says that two sows having litters on the 18th and 22d of January, respectively, were kept in two rather dark, but warm, temporary sties, and had to occupy them till about the middle of the month of April, when, for each sow with litter, one of the permanent sties was opened by selling the occupants. At that time the pigs which had been kept in the dark, temporary stics, proved to be less lively than, and much inferior in weight and size to those of any of the litters raised in the less warm but well lighted permanent sties, notwithstanding that the difference in age was very small, and that food and care had been the same in every respect. One of the litters born on the 18th of January, which had accidentally the best lighted sty though situated in the northwest, and consequently coldest corner of the frame building, exhibited the most rapid growth and the litter born on the 18th of January, which had the darkest sty, had made the poorest.

A CORRESPONDENT writing to the *Practical Farmer*, in relation to the use of salt and lime for bathing the feet of horses, says: "I have tried strong brine on foundered or hoof bound horses, and with good results. I made a solution of salt and applied it three times a day by washing the legs and pouring upon the bottom of the feet, and holding them a few minutes to let it strike in. I saw the wonderful effects in a few days. I account for it in this way: Salt will extract moisture from the atmosphere, which keeps the feet moist. Salt operates nearly like grease upon the foot. The hoof becomes soft, yet pliable. Like a chunk of wood saturated with salt or brine, it is tough yet moist. Thus it is with horses' feet. Here let me add that the practice of rasping a cracked hoof to toughen it is folly. Apply brine, and you will effect a cure. A horse that is driven upon a hard road is liable to be stiffened. I have seen valuable horses, driven upon our own plank roads a few days, get quite lame. I reasoned to myself as to the cause, and adopted the use of brine as a remedy, which proved effectual."

How to Utilize a Dead Horse.

In reply to a correspondent, the *American Agriculturist* says: "A dead horse or other animal should be skinned, and roughly cut up into as many small pieces as possible; a plot of ground a few rods square should then be plowed deeply, and the carcass thrown upon the soil in the centre of the plowed ground. Some fresh dry-slacked lime should then be scattered upon the heap, so as to cover it thinly but wholly. The loose earth is then to be heaped over it, a foot in depth, and the pile covered with boards, so that the dogs cannot get to the heap and tear it up. If the least smell is perceived, more earth should be used."

AGRICULTURE AND HORTICULTURE.

Scotch Farmers Ruined by Mice.

The Scotch farmers, with all their shrewdness, are apparently utterly beaten by the *ridiculous mus*. So far, at least, they have been unable to devise any means of riddings themselves of the armies of these insignificant creatures which have quartered themselves on the border farms. About three months ago the attention of the public in general, and the local agricultural clubs in particular, was called to the depredations caused by these tiny quadrupeds, which, it was suddenly discovered, had increased to such an alarming extent as to have actually destroyed a large expanse of pasturage and to threaten to overrun the country. The land is represented as resembling the ground in the neighborhood of targets for rifle practice, being literally ridded with holes. The whole of the vegetation is destroyed in certain localities in Teviotdale, not merely the blades of grass being eaten by the mice, but the roots being consumed as well. The consequence has been that the sheep have been robbed of their natural food, and the recent lambing season has been one of the most disastrous ever known, both ewes and lambs being deprived of sustenance and perishing in numbers. The plague is almost identical with that which has so seriously interfered with the progress of sheep farming in New Zealand, only there it is the rabbits that have caused the mischief; unless it can be stamped out it threatens the ruin of many sheep-breeders and wool-growers. One farmer in New Zealand actually sacrificed 15,000 acres of land by inclosing that area with a solid masonry wall in order to prevent the spread of a colony of rabbits which had taken possession of a portion of his farm. But land is too scarce and valuable in Scotland to permit of such an heroic method of cure. The question for the Scotch farmers is whether they can reduce the number of the mice by encouraging the increase of weasels, hawks, owls, and other carnivorous birds and beasts, or whether they must take the law into their own hands and drive out the enemy. The unfortunate part of the business is that the little rodents are of no value, unlike rabbits, whose skins and flesh are both of a certain worth, and they are too small to attract sportsmen with their guns. One thing is certain, that the Scotch farmers will not in future encourage the use of the gun at hawks and weasels, but it will rather encourage the visits of the mouse catchers.—*London Daily News.*

Horticultural Notes.

VARIETIES OF GRAPES.—The Concord has a wide reputation for its uniformly good quality in all parts of the Union. In the catalogue of the American Pomological Society, it is recommended for no less than thirty-four different States and territories, and in twenty of these it has double stars, indicating the highest commendation. And yet a statement has been lately made by Josiah Hoopes, ex-President of the Pennsylvania Fruit Growers' Society, that at Lancaster, one of the finest grape-growing places in the Union, it ripens imperfectly, with mildew on the stems. At the same place such uncertain sorts as Iona, Catawba, Allen's Hybrid, Walter, and others, constitute "the glory of the collections," and some of these are "marvels of beauty." This and similar facts in connection with the ripening of different fruits, show that experiments must be actually made with them in every locality before absolute success can be pronounced.

PEAR ON MOUNTAIN ASH.—Some inquiries have been made as to the value of the mountain ash as a stock on which to work the pear. In experimenting years ago, we never found it of much value, being uncertain and unreliable. A correspondent of the *Prairie Farmer* gives the result of some experiments, in substance as follows: "Onondago and Osband's Summer succeeded well, and did the best, the trees being 'well branched and heavy stocked.' Of Doyenne Boussock, three lived out of five, and formed good trees; one Belle Lucrative, and one of Kirtland lived in five, while most of the other sorts all died; and others which grew are poor and sickly." On the whole, this stock may be pronounced of little or no value, and there is no reason why it should be employed, while the French quince is so easily and cheaply obtained for dwarfs, and good pear stocks may be had for standards.

EARLY PEACHES.—J. H. Watkins, of Georgia, states in the *Southern Cultivator* that the Alexander peach ripened at Palmetto, in that State, June 19. The specimens varied from six and a half to seven inches and three-fourths in diameter, but were not so large as Hales', which was two weeks and a half later. Beatrice was seven days later than Alexander.

THE WORDEN GRAPE.—This grape, which has been fruited in Northern Wisconsin, gives high promise there of value. At the Northern Wisconsin Fair it took the first prize on grapes for quality, competing with the Delaware and several of Rogers' hybrids. The members of the fruit committee were unanimous in pronouncing it superior to the Delaware for that northern region.

The Wheat Supply in England.

The wheat crop this year is the conclusion of a history full of alarms and surprises. Mr. Caird tells it very pleasantly, in all its bearing and consequences, and reminds us, by the contrast, of the mysterious and gloomy tone with which the staff of life was always discussed as late as thirty years ago. In some respects the present state of things far surpass the direct predictions of that day. We are dependent upon foreigners to an extent never then imagined. While the average consumption is about 23,000,000 quarters, or, as the customs returns state it, 100,000,000 hundred weights, during the last harvest year we have imported—happily, it seems, somewhat in excess of our wants—93,000,000 hundred weights, or not far from two-thirds of our whole consumption.

Half of this came from the United States, and so much of our wheat supply depends, therefore, not only on the good will of that country, but still more immediatly on her commercial state, which is very variable. The profit itself has to be nicely calculated, and in Mr. Caird's opinion the prices which have lately prevailed yield little or no profit. Such a fact is slowly appreciated, but when the American farmers have once acted upon it and stopped supplies, it takes time to reverse that movement and meet a rising demand. Five per cent. of our wheat imports come from British India, where we have lately had to feed a famished people. A good deal comes from Turkey and Egypt, which, Mr. Caird observes, will have to send us wheat because they both want money and can no longer get it by simply borrowing. He suggests, however, that in present circumstances Turkey cannot not be depended on for any considerable supplies. France is too much in our own condition to be sure of sparing us wheat when we happen to want it; in fact, if she has not to compete with us in the open market, that is about as much as can now be expected. She has had a poor harvest of other grain and produce, and may want all her own wheat and more. The wheat crop of Canada is much lower than usual.

Here, then, is the very state of things which a generation ago was prophesied as the last page of our national decline and fall. When all the world, including our jealous rivals, found us dependent on them for more than half of our daily bread, they had only to put their heads together and destroy the proud nation that had so oppressed and insulted them. The consummation has come. It finds us year by year growing less wheat, and the foreigner growing, if not absolutely more, at least more than pays him.—*London Times.*

Waste on the Farm.

The greatest of wastes on the farm, is in the not using of our brains; the greatest, because at the bottom of all other wastes. A little thinking often saves much labor. After accomplishing almost any piece of work, the most of us can look back and see how we could have improved on it, if we had but thought. As we view our crops of this year, we see how easily they might have been increased, had we only thought. The ditch we dug through our meadow was not done in the most economical way. We dug too deeply at first, and did not allow for the settling of the land. Hence a waste of labor. We omitted buying an implement that would have saved nearly its cost in this one year's use, until we had spent much in trying to accomplish our work without it. Here was another waste. We carry a water-pipe too near the surface to save the expense of digging a trench of a safe depth, and the winter's frosts necessitate a replacement of the pipe and an additional digging. Certainly, a waste here. We allow the weeds to grow on one piece of land, not thinking to what proportions they would grow by the time the crops were too far advanced to admit the hoe. A waste here which might have been obviated. And so on, wastes, little and big, everywhere, all arising from not thinking sufficiently—waste, because not necessary, an deasily obviated. We omit the ordinary wastes from neglect, from laziness, from want of appeciation of cleanliness and thoughtfulness—the waste from our stock, from our manure heap, from our household. Verily, a little thought will save to the farmer much, and the saving through this means, even on a small farm, will represent the interest on a considerable capital. The wastes arising from ignorance can very readily

be diminished, and are in a large part inexcusable: those arising from carelessness are not deserving of sympathy. The farmer, as well as the business man must use business principles to secure the largest success, and the one should be as careful of the outgoes as the other.—*Scientific Farmer.*

Impaired Grasses.

In many respects grass culture has not kept pace with improvements in other branches. We are continually getting new plants, new trees, new fruits, new vegetables, new grains, but a new grass is never thought of. We have the same orchard-grass, the same redtop, the same timothy, that we had over a hundred years ago; and so far as the drift of thought goes, we shall have the same grasses for a hundred years to come. And yet there is no reason that we can see why there should not be improved grasses, as well as improvements in any other thing; and there doubtless would be if public attention was drawn to the matter.

We have, to be sure, during the past twenty years or so, been treated to Hungarian grass, or millet, a harsh, coarse thing, of little merit except for the very heavy crops it produces. There surely must be others which it would be of advantage to introduce. We see in foreign agricultural journals that some attention is being given to a species of grass called Tussock grass, from its growing in large bunches, and which, from its description, appears to be closely allied to our orchard grass. It does not appear to be considered very hardy; but there are no doubt a number of places on this continent where it would find itself entirely at home. It is said to grow five or six feet in height, and to produce vegetation of great fineness of quality and exceedingly nutritious. When once a field is set with it, it is seldom killed out by other vegetation, and goes on producing good crops for a great many years. It appears to be hardy in Hungary, and if so it ought to stand considerable frost.

But it is not only by the introduction of new species that our grass crops and grass lands may be improved, there might be selected good varieties of the kinds we now grow, just as we have selected good kinds of other things. There seems to be here a good chance for somebody.—*Germantown Telegraph.*

Repelling the Grain Weevil.

A correspondent of the *Country Gentleman* says: "The only way to get rid of the weevil is to keep grain in a clean place, and spread out until thoroughly cured, so as to avoid heating. It is very difficult to clean a place where weevil has been prevalent, as they and other grain pests hide in the cracks and seams of the bin, and no cold of winter will kill them. The germ of the weevil is often in grain that to all appearances is perfectly sound, and only awaits a suitable amount of moisture and heat to develop. In grain houses our only remedy, when we have a lot of infested grain, is to screen frequently, and try to keep it cool till winter. I know of nothing to kill weevil in grain that will not recommend storing in a new place, far enough from where the infested grain was kept to prevent them crawling into it. I have often put weevils on the floor at some distance from a pile of grain, and they would make a bee-line for the nearest lot—never go away from it. They will sometimes fly, when in the hot sun, but not often. I once made a test by taking about a pint of sound wheat from a boat load, in which I could find no indication of weevil, and after sifting it very thoroughly in a coarse hand-sieve, I put it in a glass jar, and sealed it very tight. In a few weeks it was alive with large and small weevils (two kinds), and they lived for more than a year in this tight jar. This was a season when there was a great deal of wheat troubled with weevil. Ordinarily when grain is dry and cool the weevils do not injure it. The surest way to keep grain after it is dry and very thoroughly cleaned, is to keep it in a dark place."

Watering Window Plants.

There is nothing that seems to bother more those who would grow window flowers than how often to water them. It is an exceedingly simple thing to those who have had experience; though so mysterious a thing to those who have had none. When the skilled gardener is asked for advice he says, "water only when the plants need it;" but this tells the inquirer nothing. There still remains to be understood how to tell when the plants need water.

After all, this is a species of knowledge that cannot well be taught by another. It has to be learned from experience. The good plant cultivator tells from the color of the earth; but even this is a relative term. There is dark soil and there is light soil; but all soils are darker when they are wet than when dry. One can soon learn this by experimenting a little; and can soon tell whether the earth is dry or wet by the eye or finger alone. If it is wet it of course wants no more water; if much lighter than its usual color, the earth is dry and needs some. It is an exceedingly simple matter to those who will try to learn; to those who cannot learn themselves it is a hopeless task.

There is one hint that we may give that may be of value. If the earth never gets dry, the plants are not in good condition. Something is wrong. It is the active, growing, working roots that take the moisture out of the earth. It is a sign of good health for the plant to want frequent watering. As we have already said, the color of the soil, as compared to what it is when wet, will tell whether it wants water or not.—*Germantown Telegraph.*

Small Farms.

The Springfield (Mass.) *Republican* says; "The real estate agents note a remarkable and steadily increasing demand for small farms, worth from $1,200 to $3,000, while large farms are much less sought for. The mechanics and laborers, whose wages have been steadily reduced for the last two years, form the majority of the purchasers, and we fancy most of them will find that the reductions have not been confined to the city. Probably half of these people have not fully counted the cost, and will be glad enough to get back to the city after the novelty has worn off, while those who go to their new avocation with a determination to work hard, and make the thing a success at all hazards, will be pretty sure to stay. A notable instance of the rapidity with which some of the former class change, is to be found in a small Worcester farm, near the Boston and Albany road, that has been sold ten times within twelve years.

My attention was drawn to notice the amount of corncobs that are thrown away daily, from feeding one pair of horses. The cobs looked so clean and nice it does seem as though they were made to do a farmer more good than to add to the bulk of the manure heap. Being of rather a speculative turn of mind, I tried a little experiment with a few cobs, by pouring over them a small amount of coal oil, and then put them in the cook stove to see what the effect would be. I was entirely satisfied that I had produced an excellent fuel. They furnish a kindling cheaper, and equally as good, than the patented article sold in the cities and towns. Farmers who have to haul wood long distances, and then prepare it for use in the busy seasons of the year, will find this hint of value. I think it would be better to let the cobs lay awhile, after pouring the oil over them, before using.—*Cor. Prairie Farmer.*

LITERARY NOTICES.

Report of the Fruit Growers' Association of the Province of Ontario, for the year 1875, to which is appended the Report of the Entomological Society, for the same year. Printed by order of the Legislative Assembly, Toronto: 1876. This is a royal octavo volume of 155 pages in paper covers (including the two reports) and contains a vast amount of useful and interesting matter on the subjects of fruit-growing and entomology, illustrated with two full-page colored lithographs of Arnold's and Saunders' Seedling, or "Canadian Hybrid Raspberries," and twenty-eight illustrations, containing about seventy figures of noxious and beneficial insects. Canada is doing more in sustaining entomological publications, perhaps, than the whole United States, the *Canada Entomologist* having reached its eighth volume, whilst the *American Entomologist* died at the close of its second. Her exhibit at the Centennial pomological show, and the volume under review, illustrates that she also occupies a foreground position in the noble profession of fruit-growing.

"The Three Earls"—a handsome little 12mo volume of 115 pages, by our fellow townsman, Mr. Frank R. Diffenderffer, being "an Historical Sketch, and proceedings of the Centennial Jubilee, held at New Holland, Pa., July 4, 1876," and printed by Ranck & Sandoe, of the *Clarion*. This is an exceedingly interesting little volume, containing not only Mr. Diffenderffer's local sketch, but also the preliminary proceedings, an introductory, a financial statement, the prayer of Rev. J. F. Mower, the oration of Mr. E. K. Martin, and an Appendix, embracing a full history of the celebration of the *Fourth of July*, 1876, at New Holland, in this county, in accordance with the spirit of Governor Hartranft's proclamation; and which has resulted in a valuable contribution to our local history. Occurring at the old home of the historiographer, no doubt with Scotland's highland chief, he could truly say:

"My foot is on my native heath,
And my name's McGregor."

Gregory's Seed Catalogue.—Our readers will find the catalogue of J. J. H. Gregory's well-known seed house advertised in our columns. For freshness and reliability of the seed sent out, and enterprise in introducing choice new vegetables to the public, Mr. Gregory is endorsed by the prominent agriculturists of the United States; as recommendations from over forty States and territories, to be found on the cover of his catalogue, amply attest.

Our readers will welcome the advertisement of the popular Seedsmen, Messrs. D. M. Ferry & Co., of Detroit, Mich. Their seed Annual for 1877 far surpasses their previous numbers. This firm, one of the largest in the Seed business, needs no indorsement from us.

PENNSYLVANIA RAILROAD SCHEDULE.

Trains LEAVE the Depot in this city, as follows:

WESTWARD.	Leave Lancaster.	Arrive Harrisburg.
Pacific Express*	2:40 a. m.	4:05 a. m.
Way Passenger†	4:50 a. m.	7:50 a. m.
Limited Mail*	9:25 a. m.	10:30 a. m.
Hanover Accommodation.	9:30 a. m.	Col. 10:00 a. m.
Mail train via Mt. Joy	11:20 a. m.	1:00 p. m.
No. 2 via Columbia	11:20 a. m.	1:20 p. m.
Sunday Mail	11:29 a. m.	1:20 p. m.
Fast Line	3:25 p. m.	4:50 p. m.
Frederick Accommodation.	3:35 p. m.	Col. 4:15 p. m.
Harrisburg Accom	6:10 p. m.	8:10 p. m.
Columbia Accommodation	7:32 p. m.	8:10 p. m.
Lancaster Express	7:40 p. m.	8:10 p. m.
Harrisburg Express	7:45 p. m.	9:05 p. m.
Pittsburg Express	9:10 p. m.	10:35 p. m.
Cincinnati Express*	11:30 p. m.	12:45 a. m.
EASTWARD.	**Lancaster.**	**Philadelphia.**
Atlantic Express*	12:40 a. m.	3:10 a. m.
Philadelphia Express†	4:10 a. m.	7:00 a. m.
Harrisburg Express	7:25 a. m.	9:25 a. m.
Lancaster Express	7:50 a. m.	10:30 p. m.
Columbia Accommodation	9.28 a. m.	12:30 p. m.
Pacific Express*	1:10 p. m.	3:30 p. m.
Johnstown Express	3:05 p. m.	6:00 p. m.
Harrisburg Accom	5:50 p. m.	9:00 p. m.

The Hanover Accommodation, west, connects at Lancaster with Limited Mail, west, at 9:25 a. m., and will run through to Hanover without change of cars.

The Frederick Accommodation, west, connects at Lancaster with Fast Line, west, at 3:25 p. m., and runs through to Frederick without change of cars.

The Frederick Accommodation, east, leaves Columbia at 12:30 p. m., arriving at Lancaster at 1 p. m., connecting with Pacific Express at 1:10 p. m.

The Dillerville Accommodation leaves Harrisburg at 5 a. m., coming via Mt. Joy, and arriving at Lancaster at 9:05, connecting with Lancaster train.

The York Accommodation, leaving York at 6:22 a. m., connects at Columbia, at 7:25, with the train leaving Marietta at 6:52 a. m., at Lancaster with the Harrisburg Express at 7:25 a. m.

The Marietta train leaves Columbia at 6:05 a. m., and returning, leaves Marietta at 6:25, connecting at Columbia with the York Accommodation, and at Lancaster with the Harrisburg Express at 7:25 a. m.

On Sunday there will be two sections of Pacific Express, east, the second section starting from Columbia at 12:30 p. m., making all the stops between Columbia and Lancaster, and the Johnstown Express stops from Lancaster to West Philadelphia.

The first section of Pacific Express, east, on Sunday, when flagged, will stops at Middletown, Elizabethtown, Mt. Joy, and Landisville.

*The only trains which run daily.

†Runs daily, except Monday.