THE Alumni Journal

PUBLISHED BY THE ALUMNI ASSOCIATION
OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK.

Vol. I. New York, February, 1894. No. 1.

THE Alumni Journal

PUBLISHED BY THE ALUMNI ASSOCIATION
OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK.

Vol. I. New York, February, 1894. No. 1.

RELATIONSHIP BETWEEN THE CHEMICAL CONSTITUTION AND THE PHYSIOLOGICAL ACTION OF THE NEWER SYNTHETIC REMEDIES.

Delivered at the meeting of the Alumni Association, January 10th, 1894.

BY VIRGIL COBLENTZ, A.M., PH.G., PH.D.

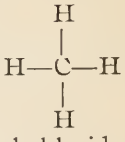
Professor of Theory and Practice of Pharmacy, Director of the Pharmaceutical Laboratory.

TO the beginner or even the old student, the vast array of the organic formulæ presented by the synthetic remedies, is at first confusing. However, owing to the efforts of chemists, the entire structure is built up so systematically, like unto the various parts of a great building, each and every part has its exact position and relationship to the general whole, so that together they unite in forming a uniform and perfect structure.

The wonderful combining capacity of carbon gives rise to the infinite number of compounds already known to exist, and even as great a number theoretically possible. The classification of these, among which we have multitudes of isomers is made a simple matter by the use of graphic formulae and a systematic nomenclature; thus by means of this configuration we are able to express clearly and concisely at a glance, the exact relationship these bodies possess, one to another.

Before presenting the subject proper, a general survey of the field is necessary in order that we may arrive at an intelligent understanding of the subject. Methane or marsh-gas CH_4 furnishes us the theoretical source of all carbon compounds, these being derived by the substitution of one or more of its hydrogen atoms by atoms or groups of other elements. These derivatives of methane are classed under the so-called "Paraffin Series."

On replacing one or more of the hydrogens in methane by the halogens Cl., Br. or I. we give rise to



Mono chlor-methane, or methyl chloride CH_3Cl, a gas, by pressure and cold a liquid, it is employed as a local anæsthetic in minor surgical operations.

Di chlor-methane or methylene chloride CH_2Cl_2 a liquid resembling chloroform in many respects, employed as anæsthetic.

Tri-chlor-methane or chloroform $CHCl_3$

The corresponding iodine comp. is iodoform. Tetrachlor-methane or carbon tetra chloride CCl_4 a liquid, employed as a solvent.

Of the next higher homologue ethane, we have the following halogen products :

Mono-chlor-ethane or ethyl chloride C_2H_5Cl, an ethereal liquid, owing to its great volatility it is employed as a local anæsthetic, benumbing the sense of feeling.

Mono-brom-ethane or ethyl bromide C_2H_5Br. an anæsthetic like ether.

On treating the above halogen alkyls with caustic alkali the halogen is removed with its nearest hydrogen atom, yielding the unsaturated hydro-carbons as ethylene $\begin{matrix}CH_2\\ \|\\ CH_2\end{matrix}$ The bromine compound $\begin{matrix}CH_2Br.\\ |\\ CH_2Br.\end{matrix}$ Ethylene bromid is employed in epilepsy. Tetraiod ethylene C_2I_4 called diodoform offered as substitute for iodoform. To this class the anæsthetic *pental*

tri-methyl-ethylene $\begin{matrix}C<CH_3\\ \|\\ C<CH_3\\ \quad\ CH_3\\ \quad\ H\end{matrix}$

belongs.

The next homologue of this series is propane, having two different kinds of H atoms ; derivatives arise from the substitution of the H in either of the end carbon atoms, known as "normal," while those arising from the substitution of H in the middle one, are known as "iso." Among the higher homologues with greater number of carbon atoms, the number of isomers increase accordingly.

If we replace H atoms in the paraffin hydrocarbons by hydroxyl groups (OH) we form corresponding alcohols. Among those containing one hydroxyl are methyl alcohol (CH_3-OH), ethyl alcohol C_2H_5OH). *Tertiary-amyl-alcohol* or amylene-hydrate $\begin{matrix}CH_3\\ CH_3-C-OH\\ C_2H_5\end{matrix}$ is an oily-like liquid, employed as a hypnotic.

We have alcohols which contain more than one hydroxyl group, each hydroxyl being of course attached to a different carbon atom. These are called diatomic alcohols or glycols, the simplest being *ethylene glycol.* $\begin{matrix}CH_2OH\\ |\\ CH_2OH\end{matrix}$ *Glycerin* is a propenyl alcohol (triatomic $C_3H_5(OH)_3$). The tetra, penta, and hexatomic alcohols form solid crystalline compounds of sweet taste ; for ex. mannite $C_6H_8(OH)_6$ and dulcite.

If we substitute an SH group for a hydrogen in methane, or sulphur for an oxygen, in an alcohol, we obtain the mercaptans, these are liquids of very unpleasant, penetrating odor, ethyl mercaptan being C_2H_5SH.

By partial oxydation of the primary alcohols we obtain the aldehydes ;

$$\begin{matrix}CH_3\\ |\\ CH_2OH\end{matrix} + O = \begin{matrix}CH_3\\ |\\ CHO\end{matrix} + H_2O$$

Ethyl Alcohol. Ethyl or Acetic Aldehyde.

these are distinguished from the alcohols, in that they contain two atoms less of hydrogen, and are characterized by the group—CHO. A 40% solution of formaldehyde in H_2O is Schering's Formalin a powerful germicide. On adding a little sulphuric or hydrochloric acid to ethyl (acetic) aldehyde CH_3CHO it undergoes polymerization, with formation of *paraldehyde* $(CH_3\text{-}CHO)_3$ a liquid hypnotic.

If we replace three hydrogens of the alkyl, in acet-aldehyde by three atoms of the halogens Cl or Br., we obtain *chloral* CCl_3-CHO or *bromal* CBr_3-CHO. Three atoms of chlorine thus introduced into butyl-aldehyde yields *croton chloral* or tri-chlor-butyl-aldehyde (CCl_3CH_2.-CH_2 CHO). These aldehydes unite with

NH_3 directly, forming crystalline oxy-amides as *chloral-ammonium*

$$\left(\text{Chloramid } C\,Cl_3—CH<\begin{matrix}OH\\NH_2\end{matrix}\right)$$

a hypnotic, this on heating loses H_2O and yields *chloralimid* ($C\,Cl_3$-$CH{=}NH$) also a hypnotic. Under the name of chloralamid a compound of formula $C\,Cl_3$-CHO-HCO_2NH_2 is also designated, this is formed by action of formamid $HCONH_2$ on chloral, properly it is chloral formamid, this is also hypnotic.

With alcohol, the aldehydes form the so-called acetals, among which we have *methylal* $CH_2<\begin{matrix}OCH_3\\OCH_3\end{matrix}$ a compound of formaldehyde and methyl alcohol, an aromatic liquid hypnotic. The aldehydes unite with hydrocyanic acid to form oxy-cyanides (oxy-nitriles) for ex. the *chloral-cyan-hydrin* ($C\,Cl_3$-CHO-HCN) a cryst. compound is proposed as substitute for hydrocyanic acid. If a *secondary* alcohol undergoes oxydation, we obtain a class of bodies resembling aldehydes, called ketones; thus two hydrogens in methane are replaced by a radical, and the other two free bonds being satisfied by oxygen.

$$\begin{matrix}CH_3\\CH_3\end{matrix}>CH—OH+O=\begin{matrix}CH_3\\CH_3\end{matrix}>CO+H_2O$$

Isopropyl Alcohol. Dimethyl Ketone Acetone.

Ketones simple, are more readily prepared by the dry distillation of the calcium salts of the corresponding fatty acids,

$$CH_3—COOM+CH_3COOM=$$

An Acetate. An Acetate.

$$\begin{matrix}CH_3\\CH_3\end{matrix}>CO+M_2CO_3$$

Dimethyl Ketone.

If the fatty-acid salts be dissimilar, then mixed ketones result thus;

$$CH_3—COOM+C_6H_5—COOM=$$

An Acetate. A Benzoate.

$$\begin{matrix}CH_3\\C_6H_5\end{matrix}>CO+M_2CO_3$$

phenyl-methyl ketone or *hypnon*. an oily-like liquid, hypnotic. If we cause one molecule of acetone to react with two molecules of ethyl mercaptan we obtain mercaptal, (di-thio ethyl-dimethyl-methane) thus:

$$\begin{matrix}CH_3\\CH_3\end{matrix}>C=O+\begin{matrix}HS—C_2H_5\\HS—C_2H_5\end{matrix}=H_2O$$

$$\begin{matrix}CH_3\\CH_3\end{matrix}>C<\begin{matrix}S—C_2H_5\\S—C_2H_5\end{matrix}$$

this on oxydation yields *sulfonal* (di-sulfonethyl-di-methyl-methane) a crystalline hypnotic of formula,

$$\begin{matrix}CH_3\\CH_3\end{matrix}>C<\begin{matrix}SO_2—C_2H_5\\SO_2—C_2H_5\end{matrix}$$

We have a class of derivatives of carbonic acid, this is dibasic and forms amido derivatives, thus: $CO<\begin{matrix}OH\\OH\end{matrix}$ $CO<\begin{matrix}NH_2\\OH\end{matrix}$

Hypothetical Carbonic Acid. Carbamic Acid.

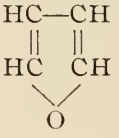
The hydrogen of the OH is replacable by organic radicals (methyl-ethyl-propyl, etc), thus: $C(=O)<\begin{matrix}NH_2\\OR\end{matrix}$ giving rise to the esters of carbamic acid generally known as *urethanes*. Of this class ethyl urethane is generally known in medicine as *urethane* $C(=O)<\begin{matrix}NH_2\\O—C_2H_5\end{matrix}$ crystalline, hypnotic. The phenyl-ester $C(=O)<\begin{matrix}NH—C_6H_5\\O—C_2H_5\end{matrix}$ of this latter body is the well known *euphorine*, an antipyretic and anti-rheumatic. A combination of ethyl-urethane with chloral is designated as uraline or chloral urethane a hypnotic.

Replacing a H in one of the amido groups in urea $\left(CO<\begin{matrix}NH_2\\NH_2\end{matrix}\right)$ by the phenetidine residue, *dulcin* results $CO<\begin{matrix}NH—C_6H_4OC_2H_5\\NH_2\end{matrix}$ a principle being 200 times sweeter than cane sugar.

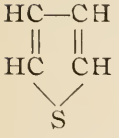
Thio-urea or $CS<^{NH_2}_{NH_2}$ sulfocarbamide is the base of *thiosinamine*, an allyl-thio carbamide $CS<^{NHC_3H_5}_{NH_2}$ a remedy employed in chronic cutaneous diseases.

AROMATIC COMPOUNDS.

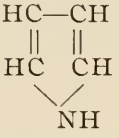
We will now leave the fatty series or methane derivatives, which are distinguished by an "open carbon chain" for those of the "closed ring" or aromatic compounds. Among the bodies which form the transition to the aromatic group we have:



Furfurane.

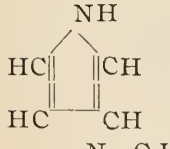


Thiophene.

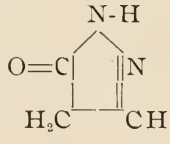


Pyrrol.

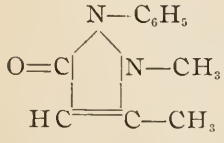
The one of greatest interest to us is pyrrol, a constituent of coal-tar and bone-oil. This forms the basis of *iodol*, (a substitute for iodoform), which is a tetra-iodo-pyrrol, four hydrogen atoms of pyrrol being replaced by iodine. Pyrrol is also the mother substance of *antipyrin*, in which one of the carbon atoms of pyrrol is replaced by a second N atom, two hydrogens by methyl and a third by phenyl C_6H_5 an oxygen replaces a hydrogen where the double linking of two carbon atoms is dissolved to a single



Pyrrol.



Pyrazolon.



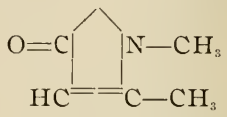
Di-methyl-phenyl-pyrazolon.

Antipyrin.

The salycylic acid salt of antipyrin is called *salipyrin*.

A combination of antipyrin with chloral is designated as *hypnal*, or mono-or bi-chloral antipyrin. With butyl-chloral it combines to butyl hypnol. If one H is replaced by I, iodopyrin results, combining the properties of both.

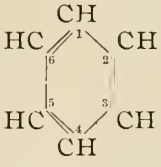
If we introduce a methyl radical for a hydrogen of the phenyl group in antipyrin, a methylated-phenyl-dimethyl-pyrazolon is obtained



This is better known under the name of *tolypyrin*, an antipyretic. The salicylic acid salt of this is called *tolysal*.

BENZENE—DERIVATIVES PROPER.

The aromatic compounds are derived by substitution, from a nucleus consisting of six carbon atoms, the simplest of which is benzene C_6H_6. The structure of the benzene nucleus is such, that six carbon atoms form a closed ring-shaped chain, the atoms joined alternately by single and double bonds, each carbon being linked to a hydrogen. The readiness with which these hydrogens may be replaced will explain the existence of a vast number of derivatives. Its structure is symmetric, that is the six affinities of the nucleus are of equal value.



Any one hydrogen atom can be replaced by another atom or atomic group, hence the resulting compounds can exist in but one modification only, thus there can be but one chlor-benzene (C_6H_5Cl), one nitro-benzene $C_6H_5NO_2$), one benzoic acid (C_6H_5-COOH) etc.

Although the six hydrogen atoms in benzene are of equal value, it is clear that from the above figure that each di-

derivative ($C_6H_5X_2$) is capable of existing in *three* modifications, their isomerism, being due to the *relative position* of the two substituting groups. Thus di-derivatives are known in three modifications, and no more. These are designated by the terms

ORTHO 1–2 C_6H_4 META 1–3 C_6H_4

PARA 1–4 C_6H_4

substitution being affected respectively, in two adjacent, intermediate or opposite carbon atoms, giving rise to products that differ greatly in chemical and pharmacological action.

By action of nitric acid on benzene we obtain a nitro-derivative (C_6H_5-NO_2) called *oil of mirbane*, by reduction of this we obtain amido benzene or *aniline* (C_6H_5-NH_2). If one of the hydrogens in the amido group of anilin be substituted by the acetyl radical (CH_3-CO), we obtain *antifebrin* (acetanilid C_6H_5-NH-CH_3-CO). If we replace one hydrogen in the nucleus of acetanilid by bromine, brom-acetanilid or *antisepsin* results. If the other hydrogen of the amido group in acetanilide is replaced by the methyl radical, *exalgin*

methyl-acetanilid $C_6H_5—N<\begin{matrix}CH_3\\CH_3—CO\end{matrix}$

is obtained, an antineuralgic. Substituting one hydrogen of the amido group in anilin by the benzoyl radical (C_6H_5-CO) *benzanilid* (C_6H_5-NH-C_6H_5-CO) an antipyretic, results.

By the introduction of a second amido group in place of a H atom in anilin we obtain *phenyl-hydrazine* (C_3H_5-NH-NH_2). Substitution in the second amido-group give rise to hydracetin or *pyrodin* (C_6H_5-NH-NH-CH_3-CO) an antipyretic.

Antithermine (antipyretic) is a condensation product of phenyl-hydrazine with levulinic acid.

$$C_6H_5N_2H=C<\begin{matrix}CH_3\\CH_2—CH_2—COOH\end{matrix}$$

Phenols, are a class of benzene derivatives in which one or more H atoms are replaced by hydroxyl groups (OH). Those groups into which one hydroxyl enters are called mono-hydric phenols, the most familiar being *phenol* or carbolic acid C_6H_5-OH. The next higher homologue being *cresol*,

(methyl-phenol) $C_6H_4<\begin{matrix}CH_3\\OH\end{matrix}$

The trio-iodo derivative of this is called *losophan*

trio-iodo-meta-cresol $C_6H<\begin{matrix}CH_3\\OH\\I_3\end{matrix}$

employed in skin diseases. The next homologue is *thymol* a propyl-cresol,

$C_6H_3<\begin{matrix}C_3H_7\\CH_3\\OH\end{matrix}$ = Aristol is dithymoldi-iodide.

Among the next class of benzene derivatives in which two H atoms are replaced by hydroxyl groups, the dioxy-benzenes, $C_6H_4(OH)_2$ we have three isomers, the

Ortho. *Pyrocatechol* — OH, OH (1.2)

—the Meta *Resorcinol* (resorcin) — OH (1 3) OH

a valuable antiseptic, and the Para *Hydrochinon*, an antiseptic. — OH (1.4) OH

The methyl ether of pyrochatechol is *guaiacol* $C_6H_4<\begin{matrix}OCH_3\\OH\end{matrix}$ the active constituent of creosote.

Guaiacol carbonate $C_6H_3<\begin{matrix}OH\\OCH_3\\COOH\end{matrix}$ and benzoate (*benzosol* $C_6H_4<\begin{matrix}OCH_3\\OCOC_6H_5\end{matrix}$) are crystalline derivatives.

The third class or tri-oxy-benzenes $C_6H_3(OH)_3$ furnish us *pyrogallol* (pyrogallic acid) and phloroglucinol. In the phenol derivatives, the substituting radical may enter either into hydroxyl group or the benzene nucleus. The substitution of a hydrogen in the nucleus by an acetyl group, gives *gallacetophenon*

$$C_6H_2 < \begin{matrix}(OH)_3 \\ COCH_3\end{matrix}$$

If the H of the nucleus in phenol, be substituted by the sulfonic acid group (SO_3H) under proper conditions the antiseptic *aseptol* or sozolic acid

(ortho-phenyl-sulfonic acid,

$$C_6H_4 < \begin{matrix}OH \\ SO_3H.{}_2\end{matrix}{}^{1})$$

results. The iodide sustitution product from the para acid is called soziodolic acid

$$C_6H_2 \begin{matrix}/OH \\ —SO_3H \\ \backslash I_2\end{matrix}$$

the salts of which are employed as substitutes for iodoform. Picric acid is a tri-nitro-phenol $C_6H_2(NO_2)_3OH$. If the hydrogen be substituted by bromine the antiseptic *tri-bromphenol* $C_6H_2 < \begin{matrix}Br_3 \\ OH\end{matrix}$ results. If we substitute a H of the hydroxyl in phenol, by the methyl group, we have the ether *anisol* (C_6H_5-O CH_3) if by ethyl *phenetol* C_6H_5-O C_2H_5.

If a H of the amido group in phenetidin

(amido-phenetol $C_6H_4 < \begin{matrix}OC_2H_5 \\ NH_2\end{matrix}$)

be substituted by the acetyl group, we obtain *phenacetin*

$$C_6H_4 \begin{matrix}/OC_2H_5\ (1) \\ \\ \backslash NH—CH_3—CO\ (4)\end{matrix}$$ acet p-phenetidin

the well known antipyretic.

Methacetin

$$C_6H_4 \begin{matrix}/OCH_3\ (1) \\ \\ \backslash NH—CH_3—CO\ (4)\end{matrix}$$ acet-p-anisidin

an antipyretic, bears the same relationship to anisol as phenacetin to phenetol.

Through the endeavors of the Schering factory, a soluble derivative of phenacetin was prepared. This was accomplished without loss of its valuable antipyretic properties by the introduction of an amido group in the side chain, which rendered it capable of uniting with acids and forming very soluble salts; thus *phenocoll* was built up.

$$C_6H_4 < \begin{matrix}OC_2H_5 \\ NH—CO\ CH_3\end{matrix}$$ Phenacetin.

$$C_6H_4 < \begin{matrix}OC_2H_5 \\ NH—CO\ CH_2—NH_2\end{matrix}$$

Phenocoll (glycocoll phenetidin.)

Phenocoll possesses all the valuable properties of phenacetin, having the additional advantage of ready solubility. Only to be had as acid salts. Properties antipyretic and antirheumatic.

The aldehydes, are formed by the substitution of a H in the benzene nucleus (C_6H_6) by the aldehyde group CHO. The simplest of these compounds is *benzoic aldehyde* C_6H_5-CHO bitter almond oil. The mono hydroxy derivative (oxyaldehyde) of this is *salicylic aldehyde* $C_6H_4 < \begin{matrix}OH. \\ CHO\end{matrix}$ Salicylic aldehyde with methyl-phenyl-hydrazin, forms *agathin*

$$\left(\begin{matrix}C_6H_5 \\ CH_3\end{matrix} > N—N=HC—C_6H_4OH\right)$$

an antineuralgic. The methyl ether of this mono-oxy-aldehyde is *anisic aldehyde* $C_6H_4 < \begin{matrix}O\ CH_3 \\ CHO\end{matrix}$ it is formed by the oxidation of oil of anise or anisol (methyl phenate). As a derivative of a di-oxy-aldehyde

(protocatechuic aldehyde $C_6H_4 < \begin{matrix}(OH)_2 \\ CHO\end{matrix}$)

we have the methyl ether or *vanillin*

$$C_6H_3 \begin{matrix}/OH \\ —OCH_3 \\ \backslash CHO\end{matrix}$$

The aromatic acids are the oxydation products of the aldehydes, thus benzaldehyde yields *benzoic acid* C_6H_5-COOH a

benzene-mono-carboxylic acid. By action of sulfuric, on benzoic acid, sulfo-benzoic acids are formed

$$\left(C_6H_4<\begin{matrix}SO_2—OH\\COOH\end{matrix}\right)$$

the amide-anhydride of the ortho-acid is *saccharin* $C_6H_4<\begin{matrix}SO_2\\CO\end{matrix}>NH$

Salicylic acid is the acid of the corresponding salicylic aldehyde, it is an ortho-oxy-benzoic acid $C_6H_4<\begin{matrix}OH\\COOH\end{matrix}$

The phenyl ester of this *salol*

$$C_6H_4<\begin{matrix}OH\\COO—C_6H_5\end{matrix}$$

If a H of the amido-group in the amido-phenyl-ester of salicylic acid

$$\left(C_6H_4<\begin{matrix}OH\\CO_2—C_6H_4—NH_2\end{matrix}\right)$$

be replaced by an acetyl (CH_3-CO) radical, *salophen* is obtained, this is an acetyl-p-amido-phenol-salicylic-ester

$$C_6H_4<\begin{matrix}OH\\CO_2—C_6H_4NH—COCH_3\end{matrix}$$

The corresponding acid of the above anisic aldehyde is *anisic acid*,

$$\left(\begin{matrix}\text{methyl-p-oxybenzoic acid}\\C_6H_4<\begin{matrix}OCH_3\\COOH\end{matrix}\end{matrix}\right)$$

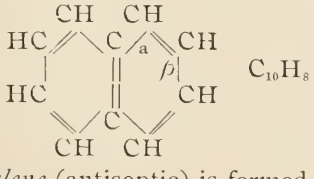
its medicinal properties are very similar to salicylic acid.

We have learned that mono-oxy-benzoic acid is salicylic acid; di-oxy-benzoic acid is protocatechuic acid; tri-oxy-benzoic acid is *gallic* acid

$C_6H_2<\begin{matrix}(OH)_3;\\COOH\end{matrix}$ *tannic* is a di-gallic acid.

Basic gallate of bismuth is *dermatol.*

The benzene nuclei condense, the two rings so combine that they have two adjoining carbon atoms, thus—



$C_{10}H_8$

napthalene (antiseptic) is formed.

By the replacement of H by OH group alpha or beta *napthol* results, the beta derivative being a valuable antiseptic. The napthyl ether of salicylic acid is *betol*, therapeutically this is closely related to salol, the latter being split up in the intestines in salicylic acid and phenol, betol is likewise split up into salicylic acid and napthol.

$C_6H_4<\begin{matrix}OH\\CO_2H\end{matrix}$ Salicylic Acid. $\qquad$ $C_6H_4<\begin{matrix}OH\\CO_2—C_6H_5\end{matrix}$ Salol.

$C_6H_4<\begin{matrix}OH\\CO_2—C_{10}H_7\end{matrix}$ Betol.

Like phenol, napthol unites with sulfuric acid, the alumia salt of this is *alumnol* an antiseptic.

Napthol yields an oxy-acid (analogous to salicylic acid), alpha-oxy-napthoic acid

$C_{10}H_6<\begin{matrix}OH\\COOH\end{matrix}$ an antiseptic.

Anthracene arises from the condensation of three benzene rings

$$C_6H_4<\begin{matrix}CH\\|\\CH\end{matrix}>C_6H_4$$ this on

oxydation yields anthraquinone

$$\left(C_6H_4<\begin{matrix}CO\\CO\end{matrix}>C_6H_4\right)$$

Alizarine is a di-oxy-anthraquinone

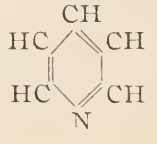
$$\left(C_6H_4<\begin{matrix}CO\\CO\end{matrix}>C_6H_2(OH/_2)\right)$$

the introduction of a methyl group into this yields chrysophanic acid, employed in skin diseases.

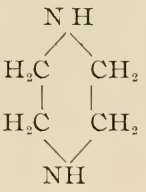
BASES—ALKALOIDS.

This class of compounds comprise derivatives and condensation products from a ring similar to benzene, differing however in the replacement of a carbon atom by that of a nitrogen, this base is called

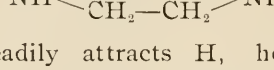
Pyridin, C_5H_5N.



Among these bases *piperazin* a uric acid solvent may be classed, being considered as a hexa-hydro-derivative of pyrazine which is pyridin, in which a CH group replaced by nitrogen, thus:



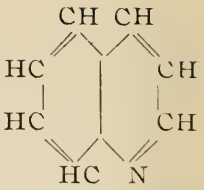
Piperazine may also be considered as diethylen-diamine.



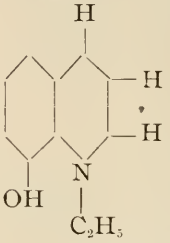
Pyridin readily attracts H, hexa-hydro-pyridin is *piperidine* $C_5H_{11}N$.

The propyl derivative of pyridine is *coniine* ($C_5H_{10}H\text{-}C_3H_7$). Nicotine, atropine and cocaine are derivatives of hydrated-pyridines.

Chinoline is produced by a coalescence of the benzene and pyridine rings C_9H_7N. this with its salts are employed as antiseptics.



Like pyridine it readily takes up hydrogen, as hydrides of chinoline we have *kairin* ($C_9H_{10}(C_2H_5)NO$) or



ethyl - oxy - tetrahydro - chinoline, the first synthetic antipyretic. Thalline is oxy-methyl-tetra-hydro-chinolin ($C_9H_{10}N(OCH_3)$), as derivatives we have quinine, strychnine, hydrastine, etc. Analgen, an antipyretic, is an ortho-ethoxy-mono-benzoyl-amido-chinolin.

(*To be Continued.*)

USE OF UNAUTHORIZED NAMES FOR VEGETABLE DRUGS AND MEDICINAL PLANTS.

BY HENRY H. RUSBY, M. D.,

Professor of Physiology, Botany, Pharmacognosy and Materia Medica, at New York College of Pharmacy.

IN one way or another everyone who has much to do with pharmacy suffers from the custom noted in this title. The clerk wastes valuable time in a vain search for an unrecorded name, although the article itself may be well-known to him under its ordinary title, (as "Cuca" for COCA,) and the customer—perhaps a physician—is sent away annoyed and dissatisfied. Or, perhaps misled by the improper use of a common name, the clerk is led to furnish an article not desired by the customer, (as "Zanthorhiza" instead of *Hydrastis*, for YELLOW ROOT,) and, however correct his action, suffers from all the discredit of having committed an error. The employer, in making his purchase, orders one thing and receives another, (as "Cherry Laurel" instead of *Myrcia*, for BAY LEAVES,) or orders something supposed to be new—the physician being, generally, in this case the one principally involved—and gets an old and generally discarded article, or one possibly already in stock, (as "Erigeron" for PRIDE WEED).

Not infrequently is the physician made the victim of a direct fraud, (as in the case of "Ditana digitifolia" which does not exist,) in which case he can never quite free himself from a feeling towards the druggist as though the latter had been a confederate in it. True, the druggist has acted merely as an agent—and an unconscious one—but then he "ought to have known," and his knowledge should have protected his over-credulous brother, who is not expected "to be posted" on such matters.

Finally, the professor and the edito

(who are not like other men, but are supposed to know not only everything, but even things which are not,) are applied to, and either wearied repeat an oft-repeated explanation, wondering meanwhile if it would not pay to have printed forms for some of these things, or lose themselves in a necessarily futile search after a trade secret. And all these inconveniences are without a single compensating feature, unless it be in some cases the favoring of ulterior purposes. It is a custom common enough, yet entirely without excuse, as there is no obstacle to the employment of an authoritative name for every article in medicinal use. Probably its most serious evil result is one that does not appear directly to those who are inconvenienced, but to which they are unconsciously inclined—a disgust for everything new and a disinclination to participate in that experimental research which has given us every good thing which we possess, from which alone we can hope for any more good things in the future, and whose success requires the intelligent co-operation of the rank and file, as well as the pioneering of a few leaders.

To understand the introduction of these misleading names we must consider them in classes. Errors in common names must be charged generally to common ignorance, though they are sometimes the result of design. The same thing growing in remote districts receives different vernacular names and an old drug, especially if long out of use, is at any time liable to reappear and flourish for a time under some one of these local names not previously connected with its general use, as in the case of Shepherd's Purse. The uneducated eye of the immigrant to a new country apparently beholds in one of its plants, similar only, a medicinal plant previously known to him, and the corresponding name is wrongly bestowed upon it, giving us two drugs of the same name as in the case of Angelica; the subsequent prefixing of the qualification "American," "Mexican," or "Brazilian," is very rarely successful, as the majority of people will not take the trouble to employ it.

If the present remarks were in reference to the ethical aspects of the case, our special compliments would here be paid to those who apply some fanciful name to a well-known substance, or combination of them, and by virtue of false representations establish a place for it in the trade, and for its new name in medical literature. But utterly unjustifiable as this is, from a moral point of view, it hardly contributes to an immediate confusion of nomenclature, as the new name is usually made to stand independently in professional outlawry.

The scientific names, while on a very different plane, are subject to precisely similar contingencies. Vernacular confusions are scarcely more common than the application of new names for alkaloids or other proximate principles already isolated elsewhere and otherwise named, (as Buxine—Pelosine—Beberine,) while the possession of two or more botanical names is the unhappy condition of a majority of at least all the more early known plants. Even the opposite condition of having two or more plants included under one botanical name is not so very uncommon, as witness Cephaelis Ipecacuanha for the very dissimilar Ipecac plants of New Grenada and Brazil, Pilocarpus Selloanus for the equally distinct Jaborandi plants (now separated by Mr. Holmes,) of Pernambuco and Rio, and Prunus Virginiana for the worthless genuine P. Virginiana, L. and the valuable P. serotina, Ehrh. In short, there is no class of names in use by our profession which are out of the reach of the misconceptions under consideration.

The responsibility for everything being traceable to somebody, to whom are we to look for the correction of this very troublesome state of affairs? Clearly, to those who make use of drug and plant names. There is no system of penalties and fines for mere carelessness in this matter, which belongs to that class of obligations known as "honorable." Every time that the editor, the teacher, the physician or the pharmacist employs an unauthorized name, or employs a name in an unauthorized manner, he strikes a blow at the exactness of his science.

It is true that we have not, in all cases, a clear definition of what constitutes authority, but even where this is wanting we have sufficient guidance in good usage and common sense.

Referring to all articles incorporated into the U. S. P., there should be no deviation from the rule of using no other names than the official Latin or English title, or a synonym endorsed by that work. The practice of sending out LADIES' SLIPPER marked "Nervine," or CIMICIFUGA marked "Black Root," is to be condemned. If ordered under an ill-advised name, such name might be affixed as synonymous with the authorized one, which should always be printed or written as the principal name, thus tending to discourage the use of those which are not authorized. The ground for such action does not rest upon any assumption that the official name is better selected than another would be, though such a presumption properly exists. It is rather because the proper application of that title is rigidly fixed by the Pharmacopœial definition and description. In the case of non-official names, a careful investigation will generally discover the name which is endowed with authority. It is a fixed rule of science that a discoverer shall have the right to bestow a name of his own selection or formation upon the thing discovered. If this name be selected or formed in accordance with the rules of nomenclature, and properly published, none subsequently proposed has the right to supersede it, nor has anyone the right to apply this name to anything else. If, through either ignorance or design, this rule be for a time violated, the restoration of the original name, or the original application of the name, so soon as the facts shall have become established, is imperative. So sensible a rule may well be applied to the titles of drugs

He who first makes known to medical science the medicinal properties and uses of a drug is entitled to select or form a name for it, the native name, or one of them, if it have any that is admissible, being naturally adopted. If this name be so published as to fix the origin and identity of the drug, the name should be permanent, and should be regarded as authoritative. An exception is very properly made to copyrighted names, because while their formation observes the letter, it violates the principles of the rules of nomenclature. In all of those rules there is nothing arbitrary. All are based on the principle of serving the public welfare and convenience, whereas the object of copyrighting and trade-marking is to violate this principle, in the interest of the owner. Public spirit and policy therefore dictate that a concerted action should be promptly made by professional people to break down the influence of the proprietorship, by making known some equivalent title, as has been successfully done in the case of Acetanilide.

The "proper publication" of a drug name, herein referred to, is its careful reference to the species of plant yielding it, with a description sufficient for identifying it and determining its good quality. True, the botantical origin cannot in all

cases be determined at once. In such cases an adequate description can properly suffice until the necessary botanical information can be gained. It will thus be seen that every properly constituted drug-name is capable of being readily traced to a substantial and established basis. Wherever a name is found incapable of such explanation it should be rejected, and if the article have no better name, it should be ignored. It has been repeatedly pointed out, and cannot be too strongly impressed, that while the observance of this rule can not possibly work an injustice, it effectually closes the door against the introduction of fraudulent articles, and insures a general and uniform understanding of plant names. Had it been more carefully observed by editors, especially of medical journals, in the past, our literature would have escaped a large number of hideous deformities.

The fact already referred to is not to be lost sight of, that most medicinal plants possess more than one botantical name, and that in many cases the same botanical name has been applied to two or more plants. The difficulty thus created is in most cases met by regarding the name of the author of the botanical name as a necessary adjunct thereto. Even the careful definitions of the U. S. P. would be absolutely worthless except by their observance of this rule. Occasionally even the same author has applied one name to two plants, and this contingency is provided for by stipulating that it is his *first* application of the name which shall be recognized.

Those interested in the rules for the application and use of botanical names will find the chief guiding principles printed in the "Seventh Revision of the U. S. P.," page xxxii. of the preface, and elaborately explained in the *Bulletin of Pharmacy*, July and December, 1892.

MALPRACTICE AS DEFINED BY LAW.

By Hon. DAVID McADAMS,

Judge of the Superior Court of New York City.

WE are only able to allow space for two extracts from Judge McAdams' address, delivered before the Society of Medical Jurisprudence at the Academy of Medicine, November 13, 1893. Hon. David McAdam is judge of the New York Superior Court, and speaks as an authority upon "malpractice as defined by law." We would commend this entire address as valuable reading to all who can secure it. The New York *Herald* of December 7, gives an excellent synopsis:

IMPLIED OBLIGATIONS OF THE PROFESSIONS.

"The obligation of the two professions is the same. Physicians, surgeons, dentists, druggists and lawyers, by holding themselves out to the world as such, impliedly contract that they possess the reasonable and ordinary qualifications of their profession, and are consequently under a duty to exercise reasonable and ordinary care, skill and diligence toward those who employ them. The world has not time to inquire into the proficiency of every professional man;

hence, it presumes him to be furnished with that amount of skill which he is under obligation, by virtue of his calling, to possess. It may and does vary widely among men, but it must at least be sufficient to entitle him to a recognized place among his own fraternity. If, therefore, by illegally assuming a title, or assuming one he is incompetent to fill, he holds himself out as a practioner of any science, then he does not possess the required qualifications, and induces the public to employ him, he is a wrongdoer *ab initio*, and any person injured by his performances has an action against him.

The courts have ruled that no attorney can be held to infallibility of judgment or to a warranty of the result of his efforts. Attorneys do not profess to know all the law or to be incapable of error or mistakes in applying it to the facts of every case, as even the most skilful of the profession. What he is responsible for is ordinary skill, diligence and care, having reference to the nature of the business he undertakes to do, and for any failure to exercise these an action may be maintained by his client against him.

MALPRACTICE DEFINED.

Malpractice is bad or unskilful practice in a physician or other professional person whereby injury is caused. Blackstone says concerning it:—'For it hath been solemnly resolved that Malpraxis is a great misdemeanor and offense at common law, whether it be for curiosity and experiment or by neglect, because it breaks the trust which the party had placed in his physician, and tends to the patient's destruction" (3 Black. Com., 122).

Malpractice may be divided into three parts—1. Wilful; 2. Negligent; 3. Ignorant.

Wilful takes place when the physician purposely administers medicines or performs an operation which he knows and expects will result in damage or death to the individual under his care.

Negligent malpractice comprehends those cases where there is no criminal or dishonest object, and includes gross negligence of that attention which the situation of the patient requires.

Ignorant malpractice is the administration of treatment calculated to do injury, and which does harm, and that which a scientific medical man would know was not proper.

Malpractice can only be affirmed where the physician has set aside established principles and neglected to employ means which are universally held to be necessary in the given case. If medical men fail to discharge their duty in a skilful and attentive manner, the law will grant redress to the party injured by their neglect or ignorance, in the form of an action on the case, as for a tortuous misconduct, and no fees can be recovered."

LIABILITY OF DRUGGISTS.

"The rule of liability of a druggist who delivers a deleterious drug to one who calls for a harmless one is the same as that which governs the liability of professional persons whose work requires special knowledge and skill, and a person is not legally responsible for any unintentional consequential injury resulting from a lawful act when a failure to exercise due and proper care cannot be imputed to him.

An action against a druggist for an error of his clerk in compounding a prescription rests upon negligence, and a right of recovery does not arise from the mere fact that a drug given was not included in such a prescription, as the defendant is entitled to have the question of the competency of his clerk and the exercise of due and proper care on his part submitted to the jury.

In such case, when the defendant assumes to fill the prescription, undertakes that he possesses the ordinary skill of a druggist or apothecary, and that he will exercise due and proper care in putting up the medicine required, the degree of care being proportionate to the gravity of the injury that would necessarily result from a want of care, the failure to exercise due and proper care is the only ground upon which a recovery can be had in such action.

One who is ignorant of the properties of a poisonous drug is liable to a criminal prosecution for a negligent sale or use thereof.

A druggist who grinds medicines in a mortar which has been used to grind poisons without properly cleansing it is liable to one injured by means of such careless use. So of a druggist on shipboard who neglects cleansing drinking utensils after using them with poisonous substances. So of a druggist who sells morphine instead of quinine, which causes death.

A druggist who sells a deadly poison as a harmless medicine is liable, and one who labels a deadly poison as a harmless drug is liable for all consequences."

SYNTHETIC REMEDIES.

By VIRGIL COBLENTZ, Ph.D.,

Professor of Theory and Practice of Pharmacy. Director of the Pharmaceutical Laboratory.

THE following comprises a resume of the more important synthetic remedies introduced during the past year.

ALUMNOL—Aluminium salt of napthol-sulfonic acid. A fine powder, very soluble, employed for antiseptic dressings; non-poisonous when employed externally; dissolves in purulent discharges, hence does not stop up wounds.

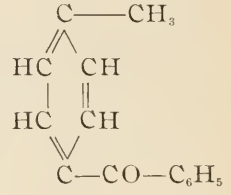
AMIDO-ANTIPYRINE—Antipyretic, more soluble than antipyrine.

ANTISPASMIN—A preparation consisting of one molecule of narceine sodium combined with 3 mol. sodium salicylate; contains about 50% narceine. A very soluble and pure form of narceine. Recommended as hypnotic and sedative. Dose 0.006 to 0.1 gms.

ASAPROL—A soluble derivative of β-napthol, sulfonic ether of β-napthol, as calcium salt, white powder, very soluble; resembles soda salicylate as antiseptic, and as remedy in acute articular rheumatism. Dose same as the salicylate.

BISMUTH PHENATES—Among a group of antiseptic combinations of Bismuth, the following are more important; Phenol Bismuth—Cresol Bismuth—Tribromphenol Bismuth—Chlorphenol Bismuth—Resorcin Bismuth and Beta-napthol Bismuth. These form neutral, inodorous, tasteless powders of red, yellow and white colors; insoluble in water. Among these, the Napthol Bismuth has found application in treatment of the first stages of cholera, dose 2 gms. In the intestines it is split up into Beta-napthol, which is eliminated through the kidneys, and Bismuth Oxide. The Tribrom-phenol Bismuth is recommended as an intestinal antiseptic; forms a yellow colored, neutral, insoluble powder, containing 50% Tribrom-phenol; said to be almost a specific against cholera-bacilli. Dose 5 to 7 gms.

BENZO PARA-CRESOL—Prepared by action of benzoyl chloride on the soda salt of para-cresol. Insoluble in water. Soluble in ether and hot alcohol. Properties antiseptic.



CAFFEINE CHLORAL—A mixture of the two in molecular proportions. Administered hypodermically in doses of 0.2 to 0.4 gms. in relieving habitual constipation.

CHLORALOXIME—v. Heyden prepared a new class of compounds from chloral and oximes:

$$H{=}NOH + CCl_3\,COH{=}CCl_3 \cdot \begin{cases} H \\ COH \\ ON{=}H \end{cases}$$

This body on being heated with water separates its chloral. Recommended as hypnotic.

CHLORALOSE—Anhydro-gluco-choral. Prepared by Harinot from anhydrous chloral and glucose; crystalline, sparingly soluble in cold, and very soluble in alcohol and hot water. Hypnotic action greater than chloral, showed no toxic properties. Dose of 0.5 gms. produced

deep and quiet sleep in individuals who were not affected by other hypnotics. Its solution is very bitter; best given in capsules.

CHLOROFORM—Anschütz proposed the preparation of a pure chloroform, based on the fact that it combines with salicylide (dehydration of salicylic acid) forming an insoluble cryst. compound:

$\left(C_6H_4<\begin{matrix}CO\\O\end{matrix}\right)_4 2\,CHCl_3$ with 33% chloroform; stable when kept in closed vessels; on warming chloroform is liberated.

CREOSOTAL—A mixture of carbonates of guaiacol and homologues found in creosote; is prepared by passing a current of phosgene ($COCl_2$) through a solution of sodium creosote. A viscous liquid, inodorous; insoluble in water, glycerin and dil. alcohol. Substitute for creosote. Dose 10 to 20 gms. Does not disturb the digestive functions; in the intestines it splits up into creosote and CO_2.

DI-IODOFORM-TETRAIODOETHYLENE-C_2I_4—Of all iodized antiseptics this contains the highest per cent. of iodine; no odor, yellow crystals.

DULCIN OR SUCROL—Para-phenetol-carbamide. It is closely related to Urea, in which the H in one of the aniodo groups is replaced by the phenetidine residue, thus:

$CO<\begin{matrix}NH_2\\NH_2\end{matrix}$ Urea $\qquad CO<\begin{matrix}NHC_6H_4OC_2H_5\\NH_2\end{matrix}$

A white crystal. solid; soluble in 800 parts cold and 50 of hot water and 25 of alcohol. Because of its intense sweet taste, being 200 times that of cane sugar, offers a substitute for this carbohydrate. In large doses does not produce injurious effects; and in long continued use, does not create the dislike usually caused by saccharin.

FORMANILID — C_6H_5NHCOH. Prismatic crystals, very soluble. In hypodermic injections of 3% solution acts as an anæsthetic. A 20% solution, when applied to the tongue produces prolonged numbness. Sprinkled upon bleeding wounds, it stems the flow of blood better than antipyrine. As an anodyne the maximum dose is 0 5 gm.

FORMALIN—Formic aldehyde being a well-known powerful anti-bacterial, has led to its introduction by the Schering factory; is an aqueous 40% solution. Owing to the volatility of formic aldehyde, it is given off at ordinary temperature. In dilution of 1 to 20,000 it destroys the anthrax bacillus in one hour, excelling all disinfectants and equal to sublimate; preferred to this because of its non-poisonous properties. Valuable for disinfecting instruments, sponges, sick rooms, etc., a 1% solution best adapted. Employed in form of dry powder, containing 20%; the absorbent material being infusional earth.

GALLANOL—An anilid of Gallic acid; obtained by heating aniline and tannin together. Forms colorless crystals; bitter taste; very slightly soluble in cold water, more so in hot water and alcohol. Employed as a substitute for pyrogallol in psoriasis, and has the advantage of being non-poisonous and non-irritating. In ointment 10 to 20%.

IODINE EUGENOL—Obtained by treating an alkaline solution of eugenol with iodine.

IODO-CAFFEINE—A compound of caffeine with sodium iodide; unstable, hot water is sufficient to decompose it.

IODOL CAFFEINE—A crystalline com-

pound formed by the action of iodol on caffeine. Inodorous and tasteless; recommended because of its greater stability than iodol.

LORETIN—IODO-OXY-CHINOLIN SULFONIC ACID—Iodoform substitute, inodorous, yellow; almost insoluble in water and alcohol; forms soluble salts with alkalies.

MERCURY, GALLATE AND TANNATE—Mercuric gallate is prepared by precipitating a solution of mercuric acetate with gallic acid, yielding on drying, a brownish powder. Mercurous gallate being prepared from mercurous nitrate and gallic acid, yielding a dry, greenish powder. Tannate of mercury—76.2 gms. tannin is tritulated with 25.7 gms. yellow oxide of mercury and 50 c.c. of water; when dry is olive green. Both are employed as antisyphilitics, in form of pill, combined with ext. cinchona. Daily total dose 0.1 to 0.2 gms.

MALAKIN—Salicylaldehyd-para-phenetidin. Closely related to phenacetin. Yellow cryst.; insoluble in cold water; contains about 50% salicylalhyde. Employed in muscular rheumatism, neuralgia. Dose 4 to 6 gms. daily.

PHEDURETIN—A phenol derivative, composition not given; tasteless white cryst.; insoluble in water. Doses of 0.5 to 1 gm. a powerful diuretic.

PHENOL CHLORINE AND BROMINE DERIVATIVES—Para-chlorine Phenol, crystalline; odor of phenol; slightly soluble in water. Ortho-brom-phenol is a violet colored liquid. Both employed in the treatment of erysipelas; 1 to 2% in ointment.

PIXOL—A soluble wood-tar preparation; 3 parts of wood-tar warmed with 1 part of soft soap, this gradually mixed with 3 parts of 10% KOH solution. It is a transparent solution miscible with water in all proportions. Disinfectant properties equal to Lysol.

RESORCYLALGIN—Antiseptic; made by the action of potassium resorcylate on antipyrine. Potass. resorcylate (resorcinate) made by boiling 1 part resorcin with 5 parts $KHCO_3$ and 10 parts water. Resorcylalgin is slightly soluble in water, very soluble in alcohol. Because of its strong acid properties forms soluble salts with alkaline bases.

RUBIDIUM IODIDE—The Stassfurter potassium salts furnish the source of this base. The iodide is offered as a substitute for the corresponding potassium and sodium salts; inodorous white crystals; milder taste; permanent in air; more soluble than KI; free from disturbances produced by the potassium base KI.

SALICYLACETOL—Because of the decomposition of salol in the system into salicylic acid and phenol, the toxic effects of the latter being often manifested, led to the introduction of salophen; this splits up into salicylic acid and amidophenol. This same view led to the combination of salicylic acid with a non-poisonous body, acetone. It is made by the reaction between mono-chlor-acetone and soda salicylate:

$$CH_3 \geq CO \atop CH_2 \underline{\quad} Cl + C_6H_4 < \begin{matrix} OH \\ COO\ Na \end{matrix} =$$

$$C_6H_4 < \begin{matrix} OH \\ COOCH_2COCH_3 \end{matrix} + Na\ Cl$$

Forms crystalline needles, sparingly soluble in water. Employed in the treatment of summer diarrhœa. Dose 2 to 3 gms. daily.

SALOCOLL—Phenocoll Salicylate. The salicylate of this well-known remedy,

phenocoll, which has been employed chiefly as hydrochloride. The after effects produced by the soluble salts of this base are absent in this, probably because of its insolubility ; mild and reliable antipyretic, anti-neuralgic ; in doses of 1 to 2 gms. several times daily. Specific in influenza.

SALUMIN—ALUMINIUM SALICYLATE—Recommended in catarrhal affections. —*Riedel.*

SEDATIN— para-valeryl-amido-phenetol. A patented sedative made by reaction between para-mido-phenetol and valeric acid. Dose not given.

SODIUM PEROXIDE — Employed as bleaching and oxidizing agent; yellowish powder, very soluble in water. In contact with water oxygen is disengaged; with dilute acids it forms hydrogen peroxide, of course the liquid must be well cooled. Contains 20% active oxygen.

SODIUM SULFOCAFFEATE—NASROL—Since the introduction of the sulpho. group decreases the medicinal potency in phenol groups, the same was tried here with success. Bitter, crystalline, slightly soluble in cold water; non-toxic, does not irritate the stomach. Solutions containing more than 5% are not stable. Besides above soda, lithium and strontium salts are prepared. A powerful diuretic. Dose 1 gm. in capsule.

TANNAL—ALUMINIUM TANNATE—Application like unto that of Salumin.—*Riedel.*

THUIRET—$C_8H_7N_3S_2$—A sulphurated antiseptic. Oxydatious product of phenyldithiobiuret. Inodorous crystalline powder, insoluble in water; soluble in alcohol and ether. Has the property of giving up sulphur readily (statu nascendi) upon which its disinfectant properties depend. As best adapted salt of this basic thuiret, is the para-phensulfonate, a yellow crystalline inodorous powder, which can be employed in solution as well as dry antiseptic.

THIOFORM—Basic dithio-salicylate of bismuth. A substitute for iodoform, inodorous, yellow-brown, insoluble powder. Advantages claimed, being inodorous and non-toxic.

THYMACETIN—A crystalline solid; derived from thymol, in which an ethyl group is substituted for the H of hydroxyl, and an acetylated amido group for a H in the nucleus. Employed as an anti-neuralgic.

TOLYLANTIPYRINE DERIVATIVES–The chlorhydrat, isonitroso, monobromo and monoiodo. These are all less soluble than the corresponding antipyrine derivatives, like tolypyrine itself, being only soluble 12 parts in 100 of water.

TRICRESOL—A purified mixture of the three isomers of cresol; soluble to extent of 2.5% in water, forming a neutral solution. A 1% aqueous solution is equal in disinfecting power to a 3% aqueous phenol solution.

XYLENOL SALOLS—Made by the action of dehydrating agents on a mixture of salicylic acid and xylenol, yielding ortho-meta and para salicylate of xylenole. Physically and chemically resembles the well-known salols ; insoluble in water, alcohol and ether; without any noticeable taste or odor. Employed as intestinal disinfectants.

ZINCI-BORICUM—Prepared by mixing solution of 5 parts zinc sulphate in 50 parts water, with solution of 4 parts borax in 100 parts of water.

THE ALUMNI JOURNAL

Published under the auspices of the

Alumni Association of the College of Pharmacy

OF THE CITY OF NEW YORK,

209 EAST 23d STREET.

Vol. I. February 1, 1894 No. 1.

THE ALUMNI JOURNAL will be published Monthly, excepting June, July and August.

SUBSCRIPTION:

Per Annum, . . . One Dollar

Single Copies, . . . 15 Cents.

All copy for publication, or changes of advertisements should reach us on or before the 20th of the month previous to the issue in which they are to appear.

Correspondents will please write on one side of the paper only, and address all editorial matter to

O. G. HARRISON, M.D.,* 209 East 23d Street.

All communications relating to finances and subscriptions should be addressed to

A. HENNING, Treas., 209 East 23d Street.

All communications relating to advertising should be addressed to

F. B. CASWELL, Manager Advertising Department, 209 East 23d Street.

INTRODUCTORY.

We present to you the initial number of THE ALUMNI JOURNAL, believing it will be gladly welcomed by all interested in pharmaceutical education, and more especially by the graduates and members of the N. Y. College of Pharmacy, in whose interest it will be published.

Beginning under the auspices of the Alumni Association and representing both the association and the college, it will, as far as possible, preserve an independence in its views, and will advance fearlessly the interests of pharmaceutical education.

From time to time in the history of the College and the Alumni Association, a paper, or journal of a representative character has been suggested, and the subject agitated; never meeting with any degree of success until this year, when the matter was thoroughly discussed.

That the time had arrived for such a publication was obvious to all closely associated in our college work, and so urgent have been these demands that an editorial staff was secured and the organization of the present journal completed.

THE JOURNAL will be published monthly, omitting June, July and August, and will contain original articles by known writers on pharmaceutical topics and leading events of interest to our profession.

It will contain reports of the transactions of the college and alumni meetings.

All scientific papers read at the alumni meetings, and such lectures as shall be given in the alumni course will be reported.

Each month we will devote to the Senior Class two pages, and Junior Class one page for such items and notes as shall come to us from the class reporters. A column of general notes and personals will be given, and we request items of such a nature.

Visiting graduates often express regret that they have heard nothing regarding former classmates since leaving college. We believe this portion of our JOURNAL can be made of great interest to all who retain warm memories of college days.

Such books as shall be brought to our attention will be reviewed, and from time to time a list of the more recent publications for use of pharmacists will be given.

We appeal to every graduate of the

*Owing to the sudden death of the editor, Dr. O. G. Harrison, close to the date of publication of this number, all editorial matter should be addressed to

FRED HOHENTHAL,
857 Third Avenue, New York.

N. Y. College of Pharmacy to not only support THE JOURNAL by sending in his subscription at once, but to secure a number of subscribers in his vicinity, and to lend his influence in promoting the success of THE JOURNAL. Also, if he is not already a member of the Alumni Association, we extend to him an invitation to join, and in this way assist the Association in its work of advancing the interests of our Alma Mater.

Since the establishment of the Alumni Association it has identified itself with every college interest, and we believe has largely assisted in its progress and success.

We know that our graduates all over the country could do a grand work, proving their loyalty to the college which gave them their profession, by increasing her interests in their own immediate vicinity, and each one becoming a distributing centre of college news.

The college is now completing one of the finest buildings in the world for pharmaceutical education, built and designed entirely for teaching purposes. It looks to its graduates to send next year a larger class than ever before. The success and future of the college is determined largely by the activity of its graduates.

Our college has always taken an advanced position in matters relating to pharmaceutical education. This year will mark another forward movement, for with the new building and increased facilities for practical laboratory instruction, largely replacing the old didactic lecture system. We shall have opportunity for larger classes with more hours of instruction, and thus aid in making the graduates of the college practical men in their profession.

Advantages of special courses can be obtained by those wishing to continue their studies in any of the departments of Materia Medica, Chemistry and Pharmacy. Also a post-graduate course covering one year of practical work and for which an advanced degree will be given, is promised for the session of '95-'96.

O. G. HARRISON, M. D.

IT is with the deepest regret and sorrow that we have to inform our readers of the sudden death of our chief editor, Dr. Oscar G. Harrison. His sad death occurred so soon before this journal went to press, that the following short history of his life and career is all that could be devoted to him. Dr. Harrison was born October 28, 1863, graduated at our college in 1890, and from the College of Physicians and Surgeons in 1891. His death occurred January 14, 1894, after only five days' illness with appendicitis. He was instructor in botany, materia medica, physiology and pharmacognosy at our college, and assistant to Professor Wilcox at the Post Graduate Medical School. In him our college, as well as the Alumni Association and the students lost a staunch friend, and an intelligent, zealous, conscientious teacher and adviser in the branch of knowledge to which he had so earnestly devoted himself. The funeral services took place Thursday, January 18, at 10.30 A. M., at the Broadway Tabernacle, and was largely attended. There were present the faculty of our college, its officers, trustees and a number of its members, also members of the Alumni Association, as well as a good representation of the classes of '94 and '95. The remains will be interred in the family plot in Connecticut.

Association Notes.

Minutes of the meeting of the Alumni Association held January 10, 1894.

The meeting was called to order at 8 P. M. by President Graeser. The lecture room was crowded with the members and friends of the alumni and the college, and the students of the classes of '94 and '95 Upon motion the reading of the minutes of the last meeting was dispensed with. The following gentlemen were elected to membership: William C. Oetinger, '88, Ira Illo Hopkins, '93, Alexander Kraemer, '93.

The president then introduced Professor Virgil Coblentz of our college who delivered a highly instructive and interesting lecture on "Relationship between the chemical constitution and the physiological action of the newer synthetic remedies."

After the conclusion of the lecture which elicited a storm of applause, Mr. Hohenthal moved that a vote of thanks be tendered Prof. Coblentz and that the lecture be published in THE ALUMNI JOURNAL.

There being no further business the meeting adjourned.

HARRY HELLER, Secretary.

Meeting of the Executive Board held in the College Library, January 10, 1894.

The meeting was called to order by the president in his usual graceful manner at 10 P. M.

There were present Messrs. Graeser, Henning, Hohenthal, Heller, and Miss Mahegin.

Considerable business in regard to THE ALUMNI JOURNAL was transacted; the usual bills for postage, printing, etc., were passed for payment on being found correct, and after some informal discussion about the needs of the association, and its future policy, the meeting adjourned at 10.45 P. M.

HARRY HELLER, Secretary.

THE next Pharmaceutical meeting of the Alumni Association will be held at the college, 209–213 East Twenty-third street, on Wednesday evening, February 14th, at 8 o'clock. Dr. Cyrus Edson will deliver a lecture on "Nervous Exhaustion," demonstrating the use of the "Lavage Tube" in washing out the stomach.

The members and students of the college and their friends are cordially invited to attend.

OBITUARY.

Louis F. Hiltz, valedictorian of the class of 1890, was run over and killed by a trolley car in Brooklyn, on December 11th, 1893.

He was born at Norwalk, O., on August 8th, 1871, and received his education in the public schools of that city. In 1886 he entered the employ of E. R. Leich, at Cleveland, O., and from there came East to attend our college, from which he graduated in 1890. In April, '91, he established a retail pharmacy at the corner of Herkimer street and Hopkinson ave., Brooklyn, of which he was the proprietor at the time of his death. The remains were interred in the family plot at Norwalk, O.

He was married about a year, and his widow and a child three weeks old survive him. The shock has so prostrated his wife that her recovery is doubtful.

THE annual ball of the German Apothecaries' Society took place on Friday, Jan. 9, and was very well attended. At 10 o'clock P. M. Mr. Martin Arneman led the opening march, which was beautifully executed. The festivities were ended only when it was time to open the drugstores in the morning. Of our graduates there were present: Messrs. M. Arneman, J. Pfeiffer, A. Behrens, H. Wurm, F. Hohenthal and many others.

Senior Class Notes.

EXCURSION.

It was indeed a jolly crowd that started out from the college Thursday morning, December 21st, and, with colors conspicuously worn, wended their way to the Chambers street ferry on their way to the fair realms of Jersey.

The occasion was the annual outing of the senior class to the factories of Seabury & Johnson and E. R. Squibb & Sons. When the boat having the students on board reached the other shore, their ranks were re-enforced by others of the class who had awaited their arrival at the railroad station.

It was but the wait of a few minutes before the train started, and after a ride of half an hour it drew up at East Orange, only a short distance from the works of Seabury & Johnson. Upon arriving there the class separated into two sections and the students were shown through all the various departments. They first entered the room where the extract of belladonna is prepared. Here the still and the huge percolators were a source of general interest. They were then shown successively the assay room, the cotton room where the crude material is made absorbent, the department devoted to the making of plaster masses and the spreading of the same, the engine room and other places of minor importance, to the finishing department.

There seemed to be a strange magnetism existing about the last named department; the boys lingered therein until the train was due and were then loathe to depart.

Some of them even rendered valuable (?) assistance to the ladies employed there.

At 12.23 the return train left, and, with the boys exuberant over the pleasant experiences of the morning, the trip back to New York was attended with a continual flow of joviality. Arriving at New York the students marched in a body over the bridge to Brooklyn, where, after dining, they assembled at the works of E. R. Squibb & Sons. Here, while passing through the various departments, the wonderful progress in modern pharmacy and chemistry became more and more manifest. Among the many interesting attractions were the preparation of fluid extracts, the method of repercolation, the preparation of the various chemical compounds, the store room for crude drugs, etc.

The students left Brooklyn well satisfied and considerably enlightened upon the intricacies involved in the wholesale manufacture of pharmaceutical products.

The students of the Philadelphia College of Pharmacy being in New York at the time, they having also visited the two factories, a committee was sent to them inviting them to attend a theatrical performance with our boys in the evening.

They immediately accepted the invitation and a very pleasant evening was spent in this manner.

To conclude it may be stated that every member of the class of '94 returned home that night well satisfied with the manner in which he had spent the day.

On Monday, January 3d, the seniors entered the homestretch, it was a very busy day and was divided into two sessions. The morning being devoted to Dr. Rusby's department, which continues to get more and more interesting. January 8th, found us at the subject of flowers and herbs, which necessitated the use of our simple microscope, but having had considerable experience in that line, and being now microscopists we handled the subject with little difficulty.

The reading of the Inorganic Chemistry ratings on the 12th resulted satisfactory to the majority of us, very few below fifty.

Of the making of plasters one thing may be said to our advantage, and that is: we thoroughly learned the modus operandi while on our excursion last month, and it is highly probable that the finished product resulted in a good mark to many. When we were assigned the work there was a restricted applause, owing to our regard for the craniums of our fellow students in the room below and not wishing to loc'en any of the "hard finish."

Mr. Wurthmann, our former secretary, succeeded admirably well in passing the city board's last examination.

During the month of December the senior class held two interesting meetings. At the first of these, held on Dec. 8th, the election of officers took place which, after some spirited contests resulted in the selection of the following candidates:

For President, Peter J. Ehrgott; vice-president, Frank L. Wilcox; treasurer, Albert Horne; secretary, Emil F. Imhof.

At a meeting held Thursday, Dec. 21st, the following resolutions were adopted:

Whereas, Messrs. Seabury & Johnson and Messrs. E. R. Squibb & Sons, with their cus-

tomary kindness have favored us with an invitation to inspect their laboratories; and as a means of expressing our appreciation of their beneficence and courtesy, be it

Resolved, That we, the members of the class of '94 of the College of Pharmacy of the City of New York, extend our sincere thanks to Messrs. Seabury & Johnson and to Messrs. E. R. Squibb & Sons, and to those others, who contributed towards making our sojourn so instructive and entertaining, and be it furthermore

Resolved, That these resolutions be spread in full upon the minutes of the class of '94, and a copy be presented to each of the firms named herein.

A GLEE CLUB composed of members of the senior class, has been organized and Mr. William Hall, the celebrated baritone, assures us that it will be a "howling" success.

A SPECIAL feature of the month of December was a lecture on "The Alcohols" by Dr. Pellew, who owing to Dr. Chandler's inability to be present at the time, acted in his stead. The voluminous burst of applause which greeted Dr. Pellew upon his entrance was surely indicative of that genial gentleman's popularity, while his ready wit and pleasant address did certainly not detract from the same.

THE following cry has been adopted by the class of '94:

"Penta-Meta-Borici
Ileo-coecal-Pharmacy,
Phenol-Benzol-Carpophore,
N.-Y.-C.-P.-'94."

PERSONALS,

THE selection of Mr. Ehrgott for president, was a popular one. His services as treasurer last year were very highly appreciated, notwithstanding the fact that his report indicated an empty treasury upon his retirement.

MR. IMHOF, our popular and corpulent secretary, has at last discovered a specific for adipose superfluity in the duties pertaining to his office.

AT our excursion to East Orange, Mr. F. M. Davies officiated as chief vender of our college colors. When we had almost reached our destination, Mr. Davies realizing that his supply would perhaps not be entirely disposed of, devised a successful plan. "Don't forget the girls in East Orange" he cried. In less time than it takes to tell, his supply was exhausted.

J. KUSSEY,
Class Reporter.

Junior Class Notes.

CLASS OF '95, N. Y. C. P.

The class of '95 held their first meeting Nov. 18, '93, for the purpose of electing a Constitutional Committee. Mr. C. W. Hitchcock was the presiding officer. The Committee decided upon were Messrs. Chambers, Carter and Sutorious. The meeting then adjourned.

The next meeting was held Nov. 25, '93, Mr. C. W. Hitchcock, chairman *pro tempore*. Constitution submitted by the Committee was read and adopted. At this part of the meeting the members applauded so heavily "with their feet" that "Schuyler" our genial janitor stuck his head in the door and gravely announced that the ceiling was falling from the Quiz Room below. This news did not seem to have the desired effect, but as soon as "Schuyler" announced that he would "turn off dem lights," peace and quiet reigned.

Meeting called for Dec 9, was for the purpose of electing officers for the ensuing year. Mr. C. W. Hitchcock was presiding officer. Regular nominations for President, were Messrs. Hitchcock, Section 3; Murray, Section 2, and Rose, Section 1. Mr. Hitchcock, of Section 3, was elected by a majority of 20 votes. For Vice President, Messrs. Watling, Section 2; Hilliard, Section 3, and Lavalye, Section 1. On the first ballot, Messrs. Watling and Hilliard each received 19 votes, and Mr. Lavalye 10 votes. On the second ballot Mr. Watling, Section 2, was elected by a majority of three votes. Nominations for Recording Secretary were Messrs. Thumb, Section 1, and Sutorious, Section 2, and who was endorsed by Section 3. Mr. Sutorious was elected by a majority of 25 votes. Nominations for Treasurer were Messrs. Carter, Section 2; Lavalye, Section 1, endorsed by Section 3. Mr. Lavalye was elected by a majority of 6 votes. Motion made by Mr. Carter, to make Mr. Lavalye election unanimous, was seconded and carried. Motion was made and seconded to have only the college button for the Junior year. Carried. Then the college cry, or rather class cry submitted by Mr. Sutorious was adopted. Pharmacy, Pharmacy, '95, Rah—N.—Y.—C.—P.—Sis—Boom—Bah—

At a special meeting of the class of '95, of the New York College of Pharmacy, held at the college January 16, '94, the following resolutions were unanimously adopted:

WHEREAS, Our beloved and highly esteemed

instructor, Dr. Oscar G. Harrison, has been called from us by death, therefore,

Resolved, That in the demise of Dr. Harrison, we feel that our class has lost an instructor whose services were invaluable, and whose place in the hearts of his pupils can never be filled. During the time of our association with him as pupils, we have ever found him devoted to our interest even to self sacrifice. The time of vacation usually spent in recreation and pleasure was by him employed in furthering the work in which his life was absorbed.

Resolved, That we extend our heartfelt sympathy to the bereaved family. To the wife who has lost a kind and considerate husband. To the parents who lost a dutiful and loving son.

That the above resolutions be placed in full on the class record and printed in THE ALUMNI JOURNAL, and that an engrossed copy be sent to Mrs. Harrison.

The committee appointed to attend the funeral and to see to the floral display, consisted of the following gentlemen :

L. S. HOMMEL, Chairman,
H. E. COOLEY,
H. A. BRADNER.

PERSONALS.

IT is to be regretted that one of our fair lady students has been obliged to leave college owing to poor health.

OFFICERS of Junior Class.—President, Clarence W. Hitchcock; Vice-President, R. C. Watling; Secretary, G. Ford Sutorious; Treasurer, J. P. Lavalye.

WILL H. CHAMBERLAIN, of Meriden, Conn., class '95, has been obliged to leave college owing to poor health.

OUR Treasurer, Mr. J. P. Lavalye, has been confined to his home for the past few days by an attack of the grip.

ONE student in Botany examination thought he was going to be shaved, when the Professor called *next*, to look into the microscope.

EVIDENTLY McI—and others thought whiskey was a good brain stimulant by their actions just before the examinations.

Our Graduates.

MARRIED, on New Year's Day, in the quiet town of Morris, Conn., Mr. Harvey P. Bissell, Ph.G., to Miss Flora M. Randall. Mr. Bissell, who graduated from the N. Y. C. P. in '93, has accepted a very honorable position in Litchfield, Conn., at Wheeler's Pharmacy. As the happy pair start in life full of hope, they have the best wishes from their many and numerous friends for every possible success.

H. W. REUSSWIG, '93, at present with J. C. Field, of Sommerville, N. J., will soon join the ranks of the Alumni Association.

GEO. B. BRUEN, '85, formerly with Billings, Clapp & Co., is now in the employ of Seabury & Johnson.

OTTO RAUBENHEIMER, '88, has removed his place of business to Fourth street and Willow avenue, Hoboken, N. J.

GEO. B. WRAY, '82, has greatly improved the appearance of his store on Getty Square, Yonkers, N. Y., by the addition of a handsome soda fountain, the cost of which approached closely to $3,000.

JOHN C. NEILSEN, late secretary of the Alumni, is now at Sag Harbor, Long Island.

THE new pharmacy of Oscar G. Kalish, '89, at Twenty-third street and Fourth avenue, is a "thing of beauty."

WILL C. MUNSON, '93, is now acting as manager for the Allison Drug Co., of Fourth avenue.

EDW. W. BRŒCKLEIN, '91, is doing a fine business on Market street, Paterson, N. J.

ARE there any druggists in New York who are anxious to buy tickets for an apothecary's ball?

THAT the New York Board of Pharmacy is watching out sharply is shown by the fact that the following druggists have been convicted and fined for violation of the pharmacy law: Fred J. Stock, Wm. T. Cox, Geo. Roserson, John O'Conner, and Fred Kleinschmidt. Other sinners take warning.

THE Alchemysts may be seen every Wednesday afternoon at the alleys of Allaire & Petro, on Third avenue, making "strikes" and "spares," and occasionally the deadly "poodle."

WILL all members of the Alumni Association kindly send their addresses to the secretary Harry Heller, 209 Bleecker street, New York City?

OFFICERS

OF THE

ALUMNI ASSOCIATION

FOR 1893-94.

President,

HERMAN GRAESER.

Vice-Presidents,

ARTHUR C. SEARLES,

J. G. NEEDHAM, M. D. WILL C. MUNSON.

Treasurer,

ADOLPH HENNING,
68 William Street, New York.

Secretary,

HARRY HELLER,
209 Bleecker Street, New York.

Registrar,

DUDLEY T. LARIMORE,
294 Seventh Avenue, Brooklyn, N. Y.

Executive Board,

D. PERAZA, C. F. LORD, } To serve one year.

K. C. MAHEGIN, ALFRED STOVER } To serve two years.

FRED. HOHENTHAL, WM. A. HOBURG, JR. } To serve three years.

ROLL OF MEMBERS

OF THE

ALUMNI ASSOCIATION

Of the College of Pharmacy of the City of New York.

N. B.—Life members in italics.

CLASS.

1887. Alvarado, Jacobo, Paso del Norte, Mexico.
1873. Ambler, Starr H., 82d St. and Ninth Ave., N. Y.
1889. *Amend, C. A. L.*, 120 E. 19th St., N. Y.
1890. Arnold, John P., 237 W. Market St., York, Pa.
1892. Arteaga, Angel, 307 W. 28th St., N. Y.
1874. *Ashley, Geo. Nolton*, Montclair, N. J.
1889. Austin, R. A., Hunter, N. Y.
1877. Avery, Abbott L., 607 Broad St., Newark, N. J.
1883. Averbeck, Max J., Youngstown, O.
1881. Ayme, Edward L. E., 896 B'way, N. Y., Room 12.
1873. Ayres, Chester D., Bergen Point, N. J.
1890. *Baily, C. S.* 208 Fifth Ave., N. Y.
1870. *Ballard, J. W.*, Davenport, Ia.
1890. Badger, Gurdon S., 52 E. 42d St., N. Y., care F. W. Schoonmaker.
1885. Bergen, J. L., Red Bank, N. J.
1865. *Best, John*, Central City, Col.
1888. Betts, Wm. R., care I. L. Lyons & Co., New Orleans, La.
1884. Benton, Howard A., 195 Christian Ave., Indianapolis, Ind.
1890. Benkendoerfer, C., 1010 Third Ave., N. Y.
1882. Bischof, Louis F., M. D., 34 First Ave. N. Y.
1876. *Blumauer, Lewis*, Portland, Ore.
1889. Boenau, Theo. C., 561 Fourth Ave., B'klyn, N. Y.
1876. Booth, Clarence F., 278 Greenwich St., N. Y.
1839. Boysen, Henry C., 165 Rivington St., N. Y.
1881. Braünlich, Henry U., M. D., 1119 W. 3d St., Davenport, Ia.
1882. Branigan, James E., 163 Boulevard, N. Y.
1890. Bracklein, H. A., 157 E. 31st St., N. Y.
1891. Breen, Timothy B., 2300 Seventh Ave., N. Y.
1877. *Breitenbach, Max J.*, 57th St. and Madison Ave. N.Y.
1879. Breunig, John, 270 Springfield Ave., Newark, N. J.
1879. Brewer, Percival, Tampa, Florida.
1885. Briner, Wm. L., 242 Flatbush Ave., B'klyn, N. Y.
1888. Brown, Arthur T., Sag Harbor, N. Y.
1889. Brown, Major C., 874 Broadway, N. Y.

CLASS

1890. Brown, L. W., 309 Lexington Ave, B'klyn, N. Y.
1881. Bruckmann, Chas. G., 138 Marcy Ave., B'klyn, N.Y.
1885. Bruen, Geo. B., care of Seabury & Johnson, N. Y.
1878. Brunner, Chas. W., M. D., 623 Wythe Ave, Brooklyn, N. Y.
1888. Brunner, Mrs. Rose S., 623 Wythe Ave, Bk'lyn, N.Y.
1874. *Buchhop, Louis F.*, 583 Tenth Ave., N. Y.
1888. Buehler, Emil, 100 St. Mark's Place, N. Y.
1891. Burkhardt, Wm. R., 515 Ninth Ave , N. Y.
1888. Burr, Frank K., care of Keller & Yager, 821 Seventh Ave., N. Y.
1893. *Burton, Carey, Dever*, Susquehanna, Pa.
1886. Campbell, Harry P., 287 Nostrand Ave., Bk'lyn, N.Y.
1890. Carpentier, M. A., 251 W. 123d St., N. Y.
1891. Cafferata, David, 182 First St., Hoboken, N. Y.
1892. Casey, Herbert W., 416 Madison St., Bk'lyn, N. Y.
1879. Chagnon, Thelesphore, 155 Grand St., Bk'lyn, N.Y.
1882. Chapin, Henry A., Brattleboro, Vt.
1874. *Cohen, Louis S.*, 7 Rue Massena, Nice, France.
1876. Coit, H. Leber, M. D., 108 Warren St., Newark, N.J.
1880. Comstock, Jas. C., M.D., Windsor, Broome Co., N.Y.
1883. Cook, Ansell G., M. D., Vineyard Haven, Mass.
1887. *Corwin, Fred M.*, M. D., 7 W. 6th St., Bayonne, N.J.
1883. Couch, Francis G., 846 Broadway, N. Y.
1888. Crampton, J. Miller, 27 Vandewater St., N. Y.
1893. Cubit, Chas. T., 149 W. 21st St., N. Y.
1892. Cusachs, Pierre Leon, Jr., Canal and Baronne Sts., New Orleans, La.
1879. *Cutts, Foxwell C.*, 985 Fulton St., Brooklyn. N. Y.
1880. Dahlbender Jos., 371 Grand St., N. Y.
1887. Dall, Fred T., 376 Columbus Ave., N. Y.
1889. Davis, Willis O., 162 E. 36th St., N. Y.
1875. *Davren, Jas. N.*, Northwestern Dispensary, N. Y.
1881. De Lano, Will, Ithaca, N. Y.
1892. Delson, John, 857 3d Ave., N. Y.
1891. Dennin, E. Clinton, 109 First Place, Bk'lyn, N. Y.
1885. Desbecker, Daniel, 138 N. Division St., Buffalo, N.Y.
1881. Dewender, W. H., 169 Atlantic St., Bk'lyn, N. Y.

CLASS

1890. Dickinson, A. L., Cor. Main and White Sts., Danbury, Conn.
1888. Diehl, Aug., 644 Bedford Ave., Brooklyn. N. Y.
1888. Diekman, Geo. C., M. D., 209 E. 23d St., N. Y.
1830. Doolittle, F. D., Far Rockaway, N. Y.
1887. Dolmetsch, Richard, 158 Main St., Rahway, N. J.
1884. Douden, Clarence O., 1193 Gates Ave., Bk'lyn, N.Y.
1892. Duble, Jesse Clyde, 317 Park Ave., Williamsport, Pa
1890. Dubois, A., Cor. Liberty and Renwick Sts., Newburgh, N. Y.
1890. Dubus, A., 327 E. 15th St., N. Y.
1875. *Dudley, Oscar E.*, 62 E. 125 St., N. Y.
1876. *Dunn, John A.*, 93 Sands St., Brooklyn, N. Y.
1879. Ebbitt, Wm. H., 170 William St., N. Y.
1876. *Eberhardt, Geo.*, 2422 Eighth Ave., N. Y.
1867. *Eberhardt, John H.*, 482 W. 22d St., N. Y.
1889. Eckett, Frank H., 94 Garden St., Hoboken, N. J.
1886. Edler, Otto, Atlantic & New Jersey Aves., Brooklyn, N. Y.
1878. *Edlich, Adolph A.*, 52d St. & 1st Ave., N. Y.
1891. Eichler, Wm., 338 E. 118th St., N. Y.
1874. Engel, H. Adolph, 163 Avenue A., N. Y.
1893. England, Wm. A., 136 Main St., Rahway, N. J.
1875. Erhard, Albert C.
1878. Evans, Henry W., Danville, Ky.
1887. Everest, Chas. H., 27 W. 34th St., N. Y.
1890. Everitt, W. G., 1023 Sixth Ave., N. Y.
1876. *Falkenreck, Frank H.*, 101 E. 86th St., N. Y.
1891. Farrington, Frederick, North Tarrytown, N. Y.
1889. Fels, Paul, 95th St. and Amsterdam Ave., N. Y.
1882. Fenn, Fred W., Wilmington, Del.
1880. Fiero, Frank W., 13 Bond St., N. Y.
1889. Fincke, H. S., Cor. Webster and Vernon Aves., L. I. City, N. Y.
1889. Flood, Imgolf, 758 Marcy Ave., Brooklyn, N. Y.
1884. Fougera, E., Jr., 319 8th St., Brooklyn, N. Y.
1876. Fountain, George C., 219 Pacific St., Jersey City, N.J.
1888. Frank, August, 286 Tenth Ave., N. Y.
1888. Frawley, John P., Bangor, Me.
1879. *Frazee, Geo. Blair*, 52 E. 42d St., N. Y.
1879. *Freygang, Geo. W.*, 131 W. Broadway, N. Y.
1881. *Funnell, Henry H.*, Huntington, L. I., N. Y.
1883. *Funnell, William S.*, Huntington, L. I., N. Y.
1882. Gastmeyer, Robert, 293 Evergreen Ave., Brooklyn, N. Y.
1889. Gardner, A., Myrtle Ave. and Pearl St., Brooklyn, N. Y.
1881. Geiger, Geo. J., 11 Canfield St., Orange, N. J.
1887. George, Wm., Watertown, N. Y.
1875. Gill, Hy. S., M. D., 55 W. 11th St., N. Y.
1883. Goldman, Oscar, 165 Rivington St., N. Y.
1889. Graeser, Herman, 40 Stanton St., N. Y.
1885. *Griffin, Daniel B.*, Wakefield, R. I.
1874. *Griffith, Wm. H.*, 11th St. and Third Ave., N. Y.
1886. Grom, Otto C. B., Denver, Col.
1888. Guiney, Howard P., 1123 Pearl St., Sioux City, Ia.
1892. Gundlich, Chas., 537 E. 82d St., N. Y.
1883. Halsted, Alfred T., M. D., Y. M. C. A., Springfield, Mass.
1890. Hardenberg, A. J., 329 Jefferson Ave., Brooklyn, N. Y.
1891. Hart, G. B., 91 Eighth Ave., N. Y.

CLASS

1875. Hays, B. F., 561 Fifth Ave., N. Y.
1884. *Harris, A. Steinwedel*, 961 DeKalb Ave., Brooklyn, N. Y.
1888. Harding, John, Box 160, Salt Lake City, Utah.
1887. Harding, F. L., Long Branch, N. J.
1881. Hanmore, Louis E., M. D., 88 Smith St., Newburgh, N. Y.
1881. Hand, Thos. A., 582 Ninth Ave., N. Y.
1885. *Hamilton, Albert H.*, 61 Genesee St., Auburn, N. Y.
1881. *Heebner, Chas. F.*, 31 Prospect St., Toronto, Canada.
1884. Heebner, Herman H., Lee, Mass.
1890. Heckel, F. C., 59th St. and Lexington Ave., N. Y.
1892. Hegeman, Andrew C., Bath Beach, N. Y.
1887. Heuser, Wm., care H. Heller, 82d St. and 3d Ave., N. Y.
1887. Herzfeld Herman, 260 Seventh Ave., N. Y.
1875. *Herman, Frederico F.*, San Jose, Costa Rica.
1886. Heller, Geo. G., Missouri Ave. and 5th St., E. St. Louis, Ill.
1893. Heller, Harry, 209 Bleecker St., N. Y.
1883. Heinman, Herman, Seventh Ave. and 122d St., N.Y.
1871. *Henes, Edwin*, 128 E. 93d St., N. Y.
1876. *Henning, Adolph*, 68 William St., N. Y.
1892. Herz, Pincus, 230 W. 25th St., N. Y.
1892. Higinbotham, Arthur, 655 Columbus Ave., N. Y.
1838. *Hinsdale, Samuel J.*, Fayetteville, N. C.
1891. Hitchcock, Edgar F.
1893. Hoburg, Wm. A., Jr., 318 W. 27th St., N. Y.
1892. Hoff, Alfred W., Keyport, N. J.
1881. Hohentlral, Frederick, 857 Third Ave., N. Y.
1881. Holthusen, Emil T. F., M.D., 20 Rutger St., N. Y.
1873. *Holzhauer, Chas.*, 787 Broad St., Newark, N. J.
1893. Hopkins, Ira Illo, 98 Columbus Ave., N. Y.
1879. Horning, Geo. H., 831 Elizabeth Ave., Elizabeth, N. J.
1878. Huber, Daniel, Jr., 165 Third Ave., N. Y.
1893. Huber, Walter, 9 Irving St., Jersey City H'g'ts, N.J.
1877. *Hunt, Effingham L.*, 747 Newark Ave., Jersey City, N. J.
1881. Hurd, Ellison W., 2241 Third Ave., N. Y.
1890. Huntoon, L. D., Port Oram, Morris Co., N. J.
1890. Hubschmitt, J. J., 408 E. 52d St., N. Y.
1889. Hubbard, Alfred E., 455 W. 57th St., N. Y.
1893. Ihmels, Hy. W., 1596 Fulton St., Brooklyn, N. Y.
1877. *Iler, Robert L.*, Shreveport, La.
1885. Ill, Charles L., 132 Springfield Ave., Newark, N. J.
1889. Imhoff, Geo. J., 495 Atlantic Ave., Brooklyn, N. Y.
1890. Jackson, A. A., 292 6th Ave., N. Y.
1863. *Jacobi, Mary Putnam*, M. D., 110 W. 34th St., N. Y.
1893. Jacobson, Louis, 849 Third Ave., N. Y.
1889. James Fred. K., 700 Eighth Ave., N. Y.
1890. Jennings, W. E., Jr., Summit, N. J.
1889. Joannes, Leon J., 62 S. 5th Ave., N. Y.
1883. Johnston, H. S., Newtown, L. I., N. Y.
1891. Kahrs, Wm. H., Topping and 173d St., N. Y.
1889. Kaiser, Geo. H., 330 Columbus Ave., New Haven Conn.
1873. *Kalish, Julius*, 413 Grand St., N. Y.
1889. Kalish, Oscar G., Fourth Ave and 23d St., N. Y.
1888. Katz, G., Lenox Ave. and 125th St., care of Wanier & Imgard.
1889. Keale, Chas. F., 585 Wythe Ave., Brooklyn, N. Y.

CLASS

1890. Keller, J. F., 205 E. 60th St., N. Y.
1890. Kellner, R. G., 218 Columbia St., Utica, N. Y.
1887. Kellogg, Chas. L., 1023 Sixth Ave., N. Y.
1888. Keyler, Wm. W., Arlington, N. J.
1891. Kessler, Anthony A., 238 W. 49th St., N. Y.
1892. Kirk, Jas. T., West Point, Miss.
1877. Klippert, Chas. F., M. D., 1667 First Ave., N. Y.
1875. *Knapp, Frank F.*, 868 Eighth Ave., N. Y.
1876. Knapp, Gilbert P., 362 Hudson St., N. Y.
1890. Knapp, L. P., 98 Main St, Hackensack, N. J.
1890. Kocher, L. J., West Orange, N. J.
1887. Koester, Henry F., 233 E. 85th St., N. Y.
1883. Kopf, John Louis, 341 E. 16th St, N. Y.
1893. Kraemer, Alexander, 407 E. 82d St., N. Y.
1880. *Kraft, Geo., Jr.*, 21 Colden St., Newburgh, N. Y.
1866. *Krehbiel Herman*, 219 E. 53d St., N. Y.
1874. Kuehne, Richard, M. D., 585 Central Ave., Jersey City, N. J.
1889. Kurtz, Henry G., 193 S. Haward St., Akron, O.
1880. Lahey, Salvator P., 7 Prince St., N. Y.
1885. Larimore, Dudley T., 294 Seventh Ave., Brooklyn, N. Y.
1876. *Laue, Otto G.*, Passaic, N. J.
1887. Lawrie, James T., North Tarrytown, N. Y.
1888. Leggett, J. H., Plainfield, N. J.
1886. Leonhard, Rudolph E., Vanderbilt Clinic, Tenth Ave. and 60th St., N. Y.
1888. Levin, C. E. W., 2063 Third Ave., N. Y.
1877. Levy, Adolph, 125 Grand St, Brooklyn, E. D., N. Y.
1892. Leyes, Chas. J., Willis Ave., near 138th St., N. Y.
1891. Lieberenz, Otto P. M., 756 Tenth Ave., N. Y.
1881. Lord, Chas. F., 482 Seventh Ave., N. Y.
1884. Lucke, Reinhard J., 81st St. and Amsterdam Ave., N. Y.
1875. *Mack, Adolph*, 11 Front St., San Francisco, Cal.
1889. Madison, Wm. H., 209 E. 23d St., N. Y.
1889. Magenheimer, C. H., 743 6th St., N. Y.
1889. Mahegin, Katherine C., 139 Broadway, Brooklyn, N. Y.
1886. Mahnken, Wm. A., Vernon Ave. and 4th St., Long Island City, N. Y.
1885. Maier, Otto, M. D., 321 E. 18th St., N. Y.
1871. *Main, Thos. F.*, 278 Greenwich St., N. Y.
1873. *Master, David, Jr.*, 242 Flatbush Ave., Brooklyn, N. Y.
1871. *Mauch, Jos. B.*, 485 Ninth Ave., N. Y.
1881. *May, Arthur F.*, Cleveland, O.
1893. Mayer, Jos. L., 624 Fulton St., Brooklyn, N. Y.
1871. *McIntyre, Byron F.*, 447 Greenwich St., N. Y.
1847. *McIntyre, Ewen*, 990 Sixth Ave., N. Y.
1876. *McIntyre, Ewen, Jr.*, 990 Sixth Ave., N. Y.
1892. McKane, Sadie E., 285 Willis Ave., N. Y.
1880. Merritt, Albert A., 43 W. 61st St., N. Y.
1873. *Meschenmoser, Wilhelm*, 159 W. 125th St., N. Y.
1881. Metz, Hugo L. M., 14 Second Ave., N. Y.
1887. Metz, A. L., Tulane University, New Orleans, La.
1892. *Michaelian, G.*, 301 Third Ave., N. Y.
1888. Miles, Harry S., M. D., Bridgeport Hospital, Bridgeport, Conn.
1892. *Millener, Wm. S., Jr.*, Holley, N. Y.
1891. Miller, Alfred, 537 Ninth Ave., N. Y.
1881. Miller, Edward, 703 Tenth Ave., N. Y.
1888. Miller, Edward F., 712 Tremont Ave., N. Y.
1876. *Miller, James*, 34 Jay St., N. Y.
1883. Miller, Theodore, 703 Tenth Ave., N. Y.
1889. Milligan, Robert E., 48 Charles St., N. Y.
1889. Millspaugh, Willette, Clinton, Hunterdon Co., N. J.

CLASS

1888. Miehling, Chas., 183 Broadway, N. Y.
1891. Milhau, Edward J., Tillery, N. C.
1856. *Milhau, Edward L.*, 183 Broadway, N. Y.
1874. Mitzenius, Chas., Greenville, J. C., N. J.
1889. McDonald, Thomas H. H., Cario, Ill.
1889. Monaghan, S. M. S., 770 E. 167th St., N. Y.
1887. Motschenbacher, C., M. D., 629 Eleventh Ave. N.Y.
1890. Moschcowitz, Joseph, 46th St., and 5th Ave., N. Y.
1885. Moschcowitz, Alexis V., 629 Eleventh Ave., N. Y.
1889. Morey, J. H., 561 Fifth Ave., N. Y.
1876. *Morrell, James K.*, 154 High St., Holyoke, Mass.
1891. Moore, Fred. D., New Rochelle, N. Y.
1878. *Moore, Silas H.*, Sioux City, Ia.
1878. *More, Arthur J.*, Sioux City, Ia.
1878. Morehouse, James T., Orange Valley, N. J.
1882. Morgan, David S., Montgomery and Monmouth Sts., Jersey City, N. J.
1877. *Montanus, Ernest, Jr.*, 38 Sixth Ave., N. Y.
1890. Muller, E. A., 99th St., and Ninth Ave., N. Y.
1870. Muir, Wm., B'way and Gates Ave., B'klyn, N. Y.
1879. *Muellenbach, Robert, M. D.*, 9 Bible House, N. Y.
1887. Mulvaney, Edward, Newark and Jersey City Ave. Jersey City, N. J.
1893. Munson, Will C., 309 Fourth Ave., N. Y.
1889. Murken, Andrew P., 244 Roebling St. B'klyn, N.Y.
1885. *Murphy, Thos. P.*, Towanda, Pa.
1880. *Nadler, Frank*, Rock Island, Ill.
1880. Nauheim, Samuel, 59th St. and Lex. Ave., N. Y.
1887. Naumann, Aug. G., 145 Atlantic Ave. B'klyn, N. Y,
1883. Needham, Geo. G., M. D. 218 E. 19th St., N. Y.
1877. *Neubauer, Wm G.*, Carthage Landing, N. Y.
1888. Niederer, Albert, Carlstadt, N. J.
1891. Nielsen, John C. E., Sag Harbor, N. Y.
1849. *Nietsch, A. F. W.*, Walton and Harrison Aves. Brooklyn, N. Y.
1885. Oberdoerfer, Geo., 1224 Third Ave., N. Y.
1879. *Ochler, John*, 91 Fulton St., N. Y.
1888. Oetinger, Wm. C., 153 Franklin St., B'klyn, N. Y.
1868. Osborne, Hampden,
1889. Overmiller, Allen, 159 Lexington Ave., N. Y.
1885. Palmer, G. Arthur, care of Moffit & West Drug Co., St. Louis, Mo.
1885. Pamphilon, Fred. H., 201 Fourth Ave. B'klyn, N.Y
1876. Paradis, Adrian, 191 Fulton St., B'klyn, N. Y.
1875. *Parsons, Mathias W.*, Towanda, Pa.
1873. *Peraza, Domingo*, 301 Third Ave., N. Y.
1873. Peterman, John F., 101 Ludlow St., N. Y.
1882. Petty, Edwin R., 925 Broad St., Newark, N. J.
1886. Peck, Jesse L., Paris School of Pharmacy, Paris, France.
1890. Peiter, Frederick, 301 Third Ave., N. Y.
1881. Pfeiffer, John, 241 Nostrand Ave., B'klyn, N. Y.
1892. Pfis er, Chas. F., 377 Hancock St., B'klyn, N. Y.
1869. Phillips, G. W. C., 124 Newark Ave., J. C., N. J.
1891. Phillips, Newton Dart, 121 E. 30th St., N. Y.
1890. Pisani, Antonio, 82 Park St., N. Y.
1891. Plate, F. H., 67 E. 7th St., N. Y.
1890. Power, H. J., 990 Sixth Ave., N. Y.
1871. *Porter, Henry C.*, Towanda, Pa.
1880. Probet, John A., M. D. 192 Second Ave., N. Y.
1882. Purdy, Harry R., M. D. 151 E. 29th St., N. Y.
1889. Quencer, Wm. J., 57th St. and Ninth Ave., N. Y.
1886. Quintana, Felix S., 301 Third Ave., N. Y.
1888. *Raubenheimer, Otto*, 4th St. and Willow Ave., Hoboken, N. J.
1878. Reynolds, Chas. E., U. S. S. S. "Vermont," Navy Yard, N. Y.
1889. Rheineck, Wm. M., 1620 Third Ave., N. Y.
1883. Richmond, E. A.

CLASS

1891. Rice, Arthur J., 51 Franklin St., N. Y.
1888. Richter, Armin, Mt. Vernon, N. Y.
1890. Richtmeyer, F. W., Cooperstown, N. Y.
1885. Roy, Albert M., Wappinger's Falls, N. Y.
1866. *Royce, Lucien M.*, 294 Seventh Ave., Bk'lyn, N. Y.
1890. Robinson, Wm. J. M., 112 E. 128th St., N. Y,
1890. Roese, C. H., 47 3d Ave., N. Y.
1890. Rockey, W. S., 501 Eighth Ave., N. Y.
1873. *Runyon, Edward W.*, 234 Sulter St., San Francisco, Cal.
1882. Ruppert, Ferdinand, 1822 Ninth Ave., N. Y.
1875. *Safford, E. Earl*, 1525 Second Ave., N. Y.
1864. *Sands, Geo. G.*, New York.
1887. *Sauer, John G.*
1891. Schaar, Wm. Louis, 663 E. 153d St., N. Y.
1889. Schroeder, F. O.
1876. *Schrank Henry C.*, 437 E. Water St., Milwaukee, Wis.
1887. Schumacher, Gustav A., 499 W. 7th St., St. Paul Minn.
1876. *Schumann, Peter J.*, Atlanta, Ga.
1885. Schweinfurth, George E., 240 E. 53d St., N. Y.
1884. Schaeffer, A. E., 93 Canal St., New Orleans, La.
1892. Scherick, Raphael, 61st St. and Park Ave , N. Y.
1880. Scheu, Philip, M. D., 440 E. 16th St., N. Y.
1879. *Schlegel, Gustavus*, M. D., 321 W. 31st St., N. Y.
1885. Schleiff, Frank A. M.
1878. Schlesinger, Leopold J., Yonkers, N. Y.
1885. Schlesinger, Maurice, 47 Third Ave., N. Y.
1873. *Schleussner Charles F.*, 644 Bedford Ave., Brooklyn, N. Y.
1877. *Schmid, Henry*, 38 Avenue A., N. Y.
1877. *Schoelles, Wm.*, 918 Sixth Ave., N. Y.
1877. *Schrader, Herman Von R.*, Tallahassee, Fla.
1886. Searles, Arthur C., 124 Avenue C., N. Y.
1873. *Seelbach, Gustavus*, 173 Avenue B., N. Y.
1889. Seither, Louis C., 100 Columbia St., N. Y.
1887. Seither, F. C., care of M. H. Smith, 76th St. and Lexington Ave.
1888. Shaffier, Jas. G., 266 Fourth Ave., N. Y.
1885. Shuit, W. S., Passaic, N. J.
1890. Shell, J. T., Aberdeen, Miss.
1886. Simon, Philip, White and Ive Sts., Danbury, Conn.
1890. Sipperly, N. H., 846 Broadway, N. Y.
1863. *Smith, Chas. P.*, 861 Broad St., Newark, N. J.
1879. Smith, Frank A. D., 131 Clinton Ave., Newark, N.J.
1885. Smith, L. S., St. Augustine, Fla.
1890. Small, F. M., 178 Paterson St., Paterson, N. J.
1887. Snedeker, Geo. W., 64 Jefferson St., Bk'lyn, N. Y.
1868. *Snelling, Alonzo F.*, 310 Arlington Ave,, Jersey City, N. J.
1878. Snelling, Andrew T., 400 Front St., N, Y.
1886. Snyder, George St. J., 204 Columbia Street, Brooklyn, N. Y.
1876. *Spear, Theo. A.*, 275 W. 125th St., N. Y.
1883. Speck, Wm. A., Haverstraw, N. Y.
1889. Spaeth, Geo. F., 495 Broadway, L. I. City, N. Y.
1884. Stafford Wm. T., 245 E. 23d St., N. Y.
1875. Stammler, Chas. E., 172 Varick St., N. Y.
1881. Starr, Daniel H., 350 Seventh Ave., Bk'lyn, N. Y.
1886. Starr, Wm. S., New London, Conn.
1870. *Starr, Thomas*, 317 Ninth Ave., N. Y.
1891. Stone, Edward F., 256 Fifth Ave.
1883. Stover, Alfred, 55 Vesey St., N. Y.
1889. Steinhart, A. P., 27 N. University Ave., Ann Arbor, Mich.
1890. Stafford, A. G., 34th St. and Third Ave., N. Y.
1850. Stierle, Adolph, Jr., Box 426, St. Paul, Minn.
1890. Stieb, E., 263 E izabeth Ave., Elizabeth, N. J.

CLASS

1890. Stewart, C. E., 1695 Tenth Ave., N. Y.
1889. Strassburger, Gustave, 1318 Madison Ave., N. Y.
1873. *Syvarth, Henry*, Seventh Ave., cor 9th St., Brooklyn, N. Y.
1880. Tack, William, Hilton N. J.
1875. *Talson, Jos. F.*, 481 Sixth Ave., N. Y.
1893. Tannenbaum, Julius, 153 Willis Ave., N. Y.
1877. *Teschner, Jacob*, M. D., 120 E. 55th St., N. Y.
1885. Thum, Fred. W., 34 Fillmore St., Newark, N. J
1891. Tice, Herman A., Ridgewood, N. J.
1889. Trautman, Carl E., 66 Hoboken Ave., Jersey City, N. J.
1888. Tuthill, F. P., 375 Tompkins Ave., Brooklyn, N. Y.
1882. *Tyler, Wm. H.*, 34th St. and Third Ave., N. Y.
1892. Tynau, Francis J., 264 Bridge St., Brooklyn, N. Y.
1893. Uhle, J., Horton.
1890. Unbehaun, Louis H., Morristown, N. J.
1881. Van de Bergh, Alois J. H., 213 Sixth Ave., N. Y.
1891. Van Sickle, A. M , Unionville, N. Y.
1891. Vogt, Adam C., 787 Eighth Ave., N. Y.
1890. Vogt, D. W., 22d St. and Tenth Ave., N. Y.
1888. Volland, August, 402 Broome St., N. Y.
1890. Walp, H. W., 536 Fifth Ave., N. Y.
1884. Walsh, Thos. A., 177 Ashburton Ave., Yonkers, N.Y
1882. Walters, Max L., 1708 Fifth Ave., N. Y.
1891. Warner, Helen Marguerite, Northfield, Litchfie d Co., Conn.
1882. Warsaw, M. C., M.D., 255 W. 52d St., N. Y.
1891. Washburne, Le Roy, Waterbury, Conn.
1891. Waterman, Ezra L., 102 W. 56th St., N. Y.
1884. Weber, Herman W., 16 Bayard St., N. Y.
1860. *Weinman Oscar C.*, 173 Seventh Ave., N. Y.
1893. Well, C. Otto, Corvallis, Benton Co., Ore.
1887. Wenzel, H. G. 193 Broome St., N. Y.
1879. *Werner, Rudolph C.*, 793 Fulton St., Brooklyn, N.Y.
1888. Wernert, Leon, 106 W. Houston St., N. Y.
1881. Wernicke, Egon C. B., 298 4th St., Brooklyn, E. D., N. Y.
1882. Westbrook, Geo. F., Naugatuck, Conn.
1874. Weyh, R. G., 217 E. 128th St., N. Y.
1891. Wells, Chas., 371 W. 35th St., N. Y.
1874. *Wichelns, Frederick*, Court St., Brooklyn, N. Y.
1871. *Wienges, Conrad*, M. D., 649 Jersey Ave., Jersey City, N. J.
1889. Williams, Chas. H., Thomaston, Conn.
1889 Wheeler, Wm. H , P. O. Box 269, Litchfield, Conn.
1889. White, Wm. S., Dover, N. J.
1881. Wortmann, Herman, Centreville, Bayonne City, N. J.
1889. Wolf, A. F., Woman's Hospital, 49th St. and Fourth Ave., N. Y.
1890. Woolston, Grant J., Cortland, Cortland Co., N. Y.
1882. Wray, Geo. B., P. O. Box 721, Yonkers, N. Y.
1854. *Wright, William, Jr.*, 278 Greenwich St., N. Y.
1887. Wulling, F. J., 903 Third Ave., S. Minneapolis, Minn.
1881. Wurm, Carl, 1446 Second Ave., N. Y.
1875. *Wurthman, John F.*, 1166 First Ave., N. Y.
1892. Zahn, P. E., 2361 Eighth Ave., N. Y.
1874. Zellhoefer, George, 1044 Broadway, Brooklyn, N.Y.
1884. Zimmerman, A., 561 Fifth Ave , N. Y.
1877. *Zoeller, Edward V.*, Tarboro, Edgecombe Co., N.C.

Should there be any errors in the foregoing addresses they will be corrected as soon as reported to the Secretary.

Members are requested to notify the Secretary when they change their address.

The Alumni Journal

PUBLISHED BY THE ALUMNI ASSOCIATION
OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK.

Vol. I. New York, March, 1894. No. 2.

THE
Alumni Journal

PUBLISHED BY THE ALUMNI ASSOCIATION
OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK.

Vol. I. New York, March, 1894. No. 2.

NERVOUS EXHAUSTION.

DR. CYRUS EDSON,
President of the Board of Pharmacy of the City and County of New York.

IT is apparent to any man who will take the trouble to think, that no matter how great the learning, knowledge, or ability, or even the genius of an individual may be, these rest on the animal; that is to say, they rest upon the animal functions of his system, and unless this system be in order, unless the functions are in a healthy condition, his learning, his knowledge, his ability and his genius are as nothing. If a little splinter of bone not larger than the head of a pin press upon the brain, the wisest statesman, the greatest judge, the most learned scientist may be less than a little child. Men may be civilized, they may be educated, they may be governed by the highest ideals, yet under all, carrying all—just as the foundation carries the superstructure of the palace above it—lies the animal, the creature with physical wants and governed by physical laws.

This condition that I have chosen for the title of my paper, was recognized some years ago by Dr. George M. Beard, who gave it a name, "Neurasthenia." It is not a disease, but only a condition into which a person may fall; a condition which is nothing more than a group of symptoms which may be due to a dozen different pathological lesions. It is mainly caused by peripheral irritation of the nerves of some vital organs. We may find it as the result of uterine disease; we may find it as the result of spinal disease; we may find it as the result of intestinal disease; but by far the most common of all such peripheral irritation is peripheral irritation of the nerves of the stomach, and it is this phase of the subject that I propose to treat.

Nervous exhaustion is peculiarly an American disease. The free competition in this country, and the social environment that makes it possible, have between them driven the pace of life here up to a fearful speed. The American works harder than does any other man or woman on earth. His business is always with him; he has no rest, no ces-

sation, no relief from the strain. Were he to reduce his efforts his competitors would pass him at once. This, and the fact that the rewards are so rich, so sure, so quickly won, stimulate him to his greatest effort all the time. He is like a steam-engine running constantly under a forced draught. His daily routine is one of intense and ever-present excitement; he must have a stimulus even in his recreations; the most exciting books, dramas of the most gorgeous setting and sensational character of plot, athletic games that demand the utmost effort, horses whose speed is that of railroad trains, yachts which beat their prototypes throughout the world; these and a thousand other things, all intense, all startling, all sensational, are the occupation of his leisure hours. What is the outcome? To supply his rapidly exhausted system he is compelled to consume large quantities of rich food, and to stimulate himself with alcoholic beverages. He starts on his career with a robust digestion, not easily deranged.

The very indulgence of his appetite crowds upon the excretory apparatus an amount of work that sooner or later disorders it; matter that should be cast out is retained in the body, ferments and forms unwholesome tissue, fatty degeneration occurs. His intense and ever present excitement interferes with proper digestion, the food introduced into the stomach instead of being dissolved is so feebly attacked by the digestive process that it is not digested; instead of digesting we find it fermenting, or even putrefying. Now the injury wrought by this is threefold.

First. The constant presence in the stomach of undigested food acts as an irritant.

Second. The failure of digestion results in anæmia, simply because the blood can only come from food taken and digested Cut off the supply of food and we have anæmia of starvation.

Third. Food ferments or putrefies, as I have already said. Now, the products of putrefaction are poisonous, and the putrefaction in the stomach often results, as it does outside of the stomach, in the production of poisonous ptomaines, which themselves increase the irritation to the gastric membranes and are also absorbed to an extent by the system, giving rise to well marked symptoms of ptomaine poisoning.

It is proper here to say a few words concerning what we term peripheral nerve irritation. To understand the meaning of this you must know that the nerves terminate throughout the entire body in the muscles, on the surfaces of the skin and mucous membranes, in delicate, sensitive filaments and corpuscles that effect the operations of the will or that control those involuntary functions such as digestion, the heart's action, etc. Continued irritation of these peripheral nerves at any point in the system, as, for example, in the uterus or womb, resulting from disease of that organ or caused by disease of the rectum or of other parts of the body, will in time reflect itself in the stomach and lead to derangement and finally to actual disease of that organ. I have under treatment at the present time a young man suffering from a stricture of the urethra, which caused great irritation of the canal and consequent debility of the whole nervous system, resulting in chronic dyspepsia and catarrh of the stomach.

The American has little time to attend to bodily ailments. If some urgent symptom or acute attack of disease compels him to consult a physician, the latter is required to patch him up as soon as possible. Thus urged, the doctor treats his symptoms instead of the disease; symptoms which, in the main, are

only danger signals set by nature to warn the patient of the deeper seated, more insiduous malady which threatens his well-being.

The American physician is not different from the rest of his countrymen. His aim is to produce direct and immediate results. to cut away the shackles that incapacitate his patient for the race. His patients are accustomed to expect much of him and he does much. He is the most accomplished repairer in the world. He can tinker up a worn out system and keep it running long after it should have been laid away for a thorough rest and a re-creation.

Not only does the American carry on his work under the spurs of food and climate; he has in the modern magazine and newspaper a mental spur constantly applied, the effect of which it would be impossible to over-rate.

In a very excellent paper entitled "Neurasthenia and its treatment," Professor Von Ziemssen, director of the Medical Clinic at Munich, instances two types of the condition. I will describe them in the Professor's words:

"An old merchant at the head of a large establishment in New York suffered for years from sleeplessness, pressure in the head, etc. He stated his daily life to have been as follows: 'I work constantly from eight in the morning to ten at night. I have no time for eating; I usually do so standing, and frequently my food is cold and uninviting before I can take it. At ten at night I am so worn out that I have scarcely the strength left to close my books. During the night my daily work repeats itself in my brain, so that it is usually only towards morning that I obtain a few hours of restless sleep. In the morning I am therefore still worn out, and I am obliged to resort to brandy in order to put myself in shape for work.'

"A young merchant who for months has been unable to do any mental work and passes sleepless nights, thus sketches the manner of life he has led for years: 'We work from eight to six. We have one quarter of an hour's time for lunch. At night, when the day's work is done, we young fellows go to a café, and there we eat and drink and are merry up to two or three o'clock in the morning. I naturally obtain but little sleep, since I must be up and doing by seven in the morning. In case I am obliged to travel on business I do so at night in order to have the day for work. Can you wonder, gentlemen, that such an ill-treated brain finally refuses to work? Where is Kant's golden rule which gives to man out of the twenty-four hours, eight for work, eight for recreation, and eight for sleep? In case of employees who, when their work is done, need not trouble their brain more, this rule may still be observed.' "

The latter case illustrates purely an over-worked, exhausted condition in which probably no pathological changes have occurred.

I could repeat these with a dozen instances of my own, and to them I will add a third type that was not due to the causes that I have described, and that operated to produce Dr. Von Ziemssen's cases.

The third case is that of a young student who inherited a weak digestion. He had always from earliest remembrance suffered from dyspeptic disorders, and although he was not over-taxed by work, nor did he lead in any way a fast life, his stomach gradually did less and less work until he presented himself to me, suffering from profound anæmia and the usual train of nervous symptoms due to it.

This latter case is also an exponent of a great many similar cases. In appear-

ance the young man was robust, and here I would say, that many dyspeptics appear to be in perfect health. They are often well nourished, and the look of good health which they have leads their friends and relatives to consider their discomforts as imaginary. They are looked on as hypochondriacs. Their digestion is slow, and attended with pain and discomfort; four or five hours after eating, sometimes a longer period elapses before the stomach has succeeded in coping with the indigested food. Besides the three conditions I have previously described, *i. e.* catarrh of the stomach, the ptomaine poisoning and the peripheral nerve irritation due to the latter, and to the long continued presence of the food, is a fourth. The stomach walls become weakened, undergo atrophy and are much thinner than normal. This results in dilatation of the stomach; it becomes a thin walled cavity, much larger than normal. The fermentation or decomposition of the food produces gas, which distends both the stomach and bowels. Gastric disturbances are invariably accompanied by constant diarrhea or extreme constipation. One or the other of these conditions is almost always present; the one condition is present perhaps quite as often as the other. The distinctive point between gastric and intestinal indigestion is that in the latter the uncomfortable symptoms begin two or three hours after the ingestion of food, and diarrhea is a symptom. When the trouble is purely gastric the pain and discomfort commence immediately or soon after eating, and constipation is apt to be the rule. It is, however, common to see both conditions united in the same individual. The diarrhea and the constipation should be treated as symptoms by appropriate remedies, such as are usually in vogue for this purpose. The latter may be effectually remedied by means of a pill of extract of cascara, aloin, and strychnine. Mineral waters or other aperient saline solutions also do good as laxatives. An excellent plan is to give a teaspoonful of phosphate of soda in a tumblerful of hot water a half hour or so before each meal, or twice a day, before the two principal meals, breakfast and dinner, regulating this by its effects. As an anti-fermentative, salicin in ten grain doses before meals often effects good results In a very excellent paper entitled "Remarks on Fermentative Dyspepsia," Dr. Austin Flint, in the *New York Medical Journal* of October 14, 1893, advocated the subgallate of bismuth, which he had used since December, 1892, with excellent results. I have myself in two cases verified Dr. Flint's results, but a third case in which I used the agent resulted negatively.

There is no form of treatment as efficacious as the one which we find at our hand for the treatment of such conditions as I have described. It consists in irrigating the stomach through the æsophageal tube. This instrument, which is a modification of the old stomach pump, does its work through the principle of siphonage. It has been used for a long time, although its use has been restricted to comparatively few physicians. It is, I believe, a French device and was first used in Paris some years ago. It consists of a soft rubber tube about two feet in length, connected through a short glass cylinder with another similar tube, terminating in a funnel.

The red portion of this tube is introduced through the mouth into the stomach, which is filled through the funnel with water. This water may be medicated with bi-borate of sodium, bi-carbonate of sodium or any other agent which may seem best to the physician. Pure warm water will, I think, be found to answer the purpose quite as well as any medi-

cated solution; at least, I have been unable to attribute any more beneficial results to medicated solutions, of which I have tried a vast number, than to the pure water at a temperature something more than lukewarm. After a pint and a half of water (approximately) has been allowed to pass into the stomach, the funnel is lowered quickly, just as it is about to empty, to a point about two feet below the level of the stomach and the water in the latter is syphoned into a suitable receptacle. The operation is then repeated until the water flows clear. The procedure is not difficult although occasionally very sensitive, nervous subjects find considerable trouble in swallowing the tube for the first time.

No harm can possibly be done by the soft rubber tube. The best time for stomach irrigation is three or four hours after eating, although in some cases this will be found earlier than is possible when the stomach is diseased or when the patient has eaten a hearty meal of solid food. The patient should be directed to eat a light lunch in the middle of the day of liquid or semi-liquid food, and should afterwards present himself to the doctor at four or five o'clock for treatment.

The rationale of this treatment is as follows:

First, the stomach is emptied and thoroughly cleaned; the irritating material is taken from it; the action of the water repeatedly distending and contracting the walls of the stomach is that of passive exercise, tending to strengthen the muscular coats; the peptic glands are freed from irritating substances. After a time the stomach gains in strength. It must not be forgotten that digestion is to an enormous extent aided by muscular contraction in the stomach. When the muscles of the stomach are weak this muscular action is of course less.

In the dietetic treatment of these cases it is quite as important as active and more directly remedial methods. There are three objects to be attained. First. The prevention of over distending the stomach. Second. The prevention of fermatation. Third. The prevention of irratation. The foods selected should therefore be mostly solid, small in volume, and not too hot.

In very advanced cases, the food should be taken in small quantity at frequent intervals; say every two or three hours. Nitrogenous foods are better than carbohydrates, because the former contain the elements of nutrition in a smaller bulk, and are not so easily fermentable as the carbo-hydrates. Meats such as fresh beef, mutton, eggs, oysters, and tender chicken are indicated. Alcoholic beverages, spices, condements, made dishes, potatoes and the starches generally do harm. Beef peptonoids are excellent in that they supply nourishment in highly concentrated form.

Anything that exhausts the nervous system or in other words, that uses up nerve force faster than the digestive organs can digest the food which supplies that force must sooner or later result in derangement and in disease of the stomach, and this disease is a factor of the greatest importance in preventing the recovery of the patient and in increasing the effects of the nerve exhaustion.

It would seem that when nature attacks the health of an individual, she calls innumerable factors to her aid, all of which aid her in her destructive work.

The lesson I have striven to teach this evening is three-fold:

First. Do not neglect a disordered stomach, no matter how brilliant the intelect is unless backed by a sound stomach it is of little use. With a healthy vigorous digestion there is no work too difficult, no load too heavy.

Second. Nervous exhaustion is in a majority of cases due primarily to digestive disease.

Third. Washing the stomach by means of the stomach tube, affords the most efficient means of curing the condition I have described.

WOORARA, TWENTY YEARS OLD, STILL EFFICACIOUS.

By H. A. HAUBOLD, M. D.,

Assistant to the Chair of Physiology, Bellevue Hospital Medical College.

ON January 20th, 1894, Dr. John Gonley, sent me a specimen of woorara, together with a statement that the poison had been in his possession for twenty years, and a request that I determine whether it still retained its physiological properties and what its effects were.

A mixture was made of one grain of the powdered material with one fluid drachm of water. It makes a dirty brown solution holding small particles of the undissolved powder in suspension.

The mixture was not filtered.

A medium sized adult dog was employed as a subject.

The hypoglossal nerve was exposed as it curves through the submaxillary triangle on its way to be distributed to the muscles of the tongue, and stimulated with a mild electrical current.

This was accompanied by violent movements of the tongue showing that the excitability of the motor nerves was intact. The woorara was then injected into the left flank of the animal for which a one drachm hypodermic syringe was employed.

The needle was of a sufficiently large bore to allow of the passage of the undissolved particles.

At the end of five (5) minutes the animal's gait became staggery, the incoordination being at first most marked in the lower extremities. This was followed by progressively increasing paralysis (this also having its start in the lower extremities), which slowly extended to the other muscles until the paralysis was complete. At the same time respiration became slower and more superficial until at the end of fifteen (15) minutes the respiratory efforts ceased entirely.

The heart's action was at first not affected, but after a time became slower, and this organ continued to act rythmically after respiration had entirely ceased.

In order to test the action of this agent on the heart, a bellows was inserted into the trachea and artificial respiration thus maintained for forty-five (45) minutes, at the end of which time the heart's action was of as good a character (although a little slower) than at the beginning of the observation. About twenty (20) minutes after the administration of the drug the hypoglossal nerve was again stimulated with electric process but the excitability of the nerve was entirely abolished.

A singularly striking contrast to the violent muscular contractions produced by the stimulation applied before the introduction of the woorara.

The direct muscular excitability was tested on the muscles in the neck and found to be retained, even by an exceedingly mild galvanic current, effecting both an opening and a closing contraction.

It would seem fair to deduce from this observation that woorara does not lose its effectiveness after being kept for a considerable time (certainly years). That there is a form of woorara that does not affect the heart, nor interfere with the inhibitory action of the spinal accessory nerve fibres contained in the pneumogastric's cordial branches. That this strange poison paralyzes the motor nerves completely, has no direct effect upon the muscles themselves and that it produces death by paralysis of respiratory organs.

THE ALUMNI JOURNAL

Published under the auspices of the

Alumni Association of the College of Pharmacy

OF THE CITY OF NEW YORK,

209 EAST 23d STREET.

Vol. I. March 1, 1894 No. 2.

THE ALUMNI JOURNAL will be published Monthly, excepting June, July and August.

Entered at New York Post Office as second-class matter.

SUBSCRIPTION:

Per Annum, . . . One Dollar

Single Copies, . . . 15 Cents.

All copy for publication, or changes of advertisements should reach us on or before the 20th of the month previous to the issue in which they are to appear.

All matters relating to publication should be written on one side of the paper only, and sent to the editor,
HENRY KRAEMER, 209 East 23d Street.

All communications relating to finances and subscriptions should be addressed to
A. HENNING, Treas., 209 East 23d Street.

All communications relating to advertising should be addressed to
F. B. CASWELL, Manager Advertising Department,
209 East 23d Street.

APPRECIATION.

WE are reminded, with this issue of THE ALUMNI JOURNAL, of one of the early interviews we had with the late Prof. John M. Maisch, who was also a life member of the N. Y. C. P. So many will recall that upon the walls in his study were arranged a large number of framed certificates showing his honorary connection with so many of the most distinguished pharmaceutical societies. We could not refrain from making some mention to him of the number and character of these diplomas, to which he replied, "it is gratifying to know that one's labors are appreciated." And so with the issue of the first number of THE ALUMNI JOURNAL, the managers are highly gratified with its reception. The expressions of appreciation and well-wishes have come from very many sources. We are all encouraged to continue in our work, as we have the support and assurances of very many able contributors. With this issue we shall begin and hereafter devote several pages to a resumé of the most recent work in the domain of pharmacy and the sciences relating to pharmacy. We have also established a department relating to the newer literature. This shall be devoted to mention and review (in some cases) of the latest works published. And as time goes on we shall add additional departments as may seem essential to the needs of our readers. We thank our friends for their kind words and support and assure them that we are stimulated to make THE ALUMNI JOURNAL a valuable publication to all those interested in pharmaceutical advancement.

CHLOROFORM.

ONE of the most interesting fields of labor, for a large number of investigators, during the past few years, has been the examination of chloroform, for the purpose of discriminating between good chloroform and that which is less trustworthy in use. It seems to have been ascertained that the chief products in the decomposition of chloroform are carbonyl chloride, hydrochloric acid and chlorine. Mr. David Brown contends that chloroform containing alcohol decomposes under given conditions, producing these products even while alcohol is present in the decomposing chloroform. Carl Schacht, of Berlin, and E. Biltz, of Erfurt, confirm Mr. Brown's observations, but state that in the presence of alcohol these bodies interact with the latter forming harmless products. Consequently so long as any alcohol remains uncon-

sumed, only hydrochloric acid can be detected in place of free chlorine. Moreover, they attribute the well-known preservative action of alcohol in chloroform to this fact. Mr. Brown (*Pharm. Jour. Trans.*, 1893, 321) takes exception to these statements and declares them to be contrary to his experience. He concludes that the preservative action of alcohol must be ascribed to some other cause and that it is folly to arrest decomposition altogether in chloroform by the excessive addition of alcohol. Without doubting in the least degree, Mr. Brown's statements that pure chloroform to which 0.077 per cent. of alcohol had been added, decomposes when exposed in colorless glass to direct sunlight—Dr. Squibb(*Ephem.*, Jan., 1894) calls attention to his experience that pure chloroform to which 0.625 per cent. of alcohol had been added, in ground-stoppered bottles of amber glass, has kept for at least ten years without any trace of decomposition.

One of the most recent tests in detecting decomposing chloroform is that proposed by Prof. W. Ramsey (see *U. S. P.*. 1890) in the use of baryta water. Mr, D. B. Dott has not found this, however, to be satisfactory. Mr. Brown relies wholly upon the zinc-iodide and starch test in detecting the first signs of decomposition in chloroform. He also says that by increasing the quantity used for the foreign odor test and diminishing the quantity of sulphuric acid to 10 per cent. in the acid test, that a very large quantity of impure chloroform is detected which by the usul methods of testing would pass into consumption. The two latest novelties in the domain of chloroform are those of Pictet and Anschutz. The former freezes out the impurities of chloroform. The latter produces a homo-salicylid-chloroform. It seems questionable as to whether these chloroforms are any better than a good quality of the commercial article.

THE MOST RECENT WORK.

Emetine in Ipecacuanha.—C. C. Keller examined a quantity of ipecacuanha root from Rio Janeiro and found the best to assay between 2.7 and 2.9 per cent. of emetine. Only the poorer qualities assayed less than 2 per cent. He maintains that pharmaceutical preparations should be made from ipecac. assaying, at the minimum, 2.5 per cent. of alkaloid.—*Chem. Zeit.*, 1894, 9.

Antiseptic Value of Ozone.—J. deChristmas (*Annal. de l' Inst. Pasteur*, 1893, VII., 689) finds that ozone added to air in the proportion of 0.1 per cent. by volume, possesses antiseptic properties as there is a cessation in the development of the spores of pathogenic microbes on the surface of objects exposed to this gaseous mixture. But so soon as the proportion of ozone falls below 0.1 per cent. all antiseptic action ceases. It thus follows that ozone is impracticable for use in the disinfection of houses and hospitals. Because, on the one hand, the practical difficulties in the production of ozone in sufficient quantity has not been overcome. And, on the other hand, the air becomes unfit for respiration long before it is saturated with ozone to the degree required. Hence all appliances and "ozonisers" recommended for disinfection depend upon an erroneous assumption.

Iridin in Iris florentina.—G. de Laire and F. Tiemann (*Ber. d. Chem. Ges.*, 1893, 2010) obtained on extraction of the roots of Iris florentina, a glucoside *iridin*, $C_{24}H_{26}O_{13}$, which crystallizes in white needles, melts at 208° and turns yellow in the air. On heating with dilute sulphuric acid it splits into glucose and *irigenin*, $C_{18}H_{16}O_8$. This latter, with strong alkalies, yields *iridic acid* and a phenol, *iretol*, $C_6H_2(OH)_3.OMe$ [=2:4:6:1].

Permanganate as an Antidote to KCy. — J. Kossa, (*Vratch, through Nouv. rém.*, IX., 567) considering that potassium permanganate ought, theoretically to act as a chemical antidote to potassium cyanide, by checking the paralysis of the respiratory centres, has performed some experiments, the results of which appear to fully justify his hypothesis. Rabbits were shown to be fatally affected in a few minutes by 0.01 Gm. of the poison, but if, at the time of administration, 0.5 Gm. of permanganate dissolved in 50 C.c. of water was introduced into the stomach, doses up to 0.1 Gm. failed to cause death. Successful experiments were also performed with acqueous solutions of hydrocyanic acid containing 0.1 per cent. It is suggested, therefore, that in cases of cyanide poisoning, ½ to ⅓ litre of a 3 to 5 per cent. solution of permanganate be administered immediately.—*Pharm. Jour. Trans.*, 1894, Feb., 622.

Inertness of Quicklime.—V. H. Veley (*Jour. Chem. Soc.*, 1894, 1) comes to the conclusion that dry chlorine does not combine with dry lime, at ordinary temperature, to form the so-called bleaching powder. No appreciable chemical change is observable between these two substances below a temperature of 300°, when a partial replacement of oxygen by chlorine takes place; under these conditions the reaction is analagous to that of baryta and chlorine, not specially dried, and at ordinary temperatures.

Cacao Alkaloids.—W. E. Kunze (*Zeitschr. f. anal. Chem.*, 1894, 1) has examined all of the known methods for estimating and separating the alkaloids of cacao. As a result he gives a new and rational method, which, in his hands, has given a very satisfactory result. He estimates the total alkaloids by precipitating them, from a sulphate solution, by means of phosphomolybdic acid; the precipitate is then decomposed with baryta-water; the liquid is treated with carbonic acid gas, evaporated on a water-bath and the dried residue extracted with boiling chloroform. The alkaloids are weighed and finally separated by forming a silver salt with the theobromine. This latter may be determined either grarimetrically or volumetrically.

Cinchona is merely mentioned here to call attention to the fact that the term yellow cinchona of previous editions of the U. S. Pharmacopœia has been dropped by the new one of 1890, substituting the term cinchona simply as meaning the C. Calisaya, officinalis and hybrids of these.

The marked improvement, however, in this new edition is shown in the detailed assay process now given for determination of the serviceable alkaloids, by which the quality of bark brought into this market should be improved, for all have it in their power now to demand a rich bark if they will simply take a little trouble to determine exactly what they are buying.—*Squibb's Ephem.*, Jan., 1894.

NEW LITERATURE.

Bardeleben, P. — Kurzes Repetitorium der officinellen Pflanzen und Pflanzen-familien zur Vorbereitung zum Gehülfenexamen und für Studirende der Pharmacie und Medicin.

Beauregard H.—Le Microscope.

Berg, O. C. und C. F. Schmidt.—Atlas der officinellen Pflanzen.

Berkenheim, A. — Ueber Menthol. Inaug. Dissertation. Göttingen.

Bloxam C. L.—Laboratory Teaching; or, Progressive Exercises in Practical Chemistry.

Bocquillon Limousin.—Formulaire des médicaments nouveaux et des médications nouvelles pour 1894.

Bocquillon-Limousin, H. — Formulaire des alcaloides et des glucosides.

Collin, Eug.—Guide Pratique pour la Détermination des Poudres Officinales.

Culbreth, D. R.—Pharmaceutical Botany.

Dupuy, E.—Cours de pharmacie. Tome 1, avec 64 fig.

Farmacopea ufficiale del regno *d' Italia.*

Fischer. B.—Die neueren Arzneimittel.

Flückiger F. A.—Grundriss der Pharmacognosie.

Graham Otto's.—Ausführliches Lehrbuch der Chemie. 3te gänzlich umgearbeitete Auflage.

Haenle, O. — Einführung in die organische Chemie.

Halliburton, W. D.—The Essentials of Chemical Physiology ; for the use of students.

Hartwich.—Historisches über die Cultur der Arzneipflanzen.

Jahresbericht der Pharmacie, herausgegeben vom Deutschen Apothekerverein unter Red, von Heinrich Beckurts. 27 Jahrgang, 1892. 2. Hälfte.

This work, which corresponds to the Report on the Progress of Pharmacy of the American Pharmaceutical Association and the Yearbook of the Pharmaceutical Society of Great Britain is indeed welcome as an additional source of reference to the literature of pharmaceutical progress for 1892. It contains over 100 pages more than the Jahresbericht for 1891. The arrangement is much more practical in the parts treating of Chemistry and Pharmacy than in the previous editions. It is to be regretted that a work of such a high character has not an index to facilitate its use.

Mayr, H.—Das Harz der Nadelhölzer, seine Enstehung, Vertheilung, Bedeutung, und Gewinnung.

Medicus, W.—Illustrirtes Pflanzenbuch.

Miero-Organisma and Fermentation. — A. Jörggensen. Trans. from 3rd German Ed. by A. K. Miller and E. A. Lennholm.

National Dispensatory. — Containing the natural history, chemistry, pharmacy, actions and uses of medicines, including those recognized in the pharmacopœias of the United States, Great Britain and Germany, with numerous references to the French Codex. By Alfred Stillé, M. D., LL. D., John M. Maisch. Ph. M., Phar. D., Charles Caspari, Jr., Ph. G., and Henry C. C. Maisch, Ph. G., Ph. D. New (fifth) edition thoroughly revised, according to the new United States Pharmacopœia (7th decennial revision, 1894). In one imperial octavo volume of 1910 pages, with 320 elaborate engravings. With ready reference thumb-letter index.

Peckolt, T. e. G.—Historia das plantas medicinas e uteis do Brazil.

Pharmacopœa helvetica (Switzerland). Ed. III. Deutsche Ausgabe.

Piersol, G. A.—Text book of normal Histology.

Rawitz, Bh.—Grundriss der Histologie.

Sohn, Chas. E. — Dictionary of the Active Principles of Plants. Alkaloids, Bitter Principles, Glucosides : their Sources, Nature and Chemical Characteristics, with Tabular Summary, Classification of Reactions and Full Botanical and General Indexes. The first portion of the book gives the plants concerned in alphabetical order, to which each belongs, the names of the chemists by whom it has been investigated with references to their original memoir. Then follow the names and the composition of their active principles, their solubilities and reactions. The second part of the work is the practical summary. For the full details of tests for any one substance, the reader is referred to Part I., and for other substances giving similar reactions to Part III. In parallel columns is to be found the names of the substance, with its formula, appearance or crystalline form, melting point, solubilities, reactions and behavior with special re-agents, etc. Then follow the botanical index and the general index, with certain addenda.

Thoms, Hermann. — Die Arzneimittel der organischen Chemie.

Trillat, A—Les produits chimiques employés en médecine, chimie analytique et industrielle.

Tschirch, A., und Oesterle, O.—Anatomischer Atlas der Pharmakognosie und Nahrungsmittelkunde. Lieferung 2. Mit 5 Tafeln : Cocoa, Senna, Glycyrrhiza, Cinchona, Ipecacuanha.

v. Villers, A., und F. v. Thümen.—Die Pflanzen des homöopathischen Arzneischatzes. Mit 42 kolor Kpfrtaf.

Winkelmann, A. — Handbuch der Physik. Mit 108 Abbildungen.

Wright, C. R. A.—Animal and Vegetable fixed Oils, Fats, Butters and Waxes.

Yearbook of Pharmacy. — Comprising abstracts of papers relating to Pharmacy, Materia Medica and Chemistry, contributed to British and Foreign journals from July 1, 1892, to June 30, 1893.

This work appears this year much earlier than usual, much to the gratification of all those who consult such publications. As we have not seen the present edition as yet we are not able to review it. We understand that it contains ninety pages less than the Yearbook for 1892, and that like its predecessors represents the pharmaceutical progress during the period to which it relates.

RELATIONSHIP BETWEEN THE CHEMICAL CONSTITUTION AND THE PHYSIOLOGICAL ACTION OF THE NEWER SYNTHETIC REMEDIES.

Delivered at the meeting of the Alumni Association, January 10th, 1894.

By VIRGIL COBLENTZ, A.M., Ph.G., Ph.D.

Professor of Theory and Practice of Pharmacy, Director of the Pharmaceutical Laboratory.

(*Continued from page 10.*)

THE question of relationship between physiological action and chemical constitution has often been considered, but never has it received the careful and systematic study, that has of late years been bestowed upon it. This has been brought about by the vast number of organic syntheses, for among these products, many valuable medicinal remedies have been discovered. From the time of its discovery in 1820, quinine has held the field as an antipyretic "par excellence." The labors of Koenigs, Skraup, Hesse and others, have lent much to the explanation of its constitution. Its oxydation by means of CrO_3 have shown it to be a derivative of chinolin, inasmuch as it yielded oxy–methyl–chinolin–carboxylic–acid $C_9H_5N{<}^{OCH_3}_{COOH}$. On heating with alkalies they obtained chinolin and derivatives of same. By action of HNO_3, the chinolin molecule was more thoroughly split up, yielding pyridin-carboxylic acids. With this relationship between quinine and chinolin established, the medicinal properties of the latter mother substance were studied. Donat first pointed out its antiseptic properties, later such salts as the tartrate and salicylate found application as febrifuges. In 1882 under the name of "Kairin," O. Fischer introduced the first synthetic substitute for quinine, consisting of the following chinolin derivatives; the hydrochloride of oxy - chinolin - methyl - tetra - hydrur (Kairin-M) and the hydrochloride of oxy-chinolin-ethyl-tertahydrur (Kairin-A).

This opened a new era in synthetic antipyretics. Two years later Knorr followed with his discovery of antipyrin, obtained by methylating the condensations product of phenyl-hydrazin with aceto-acetic-ether. This was quickly followed by Skraups Thallin a tetra-hydro-p-chin-anisol. A close examination of these antipyretics will show that they all contain a N united under similar conditions, this plays a most important part, in consequence of its affinity for other elements, and lends a basic character to the bodies in question. Such syntheses are of equal value to both the chemist and physician, they demonstrate to the chemist that the systematic analysis yields valuable conclusions, which furnish the key to an unlimited variety of possibilities, while it assures the physician of a still further improvement of the therapeutic value of already valuable remedies. Since these discoveries, it has been the earnest labor of pharmacologists to trace, if possible, a definite relationship that might exist between certain chemical groups or groupings of different bodies, and their physiological action; their efforts have been rewarded by some valuable discoveries, although as yet, comparative little progress has been made, it does not shut out future possibilities. The time will come when our knowledge concerning this subject, will be so advanced that the chemist will be able to construct compounds to meet the most exacting requirements of modern medicine.

The introduction of chlorine in the molecule of a hydrocarbon imparts a toxic effect *increasing* with the number of chlorine atoms, thus we have—

Mon–chlor–methane—CH_3Cl
Methyl chloride.

Di-chlor-methane—CH_2Cl_2
Methylene chloride.

Tri-chlor-methane—$CH\,Cl_3$
Chloroform.

Tetra chlor-methane—$C\,Cl_4$
Carbon-tetrachloride.

Again the introduction or substitution of methyl groups, *under certain conditions* causes a marked neutralization of the toxic effect of a body in question, thus the hypnotic action of sulfonal is greatly lessened by the substitution of methyl for ethyl groups. Xanthin, caffeine and theobromine are homologues, the tetanic effects exhibited by xanthin ($C_5H_4N_4O_2$) are found only in a greatly reduced degree in its *methyl* derivatives caffeine ($C_5H(CH_3)_3N_4O_2$) and theobromine ($C_5H_2(CH_3)_2N_4O_2$). Similar relationship exists between strychnin and brucin. The tertiary united carbon as in

Pental $\begin{matrix}CH_3\\CH_3\end{matrix}\!>\!C\!-\!C\!<\!\begin{matrix}CH_3\\H\end{matrix}$, or

Amylene-hydrate $\begin{matrix}CH_3\\CH_3\end{matrix}\!>\!C\!<\!\begin{matrix}C_2H_5\\OH\end{matrix}$ or

Sulfonal $\begin{matrix}CH_3\\CH_3\end{matrix}\!>\!C\!<\!\begin{matrix}SO_2\!-\!C_2H_5\\SO_2\!-\!C_2H_5\end{matrix}$ is *hypnotic.*

As we will later see, that slight alterations in the structure of these bodies, such as the introduction of new groups, preparation of homologues, produce marked differences in physiological action. A careful study of this feature applied to a large number of synthetic compounds has demonstrated that certain normals, in the configuration of the constitution of certain bodies, occur with regularity in antipyretics, hypnotics and other remedies.

In this study progress is rendered slow and difficult, and if all conditions are not carefully considered, erroneous results may be obtained; thus substances which persistently resist the action of reagents in the laboratory, readily break up under the influence of the vital processes in the organism, while the reverse is true of readily decomposable substances, these undergoing no change in the system. Again many bodies react contrary to expectations, because they undergo unexpected changes in the organism, becoming altered before performing the action desired. Solubility plays also a very important roll. We also find singular contradictions, as instances of this, antifebrin and antipyrin, remedies having no chemical relationship to one another, produce similar effects on the animal organism.

Again on the other hand, bodies which are chemically closely related, are found to possess widely different physiological action, for instance red phosphorus is non-toxic, while the yellow is the reverse. Among the oxy-benzoic acids, the *meta* and *para* acids have no medicinal action, while *ortho* compound forms the valuable salicylic acid. Thus while the monohydroxy-benzene (phenol C_6H_5OH) and amido-benzene (anilin $C_6H_5NH_2$) are poisonous, the para-amido-phenol

$\left(C_6H_4\!<\!\begin{matrix}OH\\NH_2\end{matrix}\right)$ which contains both groups, is relatively non-toxic. Ethylated and acetylated p-amido-phenol, (phenacetin) is antipyretic. Many other inexplainable examples might be given, this however, should not deter our attention from a most important subject, even though we are not at present, able to offer satisfactory explanations for these apparent contradictions to the theory.

On the other hand, we have striking examples which serve to prove that there must be a definite relationship between chemical constitution and medicinal

action. Attention has often been called to the similarity of action of the inorganic compounds of K.-Hg.-Fe.-Zn., also those of phosphorus, arsenic and antimony, iron and manganese, zinc and cadmium. Again comparing the alkali metals* it has been shown, that the potassium salts owe their more prompt action as compared to those of soda, to their higher molecular weight and greater electrolytic conductivity; from this the rubidium salts may naturally be expected to take a higher position for similar reasons. The electrolytic conductivity of the iodides of these metals show a similar ascending progression like unto that of the molecular weights thus:

Element	Na	K	Rb.
Molecular Wt.	23	39	85.4
Elect.cond.of iodides	105.7	128.5	130.6

Dilution 32.

These data are said by Erdmann not only to represent the actual and relative rapidity with which the different iodides are distributed throughout the organism, under the influence of osmotic pressure and electrical currents, but their data also afford a direct measure of their degree of medicinal activity, for physiological activity is conditioned by the ability to enter into chemical re-actions, and according to Ostwald's law, chemical activity is proportional to the electrolytic conductivity." This explains why the practitioner prefers the potassium iodide to the soda salt, although the latter contains 85% iodine, compared to 76% of the former. Also upon these grounds rubidium iodide, containing about 60% iodine is receiving attention, it being claimed to be far more active than either of the other iodides.

The apothecary classifies the organic remedies according to their chemical constitution as derivatives of methane, benzene, etc., while the physician classifies them according to their therapeutic action on the organism as hypnotics, antipyretics, etc. The chemist is endeavoring to find, if possible, a middle way by studying the relationship between chemical constitution and medicinal action, which will enable him to build up and construct bodies of known definite physiological action. Anything in the way of a general chemical classification, leads to difficulties, as will be seen in that of Dujardin-Beaumetz; he classed the aromatic hydroxyl derivatives as (phenol, napthol, etc.), as having antiseptic properties. Amido derivatives as (acetanilid, kairin, thallin, etc.), antipyretics, and such compounds in which a hydrogen in the amido group is replaced by a fatty radical, (particularly methyl), as hypnotics, as antipyrin, exalgin (methyl-acetanilid), phenacetin, (acetphenetidin), etc. As was pointed out by Ville, such a classification is incorrect from a chemical standpoint, for the bodies classed under the amido group do not belong together, for acetanilid contains nitrogen in the side chain, while in thallin and kairin it is in the nucleus, as a chinoline derivative. Likewise exalgin and phenacetin are derivatives of anilin while antipyrin is a derivative of pyrazol. Again Hodgkin classified the methane derivatives and aldehydes as hypnotics and anæsthetics while those of the benzene series were classed as antipyretics and antiseptics; such a classification of chemical constitution and physiological action is too general and very misleading, for as we have already said, the physiological action of such bodies depend on the construction of their molecules and not great groups. I will now endeavor to present a general outline of what has been done in this direction. In order to render the subject as lucid and concise

*Erdmann Phar. Centh. '93-598.

as possible, the matter has been considerable abridged.

THE AMIDO GROUP.

This group is found in a large number of remedies, either intact or serving to form the basis of new bodies. The following division into antipyretics and hypnotics is that of Thoms*.

ANTIPYRETICS.

ANILINE—AMIDO—BENZENE GROUP

$C_6H_5NH_2$

Those compounds† arising from the introduction of acid radicals in amido-phenol $\left(C_6H_4<^{OH}_{NH_2}\right)$ are more energetic than the alkylated amido-phenol derivatives, since the acid group is more easily split up in the organism than the alcohol group. Through the introduction of an acid radical in the amido group of p-amidophenol, its toxic effects are lessened, still further, through the simultaneous entrance of an acid radical in both the amido and hydroxyl groups. If instead of the acid rest in the hydroxyl group, an alcohol radical be substituted (phenacetin) a compound results which is milder than either of the above. Von Mering explains the intensity of the action of p-amido-phenol by the simultaneous presence of the OH and NH_2 groups. The activity of p-amido-phenol is lessened through the introduction of esters, still more so by alkyl or carbamic esters (urethanes).

The most important substitution product among the different anilides, is acetanalid $C_6H_5NH—CO—CH_3$ the antifebrile effects of which are well known. The introduction of the benzoyl group in analin gave benzanilid

$C_6H_5NH—CO—C_6H_5$

a body having a similar action, but far less potent than acetanilid hence adapted for administration to children, the same can be said of formanilid—$C_6H_5NH—COH$—and salicylanilid $C_6H_5NH—C_6H_4—(OH)\ CO$. In order to avoid the unpleasant after effect (collapse) produced by acetanilid, has led to the introduction of various groups calculated to nullify this action.

From this table it will be seen that the introduction of an alkyl or oxy-alkyl group in the para position of the benzine nucleus, the *nature* and the energetic action of acetanilid is altered, for example, phenacetin, in this an oxy-ethyl group is introduced in the p-position to the acetly group, its homologue metha-

			Solubility.	Dose:
$C_6H_5NH—CO—CH_3$		Acetanilid	1—194	0.25—0.5
$C_6H_4<^{OC_2H_5}_{NH—CO—CH_3}$	(1) (4)	Phenacetin p-acetphenetidin	1—1400	0.5 —1.0
$C_6H_4<^{OCH_3}_{NH—CO—CH_3}$	(1) (4)	Methacetin p-oxy-methyl-acetanilid	1—530	0.1 —0.2
$C_6H_5N<^{CH_3}_{COCH_3}$		Exalgin methyl-acetanilid	insol.	0.4 —0.8
$C_6H_4<^{CH_3}_{NH—CO—CH_3}$	(1) (3)	p-acet toluid	1—1800	0.5 —1.0
$C_6H_4<^{OC_2H_5}_{NH—CO—CH_2NH_2}$		Phenocoll p-amido-acet-phenitidin	1—20 Hcl	0.5 —1.0

*Phar. Centh. '91—712.

†J. von Mering-Therapeut. Monatsh '93-7-577.

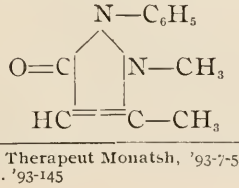
cetin contains likewise an oxy-methyl group in the para position, these two bodies, contrary to anticipations have a weaker effect than acetanilid, which is however accounted for by their comparative insolubility and difficulty in splitting up in the organism. Exalgin, a methylated acetanilid because of its insolubility suffers a loss in antipyretic effect, acettoluid is likewise feebly antipyretic.

On the contrary, increased solubility does not always indicate increased activity, for example, Schering in order to increase the solubility of phenacetin, introduced an amido-group NH_2 in the side chain which enabled it to readily form salts, thus the hydrochloride of phenocoll is soluble 1 in 20 and yet it is given in same doses as phenacetin. Neurodin* an aceto-p-oxyphenylurethane, in doses of 1 gramme is an active antineuralgic. Through the introduction of an ethyl group as in thermodin we find it to be antipyretic in doses of 0.5 gm.

Phenyl-hydrazin $C_6H_5NH—NH_2$ you will remember, may be considered a derivative of anilin, in which a H is replaced by an amido group; on introducing an acetyl group (CH_3CO) in this, hydracetin

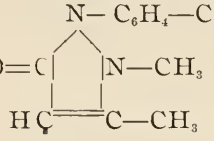
$$\begin{pmatrix}\text{acetyl-phenyl-hydrazin} \\ C_6H_5NH—NH—CH_3CO\end{pmatrix}$$

was formed, this owing to its powerful toxic properties (dose 0 05) was not favorably received, Knorr took up this idea and by forming a condensation product between phenyl-hydrazin and ethyl-aceto-aceticester ($CH_3—CO,—CH_2—CO-OC_2H_5$) and this on methylating yielded phenyl-di-methyl-pyrazolon or antipyrin



*Von Mering Therapeut Monatsh, '93-7-577.
†Phar. Centh. '93-145

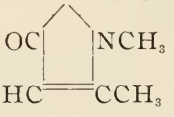
Since this discovery, numerous experiments have been made to produce bodies of equal therapeutic value, by introducing certain groups into the phenyl radical, thus Riedel prepared a methyl derivative by introducing a methyl group in the para position of the phenyl group, which he named tolypyrin,



p-tolyl-di-methyl-pyrazolon.

Comparative experiments have shown that this new body is equal to antipyrin, not only in degree, but also in the art of its therapeutic action. In most cases four gms. of tolypyrin performed the same work of 6 gms. antipyrin.

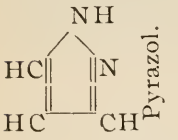
As Thoms† has suggested, the introduction of an alkyl or oxy-alkyl group in the benzene nucleus reduced the energetic action of acetanilid, with this view he prepared a like derivative of antipyrin, to note the effect produced by these groups in the benzene nucleus to the pyrazolon ring.



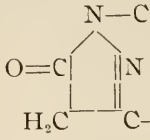
Para - antipyrin (p - ethoxy - phenyl - dimethyl-pyrazolon) was prepared, and from clinical experiments, it was found that instead of diminishing the effect of antipyrin, the ethoxy group *increased* it to such an extent as to render it useless in medicine. That the introduction of a methyl group in antipyrin has given a more powerful body tolypyrin, finds confirmation in the fact that cresol

$C_6H_4<\begin{matrix}OH \\ CH_3\end{matrix}$ which differs from phenol C_6H_5OH only in a methyl group is characterized by a stronger antiseptic action. That we find the secondary effects of antipyrin suppressed in tolypyrin may be

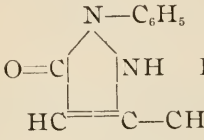
accounted for by the comparative insolubility of the latter, it being much slower absorbed by the system. Knorr cites among examples of tautomerism in the pyrazol series, three forms of phenyl-methyl-pyrazolon thus:



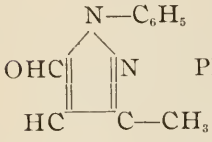
Pyrazol.



Methylene Formula.



Imid Formula.



Phenol Form.

from these he prepared six different methyl derivatives. The alkyl derivatives of the phenol forms show no trace of antipyretic action, while those of the methylene and imid formula including antipyrin, all possessed well defined antifebrile properties.

HYPNOTICS.

In this division the amido group does not play any important part. Many of these are derivatives of carbamic acid, $C{=}O(NH_2)(OH)$ the ethers being called urethanes; the ethyl ether $C{=}O(NH_2)(O{-}C_2H_5)$ forms the excellent hypnotic urethane.

Some very interesting work has been performed by Baumann* who compared the physiological action of sulfonal to bodies of similar constitution, the Disulfones. "Among the disulfones only those which contain *ethyl* groups are *active*, and the intensity of the effect of these depends on the *number* of ethyl groups contained in the molecule." A disulfon containing one ethyl group $\left(\begin{matrix}C_2H_5\\H\end{matrix}\right)>C<\begin{matrix}SO_2{-}CH_3\\SO_2{-}CH_3\end{matrix}$ produces an effect only half as intense as that of one containing two ethyl groups (sulfonal)† $\begin{matrix}CH_3\\CH_3\end{matrix}>C<\begin{matrix}SO_2{-}C_2H_5\\SO_2{-}C_2H_5\end{matrix}$ Again sulfonal is far less powerful than trional, a disulfon containing three ethyl groups $\begin{matrix}C_2H_5\\CH_3\end{matrix}>C<\begin{matrix}SO_2{-}C_2H_5\\SO_2{-}C_2H_5\end{matrix}$ The most powerful of them all is tetronal, a disulfon containing four *ethyl* groups, thus $\begin{matrix}C_2H_5\\C_2H_5\end{matrix}>C<\begin{matrix}SO_2{-}C_2H_5\\SO_2{-}C_2H_5\end{matrix}$ A disulfone containing four *methyl* groups is without medicinal effect. In certain configurations the *ethyl* group plays a certain pharmacological part, which under like circumstances is not shown by the *methyl* group. In the above instance the comparison affords us valuable conclusions. To illustrate the vast difference in their effect on the system, Baumann administered doses of 1.5 gms. pro kilo of the four fold methylated disulfon without any visible effect, while a dose as small as 0.3 gms. pro kilo of the tetronal (four-fold ethylated disulfon) produced powerful toxic effects.

SOME DIFFERENT AMIDO DERIVATIVES.

There are a number of bodies in which the amido group does not play the principal part in the therapeutic effect, but assists materially in the production of more soluble compounds and lessens the toxic effect of the body. Here we have the uric-acid solvent piperazin

*Z. Phys. Chem. XIV-52.

†Written either $(CH_3)_2{=}C{=}(SO_2C_2H_5)_2$ or $(C_2H_5)_2{=}C{=}(SO_2CH_3)_2$ the same may be said of the other disulfones.

$$NH<\begin{matrix}CH_2—CH_2\\CH_2—CH_2\end{matrix}>NH.$$

Saccharin (benzoic sulfinid). An antiseptic we have hydroxylamin NH_2–OH the hydrochlorate of which forms a substitute for pyrogallic acid and chrysarobin. Mercurial antiseptics containing the amido group are mercurous formanide $\begin{matrix}HCONH\\HCONH\end{matrix}>Hg$ Succinimid mercury

$$\left(C_2H_4<\begin{matrix}CO\\CO\end{matrix}>N—Hg—N<\begin{matrix}CO\\CO\end{matrix}>C_2H_4\right)$$

As an amido-salol we have salophen (p-aceto - amido - phenyl - salicylic - ester). From what we have thus far seen of the amido group it is evident that a satisfactory explanation of its therapeutic significance, is scarcely possible, considering the present state of our knowledge.

INFLUENCE OF THE CARBOXYL AND SULPHONIC ACID GROUPS ON THE TOXIC PROPERTIES OF ORGANIC COMPOUNDS.

Erdmann's* investigations have shown that the antipyretic derivatives of para-amido-phenol, as phenacetin and phenocoll are rendered totally inert, when rendered soluble by the preparation of their carboxylic and sulfonic acid derivatives. Further the introduction of these groups into other antipyretics have demonstrated the same. Bodies of well defined toxic properties suffer a marked diminution of action. This observation is of the greatest value from a hygienic standpoint in the coal-tar industry, for the introduction of these groups in the aniline colors, thereby rendering them inert, removes the objection to their employment as color for candies, foods, products, etc. These bodies on entering the system are split up into their various constituents or compounds; now the chief cause† of poisoning is to be found in these reduction phenomena; so in this case a lessening of toxic effect may be explained in that the carboxyl (COOH) represents a group saturated with oxygen, which is no further reduced in the organism. Napthalin, pyridin and chinolin are toxic, their corresponding carboxyl derivatives are far less so. The introduction of the COOH group into acetanilid (malon-anilic acid C_6H_5NH—CO—CH_2—COOH) yields an inert compound. While the phenols show strong toxic properties, this is considerably lowered or sometimes entirely lost in their carboxylic and sulfonic acid derivatives. Guaiacol $\left(C_6H_4<\begin{matrix}OCH_3\\OH\end{matrix}\right)$ is of the greatest value in treatment of tuberculosis, but its carboxylic acid derivative $\left(C_6H_3<\begin{matrix}OCH_3\\OH\\COOH\end{matrix}\right)$ possesses only feeble antiseptic properties.

It has been found that those bodies which exert a powerful action upon the nervous centers lose this action entirely in their sulfonic acid derivatives. This has been borne out in the alkaline salts of caffeine sulfonic acid (nasrol or sodium sulfocaffeate) having lost their effect on the vasomatoric center while the diuretic effect is retained.

The primary alcohols are less narcotic than the secondary, and these less so than the tertiary‡. In the tertiary alcohols, the medicinal action depends upon the nature of the alcohol radical, which is united to the tertiary carbon atom; is the radical CH_3 present as in tri-methyl-carbinol (tertiary-butyl-alcohol $(CH_3)_3\equiv C$–OH) the action is relatively feeble; with introduction of ethyl groups (C_2H_5) it increases in ratio to the number of such

*Phar. Centh. '92-357.
†Merck's Chem. Ztg '92 212.
‡Schneegans&Mering—Therapeut Monatshcft '92—327.

groups united to the tertiary carbon atom. The same may be said of the pinacones, thus methyl-pinacone

$$\left(\begin{matrix}CH_3\\CH_3\end{matrix}\!>\!C(OH)\!-\!C(OH)\!<\!\begin{matrix}CH_3\\CH_3\end{matrix}\right)$$

is no more narcotic than ethyl alcohol, but this action is more marked in methyl-ethyl-pinakone and still more so in di-ethyl-pinakone

$$\left(\begin{matrix}C_2H_5\\C_2H_5\end{matrix}\!>\!C(OH)\!-\!C(OH)\!<\!\begin{matrix}C_2H_5\\C_2H_5\end{matrix}\right)$$

Ureas containing one or more substituted alcohol radicals possess no narcotic action, however, we find the contrary to be the case in those which contain a tertiary alcohol radical, here the rule that an ethyl united with the tertiary carbon atom is more active than methyl, takes effect. For this reason those ureas containing the tertiary butyl radical

$$-C\!\begin{matrix}<CH_3\\-CH_3\\<CH_3\end{matrix}$$ are less hypnotic than those containing tertiary amyl. $$-C\!\begin{matrix}<C_2H_5\\-CH_3\\<CH_3\end{matrix}$$

In view of what has already been accomplished, there is but little doubt that a relationship between chemical constitution and medicinal action, exists to a certain extent. This is evidently subject to several conditions, most important among these, may be mentioned the intramolecular structural arrangement,—the degree of solubility which regulates the more rapid or slower absorbtion in the system, — various decompositions which these bodies undergo after entering the body,—the electrolytic conductivity of the compound. A definite classification is not at present possible for the field is new, and comparatively little has been thus far accomplished, from this however, we may draw an idea of future possibilities.

AMERICAN PHARMACEUTICAL ASSOCIATION.

To the Members :—

As your committee of the Scientific Section of this association, we desire to call your attention to your responsibility in connection with your membership, and would urge that you give immediate attention to the matter of contributing to the Scientific Department of our association in the coming year. We would strongly urge that you should not dismiss the matter from your mind and leave your work until the time of approaching the meeting of '94, but at least start in the work at once. It is to be hoped that you will select a subject which has a special interest to you, and report the same to the chairman of this committee at an early date. If we can be of any assistance whatsoever, call upon us freely, and we will be happy to serve in our capacity in any way that you may command.

It is gratifying to state that a number of encouraging letters have already been received from members who promise to contribute papers. Our coming meeting evidently will be an enthusiastic one. These queries are intended to be merely suggestive, and it it to be hoped that the different members in glancing over this advance list—which may be the only one sent out—will find something that will interest them, or, suggest to them something else which will be more acceptable.

LIST OF QUERIES PROPOSED.

1. The Ferric Hydrate process of assay. With which drugs does it give uniformly satisfactory results ?

2. Peroxide of Hydrogen solution is always furnished of an acid character. Is it allowable to remove this acidity before dispensing, and can it be done without certain injury to the reparation ?

3. White Castile Soap. Is its quality as good as formerly? What is the character and composition of the imitations on sale in many pharmacies?

4. Ung. Zinci Oxidum as prepared by the forumla. of U. S. P. becomes hard and tough. Would it not be advisable to diminish the proportion of zinc oxide and modify the process, with the purpose of securing a chemical union of zinc with the fatty acids?

5. It is said that Grindelia squarrosa is sold largely instead of G. robusta. To what extent is this true? Is the substitution a serious one?

6. The employment of many remedies in the effervescent form has of late years become very popular. Could not the same remedies be given to better advantage with carbonic acid and water?—an article easily furnished at all times by the pharmacist; and should not Carbonic Acid Water be restored to its place in the Pharmacopœia and its use encouraged?

7. How do the various commercial brands of Bismuth Subgallate compare with one another and with Dermatol?

8. Do the so-called elegant preparations of Cod Liver Oil, from which the Oil has been removed, possess any therapeutic value?

9. Write an essay on the application of Acetone in pharmaceutical processes in the place of Alcohol or Ether.

10. Do the "Pepsin Gums" so freely advertised contain any pepsin?

11. What is the quality of the Reduced Iron dispensed by pharmacists?

12. Can Ginseng (Panax Quinquefolium), be cultivated? Has it been attempted?

13. The names of Medicinal Plants of commercial value that are gathered in North Carolina. Their value and relative amount sold in this country and exported.

14. What relationship, if any, exists in the drug between the alkaloids hydrastine and berberine?

15. With what acid, if any, are the alkaloids hydrastine and berberine combined in the drug?

16. Is the poisonous constituent of Rhus toxicodendron altogether destroyed when the plant is dried?

17. Anemone pulsatilla is valued in medicine. Does the plant depend on *anemonin* for its value?

18. Is there any drug action in nux vomica that cannot be obtained from the alkaloids, strychnine and brucine?

19. To what degree does the resin of podophyllum represent the therapeutical force of podophyllum?

20. What advantages, if any, can tablets offer over pills, either sugar or gelatin coated?

21. To what extent do the official plant preparations known as tinctures and extracts deteriorate?

22. Does Rhubarb contain a cathartic principle identical with the cathartic acid of senna?

23. What is the condition of the lard oil of the market?

For these titles we are indebted to various members who have forwarded them to your committee. *Select one, or name one more acceptable, and let us hear from you.*

L. E. Sayre, *Chairman*,
Lawrence, Kansas.

Charles M. Ford, *Sec'y*,
700 15th St., Denver, Col.

F. S. Hereth, *Associate Member*,
194 Randolph St., Chicago, Ill.

JUSTUS KARL HASSKARL.

On January 5, Dr. Justus Karl Hasskarl, the introducer of the cinchona plant into Java, died at Cleve, in Germany, at the age of 82. Hasskarl was born Dec. 6, 1811, at Cassel, where his father, (who traced his descent to a Swedish family which had settled in Germany at the time of Gustavus Adolphus, during the thirty years' war) held an official position. During Hasskarl's childhood, his father was transferred to Bonn, and there the subject of this note visited the gymnasium. Botany was his favorite subject, and in 1827, when his school days closed, he obtained a small appointment at the botanical gardens at Poppelsdorf, near Bonn. His drafting into the military service in 1830 intercepted his botanical studies for a couple of years, but as soon as he could free himself he returned to the profession to which his inclination drew him, and found a place as manager of Weyhe's Horticultural Gardens in Dusseldorf. Hasskarl conducted a bontanical class in connection with the establishment, but it would seem that his employer refused to allow him to teach any but the most elementary principles of the science, and that as a result of differences on this point, Hasskarl was dismissed in 1834. In the meantime a paper of his on Cunnighamia had attracted some attention in scientific circles, and means were found to enable the young man to return to Bonn and finish his training at the University, where in addition to botany he studied medicine. During that time he contributed several papers to the Regensburger Flora, and received the high distinction of being appointed to the Regensburg Botanical Society. In the following year Hasskarl was thrown into contact with Professor Goldfuss, the geologist, who made him his contemporary assistant at the Natural History Museum. A wealthy Rotterdam ship owner who visited the museum, and appeared to have had a certain ambition of figuring as a Mæcenas in a cheap way, offered to provide Hasskarl, who was longing for a chance of botanical work in the tropics, with a free passage to Java in one of his ships. The offer was eagerly accepted, and in 1836 he sailed for Java. The journey took 210 days, and the young man arrived at his destination practically penniless. Fortunately he attracted the attention of a compatriot, Dr. Fritze, chief of the Dutch-Indian Medical Service, who found him a berth at the Buitenzorg Botanical Gardens, not so famous then as they have since become. For nine years Hasskarl held that appointment. During this time he introduced a systematic arrangement of the collections at Buitenzorg and prepared the first catalogue of the gardens.

In 1846, he returned to Europe and established himself at Düsseldorf, earning his living by casual journalistic work, translations of scientific books into German and original work. In about 1848, the Dutch Government decided to send an expedition to South America, for the purpose of collecting Cinchona seeds and plants. The command was offered to Dr. Junghuhn, also a German bontanist, who had done excellent work in the Dutch Indies, where he appears to have made Hasskarl's acquaintance. Junghuhn, after long consideration, declined the post, and recommended Hasskarl, who accepted immediately, and left Holland in 1852.

Hasskarl was instructed by M. Pahud, the Dutch Minister of the Colonies, not to confine himself to the collection of Cinchona Calisaya (then looked upon as the most valuable species), but to gather plants and seeds of as many varieties as possible. Early in 1853, Hasskarl set

foot in Peru, and immediately proceeded, via Lima, to the Andes, which he crossed in May, by the Tarma road. Unfortunately he happened upon a track where the richer varieties of the Cinchona were absent, and the only kinds he discovered were: One to which he gave the name of C. ovata (but which has since been renamed C. pahudiana, C. pubescens and C. amygdalifolia), of which he collected the seeds, and C. lanceolata, of which he secured plants. Hasskarl continued his journey to Cuzco, and thence to Sandia, in the province of Caravaya, on the Bolivian frontier, the home of the best Calisaya trees. Having arrived too late in the season to gather any seed, he was forced to return without this prized variety to Lima, whence he forwarded the collected seeds by post to Holland. The plants were sent on, via Panama in Wardian cases; but through some misunderstanding they were returned to Lima a few months later, and had all died when they arrived there. In the Spring of 1854 Hasskarl again set out for Bolivia. War had broken out meanwhile between that country and Peru, and the Bolivian frontier was closed to all persons from the sister republic. Hasskarl, under the assumed name of José Carlos Müller, therefore established his headquarters at Sandia, as near the Bolivian border as he could get, and thence sent out expeditions to collect Calisaya plants. In this he was fairly successful and in June 1854. he returned to the coast with 400 calisaya plants (seeds he could not obtain) only to find, when Arequipa was reached, that the Dutch man-of-war which was to carry the collection to Java, had left a few days previously. He caught up to the ship at Callas and reached Batavia on December 13, 1854.

A few months after Hasskarl's return to Java, the ship in which his family were sailing from Holland to rejoin him, foundered off the Dutch coast. Hasskarl's wife and his four daughters were among the eighty passengers who perished in the waves. Shortly after this domestic calamity, Hasskarl had the misfortune to differ from Dr. Junghuhn, who had meanwhile returned to Java, and among whose duties was that of supervising the new Cinchona-culture, on many vital principles of the system of cultivation. Hasskarl whereupon resigned his post and left Java in 1856, with all the honors of war, in the shape of many orders and crosses, and a life pension. Since that time Hasskarl has lived in retirement in Germany, the recipient of many official honors, and much beloved by his neighbors in the little German frontier town, where he spent the last thirty years of his life. Notwithstanding the fact that Hasskarl's South American mission produced no permanently successful results, time has amply shown that the method of Cinchona-culture advocated by him, and (to some extent) also by Teysmann, were scientifically correct.

CINCHONA LEDGERIANA.

It is a singular fact that the most valuable of all Cinchonas, the Ledgeriana variety, was not introduced into the Indies by any of the collectors especially appointed by the British or Dutch governments, but by a private trader in South America, the late Mr. Ledger, who collected the seeds with the assistance of an Indian carrier, one Manuel Inca Maemani. When the Bolivian authorities discovered the part played by this Indian cascarillero, they threw him into prison for assisting the foreigner in robbing the country of one of its chief riches, and there he perished miserably. —(Adapted from *Chem. and Drug.*, 1894, 73).

Association Notes.

Minutes of the meeting of the Alumni Association, held February 14, 1894.

The meeting was called to order by the President at 8 P. M. Despite the inclemency of the weather a large assemblage, of members, students and friends, was present. Upon motion the reading of the minutes of the previous meeting was dispensed with. Mr. G. A. Lauffer, '93, was elected to membership. On motion the regular order of business was suspended and Dr. Cyrus Edson delivered his lecture on "Nervous Exhaustion." The lecture was of great interest and highly instructive. At the close of the lecture a rising vote of thanks was tendered to Dr. Edson.

Mr. W. C. Munson, '93, was elected to fill the office of third vice-president. Mr. W. H. Hoburg was chosen to fill the position on the executive board left vacant by the election of Mr. Heller to the position of Secretary. The report of the business manager of THE ALUMNI JOURNAL was accepted and ordered to be placed on file. The meeting then adjourned.

HARRY HELLER, Secretary.

Meeting of the Executive Board, held in the College Library, February 14, 1894.

The meeting was called to order by the President. The following members were present: Messrs. Graeser, Heller, Henning, Hoburg, Hohenthal, Stover and Miss Mahegin.

The minutes of the previous meeting were read and adopted. The report of the Treasurer was read and accepted.

Several bills were presented for payment and ordered paid upon the report of the auditing committee.

The report of the business manager of THE ALUMNI JOURNAL was read, approved, and, on motion of Mr. Stover, ordered to be spread upon the minutes.

To fill the editor's chair, made vacant by the death of Dr. O. G. Harrison, the name of Mr. Henry Kraemer, who for several years endeared himself to the hearts of the students of our college while officiating as instructor in Botany and Materia Medica, was presented. The Board thereupon elected Mr. Kraemer by acclamation to the office of editor of THE ALUMNI JOURNAL.

There being no further business to be transacted, the meeting adjourned.

HARRY HELLER, Secretary.

Our Graduates.

MR. SAMUEL SCHWARZ, one of the honor men of the class of '89, has opened a handsome pharmacy on Broad street, Newark.

DR. A. L. METZ, '87, the city chemist of New Orleans, has been appointed on the jury of honor of the International Association for the Progress of Hygiene. He is the chemist for the Board of Health of the State of Louisiana; Demonstrator in Chemistry of the Tulane Medical Department and Instructor in Pharmacy at Tulane.

EMIL J. MARING, '91, formerly manager of Jos. Colp's store, of this city, is now "managing" his own store, at Dean and Sackman sts., Brooklyn.

ANDREW T. SNELLING, '78, formerly at 400 Front street, this city, now of Richmond, sends his compliments and best wishes for THE ALUMNI JOURNAL.

WILL the members of the class of '93, who wish to attend a reunion dinner, send their addresses to Harry Heller, 209 Bleecker street?

WM. A. ENGLAND, '93, came in from the wilds of Rahway last week, to visit his numerous friends and to call at the "old College."

MAX MONTESER, '91, has opened a pharmacy at 172 Avenue A.

Senior Class Notes.

THE first of last month's meetings was called for the purpose of taking action in regard to the untimely death of Dr. Harrison.

A committee, consisting of Messrs. Kirk, Wood and Kussy, was appointed to draw up resolutions of condolence and to have the same engrossed, and they accordingly presented the following resolutions, which were unanimously adopted:

WHEREAS, In the wisdom of the Divine Being, it has seemed good to Him to remove from our midst our beloved instructor, Dr. Oscar George Harrison, and in his death we suffer a great loss, both personal and to the cause of science, therefore, be it

Resolved, That we, the class of '94, do most deeply deplore the loss of him, who, by his earnest, upright and manly character, by his untiring, unselfish devotion to our interests, and by his true personal friendship, has endeared himself to us all; and be it

Resolved, That we extend our deepest and most heartfelt sympathy to his family and his many friends in this time of their bereavement; and, furthermore, be it

Resolved, That a copy of these resolutions be presented to the widow of the late Dr. Harrison and also that they be published in the next issue of THE ALUMNI JOURNAL.

WE were suddenly made aware of the proximity to commencement two weeks ago, when President Ehrgott announced his intention of appointing the executive committee at the following meeting. It is the duty of this committee to confer with the commencement committee of the college in reference to the arrangements for commencement, and to otherwise further the interests of the class.

Owing to a prolonged dispute as to constitutionality of the appointment of this committee by the chair, the committee was not appointed until the third meeting thereafter, when the following were named: Messrs. Brater, Clark, Wood, Donovan, Hiltz, Kirk and Wurthmann.

The class-pin committee or as denoted by the President, the "committee on pins," are the following: Messrs. Horne, Wurthmann and Holland.

As candidates for the valedictorianship were named: Messrs. Pond, Van Nuis, Stoerger, Kussey, Wood, Fendler and Holland.

Mr. Fendler declined the nomination. This was a disappointment to the class.

THE valedictorian will be elected at the next meeting at which time a secretary will also be chosen, owing to the resignation of Mr. Imhoff, our present secretary. The candidates for the office of secretary are: Messrs. Linning, Pond, Boyd, Van Nuis and Webster.

IT is the unanimous verdict of the class that, as successor to Dr. Harrison, a more able and acceptable instructor than Dr. Rusby, could not have been selected. His method of quizzing together with his customary wit serve to brighten the quizzes, and to nourish the admiration and warm feeling which our students have always maintained towards him.

TREASURER Horne, who is assessing us an X for commencement, allows no discount for cash despite the financial stringency.

HOW about this, Mr. Linning? We hear that you have recently been seen walking gravely along behind an ornamented pipe. Is this the reason?

There was a gay maid in Hoboken
Who gave to her love as a token
Some cabbage bananas
Which she said were Havanas.
The would-be engagement is broken.

THAT Mr. Bouton's speech, commending President Ehrgott for his decision in regard to the appointment of the executive committee, met the approval of the class, was quite evident.

MR. WADE, Owego's representative, is devoting considerable time to study, and has distinguished himself on several recent occasions.

AT the materia medica quiz, the other day, the Professor asked a student which he would prefer to take, a half grain of the alkaloid strychnine or the same amount of the sulphate? To which he replied "Neither." It seems strange that he should value his life so highly when so near to the final examinations.

ONLY THIS AND NOTHING MORE.

There was a sound of revelry that morn
In the stately college hall,
Upon each face a smile was worn,
For it could be seen by all.

What was it that could please like that,
And cause such an uproar?
Why, Mr. Davies' summer hat.
Only this and nothing more.

JOSEPH KUSSEY,
Class Reporter.

Assistants, { J. R. WOOD, for Section I.
NELSON S. KIRK, " II.

It was indeed a jolly crowd that journeyed down to a prominent place of amusement in the vicinity of Tammany Hall, after Dr. Edson's lecture. The first thing we did on arriving was to thoroughly inspect the freaks. After this an entertainment was furnished by the so-called theatre, which consisted of several little sketches, the most interesting being the song of a burnt cork artist, in which he severely criticised "a resigning secretary," much to the amusement (?) of Mr. Imhoff.

A meeting for the election of a secretary and a valedictorian was held on Feb. 16. Mr. F. H. Linning, Jr., received a handsome vote, which elected him to the former position, while the selection of Mr. Kussey for the latter honor was unanimous. Both of the above gentlemen hail from New Jersey.

The smaller ($2.75) design of the pins submitted by the committee was adopted. It is indeed a neat design.

NELSON S. KIRK,
Section 2.

AT a meeting of the Executive Committee on Commencement Exercises, held on Monday, February 12th, President Ehrgott was unanimously elected chairman.

THE manufacture of "Sulphur Præcipitatum" in the pharmaceutical laboratory caused regret to appear on the faces of several unfortunates who, in hoping that the hour to cease their labors had drawn near, glanced at their silver watches only to find them black as the ace of spades.

DR. C.—The odor of isonitryl is quite pleasant, is it not?

STUDENT—Well, it depends on the taste.

THE step taken by the class, in deciding to have the valedictory delivered at the class banquet instead of commencement is a good one, and should be supported by every one loyal to the college. We are discarding a time-worn and useless custom, and it is safe to say the step will not be regretted.

MR. C. L. RICHTER has presented to the college collection a number of "Terpeneless essential oils."

MR. M. W. SARGEANT is assisting Dr. Rusby in the Pharmacognosy room, filling the position Mr. W. A. Bastedo formerly held.

MR. C. T. WOLFF announces that he is enjoying (?) the sleepless nights of a "pater familias."

IT is with much regret that the majority of the class, in fact both classes, look upon such rowdyism as was displayed by certain members of both classes, during the lecture given by Dr. Coblentz, on the evening of the tenth of January. Actions, such as these, are looked upon by *men*, as rowdyish, or babyish. In either case they should be suppressed, by example, and by college sentiment, when, if any manliness exist in the miscreant, it will show itself.

"LOYALTY, '94."

Junior Class Notes.

Not hearing from the "Junior Class Reporter" as this issue goes to press, we are unable to publish any notes relating to the Junior Class. We will endeavor to reserve sufficient space, in the next issue, for these notes.—[ED.

CONTENTS.

SUPPLEMENT OF THE ALUMNI JOURNAL.

PUBLISHED BY THE ALUMNI ASSOCIATION OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK.

Classification of Drugs of the U. S. P. According to their Origin and Authors

This is a revised classification similar to that previously made and published by the Editor for assisting the Students of the College of Pharmacy of the City of New York.

VEGETABLE DRUGS.

(Author's Exceptions to Linné.)

Official Names.	Botanical Origin.	Author.
Acacia	Acacia Senegal	Willdenow
Aloe Barbadensis	A. vera	(Linné) Webb
Aloe Socotrina	A. Perryi	Baker
Ammoniacum	Dorema Ammoniacum	Don
Amygdala Amara	Prunus Amygdalus var. amara	De Candolle
Amygdala Dulcis	Prunus Amygdalus var. dulcis	De Candolle
Asafœtida	Ferula fœtida	(Bunge) Regel
Aspidium	Dryopteris Filix-mas	Schott
	Dryopteris marginales	Asa Gray
Aspidosperma	A. Quebrahco-blanco	Schlechtendal
Aurantii Amari Cortex	Citrus vulgaris	Risso
Balsamum Peruvianum	Toluifera Pereiræ	(Royie) Baillon
Benzoinum	Styrax Benzoin	Dryander
Buchu	Barosma betulina	(Thunberg) Bartling et Wendland
	Barosma crenulata	(Linné) Hooker
Calumba	Jateorhiza palmata	(Lamarck) Miers
Cambogia	Garcinia Hanburii	Hooker filius
Camphora	Cinnamomum Camphora	(Linné) Nees et Ebermaier
Capsicum	C. fastigiatum	Blume
Cardamomum	Elettaria repens	(Sonnerat) Baillon
Caryophyilus	Eugenia aromatica	(Linné) O. Kuntze
Cascarilla	Croton Eluteria	Bennett
Castanea	C. dentata	(Marshall) Sudworth
Catechu	Acacia Catechu	(Linné fil.) Willdenow
Caulophyllum	C. thalictroides	(Linné) Michaux
Cetraria	C. islandica	(Linné) Acharius
Chenopodium	C. ambrosoides and var. anthelmintticum	Linné
		Gray
Chimaphila	C. umbellata	(Linné) Nuttall
Chirata	Swertia Chirata	Hamilton
Chondrus	C. crispus	Stackhouse
	Gigartina mamillosa	J. Agardh
Chrysarobinum	Andira Araroba	Aguiar
Cimicifuga	C. racemosa	(Linné) Nuttall
Cinchona	C. Calisaya	Weddell
	C. officinalis	Linné
" Rubra	C. succinibra	Pavon
Cinnamomum Cassia	Cinnamomum (undetermined species)	
Cinnamomum Saigonicium	Cinnamomum (undetermined species)	
Cinnamomum zlylanicum	C. zeylanicum	Breyne
Coca	Erythroxylon coca	Lamarck
Colocynthis	Citrullus Colocynthis	Schrader
Copaiba	C. Langsdorffii	(Desfontaines) O. Kuntze
Cubeba	Piper Cubeba	Linné filius
Cusso	Hagenia Abyssinica	(Bruce) Gmelin
Cypripedium	C. pubescens	Swartz
	C. parviflorum	Salisbury
Elastica	Various species of Hevea	
Elaterinum	Ecballium Elaterium	(Linné) A. Richard
Ergota	Claviceps purpurea	(Fries) Tulasne
Eriodictyon	E. glutinosum	Bentham
Eucalyptus	E. globulus	Labillardière

Official Names.	Botanical Origin.	Author.
Euonymus	E. atropurpureus	Jacquin
Foeniculum	F. capillaceum	Gilibert
Galla	Quercus lusitanica	Lamarck
Gelsemium	G. sempervirens	(Linné) Persoon
Glycyrrhiza	G. glabra and of var. glandulifera	Linné
		(Waldstein et Kitaibel) Regel el Herder
Grindelia	G. robusta	Nuttall
	G. squarrosa	Dunal
Guarana	Paullinia Cirpana	Kunth
	" sorbilis	Martius
Hedeoma	H. pulegioides	(Linné) Persoon
Illicium	I. verum	Hooker filius
Ipecacuanha	Cephaëlis Ipecacuanha	(Brotero) A. Richard
Jalapa	Ipomœa Jalapa	Nuttall
Kamala	Mallotus philippinensis	(Lamarck) Mueller Arg
Kino	Pterocarpus Marsupium	Roxburgh
Krameria	K. triandra	Ruiz et Pavon
	K. Ixina	Linné
Limonis Cortex	Citrus Limonum	Risso
" Succus	" "	Risso
Macis	Myristica fragrans	Houttuyn
Matico	Piper angustifolium	Ruiz et Pavon
Mentha Piperita	M. piperita	Smith
Menthol	M. piperita	Smith
	M. arvensis Linné var. piperascens	Holmes
	M. canadensis Linné var. glabrata	Holmes
Myristica	M. fragrans	Houttuyn
Myrrha	Commiphora Myrrha	(Nees) Engler
Oleum Bergamottæ	Citrus Bergamia	Risso et Poiteau
Oleum Eucalypti	E. globulus	Labillardière
	E. oleosa	F. v. Mueller
Oleum Lavandulæ Florum	Lavandula officinalis	Chaix
Oleum Myrciæ	Myrcia acris	De Candolle
" Rosæ	Rosa damascena	Miller
Pareira	Chondodendron tomentosum	Ruiz et Pavon
Physostigma	P. venenosum	Balfour
Picrotoxinum	Anamirta paniculata	Colebrooke
Pilocarpus	P. Selloanus	Engler
	P. Jaborandi	Holmes
Pimenta	P. officinalis	Lindley
Pix Burgundica	Abies excelsa	Poiret
Pix Liquida	Pinus palustris	Miller
Prunus Virginiana	Prunus serotina	Ehrhart
Pyrethrum	Anacyclus Pyrethrum	(Linné) De Candolle
Quassia	Picræna excelsa	(Swartz) Lindley
Quillaja	Q. Saponaria	Molina
Rhamnus Purshiana	R. Purshiana	De Candolle
Rheum	R. officinale	Baillon
Rubus	R. villosus	Aiton
	R. canadensis	Linné
	R. trivialis	Michaux
Santalum Rubrum	Pterocarpus santalinus	Linné filius
Santonica	Artemisia pauciflora	Weber
Sarsaparilla	Smilax officinalis	Kunth
	Smilax medica	Chamisso et Schlechtendal
	Smilax papyracea	Duhamel
Sassafras	S. variifolium	(Salisbury) O. Kuntze
Sassafras	S. variifolium	(Salisbury) O.

Official Names	Botanical Origin	Author
Sassafras Medulla	S. variifolium	Kuntze
Scilla	Urginea maritima	(Linné) Baker
Scoparius	Cytisus Scoparius	(Linné) Link
Senna	Cassia acutifolia	Delile
	Cassia angustifolia	Vahl
Serpentaria	Aristolochia Serpentaria	Linné
	Aristolochia reticulata	Nuttall
Sinapis Alba	Brassica alba	(Linné) Hooker filius et Thompson
Sinapis Nigra	Brassica nigra	(Linne) Koch
Strophanthus	S. hispidus	De Candolle
Styrax	Liquidamber orientalis	Miller
Sumbul	Ferula Sumbul	(Kauffmann) Hooker filius
Taraxacum	T. officinale	Weber
Terebinthina	Pinus palustris	Miller
Terebinthina Canadensis	Abies balsamea	(Linné) Miller
Thymol	Thymus vulgaris	Linné
	Monarda punctata	Linné
	Carum Ajowan	(Roxburgh) Bentham et Hooker
Tragacantha	Astralgus gummifer	Labillardière
Triticum	Agropyrum repens	(Linné) Beauvois
Ulmus	U. fulva	Michaux
Uva Ursi	Arctostaphylos Uva-ursi	(Linné) Sprengel
Vanilla	V. planifolia	Andrews
Veratrina	Asagrœa officinalis	(Schlechtendal et Chamisso) Lindley
Veratrum viride	V. viride	Solander
Vinum Album	Vitis vinifera	
" Rubrum	" "	
Xanthoxylum	X. americanum	Miller
	X. Clava-Herculis	Liuné
Zingiber	Z. officinale	Roscoe

VEGETABLE DRUGS (AUTHOR LINNÉ).

Official Names.	Botanical Origin.
Absinthium	Artemisia Absinthium
Aconitum	A. Napellus
Allium	A. sativum
Althæa	A. officinalis
Amylum	Zea Mays
Anisum	Pimpinella Anisum
Anthemis	A. nobilis
Apocynum	A. cannabinum
Arnicæ Flores	A. montana
" Radix	A. montana
Asclepias	A. tuberosa
Aurantii Dulcis Cortex	Citrus Aurantium
Balsamum Tolutanum	Toluifera Balsamum
Belladonnae Folia	Atropa Belladonna
" Radix	" "
Bryonia	B. alba
	B. dioica
Calamus	Acorus Calamus
Calendula	C. officinalis
Cannabis Indica	C. sativa
Carum	C. Carvi
Cassia Fistula	Cassia Fistula
Chelidonium	C. majus
Colchici Radix	C. autumnale
" Semen	"
Conium	C. maculatum
Convallaria	C. majalis
Coriandrum	C. sativum
Creosotum	Fagus sylvatica
Crocus	C. sativus
Digitalis	D. purpurea
Dulcamara	Solanum Dulcamara
Eupatorium	E. perfoliatum
Ficus	Ficus Carica
Frangula	Rhamnus Frangula
Gentiana	G. lutea
Geranium	G. maculatum
Gossypii Radicis Cortex	Gossypium herbaceum
Granatum	Punica Granatum
Guaiaci Lignum	Guaiacum officinale
	" sanctum
	" officinale
Guaiaci Resina	H. campechianum
Hæmatoxylon	H. virginiana
Hamamelis	H. Lupulus
Humulus	H. canadensis
Hydrastis	H. niger
Hyoscyamus	

Official Names.	Botanical Origin
Inula	I. Helenium
Iris	I. versicolor
Juglans	J. cinera
Lactucarium	Lactuca virosa
Lappa	Arctium Lappa
Leptandra	Veronica virginica
Linum	L. usitatissimum
Lobelia	L. inflata
Lupulinum	Humulus Lupulus
Lycopodium	L. clavatum
Manna	Fraxinus Ornus
Marrubium	M. vulgare
Mastiche	Pistacia Lentiscus
Matricaria	M. Chamomilla
Melissa	M. officinalis
Menispermum	M. canadense
Mentha Viridis	M. viridis
Mezereum	Daphne Mezereum
Nux Vomica	Strychnos Nux-vomica
Oleum Betulæ Volatile	Betula lenta
" Cadinum	Juniperus Oxycedrus
" Cajuputi	Melaleuca Leucadendron
" Erigeronitis	Erigeron canadense
" Gaultheriæ	Gaultheria procumbens
" Gossypii Seminis	Gossypium herbaceum
" Juniperi	Juniperus communis
" Olivæ	Olea europœa
" Ricini	Ricinus communis
" Rosmarini	Rosmarinus officinalis
" Santali	Santalum album
" Sesami	Sesamum indicum
" Theobromatis	Theobroma Cacao
" Thymi	Thymus vulgaris
" Tiglii	Croton Tiglium
Opium	Papaver somniferum
Pepo	Cucurbita Pepo
Phytolaccæ Fructus	Phytolacca decandra
" Radix	" "
Piper	Piper nigrum
Podophyllum	P. peltatum
Prunum	Prunus domestica
Pulsatilla	Anemone Pulsatilla
	" prateusis
Quercus Alba	Quercus alba
Rhus Glabra	R. glabra
Rhus Toxicodendron	R. radicans
Rosa Centifolia	R. centifolia
Rosa Gallica	R. gallica
Rubus Idæus	R. idæus
Rumex	R. crispus
Sabina	Juniperus Sabina
Saccharum	S. officinarum
	Beta vulgaris
	Sorghum
Salvia	S. officinalis
Sambucus	S. canadensis
Sanguinaria	S. canadensis
Scammonium	Convolvulus Scammonia
Scutellaria	S. lateriflora
Senega	Polygala Senega
Spigelia	S. marilandica
Staphisagria	Delphinium Staphisagria
Stillingia	S. sylvatica
Stramonii Folia	Datura Stramonium
" Semen	" "
Tabacum	Nicotiana Tabacum
Tamarindus	T. indica
Tanacetum	T. vulgare
Valeriana	V. officinalis
Viburnum Opulus	V. Opulus
" Prunifolium	V. prunifolium
Zea	Z. Mays

ANIMAL DRUGS.

Official Names.	Animal Origin.	Author.
Adeps	Sus scrofa	Linné
Adeps Lanæ Hydrosus	Ovis Aries	"
Cantharis	C. vesicatoria	De Geer
Cera Alba	Apis mellifica	Linné
Cera Flava	" "	"
Cetaceum	Physeter macrocephalus	"
Coccus	C. cacti	"
Fel Bovis	Bos Taurus	"
Ichthyocolla	Acipenser Huso	"
Mel	Apis mellifica	"
Moschus	M. moschiferus	"
Oleum Morrhuæ	Gadus Morrhua	"
Pancreatinum	Sus scrofa	"
Pepsin	"	"
Sevum	Ovis Aries	Linné
Vitellus	Gallus Bankiva	Temminck

CLASSIFICATION OF THE DOSES

OF DRUGS AND PREPARATIONS OF THE U. S. P.

This classification is but general and solely intended as an aide-mémoire to pharmacy and medical students. It is arranged in conformity to a plan adopted by the Editor in his quiz-work a few years ago.

DRUGS, ANIMAL and VEGETABLE.

All poisonous drugs in doses from 1 to 3 grs. as:

Aloe Barbadensis
" Purificata
Belladonnae Folia
" Radix
Cambogia
Cannabis Indica
Capsicum
Colchici Radix
" Semen
Colocynthis
Conium
Gelsemium
Hyoscyamus
Ipecacuanha
Lobelia
Moschus
Nux Vomica
Pulsatilla
Rhus Toxicodendron
Sabina
Scilla
Stramonii Folia
" Semen
Tabacum
Veratrum Viride

EXCEPTIONS

Aconitum, ½ to 2 grs.
Cantharis, ½ to 2 grs.
Coccus, ½ to ½ grs.
Digitalis, ½ to 3 grs.
Opium, ¼ to 2 grs.
Physostigma, ½ to 2 grs.

All others in doses from 10 to 30 grs. as:

Absinthium
Acacia
Allium
Althaea
Amygdala Dulcis
Anisum
Anthemis
Apocynum
Arnicae Flores
" Radix
Asclepias
Aspidium
Aspidosperma
Bryonia
Buchu
Calendula
Calumba
Cardamomum
Carum
Caryophyllus
Cascarilla
Castanea
Catechu
Caulophyllum
Chelidonium
Chimaphila
Chirata
Cimicifuga
Cinnamomum Cassia
" Saigonicum
" Zeylanicum
Coca
Convallaria
Copaiba
Coriandrum
Crocus
Cubeba
Cusso
Cypripedium
Dulcamara
Ergota
Eriodictyon
Eucalyptus
Euonymus
Eupatorium
Fel Bovis Purif.
Foeniculum
Frangula
Galla
Gentiana
Geranium
Gossypii Rad. Cortex
Granatum
Grindelia
Guaiaci Lignum
" Resina
Guarana
Illicum
Inula
Iris
Jalap
Kamala
Kino
Krameria
Lactucarium
Lappa
Leptandra
Lupulinum
Macis
Marrubium
Matico
Matricaria
Melissa
Menispermum
Mezereum
Myristica
Myrrha
Pareira
Phytolaccae Fructus
" Radix
Pilocarpus
Pimenta
Piper
Pix Liquida
Podophyllum
Prunus Virginiana
Pyrethrum
Quercus Alba
Quillaja
Rhamnus Purshiana
Rheum
Rhus Glabra
Rumex
Salvia
Sambucus
Sanguinaria
Santonica
Sarsaparilla
Sassafras
Scammonium
Scoparius
Scutellaria
Senega
Senna
Serpentaria
Sinapis Alba
" Nigra
Spigelia
Stillingia
Styrax
Sumbul
Tanacetum
Taraxacum
Uva Ursi
Valeriana
Viburnum Opulus
" Prunifolium
Xanthoxylum
Zingiber.

EXCEPTIONS.

Cassia Fistula, ʒi to ʒviii
Cinchona, ʒiv to ʒviii
Manna, ʒiv to ʒii
Pepo, ʒi to ʒiii
Tamarindus, ʒi to ʒi
Triticum, ʒi to ʒii

PREPARATIONS.

Acetae.—Opii, 5 to 20m. Scillae, 5 to 20m.

Aquae.—At least ʒss.

EXCEPTIONS.

Aq. Ammoniae, 10 to 30m
Aq. Amygdalae Amarae, ʒss to ʒii.

Cerata, Charta, Collodii.—Externally.

Confectiones.—Rosae, Sennae, ʒii to ʒiv.

Decocta.—Cetrariae, Sarsaparillae Comp, ʒiv.

Elixira.—Aromaticum, ʒi to ʒiii; Phosphori, 15 to 75m.

Emplastra.—Externally.

Emulsiones.—At least ʒiii.

EXCEPTION.

Emuls. Chloroformi, ʒi to ʒii.

EXTRACTS.

All poisonous solid extracts at least ¼ gr. as:

Aconiti
Cannabis Indicae
Colchici Radicis
Colocynthidis
Conii
Digitalis
Hyoscyami
Iridis
Nucis Vomicae
Opii
Podophylli
Quassiae
Stramonii.

EXCEPTIONS.

Belladonnae, ⅛ to ¼ gr.
Physostigmatis $\frac{1}{10}$ to ⅛ gr.

All other Extracts in doses between 1 and 5 grs. as:

Arnicae Rad.
Cimicifugae
Euonymi
Jalapae
Krameriae
Leptandriae
Uvae Ursi.

EXCEPTIONS.

Aloes, 5 to 10 grs.
Cinchonae, 10 to 30 grs.
Colocynth Comp. 5 to 25 grs.
Ergotae, 10 to 15 grs.
Gentianae, 10 to 30 grs.
Glycyrrhizae, 15 to 60 grs.
" Purum, 15 to 60 grs.
Haematoxyli, 10 to 30 grs.
Juglandis, 10 to 30 grs.
Rhei, 10 to 15 grs.
Taraxaci, 10 to 30 grs.

EXTRACTA FLUIDA.

All poisonous fluid extracts in doses from ½ to 1 m as:

Aconiti
Belladonnae
Cannabis Ind.
Capsicum
Colchici Rad.
" Sem.
Conii
Digitalis
Gelsemii
Hyoscyami
Ipecacuanha
Iridis
Lobelia
Mezerei
Nucis Vomicae
Podophylli
Sabinae
Sanguinariae
Scillae
Stramonii
Veratri Viridis.

All others according to dose of drug, which are:

Apocyni
Arnicae Rad.
Aromaticum
Asclepiadis
Aspidospermatis
Aurantii Amari
Buchu
Calami
Calumbae
Castaneae
Chimaphilae
Chiratae
Cimicifugae
Cinchonae
Cocae
Convallariae
Cubebae
Cusso
Cypripedii
Dulcamarae
Ergotae
Eriodictyi
Eucalypti
Eupatorii
Frangulae
Gentianae
Geranii
Glycyrrhizae
Gossypii Rad.
Grindeliae
Guaranae
Hamamelidis
Hydrastis
Krameriae
Lappae
Leptandrae
Lupulinii
Matico
Menispermi
Pareirae
Phytolaccae Rad
Pilocarpi
Pruni Virginianae
Quassiae
Rhamnus Purshianae
Rhei
Rhois Glabrae
Rosae
Rubi
Rumicis
Sarsaparilla
Scoparii

Scutellariae
Senegae
Sennae
Serpentariae
Spigeliae
Stillingiae
Taraxaci
Tritici
Uvae Ursi
Valerianae
Viburnum Opuli
" Prunifolii
Xanthoxylii
Zingiberis.

Glycerita.—Acidi Carbolici, 2 to 5 ♏, Acidi Tannici, 10 to 40 ♏, Amyli freely.

Infusa.—At least ℥i to ℥i.

EXCEPTION.

Inf. Digitalis, ℥ii to ℥iv.

Linimenta.—Externally.

Massae.—From 3 to 7 grs.

Misturae.—At least ℥ss.

Mucilagines.—Ad. libitum.

Oleata.—Externally.

Oleoresina.—From ¼ to 1 ♏.

EXCEPTION,

Oleo Cubeb, 5 to 15 ♏.

OLEA.

All poisonous oils at least 2 ♏ as:

Anisi
Betulae
Cajuputi
Cari
Caryophylli
Cinnamomi
Coriandri
Foeniculi
Hedeomae
Lavandulae Flor.
Menthae Pip.
" Vir.
Oleum Phosphoratum
Pimentae
Rosmarini
Sabinae
Sassafras
Thymi.

EXCEPTIONS.

Olea Amygdal. Amar. ⅛ to ½ ♏
Olea Sinapis Volatile, ⅛ to ⅓ ♏
Olea Tiglii, ⅓ to 2 ♏

All others in doses as follows:

Amygdalae, ℥i to ℥iv
Chenopodii, 3 to 10 ♏
Erigerontis, 5 to 30 ♏
Gaultheriae, 5 to 30 ♏
Morrhuae, ℥iv to ℥i
Ricini, ℥ii to ℥ii
Terebinthinae, 5 ♏ to ℥ii
Lini, ℥ss to ℥i
Santali, 10 to 30 ♏.

Pilulae.—From 1 to 3 pills.

Pulvures.—At least ℥ss.

EXCEPTIONS.

Ipecac et Opii, 5 to 15 grs.
Morphinae Comp 5 to 15 grs.

Resina.—From 1 to 8 grs.

EXCEPTION.

Podophylli, ⅛ to 2 grs.

Spiriti.—From 10 to 30 ♏.

EXCEPTIONS.

Ammoni Arom, 30 to 60 ♏
Frumenti
Juniperi Comp.
Vini Gallici.

Syrupi.—From ℥ss to ℥i.

EXCEPTION.

Ferri Iodidi, 15 to 30♏.

TINCTURA.

All poisonous tinctures in doses from 5 to 20 ♏ as:

Arnicae Flor.
" Rad.
Asafoetidae
Belladonnae
Benzoini
Cannabis Ind.
Digitalis
Ferri Chloridi
Gelsemii
Hyoscyami
Ipecae et Opii
Lobeliae
Nucis Vomicae
Opii
" Deodorati
Quillajae
Sanguinariae
Scillae.

EXCEPTIONS.

Aconiti, 1 to 5 ♏
Cantharides, 3 to 10 ♏
Iodi, 2 to 6 ♏
Physostigmatis, 3 to 10 ♏
Stramonii Sem. 3 to 10 ♏
Strophanthi, 3 to 10 ♏
Veratri Viridis, 1 to 5 ♏.

All others according to possible dose of drug.

Triturationes.—Elaterini ½ to ⅝ grs.

Trochisci.—At least 2 troches.

Unguenta.—Externally.

Vinae.—From ℥i to ℥iii.

EXCEPTIONS.

Colchici Rad., 5 to 20 ♏
" Sem., 10 to 60 ♏
Ipecac, 5 to 10 ♏
Opii, 5 to 15 ♏.

Alkaloids, Glucosides, etc., Official and Non-Official.

Aconitine, $\frac{1}{500}$ to 1-100 gr.
Aloinum, ¼ to 2 grs.
Apomorph. Hydrochlor, $\frac{1}{16}$ to ⅛ gr.
Aspidospermine, ¼ to ½ gr.
" Sulph. $\frac{1}{120}$ to $\frac{1}{48}$ gr.
Atropina, $\frac{1}{150}$ to $\frac{1}{64}$ gr.
Cathina, 1 to 3 grs.
" Citrata, 2 to 5 gr.
Chrysarobinum, $\frac{1}{64}$ to $\frac{1}{12}$ gr.
Cinchonidinae Sulph., 3 to 30 grs.
Cinchonina, 1 to 30 grs.
" Sulph., 1 to 30 grs
Cocainae Hydrochlor, ⅛ to 2 grs.
Codeina, ¼ to 3 grs.
Colchicine, $\frac{1}{50}$ to $\frac{1}{10}$ gr.
Colocynthin, ⅛ gr.
Convallamarin, $\frac{1}{12}$ gr.
Cotoin (from Coto Bark), 2 to 3 grs.
Daturine, $\frac{1}{100}$ gr.
Digitalin, $\frac{1}{50}$ gr.
Elaterinum, $\frac{1}{32}$ to $\frac{1}{16}$ gr.
Gelsemine $\frac{1}{50}$ to $\frac{1}{20}$ gr.
Hydrastininae Hydrochlor, $\frac{1}{12}$ to 1½ grs.
Hyoscinae Hydrobrom, $\frac{1}{150}$ to $\frac{1}{100}$ gr.
Hyoscyaminae Hydrobrom, $\frac{1}{150}$ to $\frac{1}{100}$ gr.
Hyoscyaminae Sulphas, $\frac{1}{64}$ to $\frac{1}{32}$ gr.
Morphina, $\frac{1}{16}$ to ¼ gr.
" Acetas, $\frac{1}{16}$ to ½ gr.
" Hydrochlor, $\frac{1}{12}$ to ½ gr.
Morphina Sulphas, $\frac{1}{15}$ to ½ gr.
Para Cotoin (from Para Coto Bark), 2 to 5 grs.
Physostigminae Salicylas, $\frac{1}{100}$ to $\frac{1}{30}$ gr.
Physostigminae Sulphas, $\frac{1}{100}$ to $\frac{1}{50}$ gr.
Picrotoxinum, $\frac{1}{120}$ to $\frac{1}{60}$ gr.
Pilocarpinae Hydrochlor, ⅛ to ½ gr.
Piperinum, 1 to 10 grs.
Quinidinae Sulph., 1 to 30 grs.
Quinina, 1 to 30 grs.
" Bisulph, 1 to 30 grs.
" Hydrobrom. 1 to 30 grs.
" Hydrochlor, 1 to 30 grs.
" Sulphas, 1 to 30 grs.
" Valerianas, 1 to 3 grs.
Salicinum, 10 to 30 grs.
Sanguinarine, $\frac{1}{16}$ to ¼ gr.
Santoninum, 1 to 3 grs.
Sparteinae Sulph., ½ to 1 gr
Strophanthin, $\frac{1}{120}$ to $\frac{1}{60}$ gr.
Strychnina, $\frac{1}{60}$ to $\frac{1}{20}$ gr.
" Sulphas $\frac{1}{32}$ to $\frac{1}{12}$ gr.
Veratrina, $\frac{1}{300}$ to $\frac{1}{100}$ gr.

CHEMICALS.

Acetanilidum.—At least 5 grs.

Acidi.—At least 10 grs.

EXCEPTIONS.

Acidum Arsenosum, $\frac{1}{60}$ to $\frac{1}{16}$ gr.
Acidum Carbolicum, 1 to 3 grs.
Acidum Chromicum, $\frac{1}{24}$ to ¼ gr.
Acidum Hydrocyanicum Dil. 1 to 3 ♏
Acidum Nitro-Hydrochloricum. 2 to 5 ♏
Acidum Phosphoricum. 3 to 7 ♏.

Aether, 5 to 60 ♏

Aether Aceticus, 10 to 30 ♏

Alumen 10 to 60 grs.

Alumen Exsiccatum, 5 to 30 grs.

Alumini Hydras, 1 to 10 grs.

Ammonium Salts, at least 15 grs.

EXCEPTIONS.

Ammonii Iodidum, 3 to 10 grs.
Ammonii Valerianas, 2 to 8 grs.

Amyl Nitris, 2 to 4 ♏

Antimonium Salts, at least 2 grs.

EXCEPTIONS.

Antimonii et Potassii Tartras, ½ to 3 grs.

Argentum Salts, at least ½ gr.

EXCEPTIONS.

Argenti Cyanidum, $\frac{1}{60}$ to $\frac{1}{20}$ gr.
Argenti Nitras, ½ to ½ gr.

Arseni Iodidum, ¼ to ½ gr.

Aurii et Sodii Chloridum, $\frac{1}{16}$ to $\frac{1}{10}$ gr.

Bismuth Salts, at least 15 grs.

EXCEPTIONS.

Bismuthi Citras, 1 to 5 grs.
Bismuthi et Ammonii Citras, 1 to 5 grs.

Calcium Salts, at least 15 grs.

EXCEPTIONS.

Calx Chlorata, 3 to 6 grs.
Calx Sulphurata, $\frac{1}{10}$ to 1 gr.

Carbonei Disulphidum, 5 to 10 drops.

Cerii Oxalas, 1 to 5 grs.

Chloral, 10 to 45 grs.

Chloroformum, 2 to 5 ♏

Creosotum, 1 to 5 grs.

Cupri Sulphas, ½ to 10 grs.

Ferrum Salts, at least 10 grs.

EXCEPTIONS.

Ferri Chloridum, 1 to 3 grs.
" et Strychninae Citras, 1 to 5 grs.
" Lactas, 1 to 5 grs.
Ferri Pyrophosphas Sol., to 5 grs.
" Sulphas, 1 to 5 grs.
" " Exsiccatis, ½ to 3 grs.
" Sulphas Granulatus, 1 to 5 grs.
" Valerianas, ½ to 2 grs.
" Reductum, 1 to 5 grs.

Glycerinum, 5 to 60 ♏

Hydrargyrum Salts, in doses from 2 to 10 grs.

EXCEPTIONS.

Hydrargyri Chloridum Corrosivum, $\frac{1}{12}$ to ⅛ gr.
Hydrargyri Cyanidum, $\frac{1}{24}$ to ⅛ gr.
Hydrargyri Iodidum Rubrum, $\frac{1}{16}$ to ⅓ gr.

Iodoformum, ½ to 3 grs.

Iodum, ⅛ to ⅓ gr.

LIQUORES.

All poisonous liquors in doses from 3 to 10 ♏ as:

Liquor Acidi Arsenosi
" Arseni et Hydrargyri Iodidi
Liquor Ferri Acetatis
" " Chloridi
" " Citratis
" " Nitratis
" " Sulsulphatis
" Iodi Compositus
" Potassae
" " Arsenitis
" Sodii Arsenatis

All others at least ℥ss.

EXCEPTION.

Liquor Magnesii Citratis ℥ii to ℥viii.

Lithium Salts, at least 10 grs.

Magnesium Salts, at least 30 grs.

Manganese Salts, in doses from 2 to 10 grs.

Menthol, 1 to 5 grs.

Methyl Salicylas, 1 to 5♏

Naphtalinum, 2 to 10 grs.

Naphtol, 2 to 15 grs.

Paraldehydum, 1 to 3 grs.

Phosphorus, $\frac{1}{100}$ to $\frac{1}{50}$ gr.

Plumbum Salts, in doses from ¼ to 1 gr.

EXCEPTION.

Plumbi Nitras, ¼ to ½ gr.

Potassium Salts, at least 15 grs.

EXCEPTIONS.

Potassa Sulphurata, ½ to 5 gr.
Potassii Bichromas, $\frac{1}{16}$ to 1 gr.
Potassii Cyanidum, ⅛ to ¼ gr.
Potassii Permanganas, ½ to 3 grs.

Resorcinum, 3 to 10 grs.

Salol, 3 to 15 grs.

SODIUM SALTS.

Sodii Arsenas, $\frac{1}{24}$ to ⅛ gr.
" Nitris, 1 to 3 grs.

All others in doses from 5 to 15 grs.

EXCEPTIONS.

Sodii Phosphas, ℥i to ℥i
" Sulphas, ℥i to ℥i.

Strontium Salts, at least 8 grs.

Sulphur, in all forms, at least ℥i.

EXCEPTIONS.

Sulphuris Iodidum, 1 to 4 grs.

Terebene, 3 to 10 ♏

Terpini Hydras, 2 to 10 grs.

Thymol, ½ to 2 grs.

Zinc Salts, at least 1 gr.

EXCEPTION.

Zinci Phosphidum, $\frac{1}{16}$ to ⅓ gr.

THE Alumni Journal

PUBLISHED BY THE ALUMNI ASSOCIATION
OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK.

Vol. I. New York, April, 1894. No. 3.

NEW YORK COLLEGE OF PHARMACY
ALERE FLAMMAM
ALUMNI

THE Alumni Journal

PUBLISHED BY THE ALUMNI ASSOCIATION
OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK.

Vol. I. New York, April, 1894. No. 3.

OBSERVATIONS OF A PHARMACOGNOSIST IN ENGLAND.

BY HENRY H. RUSBY, M. D.

An Address delivered before the Alumni Association of the College of Pharmacy of the City of New York, March 14th, 1894.

Mr. President and Members of the Alumni Association.

LADIES AND GENTLEMEN: As the journey, the results of which I am about to communicate to you, was made largely in the interests of the college, I feel that my address this evening is somewhat in the nature of an official report, and have, therefore, adopted a somewhat more personal style of narrative than would appear becoming in an ordinary lecture addressed to the public. As the value of one's observations depend largely upon the conditions under which they are made, you should first be informed as to the objects of my visit to England, and the circumstances under which they were pursued. My objects were:

1. To study crude drugs, and their commerce, in the London markets, and to establish sources of supply for our reorganized Museum Department.

2. To complete my investigations into the modern history of Cinchona, for the writing of the article on this subject for the United States Dispensatory.

3. To determine a collection of some 1,200 species of plants received from Bolivia, for which no facilities at all adequate were to be found in this country.

My herbarium work at Kew was most successfully and completely accomplished. Not only was the identity of the entire collection accurately established, but the facilities of the great library connected with the herbarium, probably the most complete botanical library in the world, were fully utilized, the history of all names completely traced out, and the proper ones selected, in accordance with the most correct rules of nomenclature. Nearly three hundred of the species, and four of the genera, represented were found to be new to science, and the publication of these will occupy an early number of the *Memoirs of the Torrey Botanical Club.*

Concerning this part of my work I find

it impossible to express my appreciation of the great privilege of working in the Kew Herbarium, and of the care taken by the director and his assistants in placing every facility at my disposal. It may not be out of place to remark that large as is the staff of botanists at Kew their collection is so vast and rapidly growing, and their duties so extensive, that a very large number of their collections are undetermined, and this in spite of the fact that they are, I believe, the hardest worked lot of men with whom I have ever associated. At the British Museum, where I spent but a very short time, the condition seemed even worse, and it seemed to me that the incessant labors of a score of competent botanists for a year would scarcely suffice to get their collections perfectly named up to date.

In the direction of Cinchona studies, I was able to obtain much better assistance in pharmaceutical circles than at any of the herbaria. My previous efforts, by means of books and such specimens as I had access to, to determine the Bolivian forms of Cinchona had resulted somewhat unsatisfactorily. There seemed a clear discrepancy between my results and the current determinations of specimens. These discrepancies I had thought to reconcile at the Kew Herbarium, but my disappointment came quickly. From my point of view nearly all the specimens there labelled as Cinchona Calisaya were distinct from that species. After intently considering this problem, I was forced to maintain my original position, and to believe that the Kew specimens were wrongly named; notwithstanding the fact that the correctness of this conclusion involved the wrong naming of millions of trees at all the centres of Cinchona cultivation outside of America, at the time that those localities contributed their specimens to Kew. To positively determine whether this view was the correct one, it was necessary that I should examine Weddell's type specimens of Cinchona Calisaya, and I saw nothing before me but to make a trip to Paris for that purpose. This necessity was avoided by a most curious accident, as I might almost call it. Mr. Holmes one day invited me to visit with him the home of Mr. Howard, the grandson of the distinguished quinologist. In spite of a strange succession of accidents and misunderstandings, I succeeded in reaching the place upon the day appointed, and greatly enjoyed the examination of the rich materials in Mr. Howard's possession. It was not until just previous to my departure that Mr. Howard incidentally remarked that he had a number of very old specimens in a separate packet, and thought that it might be worth while for him to fetch them for me to look at. You may judge of my enthusiasm when, upon turning over the sheets, I suddenly looked upon one of the original specimens from which Mr. Weddell had drawn up his description of Cinchona Calisaya. It was exactly the plant which I had taken it to be, and corresponded with not more than three or four of the entire collection of specimens so named at Kew. I now take this occasion of publishing the emphatic statement that the plant which has been called Cinchona Calisaya, var. Josephiana has been enormously cultivated and distributed to herbaria under the name of Cinchona Calisaya. If the plant were in reality a variety of the species to which it is accredited, the error would be less grave, but it is in all its essential characters, and particularly in its economic aspects, as distinct from Cinchona Calisaya as it well could be. In studying the commercial features of Cinchona, I received much valuable assistance from Mr. A. C. Meyjes, the assistant editor of *The*

Chemist and Druggist. He not only introduced me to those drug brokers who had been most long and intimately connected with the trade in this important article, but he furnished me with statistics which he had compiled with much labor, bearing upon this important question. Last, but not least, he secured for me the privilege of making a careful examination of the principal stocks of old barks which are held in London, thus about completing my grasp upon a subject to which I have devoted special attention for a number of years. I cannot forbear at this point to note my surprise at the ignorance displayed by the majority of the London drug brokers concerning the relations existing between the different commercial Cinchona barks.

Coming, finally, to speak of my general studies and collection of drugs in London, I would take occasion at the outset to acknowledge my gratitude to the brokers and dealers who, almost without exception, were liberal in the donation of specimens for our College Museum, and who, moreover, were unsparing in their attempts to give me such information as they possessed, and to assist me in solving questions which they were unable to answer.

Previous to my visit to England I had been fully assured by friends in this city and elsewhere, that my attempts to obtain specimens for our Museum from the London dealers and brokers would not meet success, partly because they lacked the inclination to confer favors, and partly because the conditions of the trade were such as to present natural difficulties. I am now happy to bear testimony to the contrary. Doubtless some of the donors were not slow to appreciate the great advantage of having their labels displayed in a museum which was likely to be largely consulted by New York druggists; but I believe that for the most part this was not the consideration which induced their liberality, but rather a genuine courtesy and sincere desire to be of service in the furthering of a public enterprise of this kind.

It seems almost invidious to mention any names among so large a number of helpful friends, but I feel that I must specially acknowledge the kindness and liberality of Messrs. Clark & Smithe, of No. 40 Eastcheap; Messrs. Souratty & Co., and their Mr. Charles Christy; Messrs. Jenkins & Phillips, Messrs. Lewis & Peat, Messrs. Figgis & Co., and Messrs. Hale & Son. The Pharmaceutical Society, through its President, Mr. Carteighie; its Editor, Dr. Paul; its Curator, Mr. Holmes; its Chemist, Professor Attfield; and its Lecturer on materia medica, Professor Greenish, afforded me constant aid and advice. Through the kind intermediation of Mr. Holmes, our museum has been placed on a regular exchange list, both of the Pharmaceutical Society Museum and the Economic Museum in the Kew Garden. In addition to this, various friends in London have promised to render us special assistance by obtaining such interesting things as may, from time to time, fall in their way, and our museum is placed in correspondence with the Department of Works of British India and that of Australia, from whom I am hoping that we may in time receive large accessions. Any attempt to describe the establishment at Bloomsbury Square would be out of place here, because it would require special treatment. The same thing I may say of the enormous collection of drugs and economic vegetable productions in the three museums at the Kew Garden. I must not, however, let the occasion pass without endeavoring to convey to you some measure of my own sense of the importance of building up in this city some similar collection. Neither the

American Museum of Natural History, nor the Botanical Museum of Columbia College, nor even the Economic Museum to be established in our new botanical garden, is the proper place for such a collection as I have in mind. Indeed, there is but one body in the city under whose management and control it seems to me possible to achieve a high success in this direction, and that is a commission appointed jointly by the College of Pharmacy and the drug section of the New York Board of Trade.

My idea of such a collection is that it should combine in the highest degree practical and commercial, with scientific features. An economic museum should be economical in the highest sense. For this purpose I would have represented not only rarities, curiosities, and typical samples, but I would aim to present each article in every phase which it can assume in commerce. An excellent illustration of this idea of this is to be found in the case of some of the samples exhibited here this evening. You will notice that we have in the case of Catechu a series of many samples, representing almost every important commercial grade, genuine and spurious, with the prices of each attached. Although these prices will vary from time to time, the relations between the different prices, that is the relative qualities of the different samples, will always be indicated by these figures. In the case of Tragacanth also we have nearly a complete representation of all commercial grades, and our collection of isinglass is equally complete. An ideal museum, such as this college should maintain, should carry out this idea in the case of each commercial drug. Every variety and grade, every substitute and form of sophistication and adulteration should be fully represented, so that either the student of science or the man of business could be able to consult it with the greatest degree of profit. This object can be accomplished in only one way, and that is by contributions from special dealers of everything relating to their particular lines of goods. Thus a dealer in sponges could supply us with a complete series of samples in that line; a dealer in varnish gums or resins could supply typical sets of such goods, and as has been promised by a large dealer in Pearl street, another may furnish a complete representation of commercial rubbers. The degree of sacrifice entailed upon such contributors would be slight as compared with the immense advantages that they would confer upon the city by building up a complete collection of this kind. Moreover, such dealers might feel themselves well repaid by having their collection, labelled with their names as donors, prominently and permanently displayed in such a place of public resort by the very classes whose custom they wish to secure. A full consideration of this subject, however, requires treatment upon a separate occasion.

Many of those present have doubtless visited the London drug sales, and many others are probably also familiar with the methods of their conduct, but for the benefit of the majority I feel that I should say a few words upon this subject. Scattered throughout London, but more especially in the vicinity of Mincing Lane, are a large number of brokers who sell imported goods in original lots. These men carry no stock, invest no capital, and are generally not the importers or consignees ; they act simply as the agents of those classes, and it is their duty merely to expose in their offices samples of the goods to be sold, accompanying these by printed lists, giving specifications of the merchandise, and copies of the same being furnished to all intending purchasers. I hand you for examination a

number of these publications. The goods are not sold immediately on arrival, but are held until the day which is devoted to the sale of goods of that class ; that is, a certain day is devoted to bark sales, another to spice sales, another to the sales of ivory and feathers, Japanese work, general drugs, and so on. Upon the day preceding the sale the respective goods are exhibited and the printed lists supplied. The sale is duly advertised in the commercial papers, the brokers being specified who have goods for sale upon that occasion. This day is then devoted by intending purchasers to an examination of the samples, and the placing upon their printed lists of such marks as shall indicate to them (but unintelligible to anybody else) the limit of prices which they are willing to pay for the different articles. Upon the following day all meet in the room where the goods are sold at auction by the respective brokers. Great rapidity is necessary in making bids, as the sales proceed at the rate of about three lots per minute. Hence the absolute necessity of the bidders following closely the price marks which they have affixed to their printed lists.

These sales are conducted under the rules of the General Produce Brokers' Association, of London, besides certain special conditions which are specified upon the printed lists. There is nothing to prevent the sale of spurious goods, provided they are not put up as genuine ; that is to say, as I understand the matter from a response to a special request for information from Mr. Umney—if wooden nutmegs were offered for sale as nutmegs, and so sold, or if a root which was obviously not ipecac were to be sold for ipecac, then the seller would be liable under the law ; but no objection would be made to his selling wooden nutmegs under the name of wooden nutmegs, or spurious ipecac without claiming that it were ipecac, notwithstanding that it might be well understood on all sides that the goods were gotten up, offered and purchased with a view to ultimate fraudulent use. I understand this to be the same principle according to which any of our "honest" drug merchants will refuse to powder the stalks of cubebs for their own trade, but will sell them to some one else to be used for that purpose.

It is as these exhibitions preceding the drug sales that one finds his best opportunity to study commercial drugs. Every sale, to one so deeply interested, is an education by itself, and I feel that could I only spare the time I should spend an entire year in London, for the sole purpose of utilizing every such opportunity which offered. Some of the sights presented even during my short stay will interest you. Upon one occasion, I saw 65 tons of raw ivory tusks, etc., on exhibition ; on another occasion 3,000 cases of ostrich feathers, and many cases of bird skins and miscellaneous feathers. Gathered upon one floor of the London docks, I saw enough of Ceylon cinnamon to fill a large building. Upon another occasion, preceding a sale of vanillas, I saw enough of this article sampled, as it seemed to me, to load several of our largest freight cars. In an adjoinining room were musk, ambergris and civet representing a small fortune. Such a quantity of ipecac as I did not suppose could be gotten together in these days, was exhibited to me at the Crutched Friars Warehouse upon another occasion, and I may remark that there were but very few bales of strictly first class root included.

An American who visits these sales and converses with the brokers hears frequent statements to the effect that the worthless, rubbish or poor stock is purchased largely for American account.

The statements to this effect are neither reserved nor indefinite. I have been assured by more than one dealer that he observed constantly that purchasers for America bid readily upon those grades which would not be taken for English consumption, but ignored the better class of goods. To these assertions I was never able to fully reply. Although I had abundant knowledge that many firms in this city and country carry and consume full lines of first class drugs, I was not in a position to reply to the general nature of such accusations and was obliged to put up with the disgrace which they implied.

At such times the question appealed forcibly to me: why cannot a large part of this trade in original packages be transferred to New York? but the query always ended with the reflection that we have not the lines of shipping to bring these goods to us from the countries of production. It seems to me that instead of devoting months of legislation to decide the question of putting on or taking off two or three cents a pound duty on a thousand articles, Congress would be much better engaged in the study of deeper and broader questions relating to the extension of our foreign trade and in bringing our great commercial centres into closer communication with distant countries.

The vastness of the London import trade can no more be realized by one who observes it for the first time than can the number of gallons of water rushing over the falls of Niagara.

In one of the recesses of such a building, and not making it at all conspicuous by the fractional portion of space which it occupied, I have come across not less than 1,500 tons of Cinchona bark, awaiting a favorable market.

The collection of specimens which I have to exhibit this evening numbers something over 200, so that any general account of them is impossible, but certain special observations upon them, made during my stay in London, may be mentioned as follows:

Two of my observations apparently outweighed in importance all of the others, relating to the two important roots, rhubarb and ipecac. It is well known to most of you that under the present construction of our customs laws spurious drugs are not admitted to entry. A wiser construction and a more efficient aid to the professions of pharmacy and medicine can hardly be imagined than this, replacing the requirements for expert knowledge by the thousands of individuals concerned in the drug trade, by that of only a few government officials at the ports of entry, and putting it out of the power of dishonest importers, who might desire to obtain and handle fraudulent goods, to gratify such wishes. It is clear, however, that the law can accomplish its good work only by virtue of maintaining at the highest level the faithfulness and efficiency of our official guardians, and while I would not for a moment make any general criticism or permit my statements to be construed as insinuations against either the faithfulness or efficiency of our Custom House officers, I yet feel it a duty to present for your consideration the statement that foreign shippers are eluding the watchfulness of custom officers in regard to the very important articles to which I have referred. There are in England several large growers of Rhaponticum or spurious rhubarb, and the statement is current and generally believed, that an important branch of their business is in the shipping of this article to American ports, whether in separate packages or mixed with the genuine drug I could not secure information. To one who is accustomed to seeing only the ordinary

article of Rhaponticum it would not appear that any one could mistake that article for Chinese rhubarb nor, indeed, can he, if an examination is made, but the practice which there prevails of carefully growing the root, selecting only a certain special grade and size and carefully preparing it for our market, the resulting product looks upon a superficial view much more like the pure grade of Chinese rhubarb than I would have supposed possible. Upon examination the bright yellow color (although it yields less yellow coloring matter to ether), the presence of the outer bark and the appearance, when this is scraped away, of the very regular fine net work are amply sufficient for identification. The sample of English rhubarb which I exhibit this evening by no means represents the large and handsome pieces which are selected for the purpose of substitution, and of which I did not succeed in obtaining a good sample.

Concerning ipecac it is well known that all Carthagena ipecac is supposed to be rigidly excluded from our market. Here again, it would appear that no one, however careless, could be deceived into mistaking Carthagena for Rio ipecac, and if the root were left in its natural condition the mistake would doubtless never occur ; but picked over, broken up and stained for the express purpose of deceiving the purchaser, Carthagena ipecac it is said, may be made to deceive even one who is familiar with it in its natural state. My evidence is very direct and definite, although circumstances prevent me from making public the details, that a regular business exists in London in picking over the Carthagena ipecac, selecting certain roots, breaking off certain parts of them, when necessary, and staining the suitable portions in imitation of the Rio variety, for the purpose of evading our custom house officers. In its natural state the spurious article is known by its greater thickness, its dull light grey color, its tortuousness, and the absence of the constrictions which mark the Rio, notwithstanding that it possesses the thickened collars. The latter, however, are more distant and broader in the Carthagena. Within, it presents more of a horny color and appearance as contrasted with the white mealy structure of Rio ipecac. All these external characteristics, except the color, can be diminished by a judicious selection, while the color can be modified by staining. Upon breaking the manipulated root it would, of course, be known by its internal structure and color. I have here for exhibition a small sample of the natural Carthagena root, but I am, unfortunately, not able to exhibit to you a specimen which has been manipulated.

It is worthy of note that the real medicinal value of Carthagena ipecac is not known. The careful studies of the past year have demonstrated the fact that emetine is not a definite chemical body, but a mixture. Investigation has not yet determined anything more than that the average percentage of emetine in the Carthagena ipecac is greater than that in the Rio, and that the two are not identical in nature. We have no good reason to believe that the Carthagena ipecac is not equal or even superior to the Rio, but in the absence of evidence to the contrary it becomes necessary to assume such to be the case.

Other specimens of special interest are the following :

A specimen of genuine Savanilla rhatany presented by the Pharmaceutical Society's Museum and differing markedly from the Para rhatany which is now almost exclusively sold as Savanilla.

Two specimens of false Pareira brava.

Two specimens of Japanese or spurious Star anise.

Typical specimens of the three important varieties of Nux vomica, viz., Ceylon, Bombay and Cochin.

Seven specimens of cubebs showing the four leading commercial grades of the genuine article, besides dust, stalks, and a spurious variety.

In Nutmegs I have specimens with the mace dried upon them ; others with the testa unbroken, and still others with broken and damaged kernels.

An interesting variety of pepper, closely related to long pepper, but of globular form, is represented by a very small specimen.

Two samples of Jaborandi illustrate the inferior Rio and the more new and superior Pernambuco variety. The latter specimen is presented by Mr. Holmes who is the author of the species of Pilocarpus which yields it.

A rare occurrence in the London drug market in these days is the appearance of a lot of Sagapenum or Opopanax, but such an occurrence took place just previous to my visit and excellent specimens of both these rare drugs were presented to me by Messrs. Souratty & Co.

Among the tanning products of recent introduction are the fruits of a species of Terminalia, which are now becoming a very important article of commerce in the London market, and of which I exhibit an excellent specimen.

My collection of Aloes is quite large and complete. The comparative qualities are well indicated on the labels.

The same thing is true of my collection of Benzoins.

Among the more recent objects of interest in the London drug trade is Senna pods. Up to very recent times these pods have been interesting only as aiding in the identification of the varieties of Senna. They were considered an undesirable element and Senna was deemed inferior if any large proportion of them were present. Of late years, however, their properties have been investigated and they have been found to have the same properties and to be probably little, if any, inferior to Senna leaves.

Wild mace is also a very important article of commerce at the present time. Large quantities of it are exhibited in bulk at the spice sales, besides other large quantities that are mixed with the genuine mace in its broken form. This is the product of Myristica Malabarica and is almost entirely devoid of aromatic properties. It is not at all difficult to recognize at sight in an entire condition, nor even when broken up if one examines the individual pieces. The entire arillode is much less flattened and its branches are straighter than in the genuine mace. Its surface is bright and shining and its color always deeper and brighter than in mace proper. Mace always presents a grayish red or brown, or perhaps I may better say a dull red or brown color. The wild or Bombay mace varies greatly in shade, three principal colors being recognized, namely, light, medium and dark, or yellow, red and brown. Excellent samples of all these three colors are here presented.

Few experiences were more interesting to me during my entire stay in England than the opportunity afforded for witnessing the passing of the ancient trade in Cinchona bark. The present era bears the same relation to that of a quarter of a century ago concerning this substance, which the trade in woven fabrics does to the state of primeval man when he clothed himself in the skin of animals. A quarter of a century ago all our Cinchona bark came from the native forests, and was of comparatively low grade and exceedingly irregular in variety, quality and strength. Much of it was worthless, the most of it poor, and the best of it not to be compared with the average bark of

to-day. This change has been wrought by cultivation, and the cultivated bark has now all but put a stop to the collection of the wild article, the latter with rare exception, not being able to command a price sufficient to cover expense of collection and shipment. But at the time when the price declined heavily under the influence of great shipments of cultivated barks, enormous stocks of the wild barks were still held in the commercial centres, particularly in London. Their holders instead of forcing them upon the market, even at the heavy loss which would have been involved, were short-sighted enough to look for better days and a later recovery in prices, and so held on. But this opportunity never came; the price sank lower and lower, until at the present time only a few cents a pound can be obtained for these barks, many of which cost a dollar or even more, and even at this nominal figure they can only be gradually marketed, a few dozen bales at each bark sale. The total stock of such barks now held must be somewhere in the neighborhood of 1,500 tons, and includes the Cuprea, Pitaya, soft Colombian and Carthagena; the hard Colombian or Maracaibo, in spite of its almost worthless character, is so fortunate as to present a handsome appearance, that it still commands a moderate and steady sale. Not only have the original stocks of this variety been entirely exhausted, but large collections are occasionally made and easily marketed. All of these varieties, with various others which represent what may be called the modern barks are here on exhibition, and all of them were taken from samples actually placed on sale during the past summer.

I cannot close my remarks without making a brief reference to the Meacham Drug Farms, the visiting of which had been a dream of anticipation with me for many years. Although I was able to devote but a single day to my observations there, yet I saw a great deal which interested me deeply. The formation is chalky, which the cultivators claim is an important element of success in the cultivation of still-drugs. This view seems to conform fairly well with the well-known principle that arid conditions favor the development of volatile oils. The section which I visited about Wallington is almost entirely devoted to the peppermint cultivation. Formerly it was a famous spot for the cultivation and distillation of lavender, but a blight which made its appearance some years ago has rendered the successful cultivation of this crop almost impossible, so that I saw but a single field of any considerable extent. This field, however, seemed at the time of my visit to be in a most flourishing condition—it was in full bloom and cutting was in progress. A sample which I brought with me is here exhibited. Small fields of thyme and chamomile were also observed ; but, as I stated, the cultivation of peppermint was almost the exclusive interest. The soil in which the latter is cultivated is not at all wet. Peppermint is propagated entirely by cuttings which are planted in beds some four or five feet broad with furrows between. The bed is occupied completely by the peppermint, no order whatever being observed in the disposition of the plants. This also was in process of cutting at the time of my visit in early August. The sample taken which is here exhibited is less than half the ordinary length and robustness, owing to the extreme drouth.

The cultivators of the plant do not themselves do the distilling, which is a separate industry. In some cases the owners of the stills purchase the crop from the farmers and distil it in their own interest, but ordinarily the crop is brought to them by the owner, and distilled for a toll or a fee, and the product returned to them after distillation by the owner of the still.

The native distillers, at the time of my visit, were in quite a state of excitement and indignation over the fact that certain Frenchmen representing a syndicate had appeared in the drug region and threatened, by purchasing the standing crops, to deprive the former of their industry.

AMERICAN PHARMACEUTICAL ASSOCIATION.

Special Membership Committee.—"The following motion was adopted at the Chicago meeting of the American Pharmaceutical Association." That the president be instructed to appoint a *Special Membership Committee* to consist of one member from each State and Territory and one each from the District ofColumbia and the provinces of Nova Scotia, Ontario and Quebec. The duty of said committee shall be that of soliciting new members in their respective sections of country. They will report to and act under the direction of the chairman of the Council, J. M. Good, St. Louis, Mo., and the chairman of the Committee of Membership, Charles Caspari, Jr., Baltimore, Md. Considerable time has been required to secure the acceptance of distant appointees. but the earnest and enthusiastic letters received from many indicate that the great advantages of membership are appreciated, and the present year promises to be one of exceptional progress in this direction. The thanks of the Association are due to H. M. Whelpley for the practical suggestion.

The following-named members have accepted the appointment: Alabama, Philip C. Candidus, Mobile; Arizona, Clemens L Eschman, Phœnix; Arkansas, Wm. W. Kerr, Russellville; California, Wm. M. Searby, San Francisco; Colorado, Chas. S. Kline. Denver; Connecticut, Chas. A. Rapelye, Hartford; Delaware, John M. Harvey,Wilmington; District of Columbia, Saml. L. Hilton, Washington; Georgia, Henry R. Slack, LaGrange; Idaho, Albert O. Ingalls, Murray; Illinois, T. H. Patterson, Chicago; Indiana, Josiah K. Lilly, Indianapolis; Iowa, Mrs. Rosa Upson, Marshalltown; Kansas, M. O. Miner, Hiawatha; Kentucky, Wiley Rogers, Louisville; Maine, Edward A. Hay, Porland; Louisiana, Alex. K. Finley, New Orleans; Maryland, D. M. Culbreth, Baltimore; Massachusetts, W. L. Scoville, Boston; Michigan, Arthur S. Parker, Detroit; Minnesota, James C. Hening, Stillwater; Mississippi, John C. Means, Natchez; Missouri, H. M. Whelpley, St. Louis; Nebraska, James Reed, Nebraska City; Nevada, William A. Perkins, Virginia City; New Hampshire, Andrew P. Preston, Portsmouth; New Jersey, Wm. C. Alpers, Bayonne; New Mexico, James A. Kinnear, Deming; New York, Caswell A. Mayo, New York City; North Carolina, Henry M. Chears, Plymouth; Ohio, Louis C. Hopp, Cleveland;Oregon, Geo. C. Blakely. The Dalles; Pennsylvania, Frank G. Ryan, Philadelphia; Rhode Island, Henry J. Alfreds, Providence; South Dakota, Irvin A. Keith, Lake Preston; Tennessee, James O. Burge, Nashville; Texas, L. Myers Conner, Dallas; Utah, Frank A. Druehl, Lake City; Vermont, Henry A Chapin, Brattleboro; Virginia, Edmund R. Beckwith, Petersburg; West Virginia, Edwin L. Boggs, Charleston; Wisconsin, John A. Dadd, Milwaukee; Wyoming, Thos. G. Maghee, M.D., Rawlins; Quebec, Seraphin Lachance, Montreal; Nova Scotia, Francis C. Simson, Halifax; Ontario, John Lowden, Toronto.

Every pharmacist of good moral and professional standing, whether in businesss on his own account, retired from business, or employed by another, and those teachers of pharmacy, botany, and chemistry and who may be especially interested in pharmacy and materia medica, who, after duly considering the objects of the Association, and the obligations of the constitution and by-laws, are willing to subscribe to them, are eligible to membership.

The large volume of proceedings issued annually to the members containing the valuable and exhaustive report on the progress of pharmacy, embracing all of prime value that has appeared in the leading chemical and pharmaceutical journals in this country and Europe, is of greater value than the membership fee. It is hoped that the druggists of each section will have a local pride in aiding the members of the committee representing them to present to the next annual meeting at Asheville, N. C., the largest accession of members ever secured.

The following sections have not responded, and the president would be pleased to have volunteers offer their services:

Florida, South Carolina, Washington State, North Dakota and Wyoming.

EDGAR L. PATCH, President.

Boston, January 1, 1894.

THE ALUMNI JOURNAL

Published under the auspices of the

Alumni Association of the College of Pharmacy

OF THE CITY OF NEW YORK,

209 EAST 23d STREET.

Vol. I. April 1, 1894. No. 3.

THE ALUMNI JOURNAL will be published Monthly, excepting June, July and August.

Entered at New York Post Office as second-class matter.

SUBSCRIPTION:

Per Annum, . . . One Dollar

Single Copies, . . . 15 Cents.

All copy for publication, or changes of advertisements should reach us on or before the 20th of the month previous to the issue in which they are to appear.

All matters relating to publication should be written on one side of the paper only, and sent to the editor,

HENRY KRAEMER, 209 East 23d Street.

All communications relating to finances and subscriptions should be addressed to

A. HENNING, Treas., 209 East 23d Street.

All communications relating to advertising should be addressed to

F. B. CASWELL, Manager Advertising Department, 209 East 23d Street.

THE SUPPLEMENT.

WITH this issue of THE ALUMNI JOURNAL we commence a departure which has for its object, primarily the care and interests of the students of the College of Pharmacy. It so happens that all of the journals published by or in connection with the authority of our college do not receive the support of the students. This arises because the students are not ready to peruse what is in many cases too difficult for them to comprehend. In order to make THE ALUMNI JOURNAL a students' journal it has seemed necessary to create "The Supplement," which shall be issued from time to time, and contain such matters as will assist the students in their studies and which are of interest to those who are not inclined to dwell too long upon matters that are too exacting and thorough. In this way we hope to bring the more solid matter into the hands and eventually into the heads of a large number who may care little for the scientific aspect of pharmacy. In this country we are almost too practical to the exclusion of scientific research. To meet practical people we must use practical means to accomplish the purposes of THE ALUMNI JOURNAL. At the same time to those of our readers to whom "The Supplement" may not be of such great interest, we trust that they may see that in this way we do not take away from the dignity and character of the JOURNAL, whose aim is "to be a valuable publication to all those interested in pharmaceutical advancement."

IPECACUANHA.

LAST month we referred to the concentration of the labors of so many investigators in the examination of chloroform. This month we desire to call attention to some of the most recent developments in the examination of ipecacuanha. This drug has received the most careful study of both pharmacognosists and chemists. E. M. Holmes, in a paper recently published, has produced a key to the microscopical structure of the commercial ipecacuanhas. It is based upon a paper on this subject by Tschvisch and Ludtke, is as follows:

I. *Woody column containing chiefly tracheids, but no vessels.*

A. Root bark containing *starch* and *raphides.*

1. Parenchyma of bark uniform = *Rio Ipecacuanha.*

2. Parenchyma of bark forming two layers = *Carthagena Ipecacuahna.*

B. Root containing *no starch, but sugar.* Woody centre not visibly porous = *Greater Striated Ipecacuanha.*

II. *Woody cylinder containing vessels, wood-cells and medullary rays.*

A. Root bark containing *starch.*

1. Medullary rays composed of a single row of cells, woody centre visibly porous = *Lesser Striated Ipecacuanha.*

2. Medullary rays forming two or three rows of cells = *Undulated Ipecacuanha.*

B. Root bark containing *inulin.*

1. Medullary rays of a single row of cells, no starch, sphœraphides in the bark = *White Ipecacuanha* (*a*).

2. Bark contains stone cells.

3 Medullary rays broad = *White Ipecacuanha* (*b*).

III. Rhizome having a *monocotyledonous* structure, brown *pigment cells* in parenchyma, *acicular raphides* and *starch* present = *False Indian Ipecacuanha.*

It should be remarked that although it is comparatively easy to identify any of the spurious ipecacuanhas by their microscopical structure it is by no means so easy to detect the presence of the spurious roots in powder, since in several of them starch and acicular raphides are present, and the starches can only be determined by careful and repeated examinations and measurements. This insufficiency of the microscope in enabling one to conclusively pronounce upon the value of a sample leads to the hope that a method of assay will soon be devised. A number of investigators are at present engaged upon this subject, and the striking absence of agreement in the results of different workers in the determination of the alkaloid in ipecacuanha, seems to arise from to lack of investigators in preserving throughout the entire treatment, conditions which are suited to the character of the material operated upon, and of the alkaloid contained therein.

B. H. Paul snd A. J. Cownley have recently found that the alkaloid *emetine* is not a homogeneous body, but a mixture of two or more different substances. They have found an amorphous alkaloid associated with others which are distinctly crystalline, and which are very different from each other in both chemical and physical characters. The authors are at present engaged in preparing such quantities of the several alkaloids of ipecacuanha as will admit of the chemical characters being studied so as to furnish data for their separation and identification, besides furnishing material for ascertaining their respective therapeutic effects Meanwhile it must be pointed out that there is no ground whatever in the assumption that ipecacuanha stems possess properties which justify the admixture with the roots. So far as anything is known, it points in the opposite direction.

C. C. Keller has recently modified the process of assay (see Most Recent Work) recommended by him, and concludes that Ipecacuanha of the best quality should contain not less than 2.5 per cent. of alkaloid. Paul and Cownley incline to the opinion that the percentage amount of alkaloid does not vary much from two per cent. A number of examples examined by J. Attfield contained two per cent.

The results of assay and microscopical examinations of ipecacuanha led A. R. L. Dohme to conclude that: The inner "woody portion" of the root contains very little emetine and that most of the emetine is situated in the cork layer and the parenchyma cells adjoining. C. C. Keller likewise finds that while the cortical portion of the root contains nearly 3 per cent. of alkaloid, the woody portion does not contain much more than 0.5 per cent., and he advocates the separation of the central woody portion of the root in the grinding.

THE PHARMACIST AND HIS EDUCATION.

FROM PERSONAL CONTACT WITH PHARMACISTS RUNNING BACK MANY YEARS.

By ARTHUR H. ELLIOTT, Ph D.
College of Pharmacy of the City of New York.

We have often been lead to think of the value of the pharmacists' education, and the best way of acquiring it. After many such periods of meditation we have been forced to exclaim, "Alas, what shall we do?" The number of difficulties we have to encounter at the very beginning of the problem are so discouraging that we may add to the above exclamation, "What may we do?" To-day the instructor in pharmacentical education has two very important obstacles placed in his path. First, the State insists that before a diploma is given to a graduate in pharmacy, he must have had some years' experience in a pharmacy where physician's prescriptions are dispensed. To our mind this is the most absurd requirement ever insisted upon by a set of intelligent men. With a large experience among young men coming from stores to a college life and fulfilling the above requirement of the law, we are satisfied that often it were better they had never seen such a place as a drug store, if the habits they have acquired there are a sign of the methods followed in a place where physicians' prescriptions are dispensed. When these young men come to us, we have to fight against the habits so acquired, for many months before we can begin to see the results of sowing the first seed for their true education. In conjunction with this absurd law comes the second difficulty we have mentioned. Since the young student *must* get this so-called practical education in a store, he hires his services for a very small amount (or perhaps he has to give such services) that he may follow the letter of the law. There is no system of apprenticeship, he does what he is told to do. This often means the veriest drudgery from early morning to late at night. He is porter and salesman and very little else for two or more years, in a place where physicians' prescriptions are dispensed by somebody else. Legally he must not put up such prescriptions alone and the proprietor of the store is often too busy to show him how, or to wait to see the young man do it himself. In fact the whole system of so-called practical experience in a pharmacy as now carried out is a farce. The law is absurd because it is not definite enough in regard to the relations between the young man and the proprietor of the store, and furthermore the education often acquired under such circumstances has to be broken down and remodelled in the college life afterwards. And even where we have college and store life together, the hardships endured by the students in order to comply with the law, speak loudly for the patience and industry of the young men entering the pharmaceutical profession. The student who has to follow a store life, at the same time that he goes to college, labors under enormous difficulties in getting time to study and digest what his instructors have given him. He often has to be in the store from 7 A. M. to 11 P. M. and get to and from college on schedule time. Squeezing his education into his laboring days like this, is it a wonder that you hear so many young men say, "it is a slave's life?" If he gets time to study his college subjects, it is in the small hours of the night, when he should be resting for the labors of the following day.

Such we conceive to be a reasonably fair picture of the situation to-day as regards the education of the pharmacist. The obvious remedy is to abolish this store life, and allow the student to get

his college education first; in the same manner as the engineer, the architect, and other professional men. And let us hope that this time is coming soon. But our present problem is what to teach the young pharmacist in the time at his disposal.

At the beginning of the inquiry we are met by a very serious defect in the elementary education of the young men who come to the preliminary college examination. For some reason or other they are lamentably weak in elementary mathematics, such as proportion, decimals, fractions, and the crudest ideas of geometry. This must either be a defect in the schools they have gone through, or else they are taken out of school too soon. This is such an important defect that one of our colleges has arranged a special course of instruction to meet this difficulty; and the success of the movement is beyond question; the young men meeting their after-studies with much better equipped minds in this particular. We would therefore urge all students entering college life to study the above branches of mathematics thoroughly, and they will find the time so spent well invested.

Coming now to the college life, we have to consider what the phamacist is as a member of the community. He and the physician are the guardians of the public health, and also the health of the individual family. In the former capacity he should understand certain sanitary problems, and toward the family he should exercise such care that they shall not suffer from poor or weak drugs dispensed from physicians' prescriptions, and that those things that are accessory to the work of the physician shall be of the most approved kind and quality.

Sanitary problems involve a knowledge of the elementary principles underlying life in communities. This means the study of water supply, air, light and ventilation, together with the broad principles governing the control of epidemics and disease in general. Knowledge of this character involves the study of chemistry and physics pretty thoroughly. This study should be made as vital as possible by bringing the student into actual contact with chemical experiments at the beginning of his work; supplementing such studies with discussions upon the bearing of the experiments upon life and its problems.

In regard to the identification of drugs and the chemicals used in prescriptions, chemistry and physics also bear a very important part; but here a good knowledge of the microscope and its uses is invaluable.

In fact the pharmacist should be a good chemist, with considerable knowledge of physics and microscopy. Beyond this he will find his work in pharmacy to consist of the application of chemical and physical truths to special cases. Advanced pharmaceutical work is but the elaboration of such chemical and physical knowledge to suit the preparation of special drugs, the testing and purification of chemicals, and the compounding of both drugs and chemicals in prescriptions.

As useful accessories to the above essential knowledge for the pharmacist come materia medica and botany. But as far as the time now given to pharmaceutical education in our colleges is concerned, these latter subjects should be given a *minor importance or else dropped out of the curriculum.* Materia medica (vegetable materia medica), while incidentally useful to the pharmacist, is essentially a study for the physician. And there is so little time now for the student to acquire the necessary truths of chemistry and physics and their application to pharmacy, that every unnecessary de-

mand on the student's time and brain should be eliminated.

Before closing it would be well to consider for a moment the scope of physical and chemical instruction. Too much stress cannot be placed upon the personal contact of the student with the experiment. Every effort should be made to carry out this idea. After the observations of the student comes the discussion by the instructor and an application of theory to facts. But here great care must be exercised not to give too much theory. Furthermore, it is unwise to give students details that are not immediately applicable to the work they have in hand. They are usually unable to discriminate and try to swal low:

"Total grist, husks and all."

Every effort should be made to classify their work for them, so it may be readily applied.

The above rather brief and disconnected statements give some of our ideas in regard to pharmaceutical education, and are the result of considerable thought after many years of contact with students and pharmacists. If they lead others to think upon the same topic, and cause a change in the present methods of educating our students in pharmacy, we shall feel only too glad that they have been committed to these pages.

Aromatic Waters.—In experimenting with the new official method for preparing "Aromatic Waters," M. A. Miner finds that in triturating 20 Gm. of calcium phosphate with 2 C.c. of volatile oil, a mobile powder is formed, which mixes readily with water on trituration, without evident separation of oily particles and furnishes a satisfactory product. —*Apothecary*, Jan., 1894.

OUR METRIC STANDARDS AND UNIT.

BY WILLIAM HALLOCK, A. B., PH.D., PHAR. D.,
Adjunct Professor of Physics at Columbia College.

"To find the length of a rood in the right and lawful way, and according to scientific usage, you shall do as follows: Stand at the door of a church on a Sunday, and bid sixteen men to stop, tall ones and small ones, as they happen to pass out when the service is finished; make them put their left feet one behind the other, and the length thus obtained shall be a right and lawful rood to measure and survey the land with, and the sixteenth part of it shall be a right and lawful foot."—JACOB KOEBEL on Surveying; Germany, 1550. Translated by E. A. GIESELER in the *Journal of the Franklin Institute*, 126, 3d ser. 96, pp. 115–16.

In Italy there existed, in 1832, no less than 215 foot measures; and in Germany, at the beginning of the century, there were certainly no less, probably more.—GIESELER, l. c.

What is a "standard" and what a "unit"? We have absolute standards and concrete or type or practical standards. For example, the absolute standard of length is the distance from the equator to the pole on the meridian of Paris. The practical standard is the distance between two marks on a certain bar preserved in Paris, and called "the meter of the archives." It was intended to be one forty-millionth of the absolute standard, it is not; but we know its error, and hence it serves our purpose very well. Some one may say we know the relation of the yard to the earth's quadrant and hence it would answer Very true, but the yard stands alone and the meter is the keystone of a whole system.

A fruitful source of misunderstanding is the standard or unit of mass, or weight. The old standard is a piece of brass—a pound. Is it mass or weight? It is a

mass, and is always called a *weight*. What is the difference? Mass is the quantity of matter (brass), weight is the force with which the mass is drawn toward the centre of the earth The mass is the same whether it is at the sea-level, or on a high mountain, on the moon, the sun, or anywhere else in the universe; mass is constant, is absolute. The weight of the mass is less on a mountain than at sea-level, less on the moon than on the earth, more on the sun, and in fact is purely relative, depending entirely upon the position of the mass with reference to other masses. When we say "a body weighs ten pounds," we really mean "the body is drawn toward the earth with ten times the force with which the standard pound is drawn toward the earth." The force is proportional to the mass, and hence, if the force is ten times the mass, it is ten times, and the mass of the body is ten pounds.

The metric absolute standard of mass is the mass of one cubic decimeter of pure water at its temperature of maximum density. The practical standard is a certain piece of metal preserved at Paris and called "the kilogram of the archives." Again, it is not equal to the absolute standard, but we know its error and so it answers our purpose.

Another standard that interests us, and is very intimately connected with the kilogram, is the liter—equal, theoretically, to the volume of one cubic decimeter; practically it is the volume, at its temperature of maximum density, of a mass of water equal to the "kilogram of the archives." The difference is very slight, and can be neglected in all but the most accurate absolute scientific work. Similarly the cubic centimeter is the volume of one gram of water at its temperature of maximum density.

Our immutable standard of a period of time is one revolution of the earth on its axis—a day. It is also our practical standard.

The "unit" is usually some fraction of the "practical standard," and varies with the quantity measured; for example, the kilometer, meter, millimeter and micron (1-1000 m. m.) are various units, any one being chosen according to the length we wish to measure. Similarly the day, hour, minute, second are units of time.

Mark the simplicity of this system. We measure the dimensions in convenient decimal units; the unit area is the square on the unit of length; the unit volume is a cube on the unit of length; the unit mass is the unit volume filled with matter of unit density (water at 4° .0 C). Specific gravity is the number of units of mass of the substance in the unit volume, etc., etc.

In practice it is found desirable to use only certain units, for example; we often use the kilometer, the meter, centimeter, millimeter, whereas hectometer, dekameter and decimeter are seldom used. In mass we use kilogram (called simply "kilo"), gram, but decigram, centigram and milligram are much less used. In volume we use the cubic meter, hectoliter, liter and cubic centimeter (never called milliliter). Specific-gravity multiplied by volume gives us mass (weight in common usage); conversely, mass (weight) divided by specific-gravity gives volume. Compare for a moment these operations with an attempt to get from cubic inches to scruples and drachms, or vice versa. In a word the metric system is homogeneous throughout and that one fact ought to be sufficient to speedily accomplish its adoption.

Let us see what is the status of the metric system to-day and what are its claims to our favorable consideration. In the first place it should never be called the "French system;" the French first

had the good sense to adopt it, but it is in no wise French, even the names being taken from the Greek and Latin. The metric system is not only entirely homogeneous as regards its various standards and units, but it is the foundation of a whole system of absolute units for the measurement of every conceivable quantity. We have in this country the amusing spectacle of a metric superstructure and foundation, with a very heterogeneous unscientific ground-floor intervening. We are almost as familiar with "ohms," "amperes" and "volts" to-day as we are with "pounds," and "feet," and more than we are with various "ounces" "scruples," "drachms," etc. Yet we could not measure an ohm or a volt without the metric system, they are metric units.

Among the blessings which the era of electricity is going to bring us is the metric system as a whole. Already we find the "kilowatt" challenging the antiquated "horse-power" for popular favor, and we are bringing up a generation of engineers who appreciate the merits of the system.

To look at the subject from another point of view, let us suppose we have a yard or pound and wish to know whether it is "true and lawful." After some inquiry we may learn that we must send it to the Coast and Geodetic Survey, a department of the U. S. Treasury, at Washington, D. C., which has the custody of the United States standards. In due time we should receive our yard or pound back again with the report of their errors. They have been compared with—what? A standard yard, a standard pound? Not at all. They have been compared directly or indirectly with the "national prototype standard meter and kilogram," which are the copies of "the meter and kilogram of the "archives" and have been atested by the International Bureau of Weights and Measures" at Paris, and issued to each of the co-operating governments. Thus to-day both ends of our system are metric. The "meter and kilo of the archives" are our standards, and our more complex units are directly derived therefrom. Only our two intermediate units, the foot and the pound, are in the old system, if indeed, such a heterogeneous conglomeration can be dignified with the name of "system." Let us hope that this anomalous condition will soon pass away. The physicist and the chemist already use the metric system exclusively, and we look to the apothecary, and the physician to take the next step toward the millennium when our antequated units will be laid away with the antequated methods of communication and transportation, and when we shall no longer accomplish twentieth century deeds and measure them in mediæval units.

THE MOST RECENT WORK.

Creosote Pills.—For obtaining very small creosote pills Fauel recommends the use of a mass obtained by dissolving five parts of sugar in twenty-four parts of water and then adding eleven parts of gelatin. One part of this, used warm, is said to emulsify two parts of creosote, and by the addition of liquorice powder a convenient pill-mass may be obtained which contains a large proportion of the active ingredients. When creosote is prescribed in pilular form, together with tannin and iodoform, Violé absorbs the first by means of animal charcoal, then adds the other ingredients, and finally masses the whole with turpentine. The charcoal is said to mask the taste of the creosote to some extent, and by rolling the pills in magnesia, silvering or coating with tolu varnish it may be still further covered.—*Pharm. Jour. Trans.*, 1894, 735.

Determination of Alkaloide by Potassio-mercuric iodide.—Grandall and Lajoux. (*Jour. de Pharm. et de Chem.*) propose the following:

100 Gms. of finely powdered plant parts are well triturated with 100 Gms. basic acetate lead, then percolated with 600 Gms. water. The treatment with basic lead acetate has for its purpose, the precipitation of the organic acids,

while the alkaloids go into solution as acetates; likewise coloring matter extractives and albuminous bodies form insoluluble compounds with the lead. The percolate is filtered, treated with slight excess sulphuric acid, the insoluble lead sulphate filtered off, and the alkaloid precipitated by excess of pottassio-mercuric iodide, the precipitate is washed and the alkaloid removed afterwards by either of two methods.

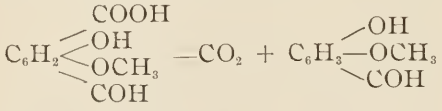
1. The precipitate is shaken in separating flask with potassium cyanide, a little solution of caustic soda and ether. The alkaloids may be removed from the ether and purified in the usual way.

2. Add slight excess of solution of sodium sulphide after standing a short time, acidify with sulphuric acid, filter, make alkaline and shake alkaloids out with ether.

The addition of a little oil (olive) to the ether assists in its rapid separation. V. C.

Toluol Thermometer.—There has lately been introduced a thermometer in which the mercury is replaced by Toluol. It answers admirably for low temperatures, as its freezing point is circa—70°C., boiling point being +170°C. The toluol is colored black which renders the thread easy to distinguish. The co efficient of expansion is five times greater than that of mercury, also its density is very small, circa 0.870, this allows the use of a larger bulb and capillary tube. Because of their comparative cheapness they promise to supplant the mercury thermometer for general uses. V. C.

Vaniltin.—Von Heyden (Pharm. Centralh), has patented a new process in which aldehydeguaiacol-carboxylic acid or its silver salt is heated in presence of acidulated water to temperature of 180° under pressure, whereby carbonic acid gas is split off, yielding aldehyde guaiacol or vanillin, thus:



Reaction for Veratrine.—N. Wender uses two three drops of a mixture of sulphuric acid and furfuraldehyde (five drops to ten C. c. acid). This mixture by means of a glass-rod is applied to a minute particle of the alkaloid when a yellowish-green and then an olive green mixture results; the edges and the whole of the mixture afterwards turn to a beautiful blue color. On warming, the mixture gradually acquires a purple violet color. The blue substance obtained in the cold is insoluble in alcohol, ether or chloroform. The least amount of water, or alkali, decolorizes the solution and on adding much water a fairly permanent yellow solution is obtained.—*Chem. Zeit., 1893, 950.*

Ætiology of Cholera.—Sanarelli (Ann. de l'Inst. Pasteur, 1893, 693), advances the idea that the morphological unity of the cholera bacillus must be abandoned, since there exist different varieties of vibriones morphologically distinct, which are capable of producing in man and in the lower animals one and the same type of cholera, clinically identical. Koch's bacteriological diagnosis of cholera as recently established, agrees neither with the idea of a limited monomorphism nor with the assumption of a polymorphism of the vibriones, since in every impure water we may find pathogenous microbes which possess quite the same character as the specific exotic vibrones. In addition to the morbific forms originating in the water, which exactly resemble those from the bowel, there are found in water a number of non-pathogenous microbes which approach the former very closely, so that they may be regarded as varieties capable under certain circumstances of resuming their former (?) malignant properties. This constant occurrence of pathogenic microbia in all sewage is a proof of the great importance of the pollution of water for the origin and spread of cholera. The water-vibrios and those of cholera dejections are in every respect very closely allied, which points to a common origin. Virulent vibriones do not long retain their malignant character. They gradually disappear along with the other characteristic properties of the vibriones, such as the formation of nitrites and of indol.

A Ptomaine in Influenza.—Griffith and Ladel (Pharm. Centralh., 1894, 4) have obtained a ptomaine from the urine of patients suffering from "La Grippe." It is a poisonous base, crystalline, soluble in water and gives characteristic reactions. Its formula being $C_9 H_9 NO_4$. The urine was made alkaline with sodium carbonate, and shaken with ether, the base removed from the ether by agitating with aqueous solution acidulated with tartaric acid, and from this the base is removed by adding an alkali and shaking with ether. The ether on evaporating leaves the base behind. V. C.

"White Ipecac" and Senega.—A. Andree, Apoth. Zeit., 1894, 23), examined a parcel of senega root sent out by a well-known drug house and found it to contain a considerable quantity of Richardsonia scabra, St. Hillaire, so-called "white ipecac." The senega

root is described as not possessing identical characters will the official root, being harder more fibrous and not possessing generally the keel of true senega. Portions of the stem attached to the roots were colored violet. The author states that this root contains a larger quantity of emetine than given by Hager and that it forms a very dangerous admixture.

Basic Bismuth Salts.—B. Fisher, (Pharm. Centralh. 1894, 4), offers the following method for the preparation of these salts, in which the theoretical quantities of freshly precipitated bismuth hydroxide and the organic acid are allowed to react upon one another. One molecule (486 gms.) of bismuth nitrate is dissolved in about four times its weight of dilute acetic acid, diluted with forty times its volume of water and precipitated in the cold with aqua ammonia. The bismuth hydroxide is washed by decantation till free from nitric acid, the magma is then triturated in a mortar with one molecule of salicylic acid (138 gms.) Warmed on water both, after short time a crystalline magma of basic bismuth salicylate forms; remove water by water pump and dry on porous tiles. Forms a light white powder. The bismuth subgallate (dermatol) is prepared after same method, yielding a bright yellow powder, entirely soluble in solut ion of sodiumhydrate. V. C.

Tinclure of Iodine.—C. F. Henry has made a series of experiments, the results of which seem to indicate that the following formula will most suitably meet all requirements:

Iodine,	1¼ oz.
Iodide of potassium,	1¼ oz.
Distilled water,	½ fl. oz.
Glycerin,	½ fl. oz.

Rectified spirit, sufficient to make 20 fl. oz. Add the iodine and iodide of potassium to the water, allow to stand till dissolved, then add the glycerin and sufficient rectified spirit to make twenty fluid ounces. Such a tincture (1 in 16) would be suitable for both external and internal use and is miscible with water in all proportions. The dose would be two to eight minims, and 24 minims to the fluid ounce would make a vapor iodi corresponding to the present official Vapor Iodi(B.P.)—*Pharm. Jour. Trans, 1894, 745.*

Ammonium Chloride.—K. Kraut, (Zeit. f. anorg. Chem., 1892, 278), finds that when this salt is heated in a platinum dish on a water bath, an appreciable amount is lost by volatilization; 50 per cent. of the whole if the heating is contiued for 270 hours.

Cresol Antiseptics.—

Creolin, (*Artman,*) *Sanatol,* —Cresol sulphonic acids, made from crude cresol and sulphuric acid.

Saprol—Mixture of crude cresol with high-boiling oils.

Creolin, (*Pearson,*) *Disinfected Izal, Iaporcarbol II*—Mixtures of resin with crude Cresol.

Cresol, 50 per cent. soluble, *Cresol*, (Raschig) *Creaspol, Cresol saponat, Lysol, Phenolin, Japocarbol, Liquor Cresoli saponatus*—Mixtures of crude or pure Cresols with soap solutions, in most cases 50 per cent, Cresol and 50 per cent. potash soap solution (Lysol, Cresoli saponatus, etc.)

Aqua cresolica, Cresol water—Mixtures of 1 part Liquor Cresoli saponatus with 9 parts water —amount of Cresol 5 per cent.

Solutol—Mixture of Cresol and Cresol Soda (Cresol 50 per cent.).

Solveol—Mixture of Cresol with cresylate of soda (Cresol 25 per cent.).

Tricresol—Mixture of 3 Cresols from tar oil. —*Pharm. Centralh.*, 1894, 102. V. C.

Eucalypteol. — Eucalyptene hydrochlorate $C_{20}H_{16}$—2HCl. Prepared by Anthoine, consist- of white scales, insol. in water, very sol. in alcohol, ether and oils. Melt at 50°. Recommended as antiseptic for the mucous surfaces of the organs of respiration. Administered in doses of 0.25 gms. in emulsion.—*Pharm. Centralh.*, 1894, 95. V. C.

Preparation of Guaiacol.—The Guaiacol obtained by practical distillation of the crude product from wood tar is always more or less contaminated with Cresols or Creosol etc. Chemical pure Guaiacol is obtained synthetically by heating under pressure a mixture of pyrocatechin, potassium salt of methyl, sulphuric acid and sodium hydrate in molecular proportions.

$$C_6H_4\begin{matrix}ONA\\OH\end{matrix} + CH_3NaSO_4 =$$

$$C_4H_4\begin{matrix}OCH_3\\OH\end{matrix} + Na_2SO_4$$

Thus prepared it forms in crystalline prisms of melting point 28,5° and boiling point 20.5°.

The preparation of pyrocatechin ($C_6H_4(OH_2)$ (1:2)) was formerly very expensive ; but is now with little difficulty made from benzene or toluol derivatives. By action of carbonic acid on sodium phenol under pressure and high temperature, paraoxybenzoic acid is formed. This on bromating is converted into bromo-p-oxybenzoic acid, the bromin taking the ortho position in the hydroxyl group. This on fusing with sodium hydrate forms pyrocatechin soda,

this on treatment with an acid pyrocatechin results.—Ibid.

Emetine Estimation in Ipecac.—C. C Keller, 12 Gms pulverized drug are placed in a flask of 200 C.c. capacity and shaken well with a mixture of 90 Gms. of ether and 30 Gms. chloroform. After five minutes 10 C.c. of aqua ammonia and after one-half hour 10 C. c. of water are added, shaking well. Let settle and decant off 100 Gms. (10 Gms. ipecac) of the clear solution into a separating funnel, remove the emetin from this by shaking three times with a 1 per cent. solution of HCl (25-15-10 C.c.) The acid alkaloidal solution is removed rendered alkaline with aqua ammonia and shaken twice, employing each time 50 Gms. of a mixture of chloroform three parts and ether two parts. This solution of alkaloids is filtered through a small filter moistened with ether, into a tared flask; the volatile solvents distilled off, residue dried, weighed and titrated. The Beckurt's method of titration with $\frac{N}{10}$ hydrochloric acid is applied thus: The alkaloidal residue is dissolved in 10 C. c alcohol, water added until slight turbidity results. Add few drops of tincture of logwood (1-100) and titrate with $\frac{N}{10}$, hydrochloric acid, the solution striking a light yellow color.—*Schwig. Wochenschr. Phar.*, '93-31-473.

NEW LITERATURE.

Atlas der officinellen Pflanzen.—Zweite Verbesserte Auflage des gleichnamigen Werkes von O. Berg und C. F. Schmidt. Herausgegeben von A. Meyer und K. Schumann.

Bechold's Handlexikon der Naturwissenschaft und Medicin, bearbeitet von A. Velde, W. Schauf, V. Löwenthal und J. Bechold.

Beilstein, F.—Handbuch der organischen Chemie. 3 Auf.

Bunge, Kuno v.—Ein Beitrag zur Kentniss der Hydrastis canadensis und ihrer Alkaloide. Inaug.-Dissert. Univ. Dorpat.

Calender of the Pharmaceutical Society of Ireland for 1894. Dublin: Chas. Chambers.

Davis, F.—Qualitative Analytical Tables.

DeCandolle, C.—Monographie phanerogamarum. Vol. VIII.

Elliott, A. H.—A System of Instruction in Qualitative Chemical Analysis. 2d Ed.

Genss, Alex.—Ueber die Cathartinsäure der Senna. Inaug.-Diss. Univ. Dorpat.

Hahn, Ed.—Pharmakognostische Untersuchung der Adstringens-Rinden der Sammlung des Dorpater pharmac. Institutes. Inaug.-Diss. Univ. Dorpat.

Handwörterbuch der Pharmacie.—Edited by A. Brestowski. Parts 13 and 14. L. to Magnesium, and Magnesium acetate to Mineralwasser.

Hjelt, Edv. and Ossian Aschan.—Lärobok i organisk Kemi. I. II.

Hoppe, E.—Lehrbuch der Physic.

Ince, J.—The Latin Grammar of Pharmacy: for use of Medical and Pharmaceutical students. With an Essay on the reading of Latin Prescriptions and Reference Vocabulary. 6th Ed.

Jahresbericht der Pharmacie, herausgegeben vom Deutschen Apothekerverein unter Red. von Heinrich Beckurts. 2 Hälfte. 2 Abtheilung. The second part of the second volume of this replete work finishes the Jahresbericht for 1892. In this part are contained the subjects of applied chemistry related to pharmacy, toxicology, literature and critique. Besides these are contained two admirable indexes, one of author's and the other of text. The entire work consists of nearly 900 pages, and is especially valuable, as the editor has consulted a large number of publications, many of which are not so generally consulted in this country. The abstracts are quite full in all cases.

Lebensmittelpolizei.—Ein Handbuch für die Prüfung und Beurtheilung der Menschlichen Nahrungs-und Genussmittel. Herausgegeben von P. Lohmann.

Medicus L.-Kurzes Lehrbuch der Chemischen Technologie. Tübingen.

Merke, E.—Bericht über das Jahr 1893.

Pharmaceutical Register of Victoria for 1893 Melbourne: H. Hearne & Co.

Pharmaceutische Chemie.—Kurze's Repetitorium der.— III. Th.

Pharmacopœia Helvetica (Switzerland), III. Ed.—This is the first official issue of the Swiss government. Previous to this the first editon of 1865, followed by those of 1872 and 1876, were issued by the authority of the Swiss Pharmaceutical Society; these were accepted by most of the cantons as official. In 1888 the government appointed a commission consisting of pharmacists, physicians and chemists to take the above in hand. The new Pharmacopœia goes into effect July 1st. 1894. The titles of the articles are in Latin, followed by the same expressed in German, French and Italiau. Thus: Antifebrin, antifébrine, antifebbrina. This is followed by the method of preparation, where necessary or practicable; then tests of identity and impurity; then preservation, and last and best, the maximum and minimum

loses. The text is followed by seventeen tables, including those of reagents, volumetric solutions, solubilities of chemicals in water, alcohol and ether, poisons, alcohol. alkali, acid and saturation tables, synonyms, etc. The index is in the three languages, rendering the work of ready access to all. V. C.

Quantitative Chemical Analysis.—F. Clowes and J. B. Coleman. Second edition.

Rocznik Farmaceutyczny. 1892. Edited by Adama Jaworowskiego. Warsaw, 1894.

Rupp, G.—Die Untersuchung von Nahrungsmitteln, Genussmitteln und Gebrauchsgegenständen.

Schoentjes, H.—Cours de physique expérimentale.

Siegel, Aug.—Ueber die Giftstoffe zweier Euphorbiaceen. Inaug.—Diss. Univ. Dorpat.

Die Arzneimittel der Organischen Chemie.—Thoms.

This little book of 174 pages contains an incrediible amount of valuable matter arranged in tabular form. This includes all the synthetic remedies, with, in addition, such products belonging to the classes of volatile oils, camphor arts, alkaloids, glucosides, ferments, organic acids, etc., that find employment in medicine. Under division name and formula are given the chemical terms, synouyms, empiric and structural formulæ. Under second division is given the methods of preparation, concisely as possible. The third division includes a description, as to appearance, melting or boiling point, solubilities, etc. The fourth division includes medicinal uses, with doses. This handy work cannot be too highly recommended. V. C.

Van Bastelaer, A.—Etudes, Discours et Mémoires relatif à la pharmacie.

Winter, W. — Lehrbuch der Physik, zum schulegebrauch bearbeitet. 3 Aufl.

Sugar in Urine, Methylene Blue as a Reagent for. — One C.c. of the urine, previously diluted to ten times its volume, is mixed with 1 C.c. of *methylene blue* solution (1 Gm. per litre) and 1 C.c. of normal potassium hydrate solution in a test tube; the mixture is diluted with 2 C.c. of water and heated over a flame. The methylene blue will be completely decolorized if the original urine contains upwards of 0.5 per cent. of sugar. If the color remains permanent the urine cannot be called diabetic.—N. Wender in *Pharm. Post.*, 1893, 393.

Association Notes.

THE minutes of the meetings of the Alumni Association and Executive Board will appear in the next issue.

College Notes.

At the annual election of officers of the "College," a full report of which is given on another page, an invitation was extended to the members of the college present to visit Delmonico's, by Mr. Edward Kemp and was unanimously accepted. After the result of the contest had been announced the meeting adjourned and marched in a body to the famous restaurant of Delmonico's, where a private banquet room had been prearranged for the guests. Here Mr. Kemp also displayed that well-known characteristic that has made his life and business such a success, that of doing everything thoroughly.

A bounteous repast was spread; nothing was forgotten in the way of refreshments, liquid or solid. Mr. Kemp also showed he was a lover of good music; besides the regular orchestra he had provided a quartet of mandolins that played those Spanish airs so enlivening to an assemblage of this kind. Mr. S. W. Fairchild proposed the toast to the host which was drank standing, the members singing, "He is a jolly good fellow." Mr. Kemp replied in a way that showed that he was an impromptu speaker of more than ordinary merit. His remarks were concise and to the point. Many of his remarks will long be remembered by the members present as he said many things in giving the result of his experience in connection with the raising of funds for enterprises similar to the college, notably the Seventh Regiment Armory of which fund he was a trustee; telling how the vast amount required had been raised in a short time, showing how simple it was if all would put their shoulder to the wheel and contribute a share in proportion to their wealth and earnings. The amount raised by the trustees of the armory was so enormous that the amount necessary to clear the college building of all debt seemed but a pittance, and there is no doubt but what the suggestion of Mr. Kemp will be followed.

He referred to his friend, Mr. Ewen McIntyre, in a way that was both touching, sympathetic and amusing; he also spoke of Mr.

Lawrence, one of the original incorporators of the college, who is still alive and in good health. Toasts were then drank and responded to by the President, Mr. S. W. Fairchild, Ewen McIntyre, H. N. Fraser, J. N. Hegeman, Wm. M. Massey, T. J. Macmahan. After the relating of many reminiscences by the members, the banquet came to a close. It was well on towards the early hours of morn when the participants wended their way homeward.

F. B. C.

SUMMER COURSE IN BOTANY.

The summer course in botany begins this year on March 22 and extends to June 28. This course has been extended from ten to fifteen lectures, the price of tickets remaining as heretofore, $5 for the general course and $15 for the course in microscopical botany. Tickets for either course may be obtained at the College of Pharmacy.

Our Graduates.

THERE is quite a rivalry among the graduates of the N. Y. C. P. in securing subscribers for THE ALUMNI JOURNAL. Mr. Newton Dart Phillips heads the list, he having secured by far the largest number thus far.

MR. JOHN KREMER and Mr. Herman Schmidt, have purchased the drug store of Samuel Traugott, 923 Third avenue, New York City, and business is to be conducted under the firm name of John Kremer & Co.

MR. HERMAN WELLER, '87, has left the employ of Mr. Scheif, Bloomfield, N. J., with the expectation of establishing himself in business, though he has not as yet selected any locality.

MR. J. MEUSER, formerly a junior student at the college, is about to open a drug store in Bloomfield, N. J.

MR. SUMTER BUGLE, class of '90, has resigned his position in South Orange to become a partner in the store of Mr. Williams at Asbury Park.

HORACE T. KLINE, druggist, corner of Sixth and Fifthy-sixth street, had a slight fire on the morning of March 8th.

DANIEL O'CONNELL, for ten years at 82½ Broadway, is about to open a very handsome day and night pharmacy at 55 Whitehall street, about the middle of May. Mr. O'Connell started in the retail business at A. J. Ditman's about twenty years ago as errand boy, and is one of the most popular of our down-town druggists.

JULIUS TANNENBAUM, class of '93, has purchased the drugstore of T. E. Fraser at Lexington avenue and Fifty-fourth street.

Senior Class Notes.

MINUTES OF CLASS '94, N. Y. C. P.

A special meeting was called to order by President Ehrgott on Monday evening, March 5, 1894, who then introduced Mr. T. J. Macmahan, a member of the committee of arrangements, for commencement, the gentleman saying that Carnegie Hall had been engaged for Wednesday evening, April 25, 1894, instead of Thursday evening, April 26, 1894, as before stated. The minutes of the previous meeting were read and adopted, also the report of the treasurer was read and accepted. Mr. Nelson S. Kirk then moved that a vote of thanks be tendered to the Hon. Frank F. Corvies for services rendered. Carried. Mr. Colton then moved that the optional inorganic chemistry quiz be held on Wednesday mornings at 10.30 to 12 M. Carried. Mr. Kirk then made a motion to adopt a class flower, and such to be the Convallaria majalis, which he said was a whitish white flower and would give a finished contrast with our blackish black coats on commencement night. Carried.

Meeting called to order by the President on Friday, March 9, 1894, at 1.15 P. M. Minutes of previous meeting were read and adopted and the treasurers report read and accepted. Upon motion made to appoint a "photo" committee of three, the following were appointed: Mr. T. Sherwood Boyd, Chairman; Mr. T. Franklin Cook and "Col." Louis B. Wade from Owego. Mr. "Joe" Kussey moved that the executive committee be the committee of arrangements for the class banquet. Carried. "Joe" also made a motion to have the celebrated Class Glee Club, composed of baritone Wm. Hall and Mr. Pryor contralto, and others to compose an elaborate programme for Alumni Day and also at the class banquet. Carried.

FREDERIC WM. LINNING, JR., Sec'y.
Class of '94.

The executive committee of the class are at work arranging matters pertaining to the commencement. They have already engaged Rogers' Seventh Regiment Band, and, inci-

dentally, ordered 7,500 invitations of a very artistic design. The class banquet will also be under the supervision of that committee. Owing to the fact that the majority of the class are desirous of holding it after the results of the examination are announced, it will probably occur on Monday evening, April 23d.

As the examinations draw nearer and nearer, the smile on Schuyler's face grows broader and broader. He is evidently preparing to wreak his vengeance by the fulfillment of his threat; "Wait till nex' April, and den I will laf at you."

The alphabetical order of the roll in Section II. furnishes an odd phrase when the letter S is reached. It is: "Steevling, Struck, Sullivan." But "we don't want thee" to be under the impression that Mr. Steevling is of such a desperate nature as to attempt such a rash act.

Mr. S. has proved himself a high authority on camphor. His recent recitation, describing the first crude distillation process was very commendable, and fully merited the applause it received.

At a recent pharmacy quiz, we were informed that the formula for a silk dress, or more generally for silk, was $C_{142}H_{214}N_{49}O_{50}$; whereupon one student of an inquiring mind sent a note up to the Professor asking for the formula for woolen stockings. He is still waiting for the valuable information.

Chairman Ehrgott appointed the following minor committees: Supper—Wurthman,* Kirk, Wood. Usher—Hiltz,* Donovan, Brater. Floral Decorations—Kirk,* Brater, Hiltz. Programmes—Wood,* Clark, Wurthman. Invitations—Donovan,* Clark, Hiltz. Music—Clark,* Wurthman, Donovan. Badges—Brater,* Wood, Kirk.

* Chairman.

NELSON S. KIRK, Section 2.

If Messrs. Fleischmann and Bettendorf were to call on us some Friday afternoon, they would doubtless be highly pleased with the manner in which our students memorize and recite the reactions of their arsenic tests.

PERSONAL.

MR. M——, that hat you wore at the lecture, Wednesday night, is truly "a thing of beauty and a joy forever;" nevertheless, accept the kindly warning of a friend and keep it off the college premises.

JOSEPH KUSSEY, Class Reporter.
J. R. WOOD,
NELSON S. KIRK,
Assistants.

Owing to the fact that the time between now and the examinations is unsufficient to allow of a review of some of the studies, a special review quiz has been organized by Mr. Ferguson. The quiz class meets every Wednesday morning at 10.30. The students certainly derive much benefit therefrom, and from the sentiments expressed on all sides it is certain that Mr. Ferguson's interest in our behalf is full appreciated.

J. K.

The students are especially indebted to K. C. Mahegin for invaluable assistance in the issue of "The Supplement." Without this help it would have been impossible at this time to have issued this part of THE ALUMNI JOURNAL.

Junior Class Notes.

CLASS OF '95 N. Y. C. P.

A regular meeting of the class was called for Thursday, Feb. 22, 1894, but owing to the absence of the President, Mr. C. W. Hitchcock, it was postponed.

The next meeting was called for Thursday, March 1, 1894, and the class being divided into two sections for laboratory work, it had to be practically two meetings. One section was in charge of the Vice-President, R. C. Watling, and the other was conducted by the President. The object of the meeting was to collect funds for a frame for the resolutions adopted on the demise of Dr. Harrison.

Unfortunately the second section had to hold their meeting in the entrance or vestibule of the college, as our worthy janitor had again turned off "dem lights," and as he expressed it, the preceding section had raised the "debel."

After pharmaceutical laboratory Saturday a jolly theatre party was organized, consisting of Messrs. Hitchcock, Kneuper, Sutorius, Geishard, Kilborn and "Pop" Carter. They wended their way to the theatre and after a collection was taken up, which included Mr. Hitchcock's "punched" nickel, it was found sufficient to purchase a box. A said box immediately became the centre of attention. In fact, the audience divided its attention between the stage and "The Box of Juniors," and it was all attributed to Mr. Sutorius' perpetual smile, which like the performance was a "continuous" one. No other noteworthy incident occurred until "Pop" Carter was obliged to leave, as he expressed it, "to see a man." Shortly after "Pop's" departure the party adjourned *sine die*.

C. W. H., CLASS '95.

PERSONALS.

Our president, Mr. C. W. Hitchcock, has been confined to the house for the past few days by a severe attack of grip.

G. Ford Sutorius, our genial secretary, is "in training" for crew work. It is understood that Mr. Sutorius will row in some of the crack crews the coming summer.

Many thanks are due the editors and staff of The Alumni Journal for giving the students the initial number free of charge, and it should be treasured by every student, as it is the first paper of its kind ever issued by the New York College of Pharmacy.

Messrs. Thomas P. and Charles C. Heffley, class '95, have engaged in the drug business at 207 Park avenue, Brooklyn, N. Y.

All Juniors who have not procured their college button, should order one at once from the class treasurer, Mr. J. P. Lavalye.

A number of the Junior Class attended the commencement exercises of the New York College of Dentistry at Chickering Hall, Tuesday evening, March 13, 1894.

Pharmacy Quiz.—Prof.—"Now, Mr. H——, why should you use two 'ms' in the word 'gramme?'" Student:—"Because if you use only one 'm' there might be a 'fly-speck' on the paper, and it would be mistaken for a grain.

STUDENT'S LIFE IN NEW YORK.

By CLARENCE W. HITCHCOCK.

New York offers to ambitious students multitudious advantages for study. As an educational center it clearly outranks any of the American cities. This claim is justified not only by the vast numbers, but by the excellent quality and great variety of its institutions of learning.

Its unsurpassed system of public schools employing about 4,500 teachers, and embracing practical as well as industrial features, afford instruction to over 300,000 children; while to its colleges and universities flock maturer students from every state and every country.

Of New York's 1,500,000 bustling inhabitants perhaps 15,000 are out-of town students attending the higher colleges. Dispersed throughout the great residential district, however, this large number is swallowed up in the myriads of business men, craftsmen and artisans comprising its cosmopolitan population, and no distinctly defined "student quarter" exists, as in the cities of Europe. In boarding-houses large congregations of students are sometimes found forming harmonious families.

The natural bond existing between the students here has been productive of the organization of the "Studeuts' Movement," or the students' branch of the Y. M. C. A.—a social club, offering many attractive features to its members. In short, through the medium of this "movement" student life in the great city is made immeasurably more pleasant and profitable than it would otherwise be.

CONTENTS.

The Alumni Journal

PUBLISHED BY THE ALUMNI ASSOCIATION
OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK.
Entered at the New York Post Office as Second Class Matter.

Vol. I. New York, May, 1894. No. 4.

NEW YORK COLLEGE OF PHARMACY
ALERE FLAMMAM
ALUMNI

OFFICERS

OF THE

ALUMNI ASSOCIATION

FOR 1894-95.

President,

HERMAN GRAESER.

Vice-Presidents,

ARTHUR C. SEARLES,

DUDLEY T. LARIMORE,

PETER J. EHRGOTT

Treasurer,

ADOLPH HENNING,
68 William Street, New York.

Secretary,

HARRY HELLER,
209 Bleecker Street, New York.

Registrar,

NEWTON DART PHILLIPS,
Tuxedo Park, N. Y.

Executive Board,

K. C. MAHEGIN,
ALFRED STOVER } To serve one year.

FRED. HOHENTHAL,
WM. A. HOBURG, JR. } To serve two years.

DOMINGO PERAZA,
C. BENKENDOERFER. } To serve three ye

THE ALUMNI JOURNAL

PUBLISHED BY THE ALUMNI ASSOCIATION
OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK.

Vol. I. New York, May, 1894. No. 4.

HINTS ON THE IMMEDIATE MANAGEMENT OF SUDDEN ILLNESS OR INJURY A LECTURE TO PHARMACISTS.*

By JAMES K. CROOK, A. M., M. D.,
Lecturer on Clinical Medicine at the New York Post Graduate Medical School and Hospital.
Fellow of the New York Academy of Medicine, etc.

Gentlemen:

The question of what to do for a sick or injured person in an emergency is one which appeals with peculiar force to the members of the pharmaceutical profession. When an individual falls in a fit or a faint on the street, is injured in an accident, or bitten by a rabid animal, one of the first thoughts of the bystander is to remove him to the nearest drug store. The pharmacy thus acts as a kind of reception hospital, and the pharmacist is for the time in medical charge of the case. It is during the few minutes you *are awaiting the arrival of a physician* or an ambulance that you will frequently have the opportunity to do a noble work—perhaps to save life. In minor cases you may be able to render all the assistance which the occasion requires. I have been invited to discuss with you some of the numerous medical and surgical exigencies which are liable to confront you in every-day life, but I find it impossible to consider all the subjects allotted to me in the brief scope of one lecture Some of these, indeed, are well omitted from such a talk to pharmacists. In the management of cases of poisoning, for example, I have no doubt that your training has been as thorough as that to be obtained in any medical college. Again, you will not often be called upon to render aid in cases of drowning, apparent or real, nor does the time admit of anything like an intelligent discussion of splints and bandages. Our remarks this evening are therefore intended to apply only to the conditions which you are liable to meet with while following your vocations as pharmacists.

Let us first consider the subject of *unconsciousness or insensibility*, in which con-

* Delivered at the New York College of Pharmacy, April 11, 1894, under the auspices of the Society of First Aid to the Injured.

dition the faculties of the mind and body are in abeyance. This state is due to so many different causes that in many cases even the most experienced medical practitioners are at a loss to determine its origin. It may be due, for example, to trouble within the brain or an injury of the skull, to apoplexy or epilepsy, to heat-stroke or intoxication, to suffocation or to simple fainting, to blood poisoning (as in uræmic coma) or to one of the numerous narcotic poisons. However, there are usually certain indications which ought, at any rate, to prevent the making of grave mistakes, and in most cases point to the nature of the trouble. If a person is brought to you in such a condition how should you act? In the first place, you can make no mistake by sending at once for medical assistance; then place the patient in a comfortable position on his back, and loosen the clothing about his neck and waist; make the crowd stand back, and give him plenty of air. Do not lose your head, but proceed in a careful, systematic manner. If the face is red or flushed, raise the head somewhat, and lay cloths dipped in cold water upon it.

A good rule, when in doubt, is to give no stimulant when the face is flushed. If the face is pale, it is better to lay the head on a level with the body, sometimes even lower. In any case, turn the head a little to one side, so as to prevent the reflux of the contents of the stomach into the lungs in case of vomiting. If the patient stops breathing, resort to artificial respiration, which I will explain later along. In the mean time, learn whatever you can about the case—whether the patient has had a fall or a blow, has been indulging in alcohol or asphyxiated by gas; whether or not he is subject to such attacks, how it came on; whether he fell suddenly, had a convulsion or complained of feeling ill, etc. Examine the surface of the body, especially the head, for signs of injury or fracture; see whether or not the pupils are of the same size or whether they contract when exposed to light. Count the pulse, and notice the respiration—whether difficult, easy or snoring; notice the odor of the breath, and whether the skin is hot or cold.

This investigation may lead you to a knowledge of the cause of the unconsciousness, and will at any rate be of great service to the doctor who takes charge of the case, as the symptoms may be greatly changed before his arrival.

Fainting.—This occurs with far greater frequency in females than in males. The face is pale and the lips colorless, indicating the bloodless state of the brain to which the condition is due. The patient is unconscious, the action of the heart weakened, and the pulse perhaps imperceptible. Treatment: Lay the person down at once. Raise the front of the bed, table or sofa so that the head will be lower than the body, thus facilitating the return of the blood to the brain. Sprinkle the face with cold water, and hold ammonia or smelling-salts to the nose. These simple measures are almost always effective, but if the faint continues, hot baths may be applied to the feet and a hot water bag to the stomach.

Shock, Collapse or Prostration.—This is a very common condition in all injuries, and may vary in degree from a slight nervous start to complete insensibility, ending in death. In severe cases the patient is breathing feebly, the face is pale, pinched and anxious, the eyelids are drooping, and the eyes dull and the pupils dilated. The pulse is feeble and often absent at the wrist; the skin is cold, and there may be shivering. In most cases reaction will take place sooner or later—sometimes in a few minutes, sometimes after hours or days; in others there

is no reaction, and the patient dies. Treatment: A gread deal can be done to relieve shock. If the patient is wounded and bleeding, the hemorrhage must be stopped as soon as possible. Place the patient in horizontal position, with the head slightly raised. *If there is no injury to the head*, give a drachm or two of good brandy or whiskey in half an ounce of hot water every ten minutes, until five or six doses have been taken. Wring out flannels in hot water every five minutes and lay on the chest and abdomen; cover patient with a blanket to keep in the heat. Place hot bottles, hot bricks and hot water bags along both sides of the body and legs and under the arm-pits. To warm and stimulate in every way is the object of treatment.

Cerebral Apoplexy.—This is caused by the rupture of a blood-vessel within the skull, and the consequent escape of the blood, producing pressure on the brain, or by the plugging up of a blood-vessel so that part of the brain-tissue is cut off from the circulation. Sometimes the sufferer falls as if struck by a heavy blow; at other times he becomes insensible more slowly. In a well marked case no efforts will arouse the patient from insensibility. The face is flushed, the pupils are generally dilated, or one may be dilated, the other contracted. The breathing is slow, irregular and snoring, and the cheeks are often puffed out with each inspiration—the air being blown through the lips. The pulse is slow, full and hard; sometimes there are convulsions or vomiting. The paralysis accompanying this condition is very important, and must be looked for. You will find that the patient can move the leg and arm of only one side, the other side being as powerless as if dead. The face is paralyzed on the opposite side from the body paralysis, and the mouth is usually drawn away from the affected side of the face. Treatment: Lay the patient down, with the head slightly raised. Apply cold to the head in the shape of cracked ice in an ice-bag or in a towel. The feet should be put in a hot mustard bath. Give no stimulant, and disturb the patient as little as possible.

Compression of the Brain results from a blow or fall on the head, causing a piece of bone to press on the brain, or rupturing a blood-vessel and allowing escape of blood into the skull cavity. Bleeding from the ears or nose after such an injury indicates fracture of the base of the skull. Treatment: Pending the arrival of the physician, the measures spoken of under apoplexy are indicated, the constitutional symptoms being about the same.

Concussion of the Brain or Stunning is due to a fall or blow on the head without a depressed fracture. The patient is stupid, confused, sick at the stomach, often vomits, and is pale and shivering. He sometimes faints, and is more or less insensible, depending upon the severity of the accident. Treatment: Place the patient in a cool, quiet room, on his back, with the head slightly raised, and the clothing about the neck and body made loose. If the patient is cold and faint, or shivers, apply heat to the body as described under shock. *Never give stimulants in head injuries.* After the first shock has passed, cold may be applied to the head.

Heat Stroke or Sun Stroke.—This you will meet with only in hot weather, except (rarely) in cases occurring among engineers or firemen working in a heated atmosphere. The patient is unconscious; the skin will be found to be burning hot and dry. There is apt to be absence of perspiration, and the face is red and flushed. On inquiry you will learn that the patient fell suddenly unconscious, or

perhaps there were a few premonitory symptoms of faintness, headache, disturbed vision, or nausea and vomiting. Treatment: The object of treatment is to reduce the heat of the body. You should apply cold to the surface by the best available means. A most valuable method is to remove most of the patient's clothing, wrap him in a sheet and pour cold water over him until consciousness returns and the patient feels cool. If insensibility comes on again, the cold water treatment must be continued. When this method is impracticable, apply cold or ice water to the head, back of the neck or the hands.

Heat Exhaustion.—In a certain number of cases the symptoms due to excessive heat are more than of simple exhaustion. The face is but slightly flushed and may be pale; the skin is moist, and may even be cool, while the pulse is frequent and feeble. The treatment is not directed to a reduction of the temperature, but simply to the securing of rest. Let the patient sit in a cool room, and give some mild stimulant, such as a little sherry with vichy water. Do not apply cold.

Epileptic Paroxysms or Fits.—These attacks are due to a disordered condition of the circulation in the brain. A person subject to them is generally aware of their approach. The face is liable to become pale and the patient may utter a peculiar cry and falls unconscious, almost always on the face. At first, the whole body becomes rigid while the face is congested, then convulsion movements set in. The tongue or lips are sometimes caught between the teeth and may be badly bitten, while the eyes roll and turn upward. A single attack lasts from a second to several minutes, but the seizures may also succeed each other with scarcely appreciable intervals during an hour or more. After the attack passes over the patient usually has some headache and feels a strong desire to sleep. Treatment: Cause the person to lie flat and prevent him from injuring himself. A cork or piece of folded cloth may if possible be pushed between his teeth to prevent injury to the tongue or lips. There is no sense in opening out the patient's tightly clinched hand or "breaking his grip," as it is called. If the convulsions end with stupor or partial or complete unconsciousness the patient may be permitted simply to rest quietly with the head slightly elevated.

Hysterical Attacks.—These occur occasionally among young women, very rarely in men. At times the patient appears to be insensible, at others she will scream, shout and struggle. These are no symptoms of injury or illness, however; the skin being normal and the pulse strong, though possibly somewhat accelerated. It may be learned on inquiry that the patient is nervous and excitable and has probably had other similar attacks. Treatment: There is no danger whatever. Simply keep her quiet and free from excitement. If the attack continues and no immediate medical aid is to be had, you may administer 25 or 30 drops of tincture of valerian combined with 20 grains of bromide of sodium or potassium.

Alcoholic Stupor.—This is important chiefly from its resemblance to more serious conditions. A person in a drunken stupor presents symptoms very like those of apoplexy. But in alcoholism the pupils are symmetrical, there is no one-sided paralysis and the cheeks do not puff out, the face is not drawn to one side and there is apt to be an alcoholic odor in the breath. The pulse is soft but full, and the patient may usually be aroused by more or less vigorous effort. Treatment: If there is any doubt as to the diagnosis it is better to treat the

patient as if he had an apopletic fit, or compression of the brain, as you can do no harm in that way. If the case is one of unmistakable drunkenness it is a good plan to administer an emetic—say a tablespoonful of mustard or a drachm of powdered ipecac in a tumbler of warm water. After vomiting, 25 or 30 grains of bromide of potassium may be given, followed by a tumbler of liquid citrate of magnesia. If there are indications of collapse—cold, clammy skin and feeble pulse, heat must be applied as in a case of shock. Don't forget that death has been due to alcoholic intoxication.

Asphyxiation from Illuminating Gas.—These cases are generally easily recognized as we have the immediate history of the case to guide us. The patient is in a more or less profound stupor depending upon the amount of gas inhaled. The eyes are suffused and the pulse slow and full, and there is a perceptible odor of gas in the breath in cases where respiration has not ceased. Treatment: Loosen the clothing and give the patient plenty of air. If he can swallow, administer a little brandy and milk, extend the arms far above the head, and if the respirations lag, make firm and gradual, but gentle pressure with both hands downward over either side of the chest, corresponding to the expirations or breathing out. Then relax your pressure during the inspiration and press down again during expiration. This is one form of artificial respiration and will often suffice. Continue it for a few minutes, at the same time dash cold water in the face and hold ammonia to the nostrils. If these measures fail and the respiration has almost or entirely ceased, the Sylvester method of artificial respiration should be resorted to, and to properly carry out this method you will require an assistant. Place the patient on his back with the shoulders resting on a folded blanket or roll of clothing. Then examine the patient's mouth. If the tip of the tongue shows just, within the teeth it requires no attention, but if it has dropped back it must be at once brought forward as the patient may be smothered by the organ closing the air passage. It can generally be brought forward and secured by a dry handkerchief or cloth held between the fingers. If necessary, however, do not hesitate to pass a threaded needle through the tip of the tongue and holding it by the thread. Physicians generally employ a sharp-pointed, hook-like instrument called a tenaculum for this purpose. Having satisfied your mind about the tongue kneel behind the patient's head, then grasp him by the fore-arms half-way between the elbows and wrists and draw his arms up and over his head rather quickly, but steadily until the hands touch the ground or floor behind the head and hold them in that position two seconds. This motion draws the ribs up, thus expanding the chest, and air enters. The arms are held back two seconds to allow the air, time to completely fill the lungs. Now reverse the movement, that is, carry the arms back until they rest against the sides of the chest, the forearms a little on top Press the forearms firmly downward and inward against the chest for one second. This pressure depresses the ribs, contracts the chest and forces the air out. These back and forth movements should be repeated persistently at the rate of 16 or 18 per minute (rate of normal breathing) until some effort is made by the patient to breathe. This process should continue for at least an hour and a half if necessary, or until life is declared extinct by a physician. As soon as respiration is fairly established put the patient in a warm bed and place hot bottles to his feet and along the sides of his legs and body. Continue to use all kinds of

warmth and friction. As soon as he can swallow administer hot stimulating drinks. A cup of black coffee combined with a couple of ounces of whiskey in tablespoonful doses is one of the best internal stimulants. Keep this up until consciousness is fully restored and the patient is out of danger. I have thus dwelt at some length upon this method of treatment, because it is applicable in all varieties of asphyxiation or smothering whether due to drowning, coal gas, illuminating gas or other causes.

Wounds. These may be incised, lacerated or contused. Then we have gunshot wounds and wounds produced by the bites of rabid animals or serpents. An incised wound is one made with a sharp or cutting instrument such as a knife, razor, or piece of glass and is apt to be attended by more or less hemorrhage, according to the depth or locality. If the bleeding is slight it may be stopped by simple cold water or the application of a piece of dry cotton. Wash out any impurities with a little carbolized water (℥ss—oii), bring the edges together and place a piece of clean, soft, folded linen or sheetlint over the wound and a little bandage placed over this. For the little household cut, a small piece of adhesive plaster after bleeding stops, with perhaps a little bandage to hold it in position, is about all that is necessary.

Contusions.—These are simply bruises in which the skin is not broken. The parts are liable to become black and blue from injury to the small blood vessels under the skin. Lay on the bruise a soft cloth saturated with a weak solution of laudanum in water, or equal parts of alcohol and water or witch-hazel extract. If the contusion has been severe and is located about the chest or abdomen some of the internal organs may have been injured, we then have other symptoms supervening. If the lungs have been damaged we have coughing and spitting of blood; if the stomach, vomiting of blood. There may also be pallor, fainting, depression and all the signs of shock and the case requires the treatment for that condition. If an internal organ protrudes, for instance a bowel, wash it off, carefully, by squeezing warm weak carbolized water over it, and after being sure it is perfectly clean restore it gently to its position.

Torn or Lacerated Wounds.--These have rough or jagged edges and are not liable to bleed very much. Cleanse the wound thoroughly with warm water, lay a wet cloth over it and bandage snugly and comfortably. If a hand or foot is crushed simply make the patient as comfortable as possible, look out for symptoms of shock or hemorrhage and wait for the doctor. The same indications apply to *gun-shot wounds.*

Poisoned Wounds.—These are caused by the bites of rabid dogs, poisonous serpents or insects, or the entrance of any poisonous substance under the skin. Treatment: First, prevent the spreading of the poison through the system. Bind anything at hand tightly around the limb a few inches above the wound. A string or handkerchief or an elastic suspender will answer. The second object is to neutralize or remove the poison in the wound. Dip the proximal end of a match or a bit of soft wood into strong nitric carbolic, or other powerful acid and rub every part of the inside of the wound with it. A stick of nitrate of silver will answer or the actual cautery in the shape of the white hot-end of a knife blade, or a knitting needle may be used in the absence of the desired chemicals. The construction may be removed after cauterizing. If there is any doubt as to whether the dog was mad or not *it is safer to cauterize.* Snake bites are treated in the same way, but when symp-

toms of general poisoning come on as shown by great constitutional depression as well as extension of the swelling from the wound, liberal doses of whiskey or brandy combined with aromatic spirits of ammonia may be given, though no benefit is to be derived from actual intoxication. In cases of stings of bees, wasps, or spiders, an application of the spirits of ammonia, or witch-hazel extract or laudanum and water is sufficient. If the pain and swelling are very severe the parts may be swathed in cloths dipped in the lead water and laudanum lotion.

Hemorrhage or Bleeding.—This is a most important subject for your attention as by a knowledge of the means of treating this symptom you will perhaps be able to save life. Hemorrhage is an accompaniment of almost all incised, lacerated or penetrating wounds and in many of them constitutes the most important indication for treatment. The ordinary oozing from a small cut or injury comes from the minutest blood vessels known as capillaries and is easily stopped by cold water or a piece of cotton wool. If a vein is opened the flow of blood is continuous and the color dark. This is arrested without trouble by a little pressure on the distal extremity of the cut vein, or by applying a compress directly over the injury. If an artery of any size is cut, however, the blood is bright red in color and as it is pumped directly from the heart it flows in intermittent jits or spurts corresponding to the contractions of that organ. As the veins accompany the arteries both are usually severed by the same accident, so that we have a mixed flow of bright red and dark blood. Arterial hemorrhage is the most dangerous form of bleeding and the most difficult to stop. If, by any means the circulation can be cut off, the remaining blood in the vessel will become coagulated or clotted and partially solidified. This is exactly what we wish to bring about and it is on the principle of clotting that our efforts to stop bleeding depend. In severe hemorrhage we may as a primary measure stuff a handkerchief or cloth or piece of absorbent cotton into the wound and bind tightly on, or bring pressure to bear directly with the fingers in or over the wound. If this is not successful you must then apply pressure above the injury by means of the artificial tourniquet. In any form of bleeding from any part of the arm or hand, leg or foot, there is one cardinal point where the main arteries may be compressed. In the upper extremity the point is just to the inner side of the upper part of the arm behind the border of the prominent (biceps) muscle. In the lower extremity the main artery may be compressed about an inch below the groin at the inner part of the thigh. Details of treatment: Lay the patient down and keep the wounded point elevated. Fold a handkerchief or piece of cloth tightly, or take an apple, a turnip, or a smooth round stone and apply directly over the artery as a compress at the point designated according to the extremity affected. Then tie another handkerchief, sleeve of shirt, suspender or anything of its kind around the limb over the compress; carry around to opposite side and fasten securely. If this doesn't arrest the bleeding, pass a cane, umbrella, or any strong stick through the knot and give it a twist or turn. This will always arrest the bleeding even though a leg or arm has been cut off. A still better tourniquet is a strip of strong rubber about a yard long and three-fourths of an inch wide. Wind this about the limb tightly above the injury and it will cut off all bleeding. Keep the wound elevated and await the coming of the doctor who will ligate the vessel if necessary. Bleeding from the face, mouth or head may sometimes be arrested by firm pressure with the thumb on the great vessels of the neck an inch above the collar bone. In bleeding from the face and scalp, however, as well as from the trunk, we must generally rely upon the use of ice to the wound, styptic or absorbent cotton, alum, tannin, persulphate of iron or direct pressure over the wound.

ON THE SPELLING OF EUONYMUS.

BY CHARLES RICE.

Some time ago the writer was asked to give his views regarding the proper spelling of botanical names beginning with "Eu" before a vowel, such as *Euonymus*, in which some authorities spell the first syllable "Ev" (*Evonymus*). It was not considered worth while at that time to preserve a copy of the reply, but, at the suggestion of the Editor of this JOURNAL, the substance of the reply is here reproduced in a somewhat extended form.

The syllable "eu" is the Greek prefix *eu*, the stem of the adjective *eŭs* and of the adverb *eu*, meaning "good." When this forms the first part of a compound, the second part of which begins with a vowel, it is pronounced in modern Greek like the first syllable of the English word, "evening," and some of the modern Romanic languages, in order to preserve this pronounciation, employ the spelling "ev," for instance, "evonimo," Italian for "Euonymus." We have reason to believe, however, that the syllable *eu* was pronounced as a dipthong, or rather as two distinct vowels, by the ancient Greeks as well as by the Romans, probably somewhat like the Spanish "eu" in "Europa".

The Romans originally had but *one* sign or letter for both the vowel *u* and the consonant *v*, namely: **V**. Later on the form **U** was used. In the oldest existing manuscripts both forms occur, often with slight variations in shape, according to the custom of the time, or the country of the writer. In some manuscripts both forms occur promiscuously, either for the vowel *u*, or for the consonant *v*. With the art of printing, the choice of the forms U (u) or V (v) appears to have been left mainly to the discretion or convenience of the compositor. We find this already in the earliest printed books, for instance, in Gutenberg's 42-line bible (ab. 1455), Schoeffer's Psalter (1457), etc., and for a long time afterwards. Thus we may meet, for example, the word "vivus" (alive) spelled in any of the following ways, even in one and the same work: vivus, uivus, uiuvs, viuus, viuvs, vivvs, uiuus, etc.

The particular word which caused the present inquiry was Euonymus. This is the Greek *euōnymos* derived from *eu* "good" and *onyma* (æolic form for *onoma*,) "name," meaning "of good repute." Tournefort supposes this appellative to be meant ironically, since the plant is really injurious to animals. But this is a doubtful interpretation. Theophrastus (died 285 before Christ) already has the word as an adjective to denote the common European spindle-tree (*to euōnymon dendron*, properly "the well-reputed tree"). The works of botanists and herbalists printed in the 15th, 16th, and 17th centuries show both spellings, "*Euonymus*" and "*Evonymus*," promiscuously. For instance, in the *Historia Generalis Plantarum* complied for and published by Guil. Rovillius (2 vols. fol. Lugduni, 1587), the shrub is described in Vol. I, pg. 370. In the title it is printed "Evonymus," but in the text of the article "Euonymus." Bauhinus in his *Pinax Theatri Botanici*, pg. 288, or at least his printer, also used both forms promiscuously. The authority from which Linné (in his *Systema Naturæ* ed. I, 1735), took the name, is Tournefort's *Institutiones Rei Herbariæ* (1716; pg. 617). In this work it is spelled "Evonymus" even in quotations from works where the spelling "Euonymus" occurs, and Linné adopted Tournefort's spelling. But in Linné's first special botanical work, the *Hortus Cliffordianus* (1737; see, however, regarding the date, O. Kuntze, *Revisio* etc., pg. CXXXIV), we find it spelled "Euonymus," and this work has been accepted as authority for this form of the word by the *Index*

Kewensis. It is also the spelling accepted by Bentham and Hooker, Gray, and others. On the other hand, in the first edition of Linné's *Species Plantarum* (1753) we find the word again spelled "Evonymus," and this was accepted and followed by De Candolle, Baillon, Engler and Prantl, and others. Curiously enough, however, some of the latter failed to apply the same rule of spelling to other words likewise beginning with "Eu" before a vowel. Thus De Candolle coins the term "Euoldenburgia" (instead of "Evoldenburgia"); Baillon, "Euoncoba" (instead of "Evoncoba,") etc. The *Index Kewensis* accepts the spelling "Ev" only in the following recognized genera: *Evacidium* (Pomel 1875), *Evandra* (R. Brown, 1810), *Evax* (Gaertner, 1791; of doubtful origin), and *Evodia* (Foster, 1776). And the spelling "Eu" in the following: *Euadenia* (Oliver, 1867), and *Euonymus* (Linné, Hort. Clifford. (1737) pg. 39).

While there is apparently sufficient authority to adopt the spelling "Evonymus," if Linné's Species Plantarum (ed. of 1753) is made the basis, the form "Euonymus" is, orthographically, better supported, and is also more in harmony with the ordinary pronunciation of the word ("yoo-onymus") by English and American botanists. The form "Evonymus" is a phonetic concession to some of the modern languages.

TERPENELESS VOLATILE OILS.

BY PROF. VIRGIL COBLENTZ.

The older method of the classification of the volatile oils into those containing oxygen and those free from this has been dropped, since in many of those oils which were formerly looked upon as being free from oxygen are now found to contain this, in the residual portions, their presence having been overlooked by the early investigators, since in some instances they existed in only very small amounts.

As far back as 1840 Völckel and Schweitzer, in examining the oil of caraway, separated a portion which possessed the characteristic odor, from the relative inodorous constituent. Later, Völckel demonstrated that this odorous constituent contained oxygen, naming it carvol. Later investigators have verified this work and found that the oil contained from 45 to 65 per cent. of this carvol (odorous constituent), the balance consisting of an inodorous terpene limonene $C_{10} H_{16}$. This work has been followed up by such investigators as Wallach, Semmler, Flückiger, Geissler and others, who have cleared up the matter concerning the nature and constituents of the larger number of the volatile oils. The majority of the volatile oils consist of a mixture of two or more bodies; one class of these we designate by the general name terpene, the other class constitute the oxygenated portion to which in main the odor of the oil is due. These terpenes, that is to say, hydrocarbons of the general formula ($C_{10} H_{16}$ (fraction or multiple thereof), include a large number of bodies; their difference in composition may be explained through their isomeric and polymeric forms. They are, as a class, comparatively inactive; on exposure to air they readily absorb oxygen, resinify and take on an unpleasant terebinthinate odor and taste, which is, of course very destructive to the odor and flavor of the volatile oil of which it may be a constituent. This is particularly evident in the case of the oils of lemon and orange, where the value depends upon the delicacy of the odor and flavor. These terpenes possess a lower density than the oils from which they are obtained, partake no part in the flavor of the oil, insoluble in dilute alcohol; hence, the solubility of the oil depends largely on

the comparative amount of terpene present.

As before stated, many volatile oils contain, besides the terpenes, an oxygenated or odorous constituent, which is often deposited as a crystalline mass on exposure to cold, or is separated by fractional distillation. This class of bodies were named by Berzelius as stearoptenes, by Nauman as camphors. These stearoptenes are characterized by high density, higher boiling point, ready solubility in weaker alcoholic liquids. We find among them alcohols, phenols, ketones, aldehydes, etc.

For example, the stearoptenes of the oils of caraway and dill is carvol, a ketone: cinnamon is cinnamic aldehyde; lemon is citrol, an aldehyde; anise is anethol, a phenol derivative; peppermint is menthol, an alcohol; thyme is thymol, a phenol; coriander and angelica contain a mixture of compounds. It is evident that where the odor of an oil resides in this oxygenated portion which is not subject to change or resinification and is also soluble in diluted alcohol, it when separated, would afford a valuable substitute for the oil itself.

These facts were first utilized and developed through the efforts of Heinrich Haensel, of Piria, in 1876, when he demonstrated that carvol is the only valuable constituent in oil of caraway, placing the "Patent Oil of Caraway" on the market. This was soon followed by the "concentrated" oils of clove, peppermint, lavender, bergamot, lemon, orange and others. The true value of these discoveries was not recognized until Professor Geissler in 1881 and Professor Flückiger in 1883 published the results of their investigations of the active constituents of the oils of lemon, orange and angelica. Geissler described the terpeneless oil of lemon, stating that it far exceeds the commercial oil in strength of odor and flavor, stability, solubility and strength, it being an oxygenated liquid, like all others of this class, of constant boiling point, composition and specific gravity; the commercial oil of lemon having the specific gravity of 0.860, the terpene citrene 0.850, while the terpeneless oxygenated portion has the gravity of 0.900.

The insolubility of the volatile oils is often the source of annoyance and loss, since in the preparation of the aromatic extract the addition of oils renders the solutions turbid with the separation of a portion of the oil, renders subsequent clarification necessary, which entails a loss of material and time. The presence of these terpenes gives rise to other difficulties, besides hindering the solubility, and that is their use in essences, confections, etc. Although the oil employed may be fresh and sweet, the articles flavored will on standing gradually develop a terebinthinate odor and taste, due to the oxydation of the terpenes in the oil. Thus we see that the presence of these terpenes in many oils simply cover the true flavor, and are a constant source of menace to their quality.

As will be seen from the list below, the strength of such a concentrated oil must vary, according to the comparative amount of terpenes contained in the crude oil; the smaller the amount of the oxygenated constituent after the removal of the terpenes the more concentrated is the product. We find them varying from twice to thirty times the strength of the natural oil. The value of these products may be summed up as follows: Great concentration, easy solubility and freedom from the terebinthinate odor or flavor. These points adapt them specially in the manufacture of liquors, essences, perfumes, confections, etc.

	Comparative strength to other oils.
Terpeneless Oils of Angelica, Lemon, Orange	30 x
Terpeneless Oil of Juniper Berries	20 x
" " Calamus	8 x
" " Wormwood	10 x
" " Coriander Seed	6 x
" " Thyme	5 x
" Oils of Cumin, Laurel, Mace, Rosemary	4 x
Terpeneless Oils of Anise, Bergamot, Caraway, Cassia, Clove, Fennel, Lavender, Lemon-grass, Peppermint, Pimenta, Sassafras	2 to 2½ x

THE
Alumni Journal

Published under the auspices of the
Alumni Association of the College of Pharmacy
OF THE CITY OF NEW YORK,
209 EAST 23d STREET.

Vol. I. May 1, 1894. No. 4.

THE ALUMNI JOURNAL will be published Monthly, excepting June, July and August.

Entered at New York Post Office as second-class matter.

SUBSCRIPTION:

Per Annum, . . . One Dollar
Single Copies, . . . 15 Cents.

All copy for publication, or changes of advertisements should reach us on or before the 20th of the month previous to the issue in which they are to appear.

All matters relating to publication should be written on one side of the paper only, and sent to the editor,
HENRY KRAEMER, 209 East 23d Street.

All communications relating to finances and subscriptions should be addressed to
A. HENNING, Treas., 209 East 23d Street.

All communications relating to advertising should be addressed to
F. B. CASWELL, Manager Advertising Department,
209 East 23d Street.

AMERICAN PHARMACEUTICAL ASSOCIATION.

One of the greatest blessings to our scientific and professional men are the annual meetings of the various associations devoted to the advancement of the sciences and professions. While it is true, that some of these associations have resorted to questionable methods for obtaining a large membership, and consequently their membership does not wholly represent the spirit and intent of the founders of these societies, still the American Pharmaceutical Association may be said to be free from such a stain in its management, and quite well represents in its ranks the prominent workers in the American pharmaceutical craft. The result is that each year are produced, in the different sections devoted to scientific papers, education and legislation, some original papers and new ideas for the advancement of pharmacy. Investigators from the laboratories in colleges and stores, are also able at these meetings to discuss new methods and processes and appliances which they have found of value in their respective lines of research. The benefits accruing from such opportunities are inestimable. At these annual meetings, furthermore, men recuperate and recreate themselves for another year's work. Many of us are prone to think that we must work continually in our own libraries or laboratories in order to accomplish our best work. This is a great mistake, for Darwin conceived of the theory of evolution while on a sea voyage, and Newton discovered the law of gravitation while lying under an apple-tree. The highest conceptions come to the hardest students, and the most serious obstacles are removed from them frequently, when they pass into some change of scene and new field of thought.

The next place of meeting of the American Pharmaceutical Association is in Asheville, N. C., on Sept. 3d. It is particularly well situated for the access of members from a large number of our large cities, being nearly equi-distant from New York, St. Louis, New Orleans, Chicago, etc. Asheville, as is well known, with a charm of situation peculiarly its own, offers attractions to summer and winter visitors in its pure, invigorating air, scenery, grand beyond description, and first-class hotel accommodations. The number of inhabitants of Asheville is about 1,400, having increased nearly 500 per cent. during the past fifteen years.

The ride from New York is most interesting, and particularly grand and remarkable when the tortuous ascent of

the Blue Ridge Mountains begins, and an additional engine is attached to the train. From this time the scenery becomes more and more sublime, and is probably only equalled by the majestic summits of the Rocky Mountains. The train creeps like a huge serpent over wild chasms and heights so dizzy as may make one shudder as he looks into the yawning abyss below. On every side the mountains rise, clothed from base to summit with the mighty products of the forest which no axe have yet hewn. These add inspiration to the view, while cascades of sparkling brilliancy dash down the mountain side, almost upon the train. At last when Round Knob is reached, and a stop is made, as if to give the panting engines a moment's rest before attempting the final great ascent to the summit of the range. And then on again, and up and up, higher and higher, the ponderous engines labor, fairly groaning under their burden, until plunging into the great tunnel, 1,800 feet in length, which crowns the very summit of the range finally emerges. This is the "Land of the Sky." Here

"Nature has known no change, felt no decay,
For untold ages in this ancient land.
Her dark woods wave, her rivers hold their way,
Majestic as when first from Nature's hand;
Down the dread depths, as in the dawn of Time,
The raging cataracts their water urge."

From a curve just before the tunnel is reached, it is possible, on a clear day, to see the track at seventeen distinct points, so tortuous has been the ascent. Some idea may be thus gained of the engineering required in these mountains to enable us to ride around and through and over into the prosperous city of Asheville. The approach from the South via of Spartanburg, and from the West via of Knoxville, is none the less beautiful and inspiring.

Asheville is situated with an average elevation of 2,200 feet above the sea level and is completely surrounded by mountains that have an average elevation of 4,000 feet, though there are fourteen peaks which tower several hundred feet above Mt. Washington. Two miles south flows the Swannansa, a clear, rapid-flowing mountain stream from thirty to sixty feet wide. Along the banks of the river, arched with overhanging boughs of forest trees, runs for miles a road of surprising beauty, similar in many respects to the drive along the Wissahickon in Philadelphia. One mile to the west of Asheville is the French Broad River, a similar stream, which is remarkably beautiful as seen from various points on the mountains. It is little wonder that upon viewing the scenes of this part of North Carolina that Mr. George Vanderbilt should have decided to create here a palace which should emphasize the work of man as this beautiful section does the work of the Creator. Much has already been written regarding this vast estate of Mr. Vanderbilt, but it may be of interest to many to know that Mr. Vanderbilt selected this particular location after having travelled the world over. He purchased a large tract of land, we believe not only because of the climate and attractive scenery, but for a still greater and grander works than he has yet revealed. He has kept adding to his land until he has acquired title to nearly 100,000 acres (more than 180 square miles), one portion of which touches the city limits of Asheville, from which it stretches over mountain and valley for such a distance that it will be possible for him to ride for thirty-five miles in a straight line from his chateau without leaving his own possessions.

Mr. Vanderbilt's magnificent palace stands upon an esplanade 700 by 300 feet. Huge retaining walls of solid masonry—sixteen feet in thickness at the base and at some points forty feet high—

surround the esplanade. The outside walls of the palace are 375 feet by 192, and when completed will be four stories in height. A detailed description of the gorgeousness of the castle and its surroundings would pass too far the limits of this article, but the imagination of the reader may run riot and he will not be far out of the way. Let him as a basis take into consideration the ideal location, then the vast wealth of the owner, his unquestioned taste and the renowned abilities of his architects, a house of such dimensions that it is possible to have in it a banquet hall with ceilings sixty-five feet high, a library as large as an ordinary church, a reception hall into which a city house could be easily put, stone stairways so broad and massive that a regiment could march down them, loggias with their score of richly carved pillars and graceful arches, and all surrounded by a private park of nearly 100,000 acres. In this tract will be a grand arboretum, to contain every tree species that can be grown in this latitude. A careful record is being kept of the treatment of each species, and the whole shall stand as an example of scientific forestry conducted under favorable auspices. It is the intention to make the arboretum one of the finest in existence. There are already in the nursery more kinds of trees and shrubs than there are in the botanical gardens at Kew, and the collection is being steadily increased. The climate will allow a larger variety of trees than any other large arboretum. The continuation of this work at Biltmore along these lines may be expected to yield much information of general value and materially assist in solving those problems with which American forestry has yet to deal.

The other attractions to the members of the American Pharmaceutical Association will be drives to Beaumont, Richmond Hill, Connelly's, Sulphur Springs, Gold View, Sunset Drive, and many other places. To those who may wish to collect specimens of plants and minerals there will be special interest, as the geological and botanical studies of this part of the country have fully revealed. As for the scientific and educational interest of this meeting the assidnous labors of the Chairman devoted these sections testifies. The hotel accommodations are first-class and charges are reasonable. So, taking everything into consideration, a more desirable place could not have been selected, and it is believed that there will be a very large attendance of members.

THE MOST RECENT WORK.

Aluminium for Laboratory Uses.—G. Bomemann, (*Abstr. Chem. News.*, 1894, 121). The author shows the advantages of aluminium as compared with other metals, especially sheet copper. He points out its resistance to H_2S, hot and moist air, sulphuric and nitric acids and the organic acids, its low specific gravity, its high specific heat and its good conductivity for heat and electricity. He compares an air bath of aluminium during heating and cooling with a copper air bath, showing that the former is more easily heated and effects a more uniform internal distribution of heat. The metal remains perfectly bright, and after being used for three months it shows only a very slight whitish coating. The exfoliation noticed in copper does not occur here. The coating consisted of alumina or basic aluminium sulphate. The metal is scarcely attacked within by the action of boiling water. After use for three weeks a loss of weight could not be recognized. Rings and clamps as supports proved satisfactory. Sand baths and crucibles of aluminium cannot be recommended as they are softened at 500°. Chimneys for burners and funnels for hot water were satisfactory.

Quinine in Pills.—Kurssteiner (*Moniteur, xliv.*, 1423) prepares quinine in pilular form by mixing intimately ten Gms. of quinine sulphate and two each of citric acid, powdered gum, and sugar of milk, then massing with syrup. The pills are first rolled in starch and afterwards in talc.—*Pharm. Jour. Trans.* 1894, 818.

Incompatibility of Sodium Phosphate and the Alkaloids.—Christiaens calls attention to the incompatibility of sodium phosphate (Na_2HPO_4) with solutions of the alkaloids, being of alkaline reaction, its deportment to the alkaloids would be the same as that of the alkalies themselves. When added to a solution containing an alkaloid, this is slowly deposited in the bottom of the container and is liable to be taken at an entire dose.—*V. C.*

Simple or Mixed Ethers of Parffian Series.—Krafft and Roos, of Heidelberg, have patented a new and simple process for preparing these ethers which depends on the reaction between an alcohol of the paraffin series and a mono or di-sulfonic acid of the aromatic series, thus:

1st. $C_6H_5SO_2OH + C_2H_5OH = C_6H_5SO_2OC_2H_5 + H_2O$

2d. $C_6H_5SO_2OC_2H_5 + C_2H_5OH = C_2H_5OC_2H_5 + C_6H_5SO_2OH$

The phenyl sulfonic acid regenerated can be used over again, it being capable of converting over one hundred times its weight of ethyl alcohol into ether. As is well known, the sulfonic acid ester may also be produced by action of a sulfo-chlorid or alcohol, thus:

a. $C_6H_5SO_2Cl + C_2H_5OH = C_6H_5—SO_2OC_2H_5 + HCl$

b. $C_6H_5SO_2OC_2H_5 + C_2H_5OH = C_6H_5SO_2OH + C_2H_5OC_2H_5$

This latter synthesis is better adapted to those alcohols of higher molecular weight. For mixed ethers the mixed corresponding alcohols (*i. e.*, methyl and propyl alcohol) are heated with a sulfonic acid.—*V. C.*

Opium Assay.—D. B. Dott. Ten Gms. of powdered opium are digested with 25 Cc. water; 1.8 Gm. barium chloride, dissolved in about 12 Cc. water, is then added. The solution made up to 50 Cc., is well mixed, and after a short time filtered; 22 Cc. (representing 5 Gms. opium) are mixed with dilute sulphuric acid, in quantity just sufficient to precipitate the barium. About 1 Cc, is required, and the solution should be warmed to cause the precipitate to subside, and the solution to filter clear. To this filtered solution a little dilute ammonia, about 0.5 Cc., should be added to neutralize the free acid, and the solution concentrated to 6 or 7 Cc., and allowed to cool. One Cc. spirit and 1 Cc. ether are then added, and next ammonia in slight excess. The ammonia should be added gradually until there is no further precipitation, and a perceptible odor of ammonia remains after well stirring and breaking down any lumps with the stirring rod. After three hours the precipitate is collected on conterpoised filters and washed. Before filtering, it should be noted that the solution has a faint odor of ammonia; if not, one or two drops of ammonia solution should be added. The dried precipitate is washed with benzene or chloroform, dried and weighed. It is then titrated with $\frac{N}{10}$ acid until the morphine is neutralized, as indicated by the solution reddening litmus paper, 1 Cc. $\frac{N}{10}$ acid = .0303 Gm. morphine hydrate. That is on the usual acceptation that the hydrate is $C_{17}H_{19}NO_3.H_2O$, although, as I have shown, there is good reason to believe that it has the composition $C_{17}H_{19}NO_3.9H_2O$.

The precipitate given by the barium chloride is much less bulky than that given by the B.P. process with its large quantity of lime, so that it is not difficult to allow for its volume with practical accuracy. The barium chloride not only precipitates the meconic acid but also a large proportion of resinoid and impurities which interfere with the precipitation of morphine. The barium is entirely gotten rid of by the sulphuric acid, so that there is no risk of carbonate or basic salt of barium being present in the morphine precipitate, and so causing error in the volumetric estimation. The ammonia added is just the proper amount required to neutralize free acid and to precipitate the morphine from its hydrochloride. It is a great advantage that it is not necessary to give a longer time than three hours for the morphine to precipitate. No notice need be taken of a very slight precipitate which forms after the morphine has been filtered off, as the precipitate does not consist of morphine, but for the most part of calcium meconate. On comparing this method with that above referred to (which we might call "the proof spirit process"), I obtained 1.35 Gm. of morphine hydrate, in both cases, from the 10 Gms. of opium: = 13.5 per cent. In another opium, assayed twice by the barium chloride process, I obtained precipitates (after washing with chloroform) $a = 0.59$; $b = 0.59$. These neutralized of $\frac{N}{10}$ sulphuric acid, 16.9 Cc. and 17 Cc., indicating .51 Gm. and .515 Gm. morphine, *i. e.*, the opium was = 10.2 per cent. morphiue. I do not mean to say that the results always come out so closely, but the same may truly be said of the best processes for opium assay. It would save time in the analysis if, instead of drying the precipitate and washing with benzene, the liquid containing the precipitate were washed with ether, by decantation, and the washed

morphine precipitate titrated directly with the standard acid. But the method by drying the precipitate, before washing with benzene, is to be preferred.—*Brit. and Col. Drug.*, 1894, 372.

The Preservation of Infusions.—E. White sterilizes the flask which is to hold the infusion by boiling distilled water in it for ten minutes and then the infusion is poured into it and the neck immediately closed with sterilized wool. If in any case it might be thought admissable, the raising of the contents of the flask to the boiling point after plugging renders their preservation more certain. In case of cold-water infusions such as calumba and quassia, filtration through the kieselguhr block of a Berkefeld filter into a sterilized flask is recommended. Flasks being inconvenient for keeping these preparations, the author has devised bottles with taps at the bottom, and the mouth closed by a rubber cork through which a thistle-funnel, plugged with sterilized cotton wool, passes. Rinsing several times with sterilized water before adding the infusion is sufficient sterilization if it be not required to keep the infusion for more than a month.—*Pharm. Jour. Trans.*, 1894, 686.

Sodium Peroxide.—This powerful oxidizing agent is made by the combustion of metallic sodium in pure oxygen. In oxidizing powers it far excells hydrogen and barium peroxide. In contact with water, oxygen is evolved with violence, with glacial acetic acid and Benzaldehyde (oil of bitter almond) it inflames with explosive violence. With charcoal, when warmed explodes, in contact with sawdust inflames, likewise with ether. In contact with alcohol it is indifferent, hence answers as solvent for oxydation of many organic substances, thus iodine to periodic acid, lead oxide to orthoplumbate of sodium. Reduces silver and mercury salts, also permanganate potassium. Sulfur and sulfides are oxidized to sulfuric acid and sulfates. In the industry is employed in very dilute solution for bleaching purposes.—*V. C.*

Cinchonifine.—E. Jungfleisch and E. Léger. (*Compt. rend.*, 1894, 536). *Cinchonifine* ranks among the alkaloids insoluble in ether, and also insoluble in alcohol of 50 per cent. It crystallizes out of boiling alcohol in small, anhydrous needles, brilliant and colorless. It is insoluble in water, ether and dilute alcohol, very slightly soluble in the cold in alcohol and chloroform, but soluble in alcoholized chloroform. Melting point, 273.6°. If strongly heated it is volatilized with decomposition. It is dextrorotatory. Cinchonifine renders tincture of litmus blue, but does not redden phenolphthalein. The alkylic derivatives of cinchonifine crystallize distinctly. Details of a large number of salts are given. Hesse, after having contested the existence of cinchonifine, has recently described, under the name of *homocinchonine*, a base which presents great analogies with *cinchonifine*, and is obtained in a similar manner.

Chlorides in Urine.—Freund and Toepper (*Centralb. f. Klin. Mes.*) Mohr's process is made available for the determination of chlorides in urine, by adding to the urine $\frac{1}{10}$th volume of a mixture of a 3 per cent. acetic acid and 10 per cent. of sodium acetate.—*Chem. News*, 1894, 145.

Total Nitrogen in Urine.—Petit and Monfet decompose 10 Cc. of urine by Kjeldahl's method with 5 Cc. fuming sulphuric acid and a little mercury; then add water when the mixture is cold and colorless, neutralize with soda, acidify with a few drops of sulphuric acid, make up to 50 Cc., and determine the nitrogen with hypobromite in 10 Cc. of the liquid.—*Ibid.*

Carborundum.—G. Deprez mentions certain artificial substances rivalling the hardness of the diamond. 1. Crystalline boron, obtained by a costly process. 2. Moissan's artificial diamond, which has not yet been produced in a practical manner. 3. The product obtained by Schützenberger in his researches on the compounds of carbon and silicon carborundum. It contains 70 per cent. of silicon and 30 per cent. of carbon. It is obtained by passing an electric current through a mixture of coke, sand and common salt. The process is conducted in a furnace.—*Rev. Univ. des Mines et de la Metal.*, Jan., 1894.

A Symmetrical Aplanetic Objective.—C. V. Zenger's lenses have the advantage of correcting: 1. The exact achromatism for the entire length of the spectrum. 2. The astigmatism to a great degree. 3. They reduce the spherical aberration for a suitable aperture to the minimum value of one second of an arc. 4. They absolutely correct the curvature of the field.—*Compt. rend.*, Feb., 1894.

Filtration with an Inverted Funnel.—A. Unguer in *Zeitschr. f. anal. Chem.*, *xxxii.*, *Part* 5. The mouth of the funnel is turned downwards and covered with filter paper, over which is tied a protective tissue. For this purpose the funnel is provided with a projecting edge.

Filter Paper Freed from Grease.—Schleicher and Schüll. (*Pharm. Centralh.. Chemt. News*, 1894, 121). This paper is specially prepared for milk analysis according to the Adams process It contains but 0.025 per cent. of fatty matter, whilst unprepared paper contains as much as 0.66 per cent.

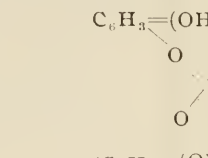
Canella Bark.—H. G. Greenish has examined canella barks from various sources and finds that the structure of the bark is by no means so uniform as it has hitherto been considered. Notable variations have been demonstrated, and the occurrence of these variations is of importance, inasmuch as it is precisely these barks of more or less abnormal appearance that the histologist is called upon to identify. To ignore such variations is therefore to render the determination uncertain. Of special interest is the possible presence of both schlerenchymatic cells and cells with red resin, for both of these elements have been regarded as especially characteristic of *Cinnamodendron corticosum*. In determining the identity of barks exhibiting either or both of these characters, caution must therefore be exercised. The paper is well illustrated and should be consulted for detailed information.—*Pharm. Jour. Trans.*, 1894, 793.

NEW REMEDIES.

Argentamin.—An antiseptic, employed in gonorrhœa. It is a solution of silver phosphate in aqueous solution of æthylendiamine. In the preparation of this the Scherings have sought to present an antiseptic, which does not precipitate albumen, held in solution in a non-corrosive and non-toxic solvent. It has been found that the antiseptic power of strong alkaline solvents is greater than simple aqueous solution, since the alkalies dissolve the membrane of the micro-organism—as organic bases adapted to this purpose are æthylendiamine and alkyl derivatives, piperazin, etc. As antiseptics, which, in conjunction with these organic bases, do not precipitate albumen, are phenol, cresol, thymol, napthol, guaiacol and silver salts. The solutions are prepared thus, after the patent: 10 parts of æthylendiamine are dissolved in 500 parts of water, adding 10 parts of freshly dissolved cresol. Where creosote or guaiacol are employed, it is better to use a larger amount of the base (æthylendiamine). For the preparation of the silver solutions 10 parts of silver phosphate (nitrate or chloride) are added slowly, with constant stirring, to a solution of 10 parts of the base in 100 parts of water.—*Apoth. Ztg.* 1894-211. *Phar. Centralh.* 1894-180.

Bismuth Phenates—The firm of Von Heyden made the discovery that those bodies belonging to the group of phenols (carbolic acid, cresol, napthol, pyrogallol, etc.) unite with bismuth, thereby losing their toxic properties. They are indifferent to the stomach, insoluble in water, alcohol and ether. They are retained by reaction between the alkali salts of a phenol and the inorganic salts of bismuth. Among these pyrogallol bismuth is of interest. Pyrogallol itself, because of its intensely poisonous nature, is not employed internally, and only externally with great caution; the bismuth compound is almost non-toxic, and is a valuable antiseptic in treatment of intestinal diseases—also useful in skin disease.

Von Heyden's patent salt contains 50 per cent, of bismuth oxide, the formula being expressed thus:



$$(C_6H^3{=}(OH)_2$$

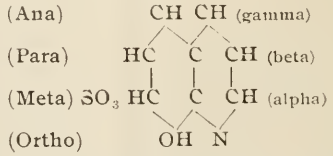
It is a yellow powder, insoluble in water and alcohol, soluble in caustic soda solution (different from all known bismuth salts) and hydrochloric acid. Must be free from subnitrate or oxychloride of bismuth.

Depilitant.—Leistikon (*Monatsh. f. prak. Dermat.* '94-233) recommends the well known barium sulphide paste, which is prepared by forming a paste of barium sulphate, charcoal, sand linseed oil; this is then heated to redness for some time in a crucible, yielding a dark blue barium sulfide. Then mix the following:

Barium Sulfide, fine powder,			10 parts.
Zinc Oxide,	"	"	5 "
Starch,	"	"	5 "

When used it should be mixed with sufficient water to form a soft paste, then applied to the parts; as soon as dry (10 min.) it is washed off.

Diapthol.—O. oxychinolin—m—sulforic acid. E. Merck. Chinaseptol. To a certain extent diapthol is the aseptol (orthophenol sulfonic acid* of the (chinolin series.



It forms yellowish-white crystals, insoluble in water, melts at 295°. Its therapeutic proper-

*Alumni Jour., p. 8

ties are the same as that of Loretin (m-iodo-o-oxychinolin-ana-sulphonic acid), to which it is closely related.

Gallol.—An aluminum gallate, insoluble in water, forms stable solution in NH_4OH. Light astringent

Crystalline Guaiacol.—The investigations of Bébal have demonstrated that chemically pure guaiacol is a crystalline solid of m. p. 32° c. and b. p. 204° c. Obtained by exposing commercial C. P. guaiacol (90 per cent.) to low temperature and separating the crystalline mass.

Lysetol—A dimethyl-piperazin. like piperazin it is a valuable solvent for uric acid. It is a very soluble crystalline salt, strongly alkaline yet not caustic.—*Bayer & Co. Phar. Ztg.*, '94-116.

Lysol. — The Therap. Mouatsheft ('94-46' recommends the following: Tricresol 50 parts, saponis kalina (Ph. G) 35 parts, aqua dest. 15 parts. Sig. 20 c. c. to the liter of distilled water The amount of soap may be diminished if desired.

Migränin.—According to J. Hoffmann, (*Phar. Weekal*) this consists of antipyrin 89.4 per cent., caffeine 8.2 per cent., citric acid 0.2 per cent., and moisture 1.84 per cent.

Neurodin. — An acetyl-p-oxy-phenylurethane.—E. Merck.

$$C_6H_4 < \begin{matrix} O—CO—CH_3 \\ NH—CO—OC_2H_5 \end{matrix}$$

Is prepared by the action of chlor-ethylformic ester upon p-amidophenol.

$$C\,Cl\,O_2—C_2H_5 + C_6H_4 < \begin{matrix} OH \\ NH_2 \end{matrix} =$$

$$C_6H_4 < \begin{matrix} OH \\ NH—CO—O\,C_2H_5 \end{matrix} + H\,Cl$$

The p-oxyphenylurethane formed is acetylated by heating with acetic anhydride. Forms colorless odorless crystals, soluble 1 in 1400 of cold water. Melting point 87° C. As antiseptic, in doses of 0.5 grains, it lowers the temperature 2.5° to 3°. As anodyne in neuralgia, is given in doses of 1 to 1.5 Gm.

Salumin.—Aluminum salicylate, insoluble in water and alcohol, soluble in alkalies; with aqua ammonia it forms a neutral soluble double salt; astringent.

Tannal.—An aluminium tannate, energetic astringent, insoluble in water. Its double salt, aluminum tannico-tartaricum, is on the contrary very soluble. This compound is sold by Riedel in compressed tablets, as its aqueous solution is not stable.

Thermodin—an acetyl p-althoxyphenyl urethane.—E. Merck.

$$C_6H_4 < \begin{matrix} OC_2H_5 \\ N—COCH_3—CO—OC_2H_5 \end{matrix}$$

In p—oxyphenyl urethane

$$CO < \begin{matrix} NHC_6H_4OH \\ OC_2H_5 \end{matrix}$$

the H of the hydroxyl group is replaced by an ethyl group, thus

$$CO < \begin{matrix} NHC_6H_4OC_2H_5 \\ OC_2H_5 \end{matrix}$$

This body is antipyretic but not free from side effects, it is acetylated yielding thermodin. This forms white needles, odorless and tasteless, melts at 86° and only soluble 1 in 2600 of water. Antipyretic dose is 0.5 Gm.

Nutrin.—Strouchein & Co., of Berlin, offer a concentrated meat extract in powder form, one part of which represents the nutritive value of four parts of beef.—*V. C.*

OBITUARY.

BROWN-SÉQUARD.—The death of the famous pathologist, Dr. Brown-Séquard, took place April 2, 1894. Dr. Séquard was 77 years of age, having been born at Port Louis, Mauritius, on April 8th, 1817. He was the son of Mr. Edward Brown, of Philadelphia, United States of America, by his marriage with a French lady. Charles Edward Brown-Séquard went to Paris in 1838, to complete his studies, and was received as a member of the medical faculty two years later. From the outset he devoted himself specially to researches in experimental physiology, paying particular attention to the composition of the blood, animal heat, and the nervous and muscular systems. His discoveries in these directions led him to adopt special treatment in cases of nervous disorders. In 1864 he went to America, and was appointed professor of physiology and nervous pathology at Harvard University. He remained in the United States for five years, when he returned to France, but only for a few years, going back again in 1873 to New York, where he founded the Archives of Scientific and Practical Medicine. Once more revisiting France, he was in 1878 called upon to take the chair of Experimental Medicine at the College de France. In 1886 he was elected a member of the Academy of Science, having already been decorated with the Legion of Honor in 1880. The celebrity of his name, as far as the general public is concerned, however, dates from 1889, in which year he aroused a keen controversy both in the press and in

scientific circles by his announcement that he had discovered an elixir for which he claimed the property of rejuvenating the system. The elixir was a secret preparation, compounded of extracts from the organs of living or freshly-killed animals, and was introduced into the circulation of the human subject by subcutaneous injection. Dr. Brown-Séquard gave an account of the effects produced by his elixir in a pamphlet published in 1890. By the medical profession, however, his chief contribution to science will probably be looked for in his works on pathology rather than in the system of therapeutics, to which he devoted the last years of his life, and by pharmacists especially for his work on the gland extracts.—*Brit. and Col. Drug.*, 1894, 376.

NEW LITERATURE.

Anatomischer Atlas der Pharmakognosie und Nahrungsmittel. 3 Lieferung.

Bevan, D., and Coffin, W. M. L.—A manual of practical hygiene, designated for sanitary and health officers, practitioners and students of medicine, with an introduction by H. A. Hare.

Bommeli, R., Die Pflanzenwelt. Das Wissenswertheste aus dem Gebiete der allgemeinen uud speciellen Botanik.

Clark, C. H. Practical Methods in Microscopy.

Coblentz, Virgil. Manual of Practical Pharmacy.

We are pleased to make the announcement that Dr. Coblentz, of our college, will have his Manual of Practical Pharmacy out some time this summer. He has been at work on this during the past two years, but the interference of other duties has compelled him to lay the work aside several times. This book will be of a very practical nature, embracing to a large extent foreign pharmacy. The chapters on prescriptions and dispensing promise to be very exhaustive. What is understood under Inorganic and Organic Pharmacy will not be included, as the author intends in a year or so to enlarge the scope of the work.

Companion to the Latest Edition of the British Pharmacopœia. By P. Squire. 16th ed. Revised by P. W. Squire and A. H. Squire.

Dieterich, E. Neues Pharmaceutisches Manual. Unter Beihülfe v. E. Bosetti. 6 Aufl. I. Lieferung.

Dispensatory of the United States. By H. C. Wood, J. P. Remington and S. P. Sadtler.

The seventeenth edition of the United States Dispensatory, revised in accordance with the Pharmacopœia, is a most excellent commentary and with some exceptions contains all that is recent in pharmaceutical research, and as an aid to physicians and pharmacists will prove invaluable. A new index, termed Index of Diseases, immediately precedes the main text at the beginning of the book. It has been so placed in order to prevent any hurried consultation and possible confusion with the general index. This is another indication of the endeavor of the editors to make it a practical work, as all those who consult works of a similar character in which two indices are present, frequently meet with a hindrance in hasty reference.

Another notable feature is that in increasing the size of the book a recognition of the ordinary book shelf as found in most stores is considered in that, the increase has been almost entirely in the width of the page. Also in Section II, Part II, there is an increase of twenty-five per cent. of articles beyond the corresponding section of the last edition, and the double column has been employed to prevent the lines from becoming too long for the eye easily to follow.

The botanical nomenclature is not in accordance with the more recent views. Of course, in the most radical changes this may be admissable, but in other cases this is questionable. The specific names given with reference to the localities in which the plants are found being frequently spelt with a capital, see: Rosa gallica, Sanguinaria canadensis, Hagenia abyssinica, Menispermum canadense and many others.

The article on Cinchona has been largely rewritten, based upon elaborate original studies made by Dr. H. H. Rusby, in South America and in London trade centres. The article on opium has been partly rewritten. Under Convolvulus panduratus no mention is made of work of Kromer in finding a glucoside different from those of other Convolvulacea (*Pharm. Jour. Trans.*) The work of Kiliani on Digitalis is given. Also an illustration of the epidermis of lower side of digitalis leaf. Illustrations of the trichomes of some of the Solunacea are also given. The recent work of A. E. Vogel (Anatomischer Atlas zur Pharmakognosie), and J. Moeller (Pharmakognostischer Atlas) show that it is in the surface characters of these narcotic and other leaves that the most important methods of identification are to be secured. Un-

der Arnica the discovery by Börner of a fat consisting of the glycerin esters of lauric and palmitic acids together with about one per cent. of a hydrocarbon (*Apoth. Zeit.*) is not given.

The recent work of Dunstan on aconite is given. Also the isolation of crystalline alkaloids in Nettle by Oddi and Lomonaco, (*Pharm. Jour. Trans. 1892.*) Under Gonolobus condurango, no reference is made to the constituent condurasterine (*Amer. Jour. Pharm. 1892.*) An illustration of a fragment of Jalap tuber, showing raphides and starch in cells is given. Also the investigations of Poleck (*Amer. Jour. Pharm. 1892*), confirming the identity of jalapine from Ipomœa orizabensis with scammonies. Most of the illustrations have been replaced by new plates, and under the following new illustrations will be found: Belladonna, Cinchona, Digitalis, Jalap, Peppermint, Senna, Uva Ursi and Veratrum viride. The most recent work on Ipecacuanha is not given. Mention is made of the work of Pehkschen and Salsberger on Veratrum viride and V. album.

A complete review of such a ponderous work as the United States Dispensatory would require for its completeness, more space than could be given in this JOURNAL, at this time, so that the above review but indicates in a general way, some of the main features in the revision of the seventeenth edition of this commentary on the Pharmacopœia. During the past sixty years, this work has passed through seventeen editions. Such success as this must depend upon extraordinary qualities in the book. In a general way the work is thorough and complete, and its great success rests undoubtedly upon the peculiar ability of its authors to perceive what facts are useful and essential to a subject upon their judgment and skill in utilizing and setting forth these facts, in making the work easy of access for reference. K. C. M.

Elliott, A. H.—A system of instruction in Qualitative Chemical Analysis. By Arthur H. Elliott, Ph. D.

Although only a little over a year has elapsed since its first publication, this work is now enjoying its second edition. Its reception has been very flattering, as the reviews in the chemical and pharmaceutical journals, and its adoption as a practical text-book in seven institutions, have shown.

Nothing will bring out the weak points in a book of this kind so much as its practical application in conjunction with a large body of students. Since its first appearance the work has been used as a text-book by the students of the College of Pharmacy, and has conclusively proved that it is a book that fulfils all that may be desired of it; and that it is adapted not only to the simultaneous working of a body of students under the direction of an instructor, but on account of its clear, concise text, is equally valuable for the guidance of a student pursuing analytical work by himself. It is the nearest approach to the living teacher of any work that I have seen.

The schemes for the separation of metals and of acids, as well as the special tests for each one, show the result of the author's many years' experience in this branch of chemistry.

The work is one that recommends itself and that will rapidly grow in popularity.

G. A. FERGUSON.

Encyclopädie der *Naturwissenschaften.*—Herasugegeben von W. Förster, A. Kenngott, A. Ladenburg u. A. 3 Abth.

Engler, A. und K. Prantl.—Die naturlichen Pflanzenfamilien, nebst ihren Gattungen und wichtigeren Arten, insbesondere den Nutzpflanzen, unter Mitwirkung Zahlreicher hervorragender Fachgelehrten, begründt von E. u. P., fortgesetzt von A. E.

Frank, B. und Tschirch, A.—Wandtafeln für den Unterricht in der Pflanzenphysiologie. 6 Arbtheilung.

Glazebrook, R. T.—Light; an elementary text book, theoretical and practical for colleges and schools.

Glazebrook, R. T.—Heat: an elementary text-book, theoretical and practical for colleges and schools.

Glucksmann, C.—Kritische Studien im Bereiche der Fundamentalanschauungen der theoretischen Chemie. II, Theil.

Jackson, Dugald C.—A text-book on Electro-Magnetism and the Construction of Dynamos. Vol. 1.

Jörgensen, A.—The Micro-Organisms of Fermentation.

Koch, A.—Jabrsbericht über die Fortschritte in der Lehre von den Gährungs-Organisimen, Dritter, Jahrgang, 1892.

Knott, C. G.—Electricity and Magnetism; elementary course.

de Koninck, L. L.—Traite de Chimie Analytique Minerale qualitative et quantitative. Treatise of Mineral Analytical Chemistry. 8vo. pp. 1064, with 163 figures and a colored plate in the first volume and 85 figures in the second.

Koppes Aufangsgründe der Physik mit Ein-

schluss der chemie und mathematischen Geographie. Für den Unterricht an höheren Lehranstalten, sowie zur Selbstbelehrung. Ausgabe A. 19. Auflage. Bearbeitet von H. Koppe.

Lejeal, A.—L'aluminium.

Limousin.—Formulaire des alcaloides et des glucosides.

Lohmann, P. — Lebensmittelpolizei. Ein Handbuch zur Prüfung und Beurtheilung der menschlichen Nahrungs und Genussmittel.

Mikrophotographischer Atlas der Bakterienkunde.—C. Fränkel und R. Pfeiffer. 2 Aufl. 7 und 8. Lief.

Muir, Pattison.—The Alchemical Essence and the chemical element. An Episode in the Quest of the Unchanging.

Müller-Pouillet's Lehrbuch der Physik, Meteorologie.—9. Auf. von Pfaundler unter Mitwirkung von O. Lummer. (In 3 Bänden). 2 Band. 1 Abth. 1 Lief.

Müller, W., und F. O. Pilling.—Deutsche Schulflora zum Gebrauch für die Schule und zum Selbstunterricht. (In 60 Lieferungen.)

Murzel, P. J.—Chemie. 2 Auf.

Muspratt's theoretische, praktische und analytische Chemie in Anwendung auf Künste und Gewerbe encyclopädisches Handbuch der technischen Chemie von F. Stohmann und B. Kerl. 4te Aufl unter Mitwirkung von E. Beckmann, R. Biedermann, H. Bunte und A, 5. Band. 6. u. 7. Lieferung.

Odorographia: A Natural History of Raw Materials and the Drugs used in the Perfume Industry. Second Series.

Oliver, Jos. W.—The Students' Introductory Handbook of Systematic Botany.

Pharmacopœia Roumana III.—Third revision of the Roumanian Pharmacopœia.

Repetitorium, kurzes, der pharmaceutischen Chemie. Zum Gebrauche für Apotheker, Chemiker, Physici, Pharmaceuten. Bearbeitet nach den Werken und Vorlesungen von Fischer, Flückiger, Godeffroy, Hager, Schichkum, Schmidt, Schneider, Schwanert, Weidel und A. III. Th.: Pharmaceut. Präparate.

Rochard, F.—Enciclopédie d'hygiène et de médecine publique. Tome VI; Hygiène industrielle.

Sanger, C. R.—The Qualitative Determination of Arsenic in Wall Paper by the Berzelius-Marsh Apparatus. On the formation of Volatile Compounds of arsenic from arsenical wall papers. On chronic arsenical poisoning from wall papers and fabrics. (Being a reprint from *Proc. Am, Acad. Arts and Sci.*, Vols. XXVI. and XXIX.

Santoponte, G. — Manual practico di fotografia alla gelatina bromuro d'argento. 2 a ediz.

Science-Progress, a Monthly Review of Current Scientific Investigations. Vol. I, No. 1. London: Scientific Press, Limited.

Thorpe, T. E.—Essays in Historical Chemistry.

Trimble, Henry.—The Tannins: A Monograph on the History, Preparation, Properties, Methods of Estimation, and Uses of the Vegetable Astringents, with an index to the Literature of the Subject. Vol. II.

In his first volume on "The Tannins" Prof. Trimble confined himself to a discussion of the tannins as a class and the tannins of nut-galls which may be said to stand by itself. In the present volume the auther considers the physiological tannins: *Oak bark*, *Mangrove*, *Canaigre* and *Chestnut*. In the study of this class of plant constituents the author has considered them from the stand-point of the analytical chemist preparing the way for the physiological botanist. It is very apparent that we must first know how to obtain a tannin from its source, not necessarily quantitatively, then we must learn to know its physical and chemical properties, and finally its composition and constitution. Having accomplished this much we are in a position to devise a method of quantitative estimation. After this its physiological relations may be understood. After some attempts in each of the above mentioned departments, the author has decided that the only logical method of pursuing this study is to take up the individual tannins in the following order:

1. The source from which each may be obtained.

2. Collect what has been accomplished by others; that is, study the history.

3. Devise a method of preparation adapted to the peculiar tannin under consideration.

4. Determine as far as possible its purity, then its physical and chemical properties, composition and constitution.

5. Construct an accurate and rapid method of estimation.

The botanical illustrations of the leaves and acorns of the oaks are especially well done. It is highly probable that no work has appeared since the time of Michaux in which the plates are so accurately done and so true to nature.

As a botanical contribution, the illustrations are of great value. The energy of the author in securing the original articles from so many sources, is remarkable. In a bibliographical sense alone, this and the preceding volume have astonished the workers in tanning materials with its repleteness.

In looking upon the composition of the tannins discussed in this volume and comparing them with what appear to be trustworthy results obtained in recent years by other investigators, Prof. Trimble finds that they arrange themselves into two groups; the *gall-tannin group* (C, 52.17; H, 3.10) and the *oak tannin group* (C, 60.00; H, 5.00). This is likewise confirmed by the action of certain reagents, as: ferric salts, calcium hydrate and bromine water. The decomposition of the above tannins by heat, by acids and by alkaloids again further confirm the above grouping.

With the above facts in view, the conclusion naturally forces itself upon us that there are two groups of the tannins; there are, however, the results of many investigators to account for and reconcile. With as many properties in common, the author says, in conclusion, we cannot expect there exist many groups. We naturally look for only one; the facts, however, demand at least two, a close chemical relations, therefore, probably exists between these two; to discover that relation, and classify the remaining uninvestigated members, still offers a most attractive field to the plant chemist. This work of Prof. Trimble represents an amount of labor and a degree of thoroughness and accuracy that commends itself to all investigators of plant constituents. It will likewise furnish an admirable guide in principle to those who may care to write up other plant constituents.

Virginia Pharmaceutical Association Proceedings for 1893. C. B. Fleet, Secretary, Lynchburg, Va.

Wheeler, A.—The Students' Handbook of Medicine and Therapeutics.

Wiechmann, F. G.—Lecture Notes on Theoretical Chemistry.

Wiedemann, G.—Die Lehre von der Elektricität. 2 Auflage. Zugleich also 4. Auflage der Lehre von Galvanismus und Elektromagnetismus. 2 Band.

Willard, J. T.—An Introduction to the Organic Compounds of Every Day Life.

Winkelmann A.—Handbuch der Physik.

Wyatt, Francis.—The Phosphates of America. Fifth ed., revised and enlarged and brought up to date.

College Notes.

The following specimens have been donated to our College Museum since the publication of the JOURNAL:

From Mr. Ewen McIntyre, a box of living specimens of Gelsemium sempervirens, Ait.

From Mrs. Emery, of the Senior Class, a similar box, together with Tillandsia usneoides, L.; three species of palm fruits from northern South America, and a fragment of Demerara copal from the same locality. Mrs. Emery has also presented a fine collection of kowrie resins from Australia.

Messrs. Leo Bernard & Co. have contributed a collection of eight specimens of vanilias, and through Mr. Henning we have received from Messrs. Schoellkopf, Hartford & Maclagan a very interesting specimen of Mexican Sarsaparilla packed in rolls to imitate and substitute the Honduras variety.

A New Way to Advertise a College.—Prof. Oscar Oldberg devotes the April number of his college journal, *The Apothecary*, chiefly to a comparison of the instruction departments of the various institutions teaching Pharmacy in the United States. A carefully prepared comparison of this sort would have been of the greatest service, not only to prospective students, but to every one concerned with pharmaceutical education. We have not compared Prof. Oldberg's statements relating to other institutions with the facts, but the gross inaccuracies relating to the New York College are such as to throw serious discredit upon the entire contribution. The instruction hours of this institution, as plainly advertised in the prospectus, are in the junior year 25 per cent. and in the senior year more than 30 per cent. in excess of his figures, while the hours devoted to laboratory work are nearly 40 per cent. greater. This correction is on the basis of our last prospectus, and does not take note of the important changes made for the coming year. Without commenting on the grotesque views on pharmaceutical education for which the Professor is noted, it seems almost incredible that in a simple calculation of this sort he could have made, not a single error, but a complete series of them, resulting in an *average discrepency of 35 per cent.* Comparisons of this kind are not unknown in commercial literature, but up to the present time educational literature has been happily free from them.

H. H. RUSBY.

ANNUAL COMMENCEMENT.

The Annual Commencement was held at Carnegie Music Hall, on Wednesday evening, April 25. Promptly at 8.30 o'clock the graduating class, headed by Mr. H. Atwood, proceeded to the music of the Seventh Regiment Band, in double file up the main aisle of this great hall amid the applause of the thousands of friends assembled to congratulate the graduating class. The exercises were opened by prayer by the Rev. Joseph M. Hodson. President S. W. Fairchild then made a short address referring to the steady progress in the work of the college, and that the concluding lectures were given in the new building. The roll of 128 graduates was read by the Secretary, J. N. Hegeman, whereupon the President of the college, on behalf of the Board of Trustees, by the power invested by the authorities of the State of New York, conferred the degree of Graduate of Pharmacy upon the members. The Rev. Dr. J. W. Brown, rector of St. Thomas, then delivered the address of the evening, which was pronounced the most appropriate ever given to the graduating class. He referred to the faculty as being composed of comparatively young men, which was a sure indication that this institution was destined to an even greater future prosperity. He referred to the acquirements of accuracy, the necessity of fidelity to study and sincerity of purpose, and reminded the class that some of the most wonderful discoveries were made by pharmacists. This address will be printed in full in the proceedings of the Alumni Association.

Prof. C. F. Chandler read the "roll of honor" of the graduating class. He said that to have been one of the 128 was an honor, but to be one of the 13 honor men was a thing for them to be proud of the remainder of their lives, and trusted that they might always lead in any enterprise with which they might be connected. The honor roll consisted of the following, who, out of a possible 600 points, received the annexed number: W. A. Bastedo, 577; E. Jordan, 547; B. Culp, 543; F. C. A. Schaefer, 542; J. R. Wood, 540; H. Kreuder, 536; J. H. Wurthmann, 531; R. W. Schaul, 526; O. Neubert, 521; C. L. Richter, 523; B. F. Williams, 518; F. J. Hills, 507.

The special prizes of one hundred dollars each were awarded by the chairman of the Board of Trustees, S. W. Fairchild, to J. R. Wood in operative pharmacy, F. C. A. Schaefer in practical pharmacy, and E. Jordan in pharmacognosy and materia medica. The Alumni prizes were then awarded by Herman Graeser, the President of the Alumni Association, who, in presenting the prizes, delivered the following address;

Mr. President, Members of the Faculty, Ladies and Gentlemen:

It is my privilege this evening to appear before you as the representative of the Alumni Association of the College of Pharmacy of the City of New York.

Our association was organized to advance the interests of the college, to bring its graduates into closer fellowship with each other, and to promote sociability and good feeling among them; to advance the science and art of pharmacy, and to encourage undergraduates.

It is a peculiar fact that although pharmacy is an absolute necessity to man through all his varied career, from the time he beholds the light of day, until his spirit, wearied with the toils of life, ascends to realms unknown, it has never created a great stir among the public, nor do they realize its importance.

It is like a mighty undercurrent whose resistless power and overmastering force have cut a deep and everlasting channel through the density of ignorance, and through the dark ages of fear, torture and superstition, saving to usefulness many lives that would otherwize be lost.

The Alumni Association feeling that it had an unselfish duty to perform in assisting her alma mater to raise the general standard of excellence required, decided to lend its assistance in such a manner, that the increased amount of study required of a student, in order to reach that standard, would be felt by him to be more of a pleasure than a duty or hardship. Therefore it was decided to give what are generally known as the Alumni prizes.

Competition for these prizes has been one of the factors in urging every student to put forth his best efforts to attain the all-desired end of superior excellence, to reach that point in college fame where he can stand and wave his bunting to the breeze, having distanced all competitors, and cry "Excelsior."

There are three prizes to be awarded—a gold medal to the student attaining the highest general average, a silver medal to his closest competitor, and a bronze medal to the student ranking third.

The total number of marks attainable were 600, of which Mr. W. Arthur Bastedo received 577, or 96.16 per cent.; Mr. Ernest Jordan received 547, or 91.16 per cent.; Mr. Brevard Culp received 543, or 90.50 per cent.

It gives me great pleasure in behalf of the Alumni Association, to present to you these medals for general excellence. It is the highest honor our association bestows.

As you leave here to-night, graduates of this college, you are appointed to a position of trust, in the discharge of the duties of which you hold the highest confidence and regard of the public.

In order to successfully hold this position you must cultivate habits of accuracy, honesty, industry and sobriety.

But while looking after and serving the public interest, never forget your duty to your alma mater, and as you have profited by the labors of past generations, so must you labor to benefit posterity.

Remember the saying of one of our ablest statesmen, that "public office is a public trust." You do not hold in trust the public funds, nay, more than that, you hold in trust their lives.

The committee on arrangements consisted of H. W. Atwood, W. M. Massey and T. J. Macmahan, who have discharged this work so well for some years. But in the performance of their work this evening they eclipsed all their former splendor, making it the most entertaining and satisfactory commencement that has been held yet. A notable feature of the evening was the presence with the faculty of Prof. Joseph P. Remington, an honorary member of this college.

Alumni Notes.

Minutes of the annual meeting of the Alumni Association held on April 24. Meeting called to order by the President at 2.30 P. M. Roll called as usual. On motion of Mr. Hohenthal the reading of the minutes of the executive board for the year were dispensed with. Then followed the reading of the minutes of the last meeting and the annual address of the President. [This address will be published in the next issue of THE ALUMNI JOURNAL. Ed.] A committee was moved by Mr. Hohenthal to be appointed to take action upon the address of the President. The appointments reserved. The Treasurer's report was read and referred to the Auditing Committee, Messrs. Hohenthal and Larimore. To a similar committee consisting of Messrs. Hohenthal and Ebbitt was also referred the report of the Treasurer of THE ALUMNI JOURNAL. Then followed the report of the Chairman of the Committee on the examination papers of the Juniors and a reading of the roll call of the honorable Junior students. To the following Junior's were awarded the Alumni prizes: First, A. Koerber, 154; Second, Gustaf Strach, 138; Third, Harry M. Kilbourn, 136. Then followed the nomination and election of officers for the ensuing year. This list will be found in the inside page of the first cover.

The following amendments to the Constitution recommended by H. Graeser were adopted: To Article II. Section 2, after the word resident read non-resident and honorary members, the latter consisting of the faculty of the college, who shall be exempt from all financial obligations to the association. To Section III. Meetings shall be held annually, a quorum to consist of ten members. Then followed the election of new members. [The complete list will be published in the next issue of the ALUMNI JOURNAL. Ed.]

H. HELLER, Sec'y.

NOTICE.

The annual outing of the Alumni Association of our college will take place on Wednesday, the 20th of June at Peteler's Hotel, New Dorp, Staten Island. The same features as last year will prevail in general, and the committee will spare no efforts to make this year's entertainment better than last, if that is possible. Last year's will be remembered with great pleasure by those that attended, and we hope they will all come again and bring all their friends.

Pharmaceutical meeting of the Alumni Association, held on March 14, 1894, at the college, was called to order by the President at 8.10 o'clock. The lecture room was crowded. A noticeable feature was the presence of a large number of prominent men from the wholesale trade. Among these were Messrs. W. B. Kaufman, J. R. Clay and A. H. Mason. There were also present Prof. Greenleaf of the Boston College of Pharmacy, Dr. J. H. Raymond of the L. I. Medical College, and Dr. S. E. Jelliffe of Brooklyn.

The President made a short address, after which he introduced the lecturer of the evening, Prof. Henry H. Rusby. At the close of the lecture, which held the earnest attention of the audience, the lecturer received an enthusiastic burst of applause. In response to a request for debate or criticism on the lecture, Mr. A. H. Mason arose and addressed the meeting. In

the course of his remarks he said that "an English pharmacist would scarcely have been as charitable in speaking of our pharmacists as the lecturer had been in speaking of our English cousins." He also called the attention of Prof. Rusby to the fact that an act of Parliament, to prevent the adulteration of food or drugs, was strictly enforced in England, and further, that although London and Hamburg were at present the great markets of the world for the sale of crude drugs, that New York was "getting there" very rapidly and taking a large amount of their business from them. He then pointed out that the United States laws insist that the country of origin of all imports be put upon all bills of lading and consignments.

He was followed by Mr. John R. Clay, who stated that although *some* spurious and inferior drugs found their way to this country, a much larger proportion of such drugs were used in England and Germany, and that "all the arts of sophistication we had learned were due to the teachings of our mother country, England." He said that "he had never seen a false Carthagenian root in this country, but that importers should insist upon receiving only original packages, which method of procedure would spoil all chances of manipulation in London, and that no *honest* importer need bring spurious ipecac into this country."

In reply Prof. Rusby said "that while some of the statements of Messrs. Clay & Mason were undeniable, yet his statement in regard to their sophistication of ipecac for the American market must stand, as he had seen the drug being prepared for this market."

Upon motion of Mr. Hohenthal, a rising vote of thanks was tendered to Prof. Rusby, and the meeting adjourned, to allow of the examination of the splendid collection of specimens which Prof. Rusby had on exhibition.

H. HELLER, Secretary.

Executive Board meeting held at 10.15 P. M. There were present Messrs. Graeser, Heller, Henning, Stover and Miss K. C. Mahegin. The report of the business manager of THE ALUMNI JOURNAL was accepted and placed on file. A letter of resignation from Mr. Heller of the assistant editorship was read and finally moved to be accepted with regret, on the motion of Mr. Henning, the President then nominated K. C. Mahegin to filll this vacancy. On motion of Mr. Heller the nomination was unanimously endorsed by the Board. Mr. Henning moved that the usual Junior prizes be replaced by a single book for each successful competitor—said book to be selected by the President. This was seconded and carried. Mr. Stover moved that the usual Alumni Day celebration be postponed until such time as may be decided by the Executive Board. Likewise seconded and carried.

H. HELLER, Secretary.

Pharmaceutical meeting of the Alumni Association held on the evening of Apri' 11. In spite of the inclemency of the weather, a large audience gathered to hear the last of our series of public lectures. The President of the Association called the meeting to order, and then introduced Dr. Jas. R. Crook, who delighted us with an interesting and practical lecture upon "First Aids to the Injured." Using some of the members of the Senior Class to demonstrate his remarks. At the close of the lecture, which was listened to with great attention, a rising vote of thanks was tendered to Dr. Crook on motion of Mr. Pfeiffer.

H. HELLER, Secretary.

Senior Class Notes.

MINUTES OF N. Y. C. P. CLASS OF '94.

A regular meeting of the "Class of '94" was called to order by President Ehrgott at 1.10 P. M. on March 30th, 1894.

Chairman Boyd, on behalf of "Photo" Committee, stated the cost of the picture would be $1.25 and that its dimensions would be 18x22 inches. The "Photo" of the class was taken at 6 P. M. of said date, March 30th, 1894, in front of the "*Old College Building*." Motion was then made to accept Clark's as a place for our "Class Banquet" out of the several places named by Chairman Hood of the Dinner Committee at the price stated including the faculty of the College, Mr. Seabury, Dr. Squibb, the same to be held on Monday, evening, April 23d, 1894. Carried.

The last meeting of the "Class of '94" was called to order by the President at 1.20 P. M. on April 13th, 1894, in the New College Building, the President being Chairman of the Executive Committee, and as that body were holding a meeting in another part of the house he relinquished the chair to Vice-President Wilcox. The minutes of the previous meeting were read and adopted and the treasurer's report given and accepted.

The following resolutions were then submitted by the Hon. "Joe" Kussy and were unanimously adopted:

WHEREAS, During our college course our esteemed instructor, George A. Ferguson, Ph. B., has at all times manifested a friendly and potent interest in our behalf, being even self-sacrificing in his devotedness to our welfare, therefore be it

Resolved, That we, the "Class of '94," of the College of Pharmacy of the City of New York, tender herewith to our esteemed instructor our most sincere and heartfelt thanks assuring him of our appreciation of his kindness and of our deep gratification.

Motion was then made by "Nellie" that a vote of thanks be extended to the retiring class officers and that they give an extempore address (but not one like the President gave) which was done with a roar of applause.

Motion was then made to take up a collection taxing each student five cents, a nickel or a half a dime (as "Joe" quoted it) for the purpose of getting and framing the "Photo" of the "Class of '94" and the same to hang in the Lecture Room of the New College Building when so completed. Carried.

President Ehrgott then informed the class that the invitations for the commencement would be distributed to the members of the "Class of '94" on Saturday, April 14th, 1894, between the hours of 10 and 12 M.

There being no further business to transact the meeting adjourned.

FREDERIC WM. LINNIG, JR.,
Secretary "Class of '94."

At this writing the examinations are over but the results are unknown. The questions were fair and impartial with a few exceptions as the one relating to terebene most of the boys never heard of the test. The mention of spegelia and arnica also bothered many.

We were fortunately enabled to have a few lectures in the new building, despite the inconvenience of it not being completed. This however, did not bother the boys much as they all enjoyed the change of atmosphere.

At Dr. Rusby's last exhibition of the pharmacognocy specimens, quite a discussion was held between Messrs. Bouton and Cooke, as to whether a certain specimen was castor or croton seed. Mr. Bouton was as certain of it being the former that he ate one. He was mistaken. The reader is left to draw his own conclusions.

The boys were more or less nervous previous to their interview with Dr. Rice (oral examination). Our friend, Mr. Davies, was found kneeling before a chair containing an open U. S. P., a few minutes before his turn. It is said that he was praying for Providence to help him through.

A private quiz class consisting of Messrs. Hiltz, Linnig, Ehrgott, Wade, Donovan and Kirk was organized in March. They secured a microscope to which they devoted considerable time. Honduras sarsaparilla naturally needed no introduction when presented to them on examination.

The following by Mr. Wurthman was a great aid to that gentleman and his friends. I think it worthy of publication:

OUR 10 AND 20 PER CENT. TINCTURES.

Of 10 per cent. tinctures we have quite many,
Aloe, aloe and myrrh and arnica root
Rhei dulc. catechu comp. and serpentaria,
Old sumbul rhubarb and quassia wood.

Cinchona and gentian each one is a comp,
Bryonia and calumba to respond are quite prompt
Of kino and matico the props are the same,
Opium d. vanilla and card have each won fame.

To say this was all, would not be quite fair,
For twin ipecac and opii and chirata so fine,
Cinnamon and croci they fall in line
With opium and tolu to ask for their share.

On 20 per cent. tinctures I am a little sore,
Begin with calendula and arnica flor,
Brace up with Cinchona valerian and gall
Don't think that b. orange and calendula are all.

For colds take benzoin, guiaic or lobel.
Your blues with asafœtida or pyreth expel,
Ammoniated valerian and guaiac for the nerve
With cinni, and nux on hand for reserve.

After hops we often use krameria or ginger
Quillaija will do fine for a boy's soiled finger,
Sweet orange and spiced rhei to give a good taste
And a golden seal ends my poem in great haste.

We would extend the same warning to Mr. H. as we did to Mr. M. High hats are all right in their way, but they don't weigh much.

President Ehrgott was one of the attentive listeners to Dr. Cook's lecture, especially that part pertaining to asphixiation, he having had experience in this line while precipitating sulphur in the pharmaceutical laboratory.

Monkey skin aloes proved to be a "cinch" on examination day. N. S. KIRK.

Members of the Class of '94.

I take pleasure in announcing that in the next issue of this JOURNAL, there will appear a '94 column to be supported by voluntary contributions.

Trusting that this will meet with your support, I remain your fellow class-mate,

NELSON S. KIRK.

SENIOR CLASS SUPPER.

Class of '94 held their final reunion and banquet at Clark's. It was one of the best managed and most enjoyable dinners that the students with the faculty have ever held. Shortly after 8 the members of the class with the faculty and invited guests proceeded to the banquet hall. The President, who was the Toastmaster, announced that "Some people have large appetites and but little food; other people have little appetite and large amounts of food. The Lord be praised, we have both." The "menu" card was neatly arranged and will be treasured by every member of the class of '94 for the pharmaceutical language and the personalities contained thereon. The repast, including viands and wines, was of the choicest and enjoyed by all.

When the time for speeches came Toastmaster Ehrgott made an address of welcome.

This was followed by the following toasts:

Our History, by *Frank J. Keller.*
Our Alma Mater, by *Fred. P. Hiltz.*
Our Faculty, by *Nelson S. Kirk.*
Our Future, by *Joseph R. Wood.*
Valedictory, by *Joseph Kussey.*

The gentlemen faithfully did their respective parts well. The Valedictorian particularly showed that he had been faithful to the trust entrusted to him by his classmates. As it would be impossible to give more than a few ideas contained in these productions with this issue of THE ALUMNI JOURNAL, it has been decided to wait until the next issue and print them in full, as they fully deserve to be.

Dr. Elliott was then called upon. He had an opportunity to finish his story, to which he evidently had made mention during the term by reminding the class that "If thee can't do better than that thee had better not try at all." The moral of which was, "Men are always reminded of their unfaithfulness and are not always praised for their good works, but the actions of employers and superiors often speak louder than words of their approval of good work." He spoke feelingly of the uniform interests between the faculty and students and impressed upon the students the need of their support in pointing others to come to the institution where they have received good instruction.

Dr. Rusby followed, and after relating a number of humorous incidents discussed the commercial and educational problems relating to Pharmacy. This address will appear in the next issue as manuscript has not been received up to the time of going to press.

Dr. Coblentz told a great many amusing stories about the efforts of the junior students in the pharmaceutical laboratory. He has the faculty of telling them in a way which shows the marked development of the boy into the the man while at College. He referred to the work of the Alumni Association and the necessity of the men unitedly supporting the Association in its laudable enterprises. Mr. Oehler made a clever speech that hit the mark with the boys. This will be published in the next issue of THE ALUMNI JOURNAL.

Mr. Mattson, the Instructor in Pharmacy, in congratulatory terms to the students, and hoped that this achievement was the beginning of a series of even greater successes. President Graeser, of the Alumni Association, reminded the class of the meetings of the Association once a month in winter, and of the "Reunion" and "Outing" during the summer. By being one of the Alumni, the student shows his appreciation of the institution that gave him birth as a professional man. He spoke especially of greater organizations in the ranks of pharmacy, and stated that it was his intention within the next six months to organize the members of the N. Y. C. P. Alumni Association in this city, by taking each assembly district and placing it in charge of a resident alumnus, who shall at certain intervals report to the Executive Board of the Association. "In this manner it will be easily for us" he said, to "join hands with other organizations for the common need of our profession. We must organize just as only large bodies are organized to become powerful."

The Editor of THE ALUMNI JOURNAL then responded and referred to the something greater and grander than the mere livelihood, and even life itself to each man—the something that manifested itself in the patriotism, principles and character of the men and women of the living world—a loyalty such as can be shown in a measure by the class joining the Alumni Association, and so assisting their "Alma Mater" in its mighty work. Then many members of the class were called upon, among whom were: T. S. Wilcox, E. Jordan, T. M. Davies, F. N. Pond, A. H. T. Walker and others, all of whom pledged their determination to become missionaries in the interest of their "Alma Mater."

THE Alumni Journal

PUBLISHED BY THE ALUMNI ASSOCIATION
OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK.

Entered at the New York Post Office as Second Class Matter.

Vol. I. New York, September, 1894. No. 5.

THE Alumni Journal

PUBLISHED BY THE ALUMNI ASSOCIATION
OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK.

Vol. I. New York, September, 1894. No. 5.

A PLEA FOR PHARMACEUTICAL FELLOWSHIPS.

BY PROF. DR. EDWARD KREMERS.

DURING the past year several pharmaceutical journals have called attention to the desirability of endowed colleges of pharmacy that should be independent of the tuition fee paid by students. It was stated that such schools would be placed in a position to materially raise the status of pharmaceutical education. It is noteworthy that such endowed colleges were not spoken of as isolated professional schools, but as part of larger and broader educational institutions. In fact, the success of a school of pharmacy which is an integral part of one of our largest State universities was mentioned as having been demonstrated beyond all question. Such utterances are certainly remarkable signs of the times. Furthermore, the following sentence: "This elevation has merely kept pace with public sentiment among pharmacists. *It has followed rather than led the sentiment*,[1] certainly is very quickening after the sickening effusions of self-laudation with which we were flooded only a short time ago."

Editorials of such character may do much to bring about a more general recognition of insufficiency of our present standard of pharmaceutical education; also that it is the duty not only of the druggists to educate themselves, but that in the interest of self-defense it is the duty of the State to demand *higher education* of its professional men, and to offer such education at its centres of learning, its State universities.

If such editorials accomplish this end they will have achieved much. It is doubtful, however, whether they will secure endowments for chairs in pharmacy of which mention was made. It is furthermore very doubtful, whether a multiplication of schools or colleges of pharmacy in this country is desirable. On the contrary, such a duplication of instruction within a State or even a city is by many considered as being decidedly detrimental to advancement in the proper direction. If a new school offers a better course than the already existing one is willing to aspire to, great advantages may be gained, but even then they are accompanied with a loss or a scattering of energy and apparatus which is greatly to be deplored.

A common and apparently practical plan to secure an endowment is to persuade some person or a society of persons

(1) *Amer. Druggist and Pharm. Record*, 1893, p. 287.

to take the initiative on condition that others will likewise do handsomely. Most of our larger colleges of pharmacy have this persuasive power already within themselves. If they were to offer their buildings and apparatus, in one word, their entire machinery to the State on condition that the State would pledge itself to properly support and maintain the school thereafter, thus placing it on a basis independent of the *number* of students and the tuition they pay, much good could be accomplished.

It is not at all necessary to wait for the millennium when wealthy wholesale druggists or even patent and proprietary medicine manufacturers will liberally support and endow schools of pharmacy. If the numerous colleges of pharmacy desire to remove the stigma of seeking the favor of the average drug clerk rather than raising the tone of pharmaceutical education unless forced from without, they can make an effort in this direction at any moment by *abolishing their prizes* and using the money for nobler and better purposes.

At the meeting of the American Pharmaceutical Association in the White Mountains, Dr. Fr. Hoffmann suggested the establishment of fellowships.[2] The money which is now spent for medals and prizes could be much more profitably spent by assisting a talented student in the pursuance of advanced study after graduation from the prescribed college course. This is a worthy object in itself, but Dr. Hoffmann also pointed out another, and this is a very practical gain. There certainly is no reason why the pharmaceutical profession should not choose most of its teachers from its own ranks. At present this appears to be impracticable to a deplorable extent. The reason, no doubt, is to be sought in the almost vanishing number of pharmaceutical graduates who pursue advanced studies.

Dr. Power's remarks made in an address last summer[1] are only too true: "The greatest need of pharmacy to-day, as of other professions, is *men*, and by this I mean not only intelligent and educated men, of whom we have a good proportion; but those who have sound and just convictions, which they are *fearless to express*, and are willing to openly confront the evils which tend to nullify the best educational efforts, or even undermine the very foundations upon which all hope for progress may rest."

The ideal, which Prof. J. A. Buchner, held up at the beginning of this century, viz., that the pharmacist should not only be able to carefully examine chemically and botanically the materials he employs and dispenses, but that he should be a "*Naturforscher im vollsten Sinne des Wortes*" is one to which we in this country can hardly aspire even now at the close of this much lauded century.

At the so-called International Pharmaceutical Congress much was said about improving the status of pharmacy by better legislation and a set of resolutions was adopted. Well and good. But can we expect legislators to do much for the advancement of pharmacy if our ideals are low, or if we are so willing to sacrifice our ideals for small practical gain? Let pharmaceutical schools demonstrate to the people of their State at least in a somewhat adequate measure what pharmaceutical education ought to be. Ninety per cent. of the druggists of this country have themselves but the faintest idea of what it should be. The number of those is not small who "*see no use in a college course*," because in most cases the college graduate appears to them not better qualified to pursue his profession —or rather make a fortune out of his

(2) *Proceed. Amer. Pharm. Association*, vol. 40, p. 324, 326.

trade—than the licentiate or non-graduate. It is with sincere regret that we must acknowledge that this statement is not without some truth as far as true qualification is concerned.

Now and then, editors and correspondents of our numerous drug journals advise their friends, the druggist, "*not to make slaves of themselves*," but to leave the stamping of envelopes to others and to seek more professional pursuits in chemical and pharmaceutical manufacture and in analytic work. Why do not more follow this good advice? Simply because they are *not* prepared for such work even though they have attended a college of pharmacy and are graduates in pharmacy.

No doubt it is easier to criticise than to correct, and it may be a practical impossibility for most colleges to improve their courses very materially. The point to which their attention was called by Dr. Hoffmann at the meeting of the *American Pharmaceutical Association* in the White Mountains, and to which I again invite their attention, is that many colleges are wasting money where it could be spent much more profitably by assisting the truly deserving student in his honest desire for a deeper insight into the sciences of his profession. The brilliant yet often times superficial student who passed the examinations with ease, or the falsely ambitious student who crammed for the examination may have their vanity flattered by the award of a medal or other prize, but little or no practical good will come from it, neither to the student, nor to the cause of pharmacy, in the name of which the prize was ostensibly given.

Our national association is looked upon by many as the exponent of the most advanced pharmaceutical ideas. Yet it has been stated more than once and by good authority that there is much sham in its proceedings, both verbal and printed. Those who look below the surface will confess that this is in a great measure true. It is all well and good to discuss the advisability of establishing longer courses, or whether pharmacists should fill the positions of public analysts, etc., etc. But it would be better by far to lengthen and strengthen courses than to talk about possible changes and improvements year after year. To do a thing is to do it, not to talk about it *ad infinitum* and then denounce as ideal and impracticable a change when such is ventured. How can we expect State or city officials to appoint pharmacists as State chemists or city analysts if they are in no way prepared for such work, if most colleges of pharmacy do not even give their students an opportunity to fit themselves for such work? The duty of pharmaceutical teachers is not so much to ventilate their ideas on this subject at the annual meetings of the *American Pharmaceutical Association*, but to put their convictions into actual practice at home, in their respective colleges, by offering special courses in analytical work and urging their graduates to pursue advanced studies. If then the State or municipality is in need of any analytical work it will find the analyst.

Can the *American Pharmaceutical Association* do no more than offer a mere battle ground for ideas? Can it not take the initiative? Our national association is not poor and offers from its accumulating wealth a number of money prizes for papers. It may have done some good thereby in stimulating investigation. However, it may be reasonably assumed that most investigations were fairly well advanced or that even the papers were written before the idea of handing in the latter for competition occurred to the investigator or writer. The prizes, therefore, have acted less as a stimulant than

(1) *Rundschau*, 1893, p. 258.

as an award. The greatest award to the truly scientific investigator, however, comes from the work itself; the satisfaction of having ascertained a new truth, of having accomplished a desired end.

In one sense, then, it may be assumed that the prize system in its original intent to stimulate investigation is largely a failure. This could be corrected. If the money now spent for prizes could be used for a *foreign* or travelling fellowship, it could serve the double purpose of award and stimulus. As award, in as much as the fellowship should be granted not only for good scholarship but also for original work embodied in a thesis or dissertation. With a possible fellowship in view many a graduate would, after having completed the prescribed undergraduate course, remain another year or even longer at college to prepare a thesis for competition. An *American Pharmaceutical Association* fellowship, with the possibilities of studying abroad a year or two, would certainly constitute an award worth aspiring to, and, as already stated, young men with high aspirations would modify their plans accordingly.

Such a fellowship would also serve as a stimulus for advanced and original work. Not only would the holder of the fellowship devote all of his time and strength to advanced and original work, but as already indicated, young men in this country would prepare themselves for competition. In this way such a fellowship would reach out much further than to one person, its holder for a given time. We are so sadly in need of more advanced workers in pharmacy that the *American Pharmaceutical Association* certainly could do nothing better than to aid in a practical manner to fill at least in small part this great deficiency in our profession. Besides, having set the example, the various colleges now offering prizes would soon see the great advantages to be gained from such a system that they would sooner or later abolish their prizes and offer fellowships in their place.

Such a fellowship should be a foreign or travelling fellowship. A home fellowship would under no circumstances be advisable. Each college should look out for its own fellowships. The knowledge that a talented student would bring home after a two years' stay at a German university would certainly make the investment a profitable one. There are also innumerable problems in pharmacognosy that can be solved only by a thorough study of the drug-yielding plant in the country in which it is indigenous or in which it is being cultivated. It will readily be seen that the possibilities for such a fellowship are innumerable and inestimable. It is a pity that we cannot have a dozen energetic and educated young men all over the world reaping annually great harvests for the *Proceedings of the American Pharmaceutical Association* and for American pharmacy. The schools of pharmacy would also be greatly benefited. In the course of time they would be enabled to select thoroughly educated instructors very largely from their own ranks.

The details of such a fellowship system; of what character the previous education and thesis of the applicant is to be; whether the time of a fellowship is to extend over one, two or even three years; whether the remuneration is to consist of $400 or $600; whether the judges should be or *not be* members of the *American Pharmaceutical Association*, and whether they are to be, e. g., a chemist, a botanist, and possibly a college president as chairman, etc., can only be discussed at a meeting of the *American Pharmaceutical Association*, and are altogether minor points. Here, then, is an excellent opportunity for the *American Pharmaceutical Association* to lead in a good cause. Let us hope that it may not only discuss the matter, but take definite action as soon as possible.—*Pharm. Rund.*, 1894, 55.

AMERICAN PHARMACEUTICAL ASSOCIATION.

The forty-second annual meeting will be held at the Battery Park Hotel, Asheville, N. C., the first session opening on Monday, September 3, 1894, at 10 o'clock A. M.

Two years ago the A. P. A. met among the rugged mountains of New Hampshire; this year you are called to meet among the verdure clad and far more beautiful mountains of the Blue Ridge, in the "Land of the Sky." It is earnestly hoped that as many as can possibly do so will arrive on Saturday and Sunday, September 1st and 2d, as the trains all arrive during the afternoon and evening, so that those delaying their arrival until Monday will lose the greater part of the day.

The train from Salisbury, Washington and the North is due in Asheville at 4 P. M., that from Atlanta and the South at 11 P. M., and that from Knoxville, Cincinnati and the West at 2 P. M. Passengers from the West can also come by way of Atlanta, arriving at 11 P. M. A committee will meet all visitors at the trains and assist them in procuring such accommodations as they desire. The Battery Park Hotel, (the official meeting place of the Association) will accomodate all delegates, members and friends at the special rate of $2.50 per day, two in a room. The other hotels, all first class in every respect and pleasantly located are, The Berkeley, $2.00 to $3.00 per day; The Swannanoa, $2.00 to 2.50 per day; The Oakland Heights, $2.50 per day; Kenilworth Inn,——. There are also numerous first-class boarding houses with rates from $1.00 to $2.00 per day.

On Monday evening at 8.30 the citizens of Asheville will tender their visitors a reception and promenade at the Battery Park Hotel, and on Tuesday evening a literary and musical entertainment will be given in the hotel ball room. Wednesday afternoon will be devoted to a carriage ride to Vanderbilt's. Friday afternoon, September 7th, will be devoted to an excursion by special train to Hot Springs. Leaving Asheville, the train follows for thirty miles along the beautiful banks of the French Broad, between steep and precipitous hills that finally shut off all view.

At Hot Springs a lunch will be served and several hours spent in viewing the hotel and grounds, and the celebrated baths which are famed the world over for their curative powers.

Returning to Asheville in the early evening, the visitors will be in time for a late supper at their hotel. The committee trust that the programme which they have mapped out, will be one which will be enjoyed by all, and one which will give the greatest amount of pleasure with the least amount of exertion. We confidently expect a large meeting and an enjoyable one. Our citizens are all anxious and willing to do everything in their power to make your stay here pleasant, and we most earnestly urge you to come and see a country that is "God's Country," a country that nature has done much for, both in the way of scenery and climatic condition.

It is very important that we should know at as early a date as possible, just who are coming, and how many in each individual party, that we may arrange for accommodations with which all will be satisfied, and particularly is this most important as regards date of arrival in Asheville, and if rooms are desired at the Battery Park Hotel.

Address the Local Secretary, Whitefoord G. Smith, Asheville, N. C.

COMMITTEE ON TRANSPORTATION.

Caswell A. Mayo, Chm., 37 College Place, New York City; S. A. D. Shep-

pard, Boston, Mass.; W. J. N. Gordon, Cincinnati, O.; A. K. Finlay, New Orleans, La.; Harry Sharp, Atlanta, Ga.; A. E. Ebert, Chicago, Ills.; Charles M. Ford, Denver, Col.; M. W. Alexander, St. Louis, Mo.; Wm. Searby, San Francisco, Cal.

EXCURSION OF THE NEW ENGLAND DRUG CLERKS AND PHYSICIANS TO THE FORTY-SECOND ANNUAL CONVENTION OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

The excursionists will leave Providence Depot, Boston, on the evening of Friday, August 31, for Fall River, where they will embark for New York on one of the floating palaces of the line named after the former port. Staterooms, supper and breakfast on the following morning will be provided on board. The forenoon and a substantial part of the afternoon may be spent in a ramble about the city or in business and social calls, our special train over the Pennsylvania Railroad to Washington not leaving Gotham until 4.30 P. M. Washington is reached at 10 25 P. M., allowing time for supper at the Sixth Avenue depot before continuing in the Pullman sleepers provided there for the night ride. Danville is reached early the next morning, and a stop made there for breakfast. Round Knob is reached at 2.36 P.M., and there dinner will be served. The road thence winds up and through the mountains to Asheville, where our train is scheduled to arrive at 4 P. M., thus allowing ample time for a rest and general grooming before sitting down to supper in the baronial dining-hall of that superb hostelry, the Battery Park Hotel, or in the comfortable and home-like rooms of first-class boarding houses in the immediate vicinity of the headquarters of the Association.

Our party will remain in Asheville until the afternoon of Saturday, September 8, when the return to New York and Boston will be made under conditions similar to those already detailed.

The cost of the round trips as arranged will be as follows:

Boston to Asheville and return, including, briefly, parlor cars to Fall River, stateroom, supper and breakfast on board the boat, supper at Washington, sleeper thence to Ashville, breakfast at Danville, dinner at Round Knob, board and lodging at the Battery Park Hotel from September 2 to September 8, and meals and accommodations on the return journey same as those of the outward trip, $70.

We have also arranged a round-trip rate of $60 from Boston to Asheville and return, including all of the above advantages with the single exception of board and lodging at the Battery Park Hotel. This sum gives board and lodging at thoroughly first-class boarding houses within a half-mile radius of the Battery Park. We have little doubt but that this reasonable rate will appeal with special force to the drug clerks. It affords a splendid opportunity for a delightful and instructive vacation at a very moderate cost.

We have had a number of inquiries from members of the A. P. A. and others who desire to join our party in New York, We have, therefore, made two rates for the trip thence to Asheville and return, viz.: $60 and $50. The first includes all the items between New York and Asheville and vice versa, as set forth in the $70 trip from Boston. The second differs from the first in board and lodging only, which in this case, as in that of the $60 trip from Boston, will be provided in first-class boarding houses within hail of the Battery Park. For further information inquire of *New England Druggist*, s. s. Peirce Bldg., Centraf Wharf, Mass., or C. A. Mayo, Chairman Transportation Committee.

Delegates to A. P. A. from the Alumni Association of the College of Pharmacy of the City of New York are: Thos. F. Main, Ewen McIntyre, D. Peraza, E. V. Zoeller and S. J. Hinsdale.

THE Alumni Journal

Published under the auspices of the

Alumni Association of the College of Pharmacy

OF THE CITY OF NEW YORK,

115-119 WEST 68th STREET.

Vol. I. September 1, 1894. No. 5.

THE ALUMNI JOURNAL will be published Monthly.

Entered at New York Post Office as second-class matter

SUBSCRIPTION:

Per Annum, . . . One Dollar

Single Copies, . . . 15 Cents.

All copy for publication, or changes of advertisements should reach us on or before the 20th of the month previous to the issue in which they are to appear.

All matters relating to publication should be written on one side of the paper only, and sent to the editor,
HENRY KRAEMER, 115-119 West 68th Street.

All communications relating to finances, subscriptions and advertising, should be addressed to
A. HENNING, Treas., 115-119 West 68th Street.

STATE PHARMACEUTICAL ORGANIZATIONS.

SINCE the last issue of THE ALUMNI JOURNAL the representative pharmacists, all over the land, have either attended or contemplated attending or, at least, have watched with some interest the meetings of their respective State organizations. Hardly was the May issue of THE ALUMNI JOURNAL in the hands of its subscribers before the *Delaware* Pharmaceutical Association held its annual meeting at Wilmington. The *Louisiana* Pharmaceutical Association convened in New Orleans and the paper that attracted some attention was upon "Pharmaceutical Specialties as Prepared by Manufacturing Chemists," by M. T. Breslin. It was construed as an attack upon the manufacturers of drugs and chemicals—many of whom are supplying goods of inferior quality. The *Georgia* Pharmaceutical Association convened in Americus, at which meeting valuale papers were read by F. Joerges, J. P. Turner, S. C. Durban, J. W. Goodwyn, H. Sharp and C. M. Crosby.

The *Kentucky* State Pharmaceutical Association met at Paris, May 16–17. The following papers were read: "Local Organization," by Addison Dimmitt; "New Proprietary Remedies," by J. P. Barnum; "Facts from the Prescription File," by C. S. Porter; "Glycerin of Commerce," by G. Holzhauer; "Artificial Carlsbald Salts," by Charles I. Albus; "The Microscope in Pharmacy," by Louis Rominger; "Creosote of Commerce," by G. Holzhauer; "Syrup of Hydriodic Acid," by O. C. Dilly; "Emulsion of Cod Liver Oil," by G. Holzhauer; "How the Physician can be influenced to prescribe the preparations of the National Formulary," by G. Holzhauer. One of the association prizes was awarded to C. S. Porter for his paper on "Facts from the Prescription File," and the other to Louis Rominger for his paper, "The Microscope in Pharmacy." At the same time the *Tennessee* Druggists' Association met at Chattanooga. A number of papers were read; an amendment to the pharmacy law was considered favorably. Also the *Florida* Pharmaceutical Association met at Tampa. E. A. Phillips read a paper on "State Associations," J. M. Dixon on "Saw Palmetto and its Products;" J. D. Palmer on "Druggists' Associations." During May the *New Jersey* Pharmaceutical Association also convened. The meeting was held at Asbury Park. The following papers were read by H. J. Lohmann: "The use of Asbestos Filtration and Tablets and

Tablet Triturates; Are they a Safe Form of Medication?"

The *Arkansas* Association of Pharmacists met at Hot Springs, June 5–7. The reports read indicated an encouraging state of affairs on all sides. A number of Associations met about the middle of June. The *Indiana* Pharmaceutical Association met at Evansville. The following papers were read: "The New Pharmacopœia," Leo Eliel; "The Alcohol Molecule," J. N. Hurty. Several valuable and interesting reports were read, and Prof. Louis Diehl, of Louisville, Ky., addressed the meeting on the subject of the National Formulary. He outlined the history of this publication, and related how a plan had been devised by the Kentucky Pharmaceutical Association to make the use of the Formulary more popular among druggists of that State. This plan consisted in having members make preparations in strict accordance with the Formulary and present them at the meeting of the K. P. A.; these were to be examined by a committee and then presented and explained by this committee, at a meeting of the Kentucky Medical Association. The suggestion had been carried out to the letter, some 65 to 70 members having submitted samples. When presented at the meeting of the Medical Association, they attracted more attention than anything else on the programme.

The *Minnesota* Pharmaceutical Association convened at Lake Minnetonka. A number of papers were read being principally reports. C. T. Heller read a paper on "Elixir Phosphate of Iron, Quinine and Strychnine."

The formula is as follows:

Phosphate of Iron, U. S. P.	256	grs.
Quinine (alkaloid)	64	"
Strychnine (alkaloid)	1¼	"
Alcohol	2	fl. oz.
Water	2	"
Syrup	2	"
Aromatic Elixir, q. s. ad	16	"

Dissolve the phosphate of iron in the water, quinine and strychnine in the alcohol, mix the two solutions, shake, add the syrup and lastly the aromatic elixir. Set aside a short time, and filter if necessary.

The *Missouri* Pharmaceutical Association held its annual meeting at Excelsior Springs. Among the papers read were the following: "The Practical Value of a Drug Journal," by A. N. Doerschuk; "Aromatic Syrup of Liquorice," by H. S. Hassebrock; "Report of the Research Committee B of the U.S. P. Committee," by Charles O. Curtman; "Fifty Observations for Pharmacists," by H. M. Whelpley; "The Practical Value of a Drug Journal," by Ambrose Mueller; "Some Incompatible, Explosive and Questionable Prescriptions," by James Good; "Report on Cantharides," by A. Brandenberger; "Report on Volatile Oils," by C. C. Hamilton; "What is a Poison?" by A. N. Doerschuk; "A Few Paragraphs on Pharmacy from an Introduction of Liebig's Chemistry, Published in Heidelberg, Germany, 1843," by Ambrose Mueller; "A Medicinal Dynameter," by H. M. Whelpley; "Doses for Pharmacists," by the same. An abstract of the paper on "Potassium Iodide and Bromide of the Market, etc." is published under "*The Most Recent Work.*" Another valuable paper was the "Report of the Committee on U. S. Pharmacopœia," by C. O. Curtman. The writer has the honor to report the following in regard to the United States Pharmacopœia:

The committee elected by the national convention for revising the Pharmacopœia, held in Washington, D. C., in May, 1890, has during the past year completed the work of the seventh revision intrusted to it, and in August, 1893, the first copies of the work were exhibited at the meeting of the American Pharmaceutical Association at Chicago, and an edition of 8,200 copies was placed upon the market.

This supply was soon exhausted and was followed by a second edition of 5,000 copies, and again, in 1894, a third edition of 5,000 had to be printed, and a large portion of these is already sold.

Altogether the reception of the work has been a favorable one both at home and abroad. Criticisms have been published in a number of journals, some of them censuring the committee of revision for introducing or omitting features which were not in the power of the committee to control, as their action was limited by the instructions on the convention which elected the committee. Among the omissions especially censured was the non-introduction of a number of modern synthetic chemicals, such as antipyrin, phenacetin, sulfonal, etc., which are received into European pharmacopœias. Many of the members of the committee of revision were in favor of their admission, but the stringent rule, number 6, adopted by the convention, forbade this, and the only remedy for those who wish such preparations introduced will be that the delegates to the next convention give greater liberty of action to the committee they may then elect.

Another objection dwelt on by some critics was the failure of stating the doses of the remedial agents, or at least the maximum doses of very active and poisonous preparations. This question was also under discussion in the convention, and though no formal restriction was placed upon the committee of revision, the sentiment expressed in the convention was so unfavorable to the introduction of doses that it was not deemed prudent to contravene it.

As in all large publications, a number of misprints have happened, and have been discovered too late for correction in the plates of the first edition. In spite of all care, and the most painstaking proof-reading, such mishaps will always occur, and are more liable to be overlooked where the authors of the book live distant from each other and from the place of publication. Unless the printing is to be unduly protracted, only a limited time can he given to reading the proofs, and this is much shortened when they are to be sent and returned by mail. In spite of many vigilant eyes, not only of the editor and the whole committee, but also of the outside assistants, a few errors were permitted to pass. Fortunately they were mostly unimportant, such as each reader would readily correct when noticed, and a list of errata has been published to enable the purchaser of the first edition to correct them. The plates have at once been corrected, so that the errors are eliminated from the later copies.

Since the publication of the Pharmacopœia the committee of revision has not been idle. Its active chairman, Dr. Charles Rice, with the consent of all the members, has organized "Research" committees to engage in preparatory work in aid of the next revision. Thus far four such committees have been organized:

Research Committee A. Subject, The feasibility of devising practical methods of assay for drugs containing no sharply defined proximate principles capable of being separated in a sufficiently pure state (such as ergot, digitalis, rhubarb, etc.)

Chairman: Dr. W. M. Mew.

Research Committee B. Subject, Revision of the description and tests of inorganic chemicals, including salts of inorganic bases with organic acids. Revision of the volumetric assays of the U. S. P. Study of the proper limits of purity or strength of chemicals, now official or likely to become so hereafter.

Chairman: Dr. Charles O. Curtman.

Research Committee C. Subject, Inquiry into the feasibility of incorporating

into the U. S. P. methods of identifying such drugs as may be found to permit of it, in a powdered condition.

Chairman: Dr. H. H. Rusby.

Research Committee D. Subject, Revision of the description and tests of organic chemicals.

Chairman: Dr. Charles Rice.

The members of these committees are to be selected hereafter, and other committees are to be organized as occasion may arise.

The results of the researches of these committees are to be reported to the whole committee of revision, and may be published by the authors, provided they state that the papers are reports of U. S. P. Research Committees. This will secure to the profession an early knowledge of these researches, and an opportunity to repeat the experiments and verify or controvert them.

In conclusion the undersigned would urge this association to take early action in considering all matters connected with the next revision of the U. S. Pharmacopœia. Neither the pharmaceutical nor the medical profession is likely to lag behind in the progressive spirit of the age. New methods are being introduced requiring new agents of medication, obsolete preparations are discarded, other standards of strength or purity may become advisable, and all of such matters require careful study and discussion, and should not be left to be decided at the last moment in a pharmacopœial convention.

The wishes of this State association should be clearly ascertained in regard to the admission or rejection of certain preparations, in regard to inserting the doses of actual remedies, to processes of manufacture or assay of galenical preparations, and other matters connected with our national Pharmacopœia, so that when the time comes to select delegates, they may be apprised of the wishes of the profession, and not left to their personal impressions and the impulse of the moment when called upon to cast their vote for the rules guiding the next committee of revision.

The *Pennsylvania* Pharmaceutical Association met at Reading, Pa. The following papers were presented: "Notes on Practical Pharmacy," by Joseph W. England:

"*C-C*" *Cough Mixture.*—Under this name a cough mixture is very largely used in the phthisical wards of the Philadelphia Hospital. It has, in each fluid drachm, the following: Codeine sulphate, one-eighth grain; diluted hydrocyanic acid, two minims; spirit of chloroform and mucilage of acacia, each fifteen minims, and syrup of wild cherry a sufficient quantity to make one fluid drachm. Dose: one fluid drachm.

Distilled Extract of Witch Hazel.—The writer has been informed, on good authority, that the percentage of alcohol in commercial distilled extract of witch hazel is not necessarily an index of its value, for the reason that some dealers buy the cheaper aqueous distillate from the distiller and add alcohol. The only proper product is had by distilling the fresh twigs with a mixture of alcohol and water, whereby a greater quantity of volatile oil is brought into solution than by distillation with water alone.

Syrup of Wild Cherry.—In making this syrup, more especially in the summer season, when fermentation takes place readily, it is advisable to add some of the sugar to the percolate as soon as possible, to prevent change. The pharmacopœial formula of 1870 contained no glycerin, that of 1880 ordered five per cent., and that of 1890 fifteen per cent. by volume. This last increase seems excessive. The greater the percentage of glycerin, the greater the amount of

tannin extracted, up to a certain point. It is a question whether this increased astringency in the syrup is therapeutically desirable.

Blaud's Pills (Improved).—The usual formula for this much-used unofficial ferruginous preparation of ferrous sulphate, potassium carbonate, tragacanth and glycerin, can be much simplified and made to yield a more permanent product by using the following formula: Potassium carbonate, one-third grain; potassium sulphate, two grains, and mass of iron carbonate, three grains, in each pill. Little or no excipient is required. The pills flatten somewhat on keeping, and are best dispensed in gelatin capsules. They are small in size, and do not become hard and reddish-brown on fracture, as do those made by the old formula.

Ointment of Ammoniated Mercury.—This ointment is most difficult to make by the official process and secure entire freedom from "grit." The best method is, for example, to finely powder in a mortar 48 grains of the mercury compound and beat it into a smooth paste with 12 grains of glycerin, and make the official ointment from this, as wanted, by admixing one drachm with 7 drachms of cerate. In this connection, criticism may be made against the use of alcohol, as in the 1880 Revision, or olive oil, as in the 1890 Revision, to render veratrine smooth in making veratrine ointment. A small quantity of glycerin is better. Glycerin is also of superior utility in softening extract of belladonna prior to making it into ointment; the Pharmacopœia specifies diluted alcohol.

Mucilage of Sassafras Pith.—This mucilage is best made by beating the pith in a wedgewood or porcelain mortar with a small quantity of *sterilized* water until it gets pasty, expressing through cheesecloth, returning residue to mortar, adding more of the water and continuing as before. In this way, in a short time, a dense and syrup-like mucilage may be had, very different in physical appearance from the watery product gotten by following the official directions of simple maceration in *water* for three hours and straining.

As this preparation is used as an emollient in inflammatory conditions of the eye-ball and mucous membrane, it is obvious that the greater the percentage of mucilage in solution the more soothing it will be. In these days of asepsis, the use of *water* in making the official mucilage is an unpardonable sin in the eyes of oculists. Sterilized water, *i. e.*, water or distilled water boiled and cooled, only should be employed. Three hours' time in making the preparation is far too long, when it can be better done in a few minutes.

Hope's Camphor Mixture.—This old preparation has been gradually increasing in use, and is recognized by the National Formulary under the name of Mistura Camphora Acida, which authority follows the formula of Ellis (Griffith's Formulary, 1866, p. 160) in using *nitric* acid. The original formula of Hope, however, specified *nitrous* acid. The formula we have used for years is: Fuming nitrous acid, 2 fluid drachms; tincture of opium, 80 minims, and camphor water, 1 pint. Parrish's Pharmacy (1884) refers to the mixture as follows:

"This formula was originally made public after twenty-six years' experience of its use in dysentery, by Thomas Hope, Esq., surgeon, Chatam, in the Edinborough Medical and Surgical Journal, January, 1824. Dr. Hope was in the habit of directing *nitrous* acid, *not* nitric, which he says he has 'not found to produce any good effect.' I have been careful to follow his formula literally, and have for the purpose prepared nitrous acid by the

process given on p. 200; though nitrous acid passes into nitric acid by contact with water, this reaction does *not* occur in the presence of an excess of nitric acid. Few remedies have a more general and widespread reputation than this; it is now frequently prescribed, more than eighty years after its virtues were originally discovered."

The nitrous acid used is known in commerce as fuming nitrous acid or fuming nitric acid. It is really nitric acid holding in solution nitrous acid fumes, which latter may be wholly removed by boiling, or largely by simple and continued exposure to air; so that the commercial product varies considerably in strength of absolute nitrous acid.

Remington's Pharmacy (1885), p. 1027, specifies nitrous acid in the formula for this mixture, as does also the National Dispensatory of 1884 (p. 75) and 1894 (p. 76). Hope's Camphor Mixture is still largely used, at least with us, in summer dysenteries, and if Mr. Hope's contention as to the necessity of using only *nitrous* acid, *never* nitric, is correct, then the National Formulary decidedly errs in following the formula of Ellis and specifying the latter.

The objection sometimes raised as to the difficulty of securing good fuming nitrous acid can be met. The pharmacist can easily make his own nitrous acid, extemporaneously, from sodium nitrite and nitric acid, using quantities sufficient to yield the amount of acid in the formula, which is small. Messrs. Rosengarten & Sons state that sodium nitrite of the new official strength (97.6 per cent.) is readily obtainable.

Medicated Waters.—In the making of medicated waters—save those prepared by distillation or direct solution—the new Pharmacopœia directs precipitated calcium phosphate as the distributing medium in about the same proportion as that directed for magnesium carbonate in the 1870 issue. As was pointed out by the writer ten years ago (A. J. P., 1884, p, 75), in advocating the use of precipitated calcium phosphate for this purpose, it is essential, in order to properly distribute the oil, that the lime compound be used in *double* the quantity of magnesium carbonate usually employed, on account of its much less bulk. The official quantity of the lime compound should be 8 gm. to 1,000 cc. of the medicated water, and not 4 gm., as directed.

It is best to add, as the Pharmacopœia directs, *all* the water to the admixed lime compound and oil before filtration. The practice of some pharmacists adding only a *part* of the water, throwing on a filter and then adding further water, from time to time, to the contents of the filter until the required amount has filtered through, cannot result in as strong a solution as if the oil had been brought in intimate contact with all the water at once.

There is one detail whereby the official process can be greatly improved, and that is by using in place of the distilled water, *hot, boiled* water, *i. e.*, water boiled and cooled to a point just short of boiling. In following this practice, the writer adds the water to the admixed lime compound and oil, places it in a proper vessel, covers tightly and filters after it has stood for some hours, preferably over night.

The use of hot, boiled water has a number of very decided advantages. These are a maximum solution of the oil and an increased permanency of the water. Boiled water is far more germ-proof than the usual distilled water of commerce, which is believed to be, in some cases at least, simply condensed steam-waste.

Criticism may be made against the use of nearly boiling water for making aro-

matic waters, on the ground of loss of volatile oil, but practical experience will show that this loss is more apparent than real, that the amount of volatile oil lost by volatilization is insignificant in comparison with the greatly increased amount brought into solution —*Through Amer. Jour Pharm.*

Pharmaceutical Notes.—C. B. Lowe:

Terebenum or *Terebene* has come into somewhat extensive use as a remedy for chronic bronchitis, and it is frequently an ingredient of cough mixtures, or is prescribed by itself.

On account of its slight solubility in water, and its somewhat unpleasant taste, it is best given in an emulsion.

The emulsion should be made by the addition of one drachm of powdered gum arabic for each fluid drachm of terebene.

The primary emulsion, consisting of gum and water, should first be carefully prepared, and then the terebene should be slowly and carefully added.

The emulsion will be found quite a difficult one to make, the terebene being easily thrown out of solution.

Mustard Plasters.—The mustard plaster is one of the most important remedies kept in our pharmacies, and yet as far as I know none of the manufacturers have included in their directions that of wetting the plasters before using with only *tepid* water.

The acrid or volatile oils of mustard do not pre-exist as such in the seed, but are produced by the splitting up of the glucosides sinalbin or sinigrin, by the action upon them in the presence of moisture of the ferment called myrosin.

It is a fact that should be better known that myrosin is coagulated by water of a temperature of 140° F., and rendered incapable of action.

I have found that many people are under the impression that the plaster will be made the more active by dipping it into hot water, but the reverse is the case.

Syrup of Acacia.—It seems strange that the Pharmacopœia should have continued unchanged the formula for Syrup of Acacia.

In the Pharmacopœia of 1870 the syrup was made directly from the gum, and we had a fairly stable preparation.

In the last two Pharmacopœias it is ordered to be prepared from the mucilage, which spoils quickly, and the syrup thus made would ferment in a few hours, unless the mucilage was freshly prepared.

The formula of Mucilage of Acacia can be improved upon by the use of chloroform water of the strength given in the British Pharmacopœia.

If the chloroform is objectionable from a therapeutical standpoint, a few minutes' exposure to heat will thoroughly dissipate it.

The most convenient way of dissolving the gum is by means of a dialyser.

Adulteration of Belladonna Root.—This last winter, on examining some belladonna, root, I was surprised to find present a number of large pieces of poke root.

As the former root is indigenous to Europe and the latter to the United States, and as the structure of them is entirely different, it could hardly have been an accidental adulteration.

The cork layer of the belladonna is of a very light brown gray color while that of the poke root is of a yellowish brown gray and marked by very characteristic transversely elongated corkey warts of a lighter color.

The transverse section af the former shows a fine black cambium line, and the woodwedges, when present, are of a light yellow color, radially arranged ; in the poke the wood tissue is whitish, and shows a decidedly concentric arrangement.

Camphor.—I have pleasure in calling to your attention an excellent article of camphor, made at the Sumitomo Refinery, Kobe, Japan, and imported by Smith, Kline & French Company.

It comes in boxes very neatly made of wood, pasteboard lined, containing one pound net by actual weight.

The style of package prevents evaporation, and being divided into ounce cakes there is no loss in retailing.

It is less translucent and crystalline than ordinary refined camphor, and is probably made by submitting powdered camphor to powerful pressure.

One part is perfectly soluble in 0 7 parts of alcohol, and sublimes without leaving any residue.

It seems probable that in many industries Japan is going to be an active competitor, not only with European nations, but also with our own.

Fluid Extract Triticum Repens.—The question is asked: "What is the cause of the active effervescence which takes place when Fluid Extract Triticum Repens is added to a carbonate?"

If active effervescence occurs, I should think it due to fermentation having taken place.

The fluid extract is made by first percolating with boiling water, afterwards evaporating and adding 25 per cent. of alcohol.

As the medicinal constituents consist of three sugars, two of them directly fermentable, if too much time be taken in percolating and evaporating, there is apt to be some fermentation before the alcohol is added.—*Through Amer. Journal Phar.*

Other papers were, "The Beneficient Society of American Apothecaries of the State of Pennsylvania," by W. B. Thompson. "Do Drugs Supplied by the Jobbers Comply With Pharmacopœial Requisition? If Not Who is Responsible, the Jobber or the Retailer?" by Louis Emanuel. "Liquor Ferri Chloridi as Found in the Market," by A. L. Beck. "Unguentum Hydrargyri," by H. N. Coxe. "Can the Acidity of Guaiac be Modified?" by W. B. Thompson. Considerable discussion followed the reading of a paper entitled, "The Cutter and the Remedy," by J. H. Redsecker. Mr. Redsecker proposed the enactment of a law by the legislature requiring the formulas of all proprietary medicines sold in the State to be deposited with the Board of Pharmacy accompanied by a certain fee. The proposed law will not include the preparations of druggists, where the sales are $500 or less. C. E. Hires, of Philadelphia, addressed the Association on the subject. "Shall We Give Our Clerks and Employees a Percentage of Gross Receipts Instead of a Regular Salary?"

The *Massachusetts* Pharmaceutical Association met at Worcester, Mass., June 26 28. C. F. Nixon delivered "A Talk on the Medicinal Plants Indigenous to Massachusetts." Papers were read by Prof. W. L. Scoville, on "Chalk Mixture;" F. T. Drake, on "Adulterations of Powdered Nux Vomica," John T. Manning, "How to Keep an Index," E. L. Patch on "Trouble and Loss in Storing Stock." and "Question Box."

The *New York* State Pharmaceutical Association held its meeting at Saratoga Springs at the same time that the Massachusetts pharmacists were in convention. One of the features of the occasion was the lecture by Prof. H. H. Rusby, on "The Rubber Industry in South America." The following is a list of plants furnished by Wm. H. Rudkin, of New York City, which is supposed to comprise all of the orders and genera known up to the present time to yield commercial India rubber:

Euphorbiaceæ. — Hevea braziliensis, Mull.; H. spruceana, Mull.; H. discolor, Mull.; H. pauciflora, Mull.; H. rigidifolia, Mull.; H. Benthamiana, Mull.; H. lutea, Mull.; H. guyanensis, Mull.; Micranda siphonoides, Benth.; M. minor, Benth;—the caoutchouc derived from all these species is known commercially as Para rubber, from the principal shipping point. They are all natives of the Amazon and Guiana. Manihot Glaziovii, Mull;—the source of Ceara rubber, native of the Rio Janeiro district.

Urticaceæ, Tribe Artocarpeæ.—Ficus elastica, Roxb.; F. hispida, L;—East India rubbers, natives of Assam. F. brasi, R B;—Sierra Leone, African rubber. F. macrophylla, Desf.; F. rubiginosa, Desf;—Australian rubber, natives of Northern Australia. Urostigma Vogelii, Miq;—African rubber, native of Liberia. U. laccifera, Miq;—East India rubber, native of Assam, Castilloa elastica, Cervant; C. Markhamiana, Collins;—these trees are the sources of all the various Central American and Western South American rubbers.

Apocynaceæ. — Hancornia speciosa, Gom;—native of Pernambuco. Willoughbii edulis, Roxb.; W. firma, D. C.; W. martobanica, D. C.;—natives of Madagascar and India; these are held as high grades of rubber. Landorphia owarensis, de Beauv. L. florida, Benth.; Vahea madagascariensis, Boj., (Landorphia, B. & H.); V. comerensis, Boj., (Landorphia, B. & H.); V. Gummifera, Lam., (Landorphia, B. & H.); V. Senegalensis, A. D. C., (Landorphia, B. & H.); Carpodinus R. Br., various species, (Landorphia, B. & H.);—all natives of Tropical Africa yielding the various African rubbers; nearly all climbing plants of great size. Urceola elastica, Roxb., (charannesia, A. D. C.);—Borneo. U. esculenta, Benth, (charannesia A. D. C);—Burmah. Leuconotis eugenifolia. A. D. C.; Alstonia costulata, Miq.; A. scholaris, R Br;—Malay Archipeligo. A. plumosa, Labill,—Fiji islands.

Lobeliaceæ. — Siphoncampylus caoutchouc, Don.; S. jamesonianus, D. C.;—natives of Central America.

Asclepiadaceæ.—Periploca græca, L.;—Island of Re-union. Cryptostegia grandibora, R Br.r—Coasts of India. Cynanchum ovalifolium, Wight;—Penang, Asclepias cornuti, Desc.;—North America. Attempts were made to obtain caoutchouc from this source in Canada.

Compositæ.—Durango rubber obtained from some unknown composite plant was exhibited at the exhibition in Philadelphia, in 1876.—*Through Drug Circ.*

Much time of the meeting was occupied with a discussion of the Pharmacy Law. The sentiment of the members was in favor of a "re-registration" amendment to to the law now in force. Through the report of the committee, the Association was informed of a number of bills that had been brought before the State Legislature to regulate the practice of pharmacy, among them the perennial one of dispensing poisons in a special bottle, this brought out a full discussion by members of the Association, and the almost universal sentiment was opposed to the adoption of any mechanical device. The meeting next year will be held at Oswego.

The following officers were elected for the ensuing: President, Charles F. Fish Vice-Presidents, I. C. Chapman, L. A. Baker, E. S. Gregory; Secretary, Clay W. Holmes; Treasurer, W. B. Fuller.

NEW LITERATURE.*

Bakterienkunde.—*G. Itzerott.*—Ein kurzer Leitfaden fur Studerende und Aerzta.

Behrens, H.—A Manual of Micro-Chemical Analysis.

* Readers desiring any of the works contained in this list can obtain them through B. Westerman & Co., 812 Broadway; Gustav E. Stechert, 810 Broadway, or other foreign booksellers.

Bibliothek für Nahrungsmittel-Chemiker.—Herausgegeben von J. Ephraim. I. und II. Band.

Biologischer Atlas der Botanik.—A. Dodel.

Bocquillon-Limousin.—Formulaire des Médicaments Nonveaux et des Médications Nouvelles pour 1894. Introduction par le Dr. Huchard.

This is the fifth edition of the work, and includes about five hundred articles relating to the newer materia medica.

Botanischer Tasnhenatlas für Touristen und Pflanzenfreunde.—M. Fünfstück.

Carnegie-Douglas.—Law and Theory in Chemistry

Chemische Reagentien und Reactionen.—C. Dünnenberger.

Companion to the Latest Edition of the British Pharmacopœia.—By Peter Squire, sixteeuth edition. Revised by P. W. Squire and A. H. Squire. Pp. I. to XL., 1 to 693.

Das Conserviren der Nahrungs und Genussmittel.—Fabrikation von Fleisch-, Fisch-, Gemüse-, Obst-, etc. Conserven. L. E. Andés. I. Band; 438 S. mit 39 Testabbildungen.

A Dictionary of Medicine.—Edited by R. Quain, assisted by F. T. Roberts and J. M. Bruce. New edition, revised throughout and enlarged, in two volumes. Vol. 1., pp. I. to XXIV., 1 to 1223. Abdomen—Lysis; vol. 2, pp. I. to VII., 1 to 1260, Macrocheilia—Zyme.

Die Alkalien.—Darstellung der Fabrikation der gebrauchlichsten Kali und Natronverbindungen, der Soda, Potasche, des Salzes, Salpeters, Glaubersalzes, Wasserglasses, Chromkalis, Blutlaugensalz, Weinsteins, Laugensteins, etc., deren Anwendung und Prüfung. 2 auf. von S. Pick.

Die chemische Industrie auf de Columbischen Weltaustellung zu Chicago und in den Vereinigten Staaten von Nordamerika im Jahre 1893.—Otto N. Witt.

Die preussichen Apothekengesetze mit Einschluss der reichgesetzlichen Bestimmungen über den Betrieb des Apothekergewerbes. H. Bottjer.

Directions for Labaratory Work in Bacteriology. F. G. Novy. 1 vol., pp. 209.

Dutton, Thomas.—Domestic Hygiene. Pp. I–IX., 1 to 199.

Ehrhardt, E.—Chemische Untersuchung der westentlichen Bestandtheile, des Leucojum vernum und des Narcissus poëticus.

Einleitung in die Chemische Analyse. L. Medicus. I. Heft.

Encyclopädie der Naturwissenschaften. 2. Abth. 82 Lief. Handworterbuch der chemie, 62 Lief. Ed. Trewendt, Verlagsbuchhandlung, Breslau.

Études microscopiques de produits alimentaires: (a) Histologie et morphologie comparées des tests des graines entrant dans la composition normale des principaux torteaux alimentaires. (b) Contribution à l'examen microscopique du poivre et ses falsifications. Avec 3 pl. Par. P. Claes et E. Hyes.

Étude monographique de la Famille des Globulariées au point de vue Botanique, Chimique, et Therapeutique. Par Edouard Hechel, avec la Collaboration de Schlagenhauffen et J. Mourson.

Flückiger, F. A.—Die historische pharmaceutisch-medicinische Sammlung des Apotheker B. Rever in G nf. Pamph., 13 S.

Fluckiger, F. A. Grundriss der Pharmakognosie. Zweite mit Berück-sichtigung technisch wichtiger pflanzen bearbeitete auflage.

Formulaire des Eaux minérales de la Balnéothérapie et de l'hydrothéarpie. Introd. par Dujardin. Beaumetz. Par de la Harpe.

Frick, J.—Physikalische Technik, bearbeitet von O. Lehmann. Italian Translation.

Geissler, E.—Grundriss der Massanalyze. Mit Berücksichtigung einiger handelschemischer und hygienischer Analysen. 2 verbesserte und vermehrte Auflage. Ein Band, 164 S. mit 37 Textabbildungen.

Heim, L.—Lehrbuch der bakteriologischen Untersuchung und Diagnostik. Eine Anleitung zur Aüsfuhrung bakteriologischer Arbeiten und zur Einrichtung bakteriologischer Arbeitsstätten.

Ives, F. E.—Handbook to the Photochromoscope. By its inventor. With chapters on the nature of light and theory of color by some of the first authorities.

Jahrbuch der Natweivissenschaften 1893-1894. M. Wildermann, Enthaltend die hervorragendsten Fortschritte auf den Gebieten: Physik, Chemie und Chemische Technologie; Mechanik; Meteorologie und Physikalische Geographie; Astronomy und Mathematische Geographie; Zoologie und Botanik; Forst- und Landwirthschaft; Mineralogie und Geologie; Authropologie und Urgeschichte; Gesundheitspflege, Medicin und Physiologie; Länder und Volkerkunde; Handel, Industrie und Verkehr. 9 Jahrgang.

Jahresbericht über die Leistungen der Chemischer Technologie, mit besonderer Berücksichtigung der Gewerbestatistik für das Jahr 1893. Bearbeitet von R. v. Wagner. Fortgesetzt von F. Fischer.

Jolles, A.—Das Margarin, seine Verdaulichkeit und sein Nährwerth im Vergleich zur reinen Naturbutter.

Katechismus der Chemie.—H. Hirzel.

Koller, Th.—Ersatzstoffe der Chem. Industrie, sowie der Essig- und Starkefabrikation, der Weingeist und Liquerfabrikation, der Brauerei, der Nahrungs- und Genussmittel.

Lehrbuch der Botanik.—W. Kukula. 4 Aufl.

Lehrbuch der Chemie nach den Neuesten Ansichten der Wissenschaft für den Unterricht an Techn. Lehranstalten.—M. Zaengerle. 4 (Titel-) Aufl.

Leitfaden für den botanischen Unterricht an mittleren und höheren Schulen.—K. Kraepelin. 4 Auf.

Leitfaden der Botanik für höhere Lehranstalten.—P. Wossidlo. 4 Aufl.

Leybold, W.—Technische Gasanalyse.

Liebig and *Kopp's Jahresbericht* über die *Fortschritte* der *Chemie* für 1890. Part I. Edited by F. Fittica. Pp. 480.

Lloyd, J. U.—A Study in Pharmacy.

Manuel des plantes de la grande culture.—A. Damseaux. Tome I. Céréales et plantes légumineuses.

The Medical Annual for 1894.—Pf. I.—LXIV. 1 to 672.

This book is an epitome of new drugs, new inventions or modifications in treatment that have been suggested during the past year. There are also some original articles.

Mikrophotographischer Atlas der Bakterienkunde.—C. Fränkel und R. Pfeiffer. 2 Auf. 9 und 10 Lief.

The Natural History of Plants.—From the German of Anton Kerner von Marilaun. By F. W. Oliver. Part I. Pp. 112, with two colored plates and numerous wood cuts.

Neuberg.—A.,—Toxikologische Studien über einige organische Saüren.

Oesterreichische Pharmakopoe.—Italian Translation by F. C. Schneider and A. Vogl.

Pharmaceutische Präparate.—Anleitung zur Darstellung Erkennung, Prufung und stöchiometrische Berechung von officinellen cemisch pharmaceutischen Präparaten. Von Max Biechele. Ein Band., 308 S.

Phillips, C. D. F. Materia Medica, Phamacology and Theropeutics of Inorganic Substances. —Pp. I.—XIV., 1 to 898.

Proceedings of the American Pharmaceutical Association at the Forty first Annual Meeting held at Chicago, Ill., August 1893.—Pp. 1. XXVIII., 1 to 1087.

This work contains more than the title indicates. It includes, besides a record of the proceedings of the association meeting a report on the progress of pharmacy—being a record and digest on work in pharmacy and allied subjects for the period extending from July 1, 1893 to July 1, 1894, by Henry Kraemer.

Rathwell, R. P.,—The Mineral Industry, its Statistics, Technology and Trade in the United States and other countries from the earliest times to the end of 1892.

Ruff, Gustav.—Die Untersuchung von Nahrungsmitteln, Genussmitteln und Gebrauchsgegenständen. Practisches Handbuch für chemiker, Pharmaceuten, etc. 1 Band, 384 S. mit 115 Textabbildungen.

Sammlung chemisch—analytischer Taschenbücher.—Anletung zur erschopfenden Untersuchung und Beurtheilung wirthschaftlich und technisch wichtiger Punkte, herausgegehen von H. A. Blücher.

Schrenk, J.—Anleitung zur Ausführung bacteriologischer Untersuchungen zum Gebrauche für Aerzte, Thierärzte, Nahrungs-, Agricultur- und Gährungs-Chemiker. Apotheker und Bautecniker. Mit 137 Abbildungen.

Serres, L.—Traité de Chimie avec la Notation chimique.

Seiler, F.—Statistique des resultats d'analyse des vins swisse d'origine authentique.

Steam Elamentary Stage.—With answers to the calculatious. T. T. Rankin.

Tagebuch fur Gastechniker, 1894.—Von C. F. Schweickhart. IV. Jahrgang.

Timpe, K.—Ueber die Sterilisirung der Kuhmilch für den Bedarf des Hauses and der Molkereien, sowie über Sterilisirapparate für den praktischen Arzt und die Apotheke.

Vines, Sydey H.—A Students' Text-Book of Botany. First half. Pt. I-IV, 1 to 430. With 219 illustrations.

This new work is intended to be a students' book and the author hopes that it may supercede the old translation or adaptation of Prantl's handbook.

Vorschriftenbueh fur Drogisten.—Die Herstellung der gebrauchichsten Handverkaufsartikel. G. A. Buchheister. 2 Auf.

Waeber, R.—Lehrbuch der Botanik.

Wagner, N. F.—Die Nahrungs- und Genussmittel, ihr Nährwerth, ihre Fehler und Verfälschungen, gemeinfasslich dargestellt.

Wandtafeln zur Systematik, Morphologie und Biologie de Pflanzen fur Universitäten und Schulen.—A. Peter. Bl. 6-11.

Wiesnir, J. — Elemente der wissenschaftlichen Botanik. Italian Translation.

Wright's Prescription Book.—Containing 150 prescription forms, perforated.

Zopf, W. — Beiträge zur Physiologie und Morphologie niederer Organismen. 4 Heft.

Zimmermann's Botanical Microtechnique.—Translated from the German by J. E. Humphrey. I. Vol. pp. XII. and 296.

Zune, A. J. — Traité d'Analyze chimique, micrographique et microbiologique des Eaux potables.

THE MOST RECENT WORK.

Strychnine Nitrate.—The product obtained by dissolving strychnine in cold or warm dilute nitric acid, and evaporating the solution, is invariably colored; if, however, according to Guigues (*J. Pharm.; Jour. Chem. Soc.*, 1894, 262) the alkaloid is suspended in hot water and dilute nitric acid (1:5) added drop by drop until the liquid is neutral and dissolution complete, a colorless product is obtained on evaporation. The crystals are anhydrous. Brucine nitrate remains in the liquor.

New Essential Oils.—Glechoma hederacea L. (Ground Ivy) yields 0.03 per cent. of an essential oil; the Sp. Gr. is 0.925 at 15° C.; the odor is disagreeable and color is dark green. *Apium petroselinum L.* (Parsley root) yields 0.08 per cent. of an oil; the Sp. Gr. is 1.049 and separates crystals (probably of apiol), even at the ordinary temperature *Essential Oil of Mignonette Root* possesses characteristics which denote that it belongs to the mustard oil group—it being, however, only analogous. Its constitution will be determined by subsequent experiments. *Asarum canadense L.* (Canada snake root), the fruit yields an oil soluble in twice its volume of 70 per cent. alcohol. *Chenopodium ambosioides L. var. anthelimintiicum, Gray* (American wormseed), the fruit yields 1.03 per cent. of a light yellow oil, Sp. Gr. 0.910 at 15° with optical rotation—18°55′ in a 100 Mm. tube. The inference is that linomene is present. The oil from the herb (0.35 per cent.) is very similar but possesses a Sp. Gr. of 0.879 and optical rotation — 32°55′. Neither of these oils gives a perfectly clear solution until 10 times its volume of 70 per cent. alcohol, but age probably modifies them in this respect. Oil of *Solidago canadensis L.* (0,63 per cent.) is light yellow in color and possesses an agreeable odor; Sp. Gr., 0.859 and optical rotation—21°10′. *Juniperus virginiana L.*, the leaves yield 0.2 per cent. of a pale greenish-yellow oil with an orange tasste odor, quiite distinct from that savin; Sp. Gr., 0.986, optical rotation + 59°5′ —*Semi-Annual Report of Schimmil & Co.*, April, 1894.

Pottassium Iodide and Pottassium Bromide G. W. C. Klie in a paper before the Missouri Pharmaceutical Association, June, 1894, considers these salts of the market and finds that the large majority do not conform to the requirements of the pharmacopœia. The following is a tabular view of his results:

POTTASSIUM IODIDE.	Solubility in Dilute Alcohol Sp. Gr. 0.928.	Alkali Limit.	Sodium.	Iodate.	Sulphate.	Ars'nic Lead, Copper	Nitrate, Nitrite.	Iron.	Cyanide.	Purity Percentage.
Sample No. 1	Not complete.	Beyond.	Present.	None.	Ap'eciable.	None.	None.	None.	None.	Not Standard
" " 2	Complete.	Within.	"	"	"	"	"	"	"	" "
" " 3	"	"	None.	"	None.	"	"	"	"	Standard.
" " 4	"	"	"	"	Ap'eciable.	"	Ap'eciable.	"	"	Not Standard
" " 5	"	"	"	"	None.	"	"	"	"	" "
" " 6	"	Beyond.	Present.	Large Am'nt.	Ap'eciable.	"	None.	"	"	" "
" " 7	"	Within.	None.	None.	None.	"	"	"	"	" "
" " 8	"	"	"	"	"	"	"	"	"	Standard.
" " 9	"	"	"	"	"	"	Traces.	"	"	"
" " 10	"	"	"	"	"	"	"	"	"	Not Standard
" " 11	"	"	"	"	"	"	"	"	"	" "
" " 12	"	"	"	"	Traces.	"	Ap'eciable.	"	"	" "

POTTASSIUM BROMIDE.	Reaction.	Violet Tint.	Limit Pottassium Carbon.	Sodium.	Bromate.	Iodine.	Iron Aluminum.	Ars'ic Lead Copper.	Calcium.	Barium.	Sulphate.	Iron.	Absence of more than 3 per cent. Chloride.
Sample No. 1	Neutral.	None	Within.	None.	None	None	None	None	None	None	None.	None	Standard.
" " 2	Alkaline.	"	"	Traces.	"	"	"	"	"	"	Traces.	"	" "
" " 3	Neutral.	"	"	"	"	"	"	"	"	"	None.	"	Not Standard
" " 4	"	"	"	None.	"	"	"	"	"	"	"	"	" "
" " 5	"	"	"	Traces.	"	"	"	"	"	"	Traces.	"	" "
" " 6	"	"	"	None.	"	"	"	"	"	"	Appreciable.	"	Standard.
" " 7	Alkaline.	"	"	Traces.	"	"	"	"	"	"	Traces.	"	Not Standard
" " 8	Neutral.	"	"	None.	"	"	"	"	"	"	"	"	" "

Aconitine.—M. Freund and P. Beck state that they have made fourteen carbon and hydrogen determinations of crystallized aconitine, the results of which, together with other considerations, lead them to adopt the formula $C_{34}H_{47}No_{11}$, instead of that ascribed to the alkaloid by Dunstan and his pupils, namely, $C_{33}H_{45}No_{12}$. Ehrenberg and Pürfurst regarded the substance obtained by boiling aconitine with water as a mixture of the benzoates of two bases ; the authors have obtained a homogeneous compound by recrystallization. It melts at 202–203°, and appears to leave the formula $C_{39}H_{51}No_{12}$, being the benzoate of a base $C_{32}H_{45}No_{10}$, derived from aconitine. The authors have examined the salts of the last named base and come to the conclusion that it is identical with Dunstan's *isaconitine;* its properties also render it probable that it is identical with Wright's *picraconitine*. Attempts to prepare aconitine by acetylating pieraconitine have as yet yielded negative results.—*Ber. Chem. Ges.*, 1894, 433.

Dunstan replies to Freund and Beck, and states that he and his collaborators have already shown (*Pharm. Jour. Trans.*, 1894, 174, 29, 4, etc. that aconitine in hydrolysis yields acetic acid and "*isaconitine*," and that the latter is identical with Wright's *picraconitine*. He has also proved that isaconitine is benzoyl-aconine, and therefore not isomeric with aconitine.—*Ibid*, 664.

M. Freund and P. Beck continue their works, and give the details of their experimental work. —*Ibid*, 720.

The Emetics.—Paul Adam (*Compt. Rend.*, June 4, 1894). French chemists use the term "emetic" irrespective of physiological action, to include all compounds analogous in constitution to the well known "tartar emetic." The theories put forward concerning the constitution of the emetics may be reduced to two : Do antimonious hydrate, ferric hydrate and boric acid act in these salts as acids or as bases? The classic formulæ corresponds to the second theory, while the researches of Jungfleisch favors the former, and are supported by the present author. He concludes that the chemical analogies and reactions of "emetics," properly so called, should make us regard substances of this kind as ether salts and not as double salts. *Chem. News*, 1894, 301.

Rose Oil.—J. Bertram and E. Gildemeister could not isolate any rhodinol from the various commercial geranium oils. A reinvestigation of genuine rose oil shows that the geraniol from this source is identical with that from all other known sources. The variation in the Sp. Gr. of samples of geraniol are attributable to the ease with which the oil oxidizes. A comparison of the properties and behavior of the so-called rhodinol leads to the conclusion that this substance is a mixture, consisting for the most part of geraniol. just as Barbier's licorhodol is an impure geraniol.—*Jour. f. Prakt. Chem.*, 1894, 1895.

Ceará Jaborandi.—E. M. Holmes points out that a new kind of Jaborandi has been offered, and that it resembles the genuine article in several points. The leaflets resemble those of the true Pernambuco Jaborand in their coriaceous or leathery texture, and in the dark green or brownish-green color of the upper surface and the emarginate apex, but differs in the under surface of the leaf being covered with short, curved, simple unicellular hairs. On the upper surfaces these hairs are present in the midrib, but are only sparingly visible elsewhere on the upper surface. The margin of the leaf is also strongly incurved. When chewed it does not cause a flow of saliva. According to Paul and Cownley the leaves do not contain any considerable amount of a base, forming a crystallizable nitrate corresponding to the salt of pilocarpine· —*Pharm. Jour. Trans.* 1894, 1065.

New Constituent of True Coto Bark.—G. Ciamician and P. Silber (Ber. d. Chem. Ges, 1894, 841.) The substance which forms the subject of this paper was obtained in the purification of cotoïn on the large scale. It forms yellowish crystals melting at 66–68°, and has the formula $C_{11}H_8O_2$. In chemical properties it is closely allied to paracotoïn, which the author considers to be dioxymethylenephenylcoumalin, but it differs from it by the absence of the dioxymethylene group, so that it receives the name (provisionally) of phenylcoumalin. It may be purified by treatment with hydrobromic acid, which forms an unstable compound with it, and this decomposes gradually, leaving the original substance, which then only requires to be freed from acid by dissolving it in alcohol and precipitating with water. It is readily soluble in ether, alcohol, acetic acid, etc., but only very sparingly soluble in water. It dissolves in alkalis and alkali carbonates, yellow solutions being formed which smell of acetophenones. Sulphuric acid in the cold dissolves the compound without alteration. It is, moreover, not acted on by acetic anhydride or hydriodic acid, and therefore does not contain hydroxyl or methoxyl groups.

College Notes.

On October first, the opening day of the regular lecture term, the dreams of some of the most zealous and devoted adherents to educational interests of the College of Pharmacy of the City of New York will be realized. This will be the sixty-fifth year of its existence, and it is believed that the authorities have developed a very complete course of instruction, both theoretical and practical, and that the different courses of lectures, quizzes and laboratory work include all the important subjects which it is necessary or desirable that the pharmacist should pursue. The prospectus of the college has been in the hands of not only the readers of THE ALUMNI JOURNAL, but probably nearly all the young men who are bent upon receiving the best advantages offered by the leading colleges of pharmacy.

The Juniors and Seniors are to be congratulated for being permitted to receive their instruction in the new college building, which has been commented upon from both the esthetical and practical point of view, as being unsurpassed by any similar institution. The designs for the building required twelve months to perfect, and the result is, as was to be expected—beautiful, thorough and practical. The prospectus abounds in information and details relative to the plans for the session of 1894 and 1895, and as we deem it not good taste to attempt to describe the superiority of the advantages offered by our "Alma Mater," we urgently ask all alumni to come and see and spread the tidings to all those who desire to be instructed in the art of compounding and dispensing medicines.

Alumni Association.

ANNUAL ADDRESS OF THE PRESIDENT OF THE ASSOCIATION, HERMAN GRAESER.

The constitution of our Association demands that the president presents at the annual meeting a message giving a resumé of the work of the past year, and recommending changes for the improvement of the Association, marking outlines for further development.

The history of the Alumni Association of the past year is replete with changes, innovations and improvements.

The first change made was the transacting of all business in the Executive Board, which proved a success, as we now never fail to get a quorum at any of our meetings.

At our regular meetings we had lectures on pharmaceutical subjects or subjects of interest to the students, and every one of them was well attended, one eliciting a very lively and healthy discussion.

In the beginning of the last fiscal year our working fund was entirely exhausted, and as the reserve fund is not to be used for current expenses, we had to look smart to make both ends meet.

I am glad to be able to say that, due to an economic administration of affairs in all the executive offices, we can to-day point to a surplus. In the beginning of the year our constitution was revised, and language which seemed ambiguous altered, and numerous changes made which tend to harmonize and put at a distance all strife in the future.

It has been our misfortune to lose, after a very short illness, our associate, Dr. Oscar G. Harrison. It is unnecessary to mention to you his many good qualities, as he has endeared himself to all who came in contact with him, and who will always treasure him in their memory as one who sacrificed his life for the advancement of science and the good he could do.

I cannot say too much in praise of our ALUMNI JOURNAL. Born under adverse circumstances, its first editor died before the first number on which he labored was published, it still has prospered. In its present editor we have found a man who has every interest of the Alumni, the college and the student at heart, and whose unselfish labors have done much to advance the influence of the JOURNAL. The co-operation of the faculty and the officers of the college have made the JOUNAL an assured success.

And, gentlemen, if you could but read the inside history of this organization and the college, yea, the pharmaceutical profession, you would appreciate the value of THE ALUMNI JOURNAL. This publication has proved to the skeptic that there is stamina, worth and harmony in the Alumni Association, and that the right spirit exists there. It remains but for others to come and help to elevate our noble profession.

We should not rest until we find every graduate of our college is on our subscription list.

The college has set aside for the use of the

Alumni Association a room in the new building, and as this will give us a home in the college, I would recommend the addition of a social feature to the curriculum of our association. In addition to the social feature, I would recommend the addition of a strictly business and political feature.

We are all aware of the unorganized condition of the pharmaceutical profession. We have pharmaceutical organizations, but whose work is not harmonious, neither of them being perfect for aggressive purposes.

I recommend the organization of the alumnæ of our college for aggressive purposes by assembly districts in this city, one man to have charge of a district, after we have perfected such an organization, to co-operate with other organizations, until we are a powerful political body. We must become so strong that no act can be passed by our legislature derogatory to our profession without we have a chance to have our say.

We have on our membership roll a number of names of men who are in arrears for three years or more, and who after repeated demands have not paid up. I wish to call their attention to Article VI, Section 9, of the By-laws, which reads: Any member may be dropped from the roll, after due notification, for non-payment of dues for three successive years, by vote of the Executive Board. Any member so dropped may be reinstated by vote of the Executive Board on payment of his arrears.

It will be necessary for us to enforce this rule if the delinquents do not come forward with the amount in arrears.

Our summer reunion and outing was a great success, and arrangements have been made to hold another on June 20th, this year. Six lectures on subjects of interest to students and pharmacists will be delivered during the coming year under the auspices of our association, and we hope that the lecture room in the new building will be filled to its utmost capacity.

I trust that the amendment to the constitution making the faculty honorary members of our association will be passed.

ALUMNI OUTING.

On June 20, at 1 o'clock, about fifty gentlemen and ladies representing the Alumni Association, and their friends, took the Staten Island boat and proceeded to New Dorp, where they were cordially met by Mr. Petela, the host of the day. Dancing, bowling, shooting and other sports were engaged in, and at 4 o'clock the late contingent (who took the 3 o'clock boat) arrived. Several members went rowing and swimming, but all turned up smiling and hungry at the dinner table at 5 P. M., where a right royal dinner (such as only Petela's Hotel is noted for) was served. The intellectual sauce of the dinner was served in the way of five minute speeches by Messrs. Graeser, Hohenthal and Henning, of the Association, Mr. Neason and Prof. Haubold, in all about seventy-five sat at the table. It was 10 o'clock before the happy excursionists reluctantly left the picnic grounds.

Our Graduates.

J. TAYLOR CLARK of the class of '88 has just purchased another drugstore in Bayonne, N. J.

MARTIN J. SCHMITT, '91, purchased the drugstore of C. W. Knape, Carlstadt, N. J.

MR. W. S. MILLENER, JR., '92, has since his graduation been located at Holley, N. Y., and is doing very well. Mr. Millener expresses the hope that he will hear from the boys of the class of '92 through THE ALUMNI JOURAAL.

A. C. GEIST of the class of '91 is now in charge of the pharmacy of C. W. Knape at Carlstadt, N. J.

HERMAN WELLER has bought a store in Woodside, N. J.

As many pharmacists have cats in their stores, it will be well for them to know that their respective Tabbies and Tommies will have to be licensed according to the new law. Licenses to be obtained at the City Hall, free of charge, and the tag obtained there must be put on a collar to be worn by the animal.

JOHN WIMMER, '78, the popular Harlem Pharmacist has recently won several races in the Harlem Y Club Regatta. He is quite an adept in all athletic sports.

A. KESSLER, '92, is traveling for "The Armour Laboratory."

MR. JAMES S. HIGGINS, formerly at Lexington avenue, corner 105th street, New York City, has purchased the drugstore corner 116th street and Lexington avenue from Paul Weber and will conduct a model prescription pharmacy Mr. Higgins is one of the oldest and best known druggists in New York City.

HENRY F. ALBERT, class '91, has purchased the drugstore of Otto Haug, located at 305 First avenue, New York City.

It is rumored that Lucien M. Royce, class '66, intends resigning his position with Tarrans & Co. to engage in the retail business in Brooklyn. He has for some years been a partner in the firm of D. T. Larimore & Co., Seventh avenue and Seventh street, and will succeed said firm. Mr. Dudley T. Larimore, class '85, sells out his interest to Mr. Royce, in order to accept the position of manager for F. Haas' pharmacy, corner Fourth avenue and Twenty-second street, New York City.

Lawrence J. Meighan, class '93, has purchased one of the stores of A. L. Goldwater at No. 615 Courtland avenue, New York City.

Otto Edler, class of '86, is now manager of Wheeler & Guck's successors' Pharmacy, corner of Madison and Pearl streets, New York City.

H. G. Born, class '94, is with the Bongartz Pharmacy, corner Ninth avenue and Fifty-eighth street, New York City.

Ludwig Erb, class '94, has accepted a position with Chas. Ceunz on Sixth avenue.

James A. Bailey, class '92, has been studying medicine at the Baltimore College of Physicians and Surgeons during the past winter, and will have charge of the leading drug store in Seabright, N. J., for the summer months.

Julius Tannenbaum, class '93, has sold his store, corner of Lexington ave, and 54th street, to C. T. Webster, and gone back to his old position with Thos. A. Smith, Willis Ave. and 135 street.

Edwin H. Knox, class '92, has purchased the drug business of Armin Richter & Co., in Mount Vernon, N. Y., where he was lately a partner, and in former years a clerk.

Chas. Miller, class '94, was expected to open a store in Fleischmans (formerly Margaretville) in the Catskills, about the first of June, and expected to have for customers such celebrities as Anton Seidl and Emil Fisher, of German Opera fame.

W. L. Schaaf, class '91, has purchased the drug store of Barry & James of 798 8th ave., New York city.

Abraham J. Hardenbergh, class '90, of the firm of Hardenbergh & Angus, was recently afflicted with the death of his father, the well known railroad contractor.

That bowling is a favorite pastime of the Ph. G. is shown by the fact that the Alchemyst Bowling Club, of this city, has upon its list of members the following graduates of our college: C. Benkendorfer, '90; Henry C. Boysen, '89; Aug. Diehl, '88; F. H. Eckert. '89; H. Graeser, '89; W. Oetinger, '88; Aug. Volland, '88. The Ph. G. Bowling Club is composed as follows: Eugene Becker, A. C. Behrens, C. Behrens, G. Boen, O. Edler, J. Kiehl, F. Kransberg, J. Pfeiffer, J. Proben, C. Runkel, A. Schmidt, C, Schmidt, C. Vockrath, H. Wurm, W. Neimall.

By mistake the name of Frank J. Herbig, College Point, N. Y., was omitted from the Roll of Honor list published in the last issue of The Alumni Journal. The name of C. L. Richter should not, we are informed, have appeared thereon.

SENIOR CLASS SUPPER.

In accordance with the promise made in the last (May) issue of The Alumni Journal, we publish the following addresses, made at the Class Supper and final reunion of the Seniors. When the time for speeches was at hand, the toastmaster, Peter J. Ehrgott, Ph. G., made the following address of welcome :

"Gentlemen,—On behalf of the committee I bid you welcome.

"We are gathered here this evening to celebrate a victory—the attainment of a goal for which we have been striving, not only since we were initiated into the mysterious proceedings of the New York College of Pharmacy, but ever since we decided to cast our lot with that honorable order, the 'Knights of Mortar and of Pestle.'

"This object being accomplished, we naturally resolved to celebrate the event in some suitable form, and the carrying out of this project accounts for our presence here this evening.

"While giving vent to our own enthusiasm, we have not forgotten those who by their untiring devotion to our interest have rendered valuable aid toward the final achievement of our purpose.

"This feeling is mutual. You members of the faculty undoubtedly feel elated at our excellent showing at the final test, thus showing that your labor has not been in vain.

"To you fellow classmates it means a partial cessation of your arduous labors—no longer necessitating the burning of the midnight oil—which sounds very nice poetically, but is anything but pleasant when put into practice.

"In the midst of our rejoicing we must not fail to extend our sympathy to our less fortunate brethren ; although we are almost inclined to envy them, having, as they will, the finest

advantages offered by any institution of the kind in the world.

"I sincerely hope and trust that this will prove the first of a long series of reunions held under the auspices of the class of '94, and that our relations with one another will continue as friendly in the future as they have been in the past; also to have the pleasure of again meeting you, not as members of the Class of '94, but as members of the Alumni Association of the New York College of Pharmacy."

VALEDICTORY.

BY JOSEPH KUSSEY, PH. G.

Fellow Students and Gentlemen:

The day has almost arrived which will terminate our relations to our college and our relations to each other as classmates.

We must separate and walk along diverging roads and though the paths marked out for us may at some periods of our lives converge and cross each other, yet many of those assembled here to night will in all probability labor and struggle and fight their battles alone and pass out of the lives of their classmates with the parting after that final scene of success and triumph on Commencement night. And hence it is that even at such a joyous gathering as this we feel a touch of sadness and instinctively pause to cast a lingering, retrospective glance over the events of those two years which to us are and ever will be so memorable.

So full of absorbing interest have been our days at college, so replete with pleasant incidents, so delightful have been the associations formed, that it seems the recollections of these days can never be obliterated from our minds, but will ever remain there, fresh and imperishable.

The lectures, the recitations, and the meetings of our class have all furnished incidents, which will offer themselves to us as mental gratifications, long after the old building in which they have occurred, shall have ceased to exist.

Do you recall that first lecture in chemistry when our enthusiasm at the success of some interesting experiment found vent in a demonstration wherein our pedal extremities were employed with such striking effect?—how Professor Elliot then solemnly warned us that through such demonstrations the micrococcus and spirillum were enabled to rise in their dignity and revenge themselves with fiendish ferocity upon the guilless youth who had disturbed their repose. And do you recall how, later on, all timidity and fear of this suddenly left us when Professor Coblentz unconcernedly announced that twelve of those distinguished families dwelt in peace and serenity in our very mouths?

But aside from the pleasant incidents of the lecture hall, we are here to-night reminded of the pleasant hours spent at our class meetings. It was here that our true natures became known to each other and here it was that bonds of friendship were formed, which time may weaken but can never sunder.

In recalling the studies which we undertook to master, you remember how complex and hieroglyphical to us at first seemed the graphic formulae of chemistry; how like a labyrinth of unworldly knowledge appeared the classifications and divisions of drugs, and how persistently the preparations of the salts of iron escaped our minds and eluded our efforts to recapture and retain them.

But, fellow students, having been so fortunate as to receive our instruction from a faculty so learned, so eminent and so universally honored and respected as that of our own Alma Mater, how could we long remain in ignorance of the knowledge which they took such pains to impart to us?

Guided by the results of their ripe judgement and experience, and constantly perseverant in our endeavors to be just to ourselves and thereby just to those who have labored in our behalf we have mastered the intricate equations of chemists, passed safely through the labyrinthine classifications of pharmacognosy and Materia Medica, and even the troublesome preparations of pharmacy have become subservient to our will.

And now professors and learned instructors, we are reminded of the duty which we as graduates owe to you.

For two years we have been under your guidance and instruction. We have been by you initiated into the hidden mysteries of science, we have been brought to a clearer understanding of Nature's wonders and have become well versed in the theories and practices pertaining to our profession, indeed, through you there has been opened to us the path leading to original scientific research.

What the future has in store for us we know not, but be assured, gentlemen, the knowledge here acquired will be utilized for the purpose they are designed for the conscientious preparation of remedies tending towards the alleviation of human suffering, the mitigation of pain and

anguish wherever disease has set its heavy hand.

But alas! One who at the beginning of the last session was one of you, has been taken from our midst by the will of our Heavenly Father. To-day we recall his brilliant intellect, his true manliness of character and his sterling personality. Esteemed and honored by all who knew him, self-sacrificing in his devoted interest to our Alma Mater and ourselves, he departed this world before the brilliant plans, which he had outlined, could be executed.

And now, fellow students, we are about to go forth into the world as professional men.

Never before was the profession so in need of true scientific pharmacists and there is surely no reason why we as graduates of so noble and lofty institution as the College of Pharmacy of the City of New York should not lead in the effort to restore our profession to that position of trust and purity which it should justly command. Let our object be not alone a pecuniary one, but let us labor also for a nobler, a divine purpose—to aid and benefit mankind.

Classmates:—Two days hence and we shall be together for the last time as a class; but two days more and we shall bid adieu to one another and depart to our various homes. Some will leave for the far West, for Utah, for Indiana, some go to New England and others to the South.

How fruitful a source of pleasure it would be to us, if we could all remain in this great city, meeting frequently to renew our pledges of friendship and to rehearse and dwell fondly on the success and incidents of our college days. But this cannot be. Our homes are distant and vast stretches of territory must separate many of us from those whose friendship we prized so dearly. And yet we may rest assured that however distant we may be from each other, we will forget neither the friends from whom we have parted nor the Alma Mater from whose maternal arms we have wrested ourselves with a triumph at once glorious and tender. Absence can never destroy the love a student bears his Alma Mater, the Benign Mother to which he clung when hope and ambition burned fiercely within him, and though the distance which separates him from the scene of his learning be indeed great, the recollections of those days at college will remain with him ever urging him on to nobler deeds and loftier aspirations.

We who remain in the vicinity of the college will watch her progress with unswerving loyalty and undiminished interest. We see in her remarkable development since her incorporation the basis for a still more wonderful growth, we see her as an institution amongst the foremost in the land; we see her as the incarnation of idealism, her methods of instruction rivaling, aye excelling those of any other similar institution in this broad country.

That she may ever flourish and prosper, that she may continue to grow in wealth and influence is the prayer of all her graduates. It is the sentiment which we, of the class of ninety-four, pledge her here to-night.

OUR FACULTY.

BY NELSON S. KIRK.

I am fortunately enabled this evening to confine my remarks to a familiar honorable body, our Faculty. I could devote considerable time eulogizing these gentlemen, but as my fellow Jerseyite, Mr. Kussey, is to be best man on this occasion, I will concentrate my remarks q. s. to allow him the opportunity to extinguish himself.

Our Faculty, to which we have by this time become quite attached, will in a few days sever their connections with us as instructors to meet hereafter as friends, and members of our honorable profession. No longer will we listen to their familiar phrases as senior students but as graduates, and I sincerely hope, both as post graduate students and members of our Alumni Association.

Having had of late considerable experience with these gentlemen, which I am pleased to say resulted satisfactory to the majority of us, I shall endeavor to throw the '94 search-light upon them with a kindly hand.

You, Dr. Chandler, have made a favorable impression, long to be cherished and not soon to be forgotten, by your many jokes and interesting lectures, especially the one on the Tri Phenyl Rose Analines, of which, when concluded, left several of us suffering with symptoms analogous to saturnine paralysis.

Dr. Rusby, we all know that you have been unfortunate in your color reactions, but we don't doubt in the least but that you will meet with greater success in the new building. We are, therefore, very sorry that Providence has prevented us from being with you on those occasions.

Dr. Elliot, you have spoiled us. However, you treated us so generous on your examinations that we will forgive you for trying to teach us that fish story, of their death, and resurrection in a Sb H_3 solution.

And you, Dr. Coblenz, as a prognosticator, I am sorry to say have been very unsuccess ful. Our many hours devoted to the achievements of Messrs. Fleischmann and Bettendorhave as yet proved of no great value. Terebene as a substitution product was quite a stranger.

The sincere voluminous applause that has always greeted you, Mr. Oehler, upon your entrance in the quiz room, is itself a sufficient mark of gratitude. You put the fine adjustment to the Benzol ring, and fully explained the composition of Di Methyl Sulphone, Di Ethyl Methane, and thus deprived us of the necessity of partaking of some of the aforesaid remedy in order to produce that rest so beneficial to a brain that had been excreting cholesterine on such an enormous scale.

Your services to us, Mr. Ferguson, as the final results will certify, have proved of unexceptional value. Your self-sacrifices to us have been acknowledged, and I assure you they will never be forgotten.

As to our late Dr. Harrison, his memory will always prove dear to us.

And you, Mr. Madison, though with us but a short time, have endeared yourself to us, and by your punning propensities have often removed the gloom of sorrow from a rather dull quiz.

In conclusion, Gentlemen of the Faculty, I will say to you that we owe you a debt that we can never repay, and I sincerely hope that our future lives and deeds will reflect credit upon you.

(*To be Continued.*)

OUR HISTORY.

BY FRANK J. KELLER, PH. G.

Hon. Professors, Toastmaster and Fellow-Students:

For the last two years it has been a pleasure for us to listen to the lectures of our professors, but, gentlemen, is it not gratifying to know that we may retaliate by having them listen to us this evening?

The subject of History, assigned to me, is indeed a vast and varied one; one of which such men as Hume, McCauley and Gibbon have devoted their lives.

When reading the history of the various nations how often are we compelled to shudder at the very thought of the acts of violence and the acts of barbarisms perpetrated, all of which go to make their history; but the particular history which it is my pleasure to dwell upon this evening is one devoid of such acts. It is the history of our class of '94. We met two short years ago as total strangers, coming together from far and near for the purpose of furthering our knowledge in the profession, and in so doing we organized the class of '94, which, like everything else, has its history. Yes, gentlemen, and a history which I dare say will be remembered much better than the history of our various metals, as also the habitats of our numerous drugs.

To try and relate the various anecdotes which came to pass in our junior year would be a trying task.

But when we met in the fall of '93 we did so as seniors—as men to reorganize our class and try to make its history one which others not belonging to the class may look upon as an exception to all others. We have until now tried our best. Whether our efforts have been crowned with success or not remains for Wednesday evening to tell.

Our election of officers, as you all know, was very dubious until the counting of the las ballot, which shows that we have all taken that interest in our class which meant the selection of our best men. And, gentlemen, cannot we congratulate each other that in choosing the men we did to fill the various offices, the trust placed in their hands has not been violated, but, on the other hand, has been carried out to the letter?

We must approve of the wise judgment of our President in appointing our executive committee, as they no doubt were the ablest men in the class, and the proof we have, or will have, is before us this evening, and will be Wednesday evening.

These gentlemen have worked with untiring zeal for the interest of the class, often sacrificing an hour's pleasure, as also hours which otherwise may have been spent at their books. And what is the recompense? Nothing but the satisfaction of knowing that they have fulfilled the duties of the offices intrusted to them to the best of their ability; and also receive the best wishes of the class, which they no doubt desire.

During our senior year it has been our sad lot to have one of our beloved instructors, in the person of Dr. Harrison, taken from our midst, which proved a keen blow to all of us, as his interest in our behalf cannot be overrated.

In looking back over our various entertainments throughout the course, we find among us men not only skilled in the art of recognizing

crude drugs, making tannic acid suppositories or generating an excessive amount of H_2 S., but also men skilled in the science of the manly art, which goes to show that a gymnasium as an addition to our new building would be a vast improvement in that art, although it may prove detrimental to the other branches.

Gentlemen, the history of this class will be marked by the fact of its being the first to do away with that old-time and worn-out custom of rendering the valedictory at the commencement, which no doubt was a wise idea, as it is intended for the class, and the class only. Now, let us go still further and add more glory to our class history by being the first class to join the Alumni Association in a body. Other colleges are doing it; why cannot we be the first class in our college to do it? So that in after years, when looking back over the history of the classes, when it comes to '94 we may not see "ditto" or "graduated; left the college, have not heard from since;" but they may see the words, as though in bas relief: "This was the first class to join the Alumni in a body," proving that the bonds of friendship woven together during our college course were not to be severed at graduation, but that we would come together at least once a year as members of the alumni, to further the interests of pharmacy, and our College thereby proving the history of the class of '94 a credit to its Alma Mater.

OUR FUTURE.

BY JOSEPH R. WOODS.

Mr. President and Gentlemen:

To-night we are met together for a good time for the last time before we separate. Many of us, perhaps, will not meet again. Others of us may be more fortunate.

It has indeed been a pleasure to listen to the history of our class. How, as juniors, we came together, unknown to each other; how, before the year was over, we had made friends and had developed as a class; and how, as we went through our senior year, we had, besides our work, the touches here and there of jollity and of melancholy. And with this we are brought to the present time. The next topic to present itself is Our Future.

To this, as to most phases of life, there is the serious side and the gay.

So with all solemnity due to the occasion, we can imagine, perhaps, if we stretch our imagination, each and every one of us, plodding away at the prescription counter, from early morning to late at night, from one year's end to the other.

But we have a possible way out of this difficulty, gentlemen. And not only this difficulty, but any others in the same class. The means is through our Alumni Association.

Now I don't wish to say much about this, for we have with us, to-night, its president, who is going to speak to us about it. But I do want, as a fellow student, to beg every graduating man here to-night to join that association. Remember, gentlemen, that the *future* of this college can be bettered one hundred per cent. by its alumni, and that the alumni of any college can do more for its graduates and their brethren than almost any other body of men. It is our duty to do this, and let every man, to-morrow afternoon, come out and show his colors for the N. Y. C. P.

In this association we are brought in close relations with each other. It is almost the only means by which we shall keep up many of the friendships and acquaintances we have made in this college—by having a common object in view, and in coming together to accomplish it.

The future home of the college will, I hope, often be visited by us; there we may hope to see the familiar faces of each one of our faculty, and our instructors, who have proved themselves such true friends to us; and Mr. Davis, and Mr. Griffin, and even Old Schuyler, who, I'm sure, has done at least one favor for every man in the college, to say nothing of the many extended to most of us.

And, individually, there can be but few men in the class whose future is not in his own mind quite clearly mapped out. And, if the map be a good one, I am sure we all wish for the success of it, for each one here. But let us not once forget that the future is made up, not of to-morrows, but of to days. And in remembering this fact, and acting upon it, by making the most possible of every minute of our lives, we must be the winners, and our futures be assured.

ADDRESS

BY INSTRUCTOR JOHN OEHLER.

Mr. President, and Gentlemen, Fellow Colleagues, and more especially members of the Class of '94:

As a rule I prefer to speak extemporaneously, for it has been my experience that one can be more earnest and convincing, but as the spirit of "wanting a change" is prevalent in the land I have acceded to this spirit, and for once have

a cut and dried or as I prefer to state it, a cooked (*Cook*) and dried speech, which I intend to inflict upon you, as my method of saying farewell. When, on the third day of October, 1892, this class was born (*Born*), composed of men, who had travelled through valleys and over hills (*Hills*) in order to get to the New York College of Pharmacy, we were unknown to one another, many of us entire strangers one to the other, for prior (*Prior*) to that date, it had not been my privilege or pleasure to greet you, but as often the case (*Case*), the acquaintanceship we struck (*Struck*) at that time, has been growing stronger and stronger, and in view of the fact that I entertain this friendly feeling, it would be culpable (*Culp*) negligence on my part did I allow this feast and frolic (*Froehlich*) of yours to pass by without a little friendly advice. Most of it may not be new, but (*Neubert*) at the same time, as the majority of you are still young (*Young*) and inexperienced, it may not be amiss, for in the wild race (*Race*) for fame and fortune, you will often wade (*Wade*) into dangerous places, for in that narrow pathway of righteousness, there are many crooks (*Crooks*) and crinkles, which we must straighten out, and from which we must weed (*Weed*) the herb (*Erb*) of iniquity.

Full many a man will you meet clothed as a sheep in the clothing of a wolf (*Wolff*), who will coax (*Wilcox*) you on temptingly, but it is worth a man's (*Worthmann*) life to take no stock (*Stock*) in such people, pass by such a shaver (*Schaefer*) not by the slow and measured step of a mule (*Muhl*), but rather in the sprint of a prize walker (*Walker*). We see men (*Sieman*) at thirty, who have not yet sown their wild oats (*Oats*), let me express the hope that such act shall (*Shaul*) not be recorded against anyone of you, and this hope is a bouton on (*Bouton*) a par with the one, that when you get into love-land (*Loveland*), be upright, and just, as well as discreet and wise (*Weiss*) in all your actions and relations with your lady friends, for remember that not only is her big (*Herbig*) brother usually on hand to demand reparation, but much more serious than that, are the marks (*Marx*) that are recorded in that big book that is kept on High, in the hall (*Hall*) of records, and wherein they mark us (*Marcus*) according to our deeds. If even a brown (*Brown*) mark should appear therein, when the same is laid before us to read (*Reed*) on the morning of the day, when having crossed the River of Jordan (*Jordan*) we are summoned by that Herald (*Herold*) who is to blow the great blast on Gabriel's horn (*Horne*). It is well to ponder (*Pond*) over these facts before it is too late, and before we appear before this richter (*Richter*) or judge. I trust you will all make good clerks, (*Clarke*), I mean drug clerks of course, that you will not live like cats (*Katz*) and dogs, for life is too short for such nonsense, and remember 'tis folly to be sour (*Sauer*), try to be pleasant and agreeable to all, for it pays. Never indulge in strife, it is unworthy of a professional man, abstain from endeavoring to imitate the unworthy example set by two of your fellow students, who had so unpleasant an hour, when they were called before a police sergeant (*Sargeant*), that neither one will ever wish that hour back (*Auerbach*). As far as the college is concerned, you are now freed (*Fried*) men, that is, your studies are at an end, but it is to be hoped that you appreciate that you have still much to learn. As the stock of available names from class register is exhausted, must close by proclaiming the boss (*Boss*) maxim to be a mascot word, may you ever cherish it, for even though German, you all know the translation of your president's name, *EhrGott*, (Honor God).

ADDRESS BY HERMAN GRAESER.

Gentlemen of the Class of '94:

Following in the wake of such interesting orators as have preceded me this evening, there remains but very little for me to say.

I thank you for the courtesy you have shown me in extending to me an invitation to your class dinner. It is indeed an honor and a privilege to be with and to address so distinguished a class as the class of '94, on probably the last occasion but one on which we will meet before you go out to practice your vocation.

For two years you have come to the N. Y. C. P. During this time you have made a great many friendships, some of them lasting, and some to be forgotten or broken as soon as you part on commencement night.

It is an acknowledged fact that in the lives of all men, next to the days of courtship, the time spent at school or college is the happiest of their life. When the sterner cares and problems of life confront you; how you are going to meet the next note that comes due; when business is poor and you are hardly paying expenses; when your wife's milliner's bill comes in, and a thousand other little things that I cannot enumerate here, you will think back sometimes of the happy time at college, with no greater care than that for the coming examinations.

When you accidentally meet an old college chum and swap reminiscences with him of how you managed to outwit, or, as the boys say,

"steal a march" on this or that professor, then you forget the cares of the hour and live life over again.

Gentlemen, these are some of the moments that make a monotonous pharmaceutical life bearable. I said a little while ago that when we part on commencement night we may never meet again. That sounds very sad, but it is not as sad as it sounds. We have a place where we can meet again; it is in the Alumni Association of the college. We have our meetings once a month in Winter, and our reunion and outing in Summer, where members from far and wide flock together and have a jolly time.

I have been connected with the Alumni Association in an official capacity ever since I graduated, and the longer I am a member the better I like it. I have never yet attended a meeting where I haven't listened to some story of college days that would do any old student's heart good, and that is what makes our work in the Association light.

Not only that, but by being one of the Alumni you show your appreciation for the institution that gave you birth as a professional man, and with the stamp and seal of whose approval you rank among the first in your profession. I mean by that that you should all become members of the Alumni Association. You probably know, or will soon realize when you are in business for yourselves, that pharmacists are the most poorly organized of all professional men. Why is this? It is because they are thrown together like a lot of rubbish in a waste basket!

There are board men, men from European colleges, and men from colleges all over the United States. But let all the graduates of our college stick together, and we have an organization that any profession may well be proud of.

It is my intention within the next six months to organize the members of our Alumni Association in this city by taking each Assembly district and placing it in charge of a resident alumnus, who shall, at certain intervals, report to the Executive Board of the Association. In this manner it will be easy for us to join hands with other organizations for the common weal of our profession. We must organize, just as political bodies organized, in order to become powerful.

That is why we are anxious to have you all come with us—to help the good work along. Help us make improvements every year, until we are as strong as adamant. To-morrow afternoon at 2 o'clock the annual meeting of the association will be held, to which you are all invited. Your glee club will help to liven us up, and the junior prizes will be awarded, and an opportunity will be given for you gentlemen to join and also to elect one of your number to office.

Do not forget that a membership in the Alumni Association will be an "open sesame" to other alumni associations in whatever city or whatever country you may find yourself at any time of your life.

And the alumni badge will be to a fellow alumnus, although a stranger, as a Masonic sign worn by one Mason is to another—the indicia of honest welcome and good fellowship.

And now, gentlemen, before I conclude I wish to give you a piece of advice. In order to successfully hold your position as pharmacists you must cultivate habits of honesty, industry, sobriety and accuracy.

I say accuracy, which I want you to adhere to strictly in all cases, no matter if you have to put up a prescription for your mother-in-law.

Influence of Sugar and of Smoking on Muscular Work, By V. Harley (J, Phyriol, 16, 97-122, and Proc. Roy. Soc. 54, 480). The experiments were performed with Mosso's ergograph, and show that the periods of digestion, as well as the kinds of food, have a marked influence on voluntary muscular energy; but, irrespective of this, there is a periodical diurnal rise and fall in the power of doing work, the *minimum* being about 9 A. M., the *maximum* about 3 P. M. Regular muscular exercise increases the size and power of the muscles, and delays the onset of fatigue. The amount of work performed on sugar alone is almost equal to that obtained on a full diet, but fatigue comes on sooner. Sugar acts as a source of muscular energy when taken alone, or in addition to other articles of diet. Moderate smoking may have a slight influence in diminishing the power of doing muscular work, but it stops neither the morning rise nor the evening fall.

Kamala and Rottlerin P. Bartolotti (*Gazzetta* 24; 1-7.) confirms the formula $C_{11}H_{10}O_3$, previously assigned to rottlerin, but has evidently overlooked the paper published some months previously to his own, by A. G. Perkin (*Pharm Jour. Trans.* 1893, 975). The author finds that rottlerin melts at 200-201°, whilst Perkin gives the melting point at 191-191.5°. The so called "kamaline" put into the market by Merck, of Darmstadt, is simply rottlerin.

Dibenzoyerottlerin $C_{11}H_8Bz_2O_3$ and rottlerin Hydrazone $C_{11}H_{10}O_2N_2H$ Ph are yellow powders, which decompose on heating, and are soluble in the ordinary solvents. The ash of kamala contains a considerable proportion of manganese.

THE Alumni Journal

PUBLISHED BY THE ALUMNI ASSOCIATION
OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK.
Entered at the New York Post Office as Second Class Matter.

Vol. I. New York, October, 1894. No. 6.

THE
Alumni Journal

PUBLISHED BY THE ALUMNI ASSOCIATION
OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK.

Vol. I. New York, October, 1894. No. 6.

ADDRESS OF EDGAR L. PATCH,*

President of the American Pharmaceutical Association.

IT is considered to be the duty of the President to present with his annual report a resumé of matters of practical import that have transpired during the interval between the meetings, and to offer such suggestions for the furtherance of the usefulness of this Association as may occur to him.

An attempt to name the new *antis*, the *anes*, and the *ines* that have sprung Minerva like from the synthetical laboratory or from the office of the clever manipulator each twenty-four hours since our last meeting seems out of place, in view of the enterprise of our trade journals, and the careful sifting to be given them by our Reporter on the Progress of Pharmacy.

The exhaustive and able review of the last edition of the U. S. Pharmacopœia presented at our last meeting by my predecessor leaves little to be said in that direction.

The book has been open to criticism for a year and it would be strange indeed if some defects and faults could not be found, but I believe every unprejudiced mind must see in it a work of rare excellence as practical in character as could be expected and far enough in advance of the general pharmacist to prove an educator of the highest value.

Should any pharmacist or assistant undertake the systematic comparison of his products with the detailed description furnished him he would soon of necessity acquire a fund of information concerning pharmacy, chemistry and botany that would largely increase his appreciation of the book, his own self-respect, and his value to the community at large.

Our last volume of proceedings, in the character of original papers presented, the report on the progress of pharmacy, including the abstract of the scientific papers presented to the various State Associations, the alphabetical list of new remedies, the index to papers and publications of interest appearing at home and abroad equals its predecessors, is worthy the highest position as a valuable work of reference, and should be at the disposal of every progressive pharmacist in our country. The volume possesses unusual interest. Its story of the life and achievement of our late honored permanent Secretary, Prof. Maisch, illustrating the

*Read at the 42d Annual Meeting at Asheville, N. C., Sept. 3, 1894. (Abstracted.)

possibilities of American pharmacy and the attainments to be reached by one who persistently, with singleness of purpose pursues a high ideal, should be an inspiration to many young men at the threshold of their careers.

In addition, the proceedings of 1893 bear witness to the presence among us, at our last meeting, of distinguished pharmacists from abroad and in the addresses and discussions of Messrs. Carteighe, Martindale, and others we find much that is helpful and interesting.

Every honest seeker after improvement has courage to occasionally pray with Burns,

> "O wad some power the giftie gie us
> To see ourselves as others see us,"

and in the pleasant criticisms of our method of conducting business, and of the wide latitude we allow to irrelevant debate which some of us heard at Chicago, this prayer was partially answered, while in the report of Mr. N. H. Martin to the Pharmaceutical Society of Great Britain we are permitted to see a profile of American pharmacy cut with all the precision of the scissors artist who "does one in black while he waits."

Such efforts may be measured by the size of the cardboard and not considered true to nature by the subject, nevertheless there are dim points of resemblance that permit recognition by impartial and observing friends.

Some of the peculiarities or defects might be largely modified by a full face view, but the most patriotic would be remiss if they professed satisfaction with the best portrait a camera could produce.

We are quite aware that there is an unlimited field for improvement in pharmacy here as in Great Britain,-and are not surprised that our defects should be manifest to an interested and critical observer from abroad. Nevertheless, it affords any of us who have an active interest in pharmaceutical education the deepest satisfaction to observe the great improvement in the quantity and quality of education offered to the American pharmacist and to predict that our vantage ground is so well fortified and maintained that future progress must be more rapid.

In my own experience, entering pharmacy as a stepping stone to the study of medicine, and matriculating at a college of pharmacy, I was much disappointed at the superficial character of the instruction, materia medica, botany and theoretical chemistry and pharmacy each year being a practical repetition of the previous course, while no opportunity was given for a moiety of laboratory experience.

But our friend Mr. Martin is sadly mistaken when he assumes that this is the state of affairs to-day. Of the thirty-six pharmaceutical schools only one is in this condition.

In the brief time since my graduation the particular college referred to has come to be the possessor of a building and laboratories valued at over one hundred thousand dollars, its facilities for practical instruction are very extensive and elaborate, its course carefully graded and its instruction largely consists of laboratory work. It more than fulfills the ideal of the most hopeful dreamer of twenty years ago, although he may to-day be as unsatisfied as he was then, the possibilities of the future being so much greater.

And what is true of this institution is true of many of the schools of pharmacy of our country. Boston, New York, Philadelphia, Baltimore, Chicago, Buffalo, St. Louis, Toronto, and many other American cities, have erected costly buildings and equipped departments for practical work in manufacturing and dis-

pensing pharmacy, general chemistry, analytical chemistry and microscopy, that a few years since would have been deemed impossibilities.

In this brief time the facilities for pharmaceutical instruction must have appreciated from a few hundreds of thousands to two millions or more in value.

When we consider that the last fourteen years have witnessed the establishment of twenty-three pharmaceutical journals, the enactment of thirty-seven of our forty-six pharmacy laws and the inauguration of instruction in pharmacy in more than twenty-five of our universities and independent schools of pharmacy we should be unwise to expect the solidity and adjustment of an old and conservative community, although we believe a little more accurate knowledge would have convinced our friendly critic that we have more than one refreshing oasis in our sea of "educational chaos."

But no man, no community, no nation can live long on past achievements or develop by idle dreaming. The cost of having done well is a necessity for doing much better.

And as the mightiest construction is only as strong as its weakest points these must be sought for and assiduously built against before enlarging the area or embellishing the superstructure.

Advance on all lines of education has been extensive. Medical colleges have adopted graded courses, extended the term from two to three or more years, broadened and deepened the lines of instruction and hedged about admission with entrance examinations that would exclude fifty per cent. of the students of twenty years ago.

Compare some of our medical schools with forty to fifty professors and instructors and a four years' graded course of seven months each, with those of forty or fifty years ago when seven professors gave the same instructions each successive term of twenty weeks only, and attendance upon two such courses was all that was required.

Yet no one assumes that the medical training is ideally perfect and incapable of extensive improvement.

Judging from our foreign exchanges there are plague spots to be cut from the pharmaceutical body abroad, but that does not concern us. Our attention should be given to search for the philosopher's stone, to turn our dross and base metal to gold.

That there is much needing transmutation is apparent to the most careless reader of the medical and pharmaceutical journals.

Medical men are found declaiming against prescribing pharmacists and mere sellers of nostrums, and are advocating in public the desirability of dispensing their own remedies on the ground of self-defense against the popularity of homeopathy that saves the patient a medicine bill, against the unwarranted repetition of the prescription or the transfer to another, and against the scrutiny of their treatment by the examination of their prescription, or, that they may retain the profit which they now divide with the pharmacist.

Conjointly with this you may observe other earnest progressive physicians who have no time to devote to the consideration of such selfish trifles, but are wholly occupied with the important duties of their noble profession and considering the broad questions of national supervision of the public health, the improvement of the sanitary conditions of our cities and towns, and the establishment of such regulations for isolation and inspection as shall prevent all epidemics and largely do away with the need of medication.

In our own ranks, hours of talk and

reams of paper have been given to airing the grievances of dispensing by physicians, the encroachment of large manufacturing houses, the rivalry of department stores and the grocer pharmacist, the annoyance of the bar sailing under a drug license, and retailing by wholesalers.

Yet some are still found who accept the situation as an inevitable product of our social condition and pursue their onward course, perfecting processes, enlarging their fund of knowledge and striving after a faithful performance of the duties of their calling.

They recognize that in place of half a score of manufacturing pharmacists and chemists and a few hundred manufacturers of nostrums we now have nearly six thousand of the two combined, that the number of stores has constantly increased until we now have one to every eighteen hundred and sixty of the population in the entire country and one to eight hundred and fifty in some of our older sections.

Place this against one to to twenty-eight hundred in Italy, one to fifty-three hundred in France, one to fifty-five hundred in Switzerland and about one to ten thousand three hundred in Germany, and we see the necessity for the struggle for maintenance and the cause of the artificial cultivation of the medicine craze, encouraging the consumption of drugs and remedies that oftener outrage than assist nature.

There is no doubt that one-third the number of drug stores and one-sixth the number of physicians would be a greater benefit to the public health than the number we have. Could we wisely differentiate, particularly when we bear in mind the fact that in spite of the marvelous advance in surgery, medication is still a process of uncertain experimentation, but socialism has not yet issued its dictum in these matters, and crowded out of mechanical pursuits by the sacrifice of personal independence and the prohibition of personal excellence which labor organizations enforce, young men of any individuality will continue to enter professional, semi-professional and mercantile life.

We must then be willing to divide and accept the conclusion that a modest compensation is all we may look for.

As president of this body, associated with Dr. Charles Rice and Prof. A. B. Prescott, I was called upon to judge the papers in the Merck contest.

The competition was restricted to "proprietors or clerks actively engaged in pharmacy as a commercial business, and excluding teachers, instructors and students as such."

It may not be wise to generalize and conclude that the product is truly representative of American pharmacy, for we know some of the best trained and successful men cannot be prevailed upon to give the benefit of their observation and training to their fellows, either through the medium of this Association or that of their local organization.

Yet it may be proper to present the facts as they appear.

First. Observe that although the offer was a munificent one only one hundred and thirty of the nearly one hundred thousand associated with pharmacy found in it an inspiration to compete.

Several of the papers presented fell outside the plan of competition, but one hundred and thirteen were carefully considered. Most of you are familiar with the fifteen topics presented. Five permitted valuable original work.

Query 2. Articles to be prepared to advantage by the druggist.

Query 3. Our native medicinal plants.

Query 5. Adulterations and sophistication.

Query 9. Prescription difficulties and how to solve them.

Query 15. Iron.

The four papers presented in answer to Query 2 principally suggest non-secret or proprietaries.

The two in reply to Query 4 showed manifest study and personal effort.

In reply to Query 5 we are told that powdered drugs are largely mixed with bran, flour and corn meal; that manufacturers furnish fluid extracts much deficient in drug power and wanting in alcoholic strength, and from these the pharmacist makes tinctures, syrups and infusions that are of little value.

We are told that many give preference to fluid extracts so reduced in strength that they will not precipitate.

It is pointed out that many chemicals are deficient in quality and we should use those of the promoters of the competition if we would always be sure of having them "O. K." but the ground upon which these conclusions are based, the method by which they are determined and improved processes by which impurities may be avoided are not presented.

Query 9, which is presumed to touch every retail pharmacist in a most vital point is neglected by all but one respondent. Fortunately this paper showed observation and care, was adjudge worthy of a prize and will be published.

It occurred to me that this Association might publish "An Observation Sheet." This should be arranged so that any difficulty in practice or any peculiarity in experience could be at once made note of and a copy of the complete sheet forwarded to the chairman of the Scientific Section for comment and presentation at our next meeting. If our members would show interest in that direction, a large store of valuable suggestions as to incompatibilities, improved formulas, improvement in menstruæ, refinement of tests, correction in description, etc., might be secured.

These Observation Sheets might be mailed with the minutes of the meeting to each member with a request to use them.

We might say that a rough classification of the Merck papers would give.

Papers requiring original observation and personal work. 8 per cent.

Papers involving commercial aspect only. 10 per cent.

Papers relating to educational, ethical, remunerative and general business aspect. 82 per cent.

The difficulties barring the way to success may be summarized as "Too many stores." "Lack of sense of accountability." "Too great a variety of stock and impossibility to become familiar with it." "The smallness of the trade narrowing the mind." "Long hours and mass of detail generate apathy and lack of attention in all but strong willed or persistent minds." "Too close competition and too great expense in conducting business." "Physicians dispensing." "Cost of maintaining favor with the physician." "Too little preliminary education to meet the requirements of the present day." "Insufficient remuneration for demands that must be met." "Too little attention to the commercial side of business." "A general lack of business methods." "Too much theoretical training unfitting for the commercial acumen or business push."

Some of the remedies recommended are.—"A national pharmacy law involving a national commission which shall arrange for a uniform practical examination in all the states and territories." "Combinations that shall regain and maintain control of the distribution and the adjustment of prices of proprietary and kindred goods." "The manufacture and pushing of non-secrets to replace every advertised nostrum of note."

"Greater care in selecting apprentices." "Increased compensation to encourage better trained young men to enter pharmacy." "A training that will enable the pharmacist to do the testing of milk, of water, of wall paper, of urine, etc., and displace the analytic chemist."

The ideal concerning education differs greatly. It ranges from the sentiment that "experience in an ordinary store is the one essential with possibly the addition of the little surface polish a college of pharmacy can give," to the demand that the "apprentice must be a high school graduate and pass examination in the rudiments of history, natural history, philosophy, geology, algebra, geometry, chemistry, anatomy, Latin and German, before entering a store or attending a college.

A necessary drug course is variously considered to include "teaching in theoretical pharmacy, botany and chemistry, and a thorough training in practical botany, pharmacy, chemistry and microscopy with a good knowledge of hygiene, anatomy and physiology, and a proficient training in the analysis of drugs, food, water and urine and in the detection of poisons."

By some the college is deemed to possess the one advantage of fitting the young man to "pass the State Board examinations without undergoing the drudgery of the store." Others conclude that "colleges have raised the standard of attainments of clerks so high that they demand and secure much higher compensation than formerly and so deplete the proprietor's profits that the clerk is often better off financially than his employer.

The testimony of the great majority is that "pharmacy as an investment has long since passed its prime, holds its present votaries only by compulsion and warns off all new comers." Three only think their calling is as it should be, "the grandest calling one can engage in, demanding the highest grade of character, furnishing unlimited opportunity for the acquisition of knowledge, the enrichment and expansion of the mind and supplying all the recompense, mental, moral and financial, one has a just right to expect."

One of these cheerful optimistic brothers reminds us:

> "'Tis hard work, but grit makes the man,
> The lack of it the chump.
> To be successful, boys,
> Hang on and hump."

Thinking it might be of some interest and give something to think about, I requested the successful contestants to state briefly whether they were members of the American Pharmaceutical Association, of a State association or any local association, if graduates in pharmacy and if they had enjoyed the advantage of any special training.

Eight of the nine, successful proprietors, replied as follows: Two are members of the American Pharmaceutical Association, three will join this year, three are not. Four are members of their State association and four are not. Three are members of local associations, five are not. Three are graduates of American Colleges of pharmacy, two had pharmacy training at Gottingen, Germany, one is a doctor of medicine, one is a graduate in analytical chemistry and one has had home training and taken the Institute of Pharmacy reading course.

Eleven of the fourteen clerks replied as follows:

One hopes to join the Association at this meeting, ten no. Three are members of State associations, eight are not. One is a member of a local organization, ten are not. Seven are graduates of American colleges of pharmacy, two are about to graduate, one is a graduate of a

classical college, one is engaged in a manufacturing laboratory.

I see you are already wearied, but consider, my friends, that to-day I have my inning for the first, last and only time, by your grace, and bear with me while I offer three suggestions in addition to that relating to the Observation Sheet, a rough draft of which I submit herewith.

First. I recommend that the matter of the establishment of a National Pharmacy Commission and the enactment of a National Pharmacy Law securing as far as practical uniform methods of registration by practical examination, be referred to the Section on Education and Legislation, with a request that a bill be drafted and presented to the Association for discussion, amendment and subsequent advocacy. It will be some time before this can be secured, but a beginning can be made at once.

Second. I recommend that the Sections on Education and Legislation and on Scientific Papers present to the Association an outline of a course of instruction in pharmacy, such as in their estimation it would be desirable for teaching colleges to conform to as far as practicable. We admit that we cannot secure uniformity in instruction, but we can present an ideal good for five to ten years that may exert some influence upon the standard of education in pharmacy, although we do not assume to dictate to any school how it shall do its work.

Third.—Two years ago we met very near Heaven, among the White Mountains of our beloved New England. On that point of lofty vantage Dr. Hoffman presented to this Association his conception of the duty of our colleges to husband the resources frittered away in prizes and establish an endowment fund for the higher education of promising graduates, that we might secure in the not distant future a corps of teachers of pharmacy far in advance of those of to-day.

Here at Asheville we are said to be still nearer Heaven than two years ago (if that is possible), and I desire to embrace the opportunity to present for your consideration a project which may possibly seem cloudlike and visionary, yet which might readily be executed, be eminently practical and extend the usefulness of this Association in advancing the interest and honor of pharmacy.

I recommend the establishment of an American Pharmaceutical Association Scholarship Fund of fifteen hundred dollars annually, for the purpose of securing to suitable candidates the advantages of higher education in pharmacy.

The sum to be raised by voluntary subscription or by appropriations from our treasury of one-half the sum and the solicitation of the balance from the various State Associations.

THE CANDIDATE.

First.—He must be an honor graduate from an American College of Pharmacy.

Second.—He must pass a good physical examination.

Third.—He must be free from the impairment caused by indulgence in the use of tobacco, alcoholic beverages or any other vice that hinders the highest possible physical development and the severest training of the body and mind.

Fourth.—He shall present to the examining Board an original paper involving the results of personal observation or experience in some department of investigation of value to pharmacy. This paper shall be published in the proceedings if considered worthy.

Fifth.—He shall pass a satisfactory examination in Mathematics, Geography, American History, Botany, Theoretical Pharmacy, Chemistry, and Latin of

Pharmacy and Medicine. (Robinson's Grammar).

HOW SELECTED.

This Association and each State Association may recommend two candidates for examination, this examination to be held at any annual meeting decided upon.

EXAMINING BOARD.

This shall consist of the officers of the Association and the members of the Committee on Scientific Papers with the Committee on Education and Legislation.

CHARACTER OF TRAINING.

The successful candidate shall be sent to some desirable Continental school or university where he may secure, during three years, the highest training in synthetic chemistry, plant analysis and manufacturing pharmaceutical processes. He shall submit to this Association an annual report embracing a resumé of the year's instruction and the methods of instruction employed and at intervals during the three years' course shall present an outline of methods employed and facilities enjoyed in teaching pharmacy in some prominent school first in the German Empire, second in France, third in Great Britain.

He shall also submit annually a resumé of all original work personally performed during the year, in suitable form for publication.

Any failure to meet the responsibilities of the scholarship may be cause for his recall and substitution for another candidate.

On his return to the United States he shall give at least two years to instruction in some college of pharmacy (if such position offers, as it undoubtedly will), and present each year for two years an original paper for publication in the Proceedings.

I have trespassed severely upon your patience, and I can only incidentally refer to the new edition of Remington's Pharmacy; the United States and National Dispensatories; "A Study in Pharmacy," coming from the pen of Prof. Lloyd; the promised new work on Pharmacy by Prof. Caspari and that of Prof. Coblentz; to the practical interest displayed at the meeting of the International Pharmaceutical Congress, held last year at Chicago (the first meeting on Americen soil), and to many things yet undeveloped that are taking shape at the hands and in the minds of American pharmacists, to prove that the genius of American pharmacy is not idle, she is not wasting golden opportunities and being left behind in the race, she is not an outrider or an indifferent passenger, but she drives the chariot of progress, and, like Jehu of old, rides furiously. She is fully aware that

"A three-fold measure dwells in space,
Restless Length, with flying race,
Stretching forward, never endeth.

"Ever groundless, Depth decendeth,
Types in these thou dost possess,
Restless, onward thou must press.

"Never halt nor languor know,
To the perfect wouldst thou go,
Let thy world with Breadth extend,
Till the world it comprehend.

"Dive into the depths to see
Germ and root of all that be,
'Tis the progress gains the goal.

"Ever widens more its bound,
In the full the clear is found,
And the truth dwells underground."

—*Schiller.*

Compounds of the Sugars with Iron.—Iron Suerate, containing 48.5 per cent. of iron, is obtained as a crystalline reddish-brown powder by pouring a solution of cane sugar and ferric chloride into a slight excess of aqueous sodium hydroxide; it dissolves to the extent of about 95 per cent. in cane sugar solution, leaving a residue of ferric hydroxide. Iron mallosate was prepared in the same way. It is a brown, amorphous substance and it is not mixed with free ferric hydroxide, for it dissolves entirely in maltose solution. It contains about 32 per cent. of iron, corresponding with the formula $2\,Fe_2O_3.C_{12}H_{22}O_{11} + 2H_2O$ —*F. Evers* in *Ber. d. Chem. Ges.*, 1894, 474.

QUERY No. 2.—SHOULD PHARMACEUTICAL COLLEGE STUDENTS DIVIDE TIME BETWEEN THE SCHOOL AND THE SHOP?*

BY PROF. OSCAR OLDBERG.

DURING the entire period of his college courses, the student should, if possible, devote his whole time and attention to his studies, to the exclusion of all other occupations—first, because, within certain limits, he can accomplish twice as much in two hours as in one, and, secondly, because his work as a student will be much more effective when his mind is free from all other cares and duties than when certain days and hours belong to his employer and all his studying must be done when he is not on duty at the store.

Pharmaceutical college students who work in drug stores while at college, do so, with rare exceptions, solely for the sake of wages they are able to earn to pay their expenses. But any student, who, by reason of limited means, finds it necessary to earn a part of his expenses by rendering any kind of service for wages, must, of course, at the same time, submit to a corresponding loss of time in his school work. He cannot eat his apple and save it too. Necessity may compel him to submit to this loss if he is unable to attend college at all in any other way ; but it a costly method, for it is evident that all of the time he devotes to wage-earning must be made up by proportionately lengthening his college attendance, his attention is diverted from his studies even when he is not on duty at the store, and the colleges of pharmacy bear testimony in their annual announcements that the wages paid to students are small. As a matter of fact the students in attendance at any college of pharmacy can, as a rule, earn no more than the cost of their room and meals, and the wages they earn are, of course, in inverse proportion to the amount of school work they are required to do.

President Eliot of Harvard University stated in a recent address that students attending universities and colleges ought to devote ten hours daily to their studies. This opinion is in accord with the prevailing custom in all educational institutions, pharmaceutical as well as others, which are *not* conducted on the assumption that their students must be given sufficient time unoccupied by studies to enable them to earn their living during the same time which they devote to their education.

Colleges or schools of pharmacy so managed that the students can earn their expenses by employment in drug stores throughout the school sessions exist only in America.

I have heard and seen the opinion expressed that pharmaceutical college students make more thorough progress in their studies when they divide their time between the college and the store. It is claimed that continuous employment in the shop during the entire college course affords valuable aid to the student, because, it is said, he can then from day to day find opportunities to apply or verify what he learns in the lecture room, etc. One teacher has, in a letter to me, expressed such earnest convictions in that direction that I am led to believe that he would prefer a system of pharmaceutical education which actually requires the student to alternate from day to day between the college and the shop. But such a system, in order to be of any value, must provide that the student is

*Read at the 42d Annual Meeting of the American Pharmaceutical Association, Sept., 1894.

not employed in the store for the service he can render in exchange for the wages he receives, but that his employer, instead, consents to take him into the store with the express stipulation that the young man shall be given just such work as he requires for purposes of instruction. This is impracticable.

The shop training and practice which an apprentice or clerk gets when he is regularly employed on full time in a good pharmacy, are not only valuable but absolutely necessary to his complete development into an accomplished pharmacist. But such irregular, interrupted employment as college students can get has no educational value whatever. Besides, we are informed by the annual announcements of the colleges of phamacy that only "a limited number" of students can be provided with (partial) employment in the drug stores during the college sessions. A system which benefits only "a limited number" of the students is surely not to be commended.

But the language used in the annual announcement of colleges of pharmacy which offer to aid their students in their efforts to obtain employment during their college attendance, indicates plainly, in every instance, that the object in view is not instruction but wages, and in no instance do I find a college announcement recommending that the students secure employment for the purpose of rendering their college courses more effective.

Several of the American schools of pharmacy are conducted on the principle that the students will devote their time and attention exclusively to their school work and will *not* be employed in stores during the school sessions. These schools provide over thirty hours' instruction weekly, and expect the student to devote at least twenty hours more to text-book study, thus occupying the whole time of students fully. In other words these schools of pharmacy are conducted in the same manner as are other technical and professional schools of the same grade. Students who are employed in stores cannot, in these schools, keep up with their classmates, and they should not attempt to attend such schools unless they divide the courses of study. In other words, any student who wishes to attend a school of pharmacy in which the undivided studies are so arranged as to occupy fifty hours weekly, and who at the same time wants to devote a part of his time to wage-earning, can do so only by taking about one-half of the regular work in each semester, thus devoting two years to the school work which other students finish in one year.

In colleges of pharmacy giving courses of study adjusted to the plan of allowing the students sufficient spare time from their school work to enable them to earn their expenses, the average amount of obligatory school school attendance is less than thirteen hours weekly. Students who desire to devote their whole time to their studies, can, of course, attend these colleges ; but, if they have good natural ability, they will be able to accomplish far more than the prescribed curriculum, and in order to occupy their time they will be obliged to take up enough of the optional or extra work usually offered.

The most important difference between the curriculum which is practicable when the student devotes his whole time, and the curriculum possible when he devotes only one-half of his time, is mainly in the laboratory courses. Schools of pharmacy occupying the whole time of their students devote on an average more than twenty hours weekly to laboratory practice, while in the other colleges the average amount of laboratory work is less than six hours weekly.

In view of these facts, I am convinced that the best thing for the student, from both the educational and the economic standpoint, is to do one thing at a time. Let him get his shop training in an effective way by regular and continuous employment in the drug store when he is not attending a pharmaceutical college; and when he takes his college course in pharmacy, it is best for him in every way that he should withdraw from all other occupation until he has finished his task.

THE DRUG STORE AND THE COLLEGE.*

By L. E. SAYRE.

SOME years ago a physician made a tempting offer to induce me to take a young man (a student of medicine) into my employ solely for the purpose of imparting to him a knowledge of the principles of pharmacy, amounting to what might be called a short practical course. It was not the financial inducement so much as a desire to accommodate a friend that finally led me to assume the charge. After a few weeks of such responsibility I became very tired of my "bargain," and at the termination of the contract I felt not a little relieved; it was as a burden lifted. I believe I never before nor since realized the gap which exists between the drug store and the college; between what is known as shop training and college training. My time was so constantly demanded by the store and occupied with business cares that it required an effort which I did not before realize to make at times a sudden turn and concentrate my mind upon the one idea of teaching, and for the time being convert my laboratory and store-room into a class-room; and yet to perform my duty conscientiously I felt this was necessary to do at stated times almost every day.

I believe I am saying only what has been said over and over again, and in perhaps the same words: Practical shop experience can be acquired in no other place than the drug store, and a college education can be obtained in no other place than inside the college walls. The practical laboratory work of the college which devotes its time, as it should, to the practical demonstration of the teaching of the class-room, should not be intended as a substitute for that peculiar experience which is gained behind the drug counter. I think it goes without saying that to-day it requires both of these to make a pharmacist in the sense it is used by the druggist and the body politic. It also goes without saying that the college or school gives a training which cannot be accomplished by the shop, and the shop gives a training which cannot be accomplished by the college.

If I were to characterize in simple terms the quality of the two kinds of training, I should say that the one was business-like and the other professional or rather technical in character. Of course, I do not mean by this that either the college or the shop confines itself within these boundaries. It would be a poor college professor who did not occasionally indulge in a lecture on the business side of pharmacy, and it would be a curious specimen of a pharmacist who would not now and then indulge in comments upon the scientific principles which underlie the profession which his

* Read at the 42d Annual Meeting of the American Pharmaceutical Association.

business represents. But the aims and purposes of the proprietor and preceptor, and those of the teacher or professor, are almost directly opposite.

This divergency of interest was not so apparent in former years, when the college course was comparatively limited; but as time has advanced it has become more pronounced, until the college in some parts of our country, feeling itself fully occupied with its immediate work, asks to be relieved of the responsibility of looking after and holding itself responsible for the shop training. In doing this it does not seem to underrate the value of shop training, but it merely wishes to be relieved of the vouching for that over which it has so little control.

Endeavoring to look at the matter from an unbiased standpoint—as the public might look at it—it seems to me it does not matter upon whom the burden of this duty rests. the important thing is that it shall be looked after by proper and responsible parties. Whether this responsibility rests upon the college or the State Board is perhaps immaterial, providing the investigation is properly made.

It seems to me that in either case shop experience will always be found to be an uncertain and variable quantity — dependent upon the quality and faithfulness of the preceptors who have the supervision of such work. Comments here are unnecessary, as every one knows that the personal equation of the preceptor is by no means a fixed quantity.

The question has frequently been asked me, why not adopt the plan of some of the colleges—be relieved of this burden and only look after the college work—give credit for this, and let the other take care of itself? My answer to this is, that whenever it shall be agreed that this shall be looked after by others, I shall be only too glad to resign that part of the work. I wish very much that some unity of action could be adopted by our various colleges, but I should be very sorry to adopt any plan which might be misunderstood by the shop, and that would tend to disturb the intimate relation which now exists between the two.

In the University of Kansas the personal contact between the professor and the student, and his intimate relation with the student's preceptor, gives him a peculiarly advantageous position to judge of the value of shop training; but it is a question whether it is best after all for him or the institution he represents to continue to vouch for this experience. I should not like to urge any radical change from present methods unless the change be recommended by our State Board of Pharmacy and thoroughly acceded to by our Board of Regents.

The question has occurred to me, What would be the value of a diploma issued by the University which does not in any way vouch for practical drug store experience, as compared with a diploma as it now stands, which does vouch for this in a measure? Assuming that the college training in both cases is precisely the same, whether the experience be had or not, it is clear that the diploma in the latter case, where the experience is had, represents more. It is true it would represent also values more variable, but it would in every case mean more. I think this is the view that any unbiased person would take, and the view the public would take. As before stated, I should be very happy indeed to relieve myself of the responsibility of accounting for, of verifying and vouching for the shop experience, and I am sure that this would be a change, if adopted by the Board of Regents, which the students, particularly those who are ambitious and impatient to obtain a de-

gree, would welcome very heartily. It would doubtless increase the number of students on the class roll, but whether it would ultimately be an advantage to the profession of pharmacy in the State of Kansas is a question upon which I am endeavoring to get some light, and trust that it will be fairly and freely discussed at this meeting in the Educational Section of our Association. In closing I would say that I am convinced of one thing, and that is that our educational institutions of pharmacy in the United States should come to an understanding, and an effort be made in the direction of greater uniformity in this matter of pharmaceutical education in college and shop experience.

SHOULD GRADUATES IN PHARMACY BE COMPELLED TO PASS THE EXAMINATIONS OF BOARDS OF PHARMACY BEFORE BEING REGISTERED?*

By HENRY R. SLACK, M. D., Ph. M., LA GRANGE, GA.

IN order to discuss this question intelligently, it is necessary to consider briefly the relations existing between the college and the Board, to the profession and the public.

The object of the true college is not revenue, but to educate the pharmacist, make him more proficient and useful, and dignify his calling by elevating it to a professional standing. Surely this is a high and noble aim, worthy of our best thought, but it is not identical with that of the Board. The preamble introducing the Georgia law sets it plainly forth, that the Board is created to protect the public against the indiscriminate sale of poisons and dispensing prescriptions by incompetent persons. The laws in other States are enacted for the same purpose. If they are not, then as a distinguished professor said in a paper read in New Orleans: "The sooner they are repealed the better; legislation for the benefit of the classes is productive of much evil" (Prof. Remington, Recognition of College Diplomas by State Laws, 1891). I, however, take issue with the professor, on recognition of college diplomas, as a license to practice pharmacy. I hold that it is to the college, for State laws not to recognize interest of the public, the profession, and dipolmas.

This opinion is not the result of prejudice; but mature consideration and seven years' experience and observation, as examiner on a State Board, has forced upon me this conclusion. My judgment differs from my preconceived notions, for when first appointed on the Board I strongly advocated recognition of diplomas; but "Times change and men often change with them." The causes that led to this change were these: Our law recognized both medical and pharmaceutical diplomas; to extirpate the one it was necessary to sacrifice the other. We hesitated for some time, but seeing the medical men outnumbered us nearly ten to one in the legislative halls, we yielded, and thus necessity compelled "building better than they knew."

No one in this presence will claim that a medical diploma should confer on its holder the legal right to practice pharmacy, any more than he would hold to the right to practice medicine on a pharmaceutical diploma. Pennsylvania, the mother of pharmaceutical colleges, is, or was until recently the only State to repudiate her own offspring and confer a

* Read at the 42d annual meeting of the American Pharmaceutical Association, Sept., 1894.

pharmaceutical dignity on medicine refused to pharmacy herself. No wonder one of her brilliant professors waxed warm in his denunciation of "the legal degradation of a pharmacy diploma" by exempting the doctor and examining the pharmacist. In his condemnation of this injustice we heartily concur; but we hold that it is no degradation to the holder of a diploma to be given the privilege of showing, to intelligent judges, how much knowledge that diploma represents. This is a much more uncertain quantity than the friends of pharmaceutical education desire. The Juniors from some colleges not infrequently pass far better examinations than graduates of other institutions conferring the same degree. Here is the great advantage a thorough school enjoys in having its work passed upon by unprejudiced examiners, not connected with the institution.

Of course, we recommend to young men applying to us, not the school that is cheapest, nearest, or has the largest number of students, but the one that sends us the best prepared men. Thus an opportunity is afforded for us to distinguish between the teaching schools and the diploma mills—and how else could this be obtained except by a compulsory examination?

Another cause that has largely influenced me in forming my opinion is the present status of the medical profession in Georgia. Here a diploma from any chartered college, and a $10 professional tax, is a license to practice medicine; and what is the result? There are four medical colleges where one would be sufficient; and they have almost degenerated into diploma mills that vie with each other in grinding out the most graduates. These schools confer degrees on over 95 per cent. of the second-course men, and on practically all the third-course men. So great has become this evil, and the fact that Georgia is becoming the dumping ground for rejections from other States, and the Paradise for quacks, that the better element of the entire profession are now favoring a bill to create a board, similar to the Pharmacy Board, to review the work of the medical colleges, and to protect the public.

Four years ago, three of the medical colleges issued prospectuses for pharmaceutical adjuncts, and, with one additional instructor, lecturer or professor, were preparing to grind out Ph.G.'s, as well as M.D.'s; but, unfortunately for these conceptions, the pharmacy law was changed, so that no diploma is recognized, and only one has gone full term and been delivered of a class of Ph.G.'s. One of the colleges, finding she had miscarried with Ph.G.'s, is now bringing forth LL.B.'s.

Now, while we oppose registration on diploma, we heartily favor reciprocity among the State Boards, where the candidate has made 5 per cent. over the requirement to pass the examination. This may seem paradoxical or inconsistent, but that it is not can easily be proved.

1st. Any four or five men can secure a charter for a college and confer degrees, but no State has more than one Board, except New York which is the proud possessor of four.*

2nd. There is greater uniformity in State examinations than in college, and less inducement to pass inefficient men.

3rd. Requiring 5 per cent. above the average to pass enables a Board to discriminate between those whom they think would be safer in other sections, and those whose horizon is as limited as the oyster's.

To sum up the foregoing briefly, not recognizing diplomas, is to the interest of the public, in that it protects them from incompetent men, to the college, by protecting them from diploma mills and making manifest their good work. It is plainly to the interest of the profession, because nothing lowers professional standards more rapidly than having a large number of poorly equipped colleges turning out ignorant men armed with a degree that carries with it license to practice that profession.

* Texas practically has no pharmacy law.

THE Alumni Journal

Published under the auspices of the

Alumni Association of the College of Pharmacy

OF THE CITY OF NEW YORK,

115-119 WEST 68th STREET.

Vol. I. October 1, 1894. No. 6.

THE ALUMNI JOURNAL will be published Monthly.

Entered at New York Post Office as second-class matter

SUBSCRIPTION:

Per Annum, . . . One Dollar

Single Copies, . . . 15 Cents.

All copy for publication, or changes of advertisements should reach us on or before the 20th of the month previous to the issue in which they are to appear.

All matters relating to publication should be written on one side of the paper only, and sent to the editor,
HENRY KRAEMER, 115-119 West 68th Street.

All communications relating to finances, subscriptions and advertising, should be addressed to
A. HENNING, Treas., 115-119 West 68th Street

AMERICAN PHARMACEUTICAL ASSOCIATION.

When the well-known H. C. Whitney, on the last day of the meeting at Asheville, arose and said, "Gentlemen, I give up the championship belt to the Local Secretary and his committee," it meant more merely than that the members of the American Pharmaceutical Association and their friends enjoyed with so much rapture and delight the hospitality and scenery of Asheville and derived so much profit from the various sections devoted to science and education —it meant that those present had had a "royal time" all around and all the time. It would be impossible to even enumerate all of those features that tended to make this meeting commemorable. Nearly 150 new members were elected and completed their membership before the meeting was over. In the scientific section some 35 papers were presented while in the section on education and legislation more than 50 papers were presented. The last session of latter section closed at midnight on Friday. The interest had been so great that Mr. S. A. D. Sheppard called the attention of the members to the fact that in the near future the time of the meeting must be extended. The scarcely sufficient time for the reading (even in abstract) of many of the papers and the time of discussion was so curtailed that a great many were disappointed.

It is encouraging to educators to know that the resolution passed by the International Pharmaceutical Congress was unanimously approved by the American Pharmaceutical Association and upon motion it was ordered that a copy of the resolution be sent to the secretary of each State Pharmaceutical Association. The resolution reads as follows :

Resolved, That it is the sense of this Association that no person should be admitted as an apprentice in pharmacy unless he shall have given evidence by satisfactorily passing a preliminary examination, or otherwise, that he possesses a general education sufficient for such apprenticeship, and has advanced as the conditions of the practice of pharmacy in the United States permit, and his term of apprenticeship in pharmacy should in no case be counted so far as it may antedate said evidence of sufficient preliminary education.

Resolved, That the period of apprenticeship in pharmacy ought not to be less than four years, including the time devoted by the apprentice to regular attendance upon the courses of instruction in a pharmaceutical school.

Resolved, That this Association approves the establishment of a compulsory curriculum of pharmaceutical education and holds that no person should be regarded as a qualified pharmacist who has not passed to completion a systematic course of instruction in chemistry. pharmacognosy and pharmacy.

It will be remembered that at the meeting in Chicago a committee was appointed to consider the resolution offered by C. S. N. Hallberg. This committee consisted of S. A. D. Sheppard, Wm. Simon and C. M. Ford. Their report is as follows:

At the meeting of the Section on Pharmaceutical Education and Legislation in Chicago last year, the undersigned were appointed a Committee to consider and report on the following resolution:

"*Resolved*, That the following conditions shall determine what constitutes recognized Colleges of Pharmacy, that is, the requirements for graduation are: (1) Age, 21 years; (2) Experience in pharmacy four years, including time at college; (3) Two courses of at least six months each, extending over more than one year." See 1893 Proceedings, page 277.

As soon as the Committee began to consider carefully the character and full scope of this resolution, they realized that action upon it might be very far reaching in its effects, upon both the American Pharmaceutical Association and the Pharmaceutical Schools of the country.

They therefore requested that they might have a year in which to consider the matter before making their report. And now that they are about to present that report, they confess to a feeling of deeper anxiety concerning the matter than they did a year ago, and they urge the Association to be very careful in its actions on the subject.

While many of us have very strong convictions in regard to the matters referred to in this resolution, we must for the moment allow these convictions to remain unexpressed, and strive to answer the following, which is the only real question now before us: What position should the American Pharmaceutical Association take in regard to Prof. Hallberg's resolution?

The connection between the Association and the schools and colleges is one entirely of courtesy, and in no case one of judicial authority. Nevertheless, the connection is a very strong one, and the Association on the one side or the schools on the other, can very materially help or retard the good work that all are doing in the cause of pharmaceutical education. Now, what action can the Association take on this subject that will give the most help to pharmaceutical education, as represented in this country to-day? It would seem to be for the best that the Association should be a common meeting ground for all; that there should be at all times on this common meeting ground such full and friendly discussion of methods as shall stimulate, benefit and teach, without producing friction or bitterness of feeling.

It is very plain that the Association has no judicial rights to exercise. While most of the active workers in the schools are members of the Association, they are members simply in their personal capacities, and not by virtue of their connection with their schools. Nor can it be said that the Association is an Association of schools. It is simply a body made up of individual members. Therefore, it would seem that the American Pharmaceutical Association has no right to set itself up as a judge of what should be considered a regular, or recognized, or reputable, or good or bad college of pharmacy. Should the colleges and schools of this country, acting in concert, present the question to the Association for answer, then we might, very properly, take a decided position in regard to it. But for us voluntarily to pass a resolution of such a strong and positive character, censuring the course pursued by pharmaceutical schools standing high in the work of pharmacy, would, in the judgment of your Committee, be very doubtful policy.

The Committee, however, believe that the position of the Association is such that resolutions of a suggestive or advisory character, if passed by a two-thirds or three-fourths vote, may be of great help to the various schools, because such resolutions would probably express the prevailing opinions of the majority of the best men engaged in our line of work in this country, and the American Pharmaceutical Association is practically the only medium through which such information can be obtained.

Your Committee, therefore, recommend that the resolution offered by Prof. Hallberg be not adopted.

They also recommend that the Association adopt one of the following resolutions, provided that three-fourths of all the votes cast shall be in the affirmative:

FIRST RESOLUTION.

Resolved, That it is the sense of the American Pharmaceutical Association that the cause of pharmaceutical education would be advanced, should all pharmaceutical schools that confer

the degree of graduate in pharmacy adopt the following suggestions:

(1) That the standard for admission to the school shall be not less than that required for admission to the public high schools of the country.

(2) That each student shall attend not less than two (2) courses of lectures, each course extending over a period of not less than twenty two (22) weeks, the student to be in attendance upon not less than six (6) lectures in each week, and not less than one hundred and fifty (150) lectures in each session. That these lectures embrace those upon Pharmacy, Chemistry, and Materia Medica, but do not include lectures upon Microscopy, Botany, Latin, and other useful branches. That not less than one hundred and fifty (150) hours of practical work, and more if practicable, should be required of each student, to be apportioned throughout the various courses, as may seem best.

(3) That every student, in order to graduate, should be familiar with all the teachings of the Pharmacopœia and fully capable of performing all operations mentioned in it.

(4) That the course of study shall not be forced, but shall be such as to allow for the proper digestion and assimilation of the instruction given in the school.

(5) That, as far as practicable, students shall give their whole time to college work during the sessions of the school, and not divide their time between work in a store and work at college. That no student shall be retained at a school whose outside duties will not permit him to do full justice to his studies or to the laboratory work assigned him.

(6) That the degree shall not be conferred upon any person who is less than twenty (20) years of age at the time of completing his final course at school.

(7) That the degree shall not be conferred upon any person who has had less than three (3) years' practical experience in a good drug store, where physicians' prescriptions are compounded, exclusive of the time spent at college.

SECOND RESOLUTION.

Resolved, That a Committee be appointed, consisting of one representative from each of the colleges and schools of pharmacy of this country, with three members of the Association, neither of whom are teachers in any pharmaceutical college or school. The duty of said Committee shall be to take into careful consideration the condition of pharmaceutical education in this country, make recommendations relative thereto, and report to the Association at its next annual meeting.

After considerable discussion the second resolution was adopted on amending it to read. "That a committee to be appointed consisting of one representative from each of the colleges and schools of pharmacy of this country *having membership in this Association*" etc.

The paper on the query "Should Pharmaceutical School Students divide their time between the School and the shop?" by Oscar Oldberg, elicited as it was calculated a most animated discussion. The paper is printed in full in another portion of this journal. Not only the paper but the discussions which will be printed in the Proceedings of the American Pharmaceutical Association are worthy of very careful reading, not only because of the discussions on this subject during the past year, but it seems to strike a key that makes even the adamantine structures of pharmaceutical schools tremble a little at this time. Of the fourteen men who discussed the paper but four considered the matter favorably or worthy of the consideration that Professor Oldberg had put upon the subject. Another matter of considerable interest in this section as indicating "the signs of the times" is the sense of our National Organization as expressed in the motion of H. R. Slack, that "graduates in pharmacy be compelled to pass the examinations of boards of pharmacy before being registered." This seems to bring the matter of education to this point, viz.: (1). Colleges must be so provided as to give the required amount of theoretical and practical instruction, and (2). The Boards of Pharmacy are to consider the matter of "shop training," experience and qualification to practice pharmacy. In another portion of THE ALUMNI JOURNAL we publish the papers of H. R. Slack and L. E. Sayre which are of interest in this connection.

In the scientific section the following is a list of the titles of papers presented at this meeting. Those of sufficient value to the readers of THE ALUMNI JOURNAL will be incorporated either as a whole or in abstract in the subsequent issues of THE JOURNAL :

1. Saw Palmetto (*Sabal Serrulata*) J. Marion Dixon.
2. Examination of Preparations of Cod Liver Oil for Alkaloids of Cod Liver Oil. J. O. Schlotterbeck.
3. Therapeutic Value of so-called Elegant Preparations of Cod Liver Oil. F. E. Stewart.
4. Advance Sheets of an Analytical Companion to the U. S. Pharm. J. B. Nagelvoort.
5. On Powdered Extracts. C. S. N. Hallberg.
6. Notes on the Behavior of Ferratin and Albuminate of Iron with Artificial Gastric Juice. J. O. Schlotterbeck and S. R. Boyce.
7. Pharmaceutical Bacteriology. R. G. Eccles.
8. A Critique Upon Criticisms of the National Formulary. L. F. Stevens.
9. The Opium Poppy in North Carolina. Gerald McCarthy, Botanist, Exp. Agricultural Station.
10. Rhus Toxicodendron. H. M. Whelpley.
11. "Some Pharmaceutical Uses of Acetone," and "The Solubility of Canada Balsam in Alcohol." J. E. Morrison.
12. Papers from the University of Michigan, a. Examination of Kola, C. O. Topping. b. Reduced Iron, G. C. Steventon. c. White Castile Soaps, Samuel R. Knox. d. Glycerin of the Market, J. L. Tegarden. e. Experimental Work on the Solvent Power of Alcoholic Menstrua, L. D. Havenhill. f. A Microscopical Study of Cicuta maculata, F. Lyle Robertson.
13. Comparison of Methods of Testing Pepsin. E. H. Bartley,

PRINTED PAPERS.

14. Laboratory Notes. E. L. Patch.
15. Grain Weight. A Study of Wheat. J. U. Lloyd.
16. Analytical Alkaloidal Chemistry. Lyman F. Kebler.
17. The Names of Medicinal Plants of Commercial Value. William Simpson.
18. Official Process for Spirit Nitrous Ether. Chas. M. Ford.
19. Elegant Preparations of Cod Liver Oil, Henry A. Stearns.
20. Futher Notes on Taraxacum Root. L. E. Sayre.
21. Improved Working Formula, No. 27 National Formulary. Samuel C. Davis.
22. Allegation in Pharmaceutical Calculations. T. D. Reed.
23. Additional Experiments with Datura Stramonium. Alfred R. L. Dohme.
24. Hydrocymenes and Derivatives. Edward Kremers.
25. Oil of Cloves. C. P. T. Fennell.
26. Microscopical and Chemical Examination of Cloves. Henry Kraemer.
27. Quantitative Determination of Some Substances in Aqueous Solution by the Refractomer. W. F. Edwards.
28. Testing for Arsenic of the U. S. P. J. B. Nagelvoort.
29. What is the Quality of Reduced Iron dispensed by Pharmacists? Alfred R. L. Dohme.
30. The Relation of Hydrastine and Berberine to one another and their mode of Combination in the drug. Alfred R. L. Dohme.
31. Relative Value of Two Kinds of Ipecac Root. Alfred R. L. Dohme.
32. The Use of Isobutylic Alcohol for the Detection of Morphine and Codeine. J. B. Nagelvoort.
33. A Method for the Estimation of Mono and Bicarbonate of Sodium. W. T. Wenzell.
34. Dionæa Muscipula Ellis,(Venus Fly Trap.) Jas. D. Nutt.

In the matters that came up at the General Session of the Association we find again much reason for encouragement. The Committee on National Formulary, of which C. Lewis Diehl is Chairman, has been hard at work during the past year. In order that the work may be a companion to the Pharmacopœia titles of such preparations as may be considered advantages as Elixir Aromatica will have added to them the title U. S. P. Elixir Cinchona is to be made from the alkaloid. Elixir Bismuthi will contain citrate of bismuth and ammonia only. Mucilage of Acacia will be employed in place of the mucilage of

Irish moss. A general description for the manufacture of Tablet Triturates will be incorporated. It is recommended that for hypodemic tablets cane sugar be used as a basis. Elixir Paraldehyde will be increased to 20 per cent. Changes are also made in Elixir Chloroformi camp., Misturæ Chloroformi et Opii, Liquor Magnesii Citratis, Syrupus Codeina Sulphatis, Elixir Rhamnus Purshiana. A plan that has met with considerable success in the Kentucky Pharmaceutical Association (and commented upon in the last issue of THE ALUMNI JOURNAL) was recommended for adoption in the various State Associations for the purpose of making the National Formulary a book of use in presenting among physicians. The Committee on the Revision of the United States Pharmacopœia of the Association recommended to the Committee on Revision the incorporation of the doses of patent remedies into subsequent issues and urged that means be devised for securing definite knowledge from the recipe files of pharmacists throughout the country, the value of each preparation, drug or chemical therein incorporated as to the amount employed in medicine and pharmacy. The work of the Committee on Revision as well as the suggestions were recommended by the Association.

The Committee on President's address recommended the adoption and printing of 5,000 copies of the "Observation Sheet" prepared by E. L. Patch. The points considered on the sheet are hereby given:

OBSERVATION SHEET.

The object of this sheet is to encourage members to make note of all experiences in dispensing, manufacturing, testing and selling that might otherwise be forgotten. Preserved they would be of value for future reference and published they would be of great assistance to the profession at large.

Will you kindly make use of these sheets and send a duplicate of all filled out to the chairman of the Scientific Section.

THE PRESCRIPTION.

1. A prescription received calling for therapeutic incompatibiles (medicaments opposed to each other in action).

2. A prescription received calling for chemical incompatibiles. (A precipitate, *a*; change of color, *b*; effervesence, *c*; caused by chemical action).

3. Physical incompatibiles. (A precipiate owing to change in character of solvent, *a*; a separation, *b*.

4. A difficult pill mass. 5. An unsatisfactory ointment. 6. An excessive dose. 7. Dangerous abbreviation. 8. Peculiar composition. Copy of — attached. How the trouble was treated and result.

THE STORE.

1. New remedies called for during the month of — and times employed.

2. Obsolete, unmarketable or peculiar products called for.

THE LABORATORY.

A.

Experienced difficulty in securing satisfactory products in using U. S. P. (*a*), Nat. Form. (*b*), published in — formula for —

1. Fluid Extract of —; 2. Tincture of —; 3. Syrup of —; 4, Elixir of —; 5. Plaster of —; 6. Ointment of —; 7. Extract of —; 8. —; 9. —; 10. Chemical Product.

Character of trouble and how remedied.

B.

1. Noticed the following errors in the U. S. P. (*a*), Dispensatory (*b*), description of —

2. Had the following difficulty in applying the U. S. P. test for —

3. Found the following product had become unsalable from having changed as stated. Had been in stock for — and was stored —

It was moved by H. M. Whitney that the American Pharmaceutical Association condemns the supplying of medicines by manufacturing houses to physicians for the purpose of dispening them and that members refrain from dealing with such houses. This notice was heartily endorsed.

Prof. Oldberg, chairman of the committee on International Congress informed the council of the status of the publication of these proceedings. It was therefore

Resolved, That the balance of the appropriation of $1,000 in favor of the International Pharmaceutical Congress be used to publish the proceedings of the International Pharmaceutical Congress, and it was further

Resolved, That the actual transactions of the Congress, such as votes passed and resolutions adopted, touching important general principles, be published in German, French and Spanish as well as English, but that the minutes of the Congress be printed in English only.

Prof. Chas. Caspari, offered to the Council the following: "That the Council tender to Prof. Joseph P. Remington, the sincere appreciation of his efforts in the careful and thorough manner in which he has performed the duties of the office of secretary *ad interim*. The transfer of the office without an opportunity of consulting the late Prof. John M. Marsch, as to facts and methods carried with it a vast amount of intricate work and labor what has been most satisfactorily excuted by Prof. Remington. The Council desires to place on record its sense of gratitude to Prof. Remington after his valuable services."

This, by a rising vote, was unanimously tendered to the late Secretary *pro tem*, Prof. Remington. The fact that Prof. Remington would not sanction the use of his name for the permanent Secretaryship, was a source of much anxiety among his friends. And yet, before the meeting was over, his friends saw that he knew better than they, that his place was on the floor of the convention where he (as they feel) could intervene and modify the discussions by that influence which has made him so renowned.

THE OFFICERS OF THE ASSOCIATION FOR 1894 AND 1895 ARE:

President, Wm. Simpson.
1st Vice-President, C. M. Ford.
2d Vice-President, J. M. Hurty.
3d Vice-President, J. E. Morrison.
Treasurer, S. A. D. Sheppard.
Permanent Secretary, Chas. Caspari, Jr.
Reporter on Progress of Pharmacy, Henry Kraemer.

NEW MEMBERS ELECTED TO COUNCIL WERE:

W. S. Thompson, H. M. Whelpley, S. P. Watson, G. W. Voss.

The different Sections have the following officers

SECTION ON SCIENTIFIC PAPERS:

Chairman, A. R. L. Dohme.
Secretary, Geo. B. Kaufmann.

SECTION ON EDUCATION AND LEGISLATION:

Chairman, J. M. Good.
Secretary, C. S. N. Hallberg.

In a social way the meeting reflected great credit upon the Local Secretary, W. G. Smith, and his Local Committee, and the hospitality of the citizens of Asheville. In an instructive direction the above outline of the principal events is sufficient to encourage and cheer even the pessimist that "a good time is coming" for the pharmacist; and that the solution is an educational one and one that is to be met by concentration of the efforts of all colleges in raising the standard and so limiting the number of pharmcists.

NEW LITERATURE.*

Bacteriology.

Bacteriologie. — Ein kurzes Lehrbuch für Nahrungsmittelchemiker.—E. Wernicke.

Dei Microorganismi.—G. Rattone. Turin: Rosenberg & Sellier.

Botany.

Elemente der Botanik.—H. Potonié. 3. Aufl. 507 Abbild. Berlin: Julius Springer.

Elements de botanique médicale.—Moguin-Tandon. Paris: J. B. Bailliere et fils.

The Systematic Botany of North America has been inaugurated by the distribution of sample pages taken from the manuscript of the Hepaticæ, prepared by L. M. Underwood. The board of editors announce the following parts for 1895, but then sequences may be somewhat changed:

Vol. 5: Parts 1 and 2, Pyrenomycetes by Messrs. J. B. Ellis and B. M. Everhart. Vol. 9: Part 1, Hepaticæ by L. M. Underwood. Vol. 10: Part 1, Typhaceæ, Sparganiaceæ, Naiadaceæ, Juncaginaceæ, Alisinaceæ, Hydrocharitaceæ by the late Thomas Morong. Vol. 11: Parts 1 and 2, Cyperaceæ by N. L. Britton and L. H. Bailey.

*Readers desiring any of the works contained in this list can obtain them through B. Westerman & Co., 812 Broadway; Gustav E. Stechert, 810 Broadway, or other foreign booksellers.

Chemistry.

Jahres-Rundschau über die Chemische Industrie und deren wirthschaftliche Verhältnisse für das Jahr 1893. — Unter Mitwirkung von Fachmännern herausgegeben von Adolf Bender.

It is a report on the progress of larger and smaller industries regarding analytical methods. It is published in four parts and contains 156 illustrations distributed into the text.

Part 1. Metallurgy, inorganic acids, bases and salts.

Part 2. Foods and allied products.

Part 3. Dyestuffs, Dyeing, Calico printing, Tanning, Manufacture of Paper.

Part 4. Illuminants, Explosives, Photography, Varnishes.

Essai de chemie Synthétique.—F. C. Bartlet. Paris; Chamuel & Co.

An essay on synthetical chemistry. The author confirms the views of Newlands, Mendeleeff and Crookes regarding the periodicity of the elemeuts.

Der Monismus der Chemischen Elemente.—Ed. Miensel.

The author claims that "chemical research culminates in the question of the nature and origin of the elements." He attempts to prove that "the atoms of the various elements have arisen only by different condensation, by dissimilar occupation of space and unequal quantitative accumulation." He attempts to prove that present known 75 elements are all formed from one form-primitive—matter. He calculates for hydrogen the weight of a single particle (molecule?) 0. 000 000 000 000 000 000 000 004 Gm. An atom of the primal matter would, therefore, weigh the 200th part of this amount.

Handbuch der organischen-technischen Chemie —S. P. Sadtler (Philadelphia), Deutsch von J. Ephraim. I. Abtheilung, Leipzig; J. A. Barth.

F. Beilstein. — Handbuch der organischen Chemie.—3 Aufl. 32 Lief. Hamburg: L. Voss.

Lessons in Qualitative and Volumetric Analysis.—For the use of physicians, pharmacists and students. By C. O. Curtman. Including lessons in qualitative chemical analysis by F. Beilstein. 4 ed. revised and enlarged with many illustrations. Pp. XIV and 295. St. Louis.

In addition to what previous editions have contained, the author prefaces his books with the following:

"The portion based upon F. Beilstein Anleitung conforms to such changes as have been made in the latest German edition, and to illustrate the compounds not described there, the number of examples has been increased. To call attention to the characteristic reactions of analytical groups, notes have been inserted, which also give directions for furnishing the student with specimens for practice in the detection of unknowns."

"New tables have been added to this portion and others enlarged and the charts illustrating the spectra have been increased and rendered more complete."

"To the systematic course on qualitative analysis, a chapter on reagents has been appended."

"In the section on examples for practice in analysis of organic substances, a number of additions will be found (starch, salol, anilin, acetanilid, antipyrin, phenacetin, caffeine.)"

"The section on volumetric analysis has been entirely rewritten. Besides a description of volumetric apparatus and processes it contains numerous examples, illustrating every important volumetric method, and now forms a complete commentary in the volumetric assays of the new U. S. P., giving full instructions for the examination of every preparation for which a volumetric test has been directed in that work, including gasometric determinations. A number of illustrations have been introduced, representing apparatus used in volumetric, gasometric, and colormetric works."

"The chapter on examination of drinking water has been recast, and embodies the recent advances made in this important field of hygienic investigation." "Much care has been bestowed upon the section of analysis of urine. Modern methods of investigation have been inserted and many notes added, pointing out the diognostic value of the results of analysis."

"The orthography has been adapted to the rules of the chemical section of the A. A. A. S. The addition of nearly one hundred pages is due entirely to the introduction of new matter."

The fact that this is the fourth edition, and contains the above mentioned growth in addition makes it an unexceptional, practical and valuable work.

Formulaire des eaux minérales de la balnéothérapie et de l'hydrothérapie.—E. de la Harpe. Paris: J. B. Balliere et fils.

Foods.

Bibliothek für Nahrungsmittel Chemiker.—Unter Förderung von Prof. Geissler, E. Hanausek, Prof. Medicus, K. Thiel und unter Mitwirkung von Dr. Mayrhofer, Carl Müller, H. Röttger, E. Wernicke, A. Würzburg, heraus-

gegeben von Julius Ephraim. Leipzig; J. A. Barth.

From the contributors it will be seen that this volume is intended to be complete and practical for the critical examination of foods and nourishing materials, and for determining, preparing and investigating all matters that come before the food analyst. It will precede the following six works:

Die Nahrungsmittel-Gesetzgebung im deutschen Reiche und in den einzelnen Bundesstaaten. Arthur Wurzburg. 372 pp.

Kurzes Lehrbuch der Nahrungsmittel-Chemie. —H. Rottger. 467 pp.

Sammlung der wichtigsten Originalarbeiten über Analyse der Nahrungsmittel. J. Ephraim

Mikroskopie der Nahrungs und Genussmittel. —Carl Müller.

Instrumente und Apparate zur Nahrungsmittel-Untersuchung. Dr. Mayrhofer.

Pharmacy.

A New Book on Pharmacy,—Handbook of Theory and Practice of Pharmacy, etc., etc., by Virgil Coblentz, Ph. G., A. M., Phil. D., Professor of Theory and Practice of Pharmacy and Director of the Pharmaceutical Laboratory in the N. Y. C. P.

On or about October 1st a new handbook under the above named title will be published.

A few outlines of that work will tend to show its value as a book of study as well as of reference to pharmacists and students of pharmacy, as the author evidently dwells on everything with the utmost care to render it comprehensive. Not only are the explanations simple and clear, but not less than 392 illustrations accompany the text. It embraces all modern pharmacy.

This handbook is divided into four parts, besides an introduction treating on Pharmacopœias and the nomenclature of the U. S. P., and an appendix, which consists of following tables: Table of Atomic Weights; Solubilities; Thermometric Equivalents; Equivalents of Weights and Measures, and List of Pharmacopœial Chemicals and Reagents.

Part I is divided into 25 chapters. Chapters 1 and 2 treat of weights and measures, some illustrations showing weights which have been used in ancient times of Specific Gravity and Density. Chapters 3, 4 and 5 on heat and its various applications in pharmacy. The student will certainly find pleasure in the fine display of the different apparatus, which are illustrated to facilitate explanations and to show their uses.

Chapter 12, which treats of crystallization, explains very simply how to crystallize the different salts, those soluble as well as insoluble in water and how to obtain perfect crystals

In Chapter 24 Prof. Coblentz has explained Percolation of all kinds. The Syphon Percolator, much used in Squibb's Laboratory, is fully explained and illustrated, hot and cold extraction apparatus, most simple for the apothecary's use, and a number of the common and more modern Percolators are illustrated and their uses explained.

Part II treats of Galenical Pharmacy. Aqueous, Alcoholic, Acetous, Saccharine, Glycerin, Oleic Acid and Ethereal Solutions are all explained a number of formulæ, chemical equations and exercises relating to these solutions given and also tables of all the officinal preparations.

Chapter 33 treats of Liniments, Mixtures and Emulsions. The three different ways of effecting emulsification are very simply explained, all the emulsifying agents named and also formulæ for the emulsification of special drugs, as Salol, Lycopodium, etc. Under Solids, Powders, Pills, Tablet Triturates, Ointments, etc., the ways of mixing and compounding them are treated of.

Part III is entirely devoted to Prescriptions. In this chapter the author's knowledge and skill will prove of great benefit, as everything that belongs to the art of dispensing is here mentioned.

The writing of a prescription, its grammatical construction, all the different abbreviations used in prescribing, its words or phrases in Latin; furthermore, a table of terms likely to occur in French and German prescriptions. Homœopathic Dispensing, Triturations and Prescriptions, the latter being valuable for that very reason alone, as to enable students to recognize them and to know their meanings.

Explosive and incompatibles are fully treated and explained. A great number of prescriptions given as specimens of chemical and pharmaceutical incompatibilities.

Part IV explains the Volumetric Solutions and their applications. Like all the previous chapters, so this one also contains a number of illustrations explaining and showing the use of the different little instruments in determining the strength of a tincture or a solution. Volumetric solutions having been used very little so far, are not much understood by pharmacists. This is now thoroughly explained in the work of Prof. Coblentz, and will also enable the student to gain a practical understanding of them by following up all the formulæ and making them.

Neues pharmaceutisches Manual. — Unter Beihilfe von E. Bosetti, herausgegeben von Eugen Dieterich. 6 vermehrte Aufl. Ein Band, 740 S. Berlin: J. Springer.

Kurzes Repetitorium der Pharmacopœia practica. Wien: M. Breitenstein.

Tecnica farmaceutica secondo la farmacopea officinale ed il codice d'igiène. S. Plevani. Mailand: F. Vallardi.

Physics.

Elemente der theoretischen Physik.—C. Christiansen. Deutsch von J. Müller. Mit einem Vorwort v. E. Wiedemann. Liepzig: J. A. Barth.

Therapeutics.

A Manual of Therapeutics. — By A. A. Stevens. Prepared especially for students as an outline of modern therapeutics to be filled in by larger works, together with an article on *Incompatibility in Prescriptions* by Joseph W. England. Cloth 12 mo., pp 435. Philadelphia, W. B. Saunders.

Miscellaneous.

Die Riechstoffe und ihre Verwendung zur Herstellung von Duftessenzen, Haarölen, Pomaden, Riechkissen, etc., sowie anderer kosmetischer Mittel. — S. Mierzinski. 7, (Titel-) Aufl. Weimar: B. F. Voigt.

THE MOST RECENT WORK.

Free Mineral Acids in Presence of Organic Acids.—E. Nickel recommends the following process for detecting of, say, hydrochloric acid in vinegar: weigh the sample with a large quantity of phloroglucinol and then boil for some time with a piece of pine wood or bamboo. After further contact for about 12 hours, the wood will assume the well-known characteristic color if any free mineral acid is present.—*Chem. Zeit.*, 1894, 1670.

Benzoic Acid Odor.—Benzoic acid, prepared by various methods has no odor while in the crystalline condition, but if volatilized in the vapor of water, or dissolved in dilute alcohol, or if a solution in a 0.6 per cent. aqueous solution of sodium chloride is inhaled in the form of a spray, the characteristic odor is at once perceived. New results, together with the observations previously made on conmarin, vanillin, etc., indicate that apparently inodorous substances may be divided into two groups, viz., those that are truly inodorous under various conditions and those that are only inodorous under certain particular conditions, but distinctly odorous under other conditions.—*Jour. Chem. Soc.* (Abst..), 1894, 247; from Compt. rend., 1894, 481.

Syrup of Lime.-C.W. Patterson prepared seven samples of syrup of calcium for the purpose of determining the percentage of calcium oxide present and the Sp. Gr. of the same. The lime used was taken from the interior of a large piece, tested and found free from calcium carbonate. Four were prepared by the U. S. P. formula and three with the modification that instead of evaporating 70 Gms. enough of the filtrate was evaporated to make it measure 100 Cc. This latter modification does not affect the Sp. Gr. or the percentage of calcium oxide. In estimating the amount of calcium oxide, decinormal solution of oxalic acid and decinormal solution of hydrochloric acid were both used. Taking the average of the results obtained the syrup of lime contains 2.69 per cent. of calcium oxide and has a Sp. Gr. of about 1.164. The samples prepared were of a colorless or but pale straw color. This gives a preparation averaging 1.14 per cent. more calcium oxide than the Liquor Calcis Saccharatus (B. P.). In the Nat. Disp. the formula there given is a compromise between the U. S. and British formula.

For the purpose of finding out whether heat is necessary in the U. S. P. formula, four samples H, I, J and K were prepared as follows:

The lime and sugar were triturated together and placed in a bottle containing 80 Cc of water and shaken occasionally, H for 24, I for 48, J, and K for 60 hours. Then the mixtures were filtered and water added to make the product measure 100 Cc. The results obtained show that as satisfactory a product can be obtained without heat as by the official formula, but the time necessary is much longer.

	Sp. G. at 15° C.	Percentage of Calcium Oxide.	
H	1.160	2.3800	Stood 24 hours.
I	1.172	2.6301	" 48 "
J	1.160	2.6530	" 60 "
K	1.164	2.7267	" 60 "
Average of I, J and K	1.165	2.6750	

A review of the companion to the latest edition of the British Pharmacopœia, published in the *Pharmaceutical Journal and Transactions* for June 16, 1894, states that in the preparation of the Liquor Calcis Saccharatus it is better to dissolve the sugar in the water before adding the lime. To test this with the United States preparation one sample was prepared by dissolving the sugar in the water and adding the lime to the boiling solution. The boiling was

continued for five minutes, the product strained diluted, filtered and made up to 100 Cc. This sample gave 2.683 per cent. of calcium oxide.—*Apothecary*, Aug., 1894, 18.

Purity of Iodine sold as Resublimed Iodine.—C. O. Curtman (Report No. 8 of the Research Committee. B. of U. S. Pharmacopœia) has examined specimens obtained from six different firms and found them to be of a grade higher (minimum 99.75 per cent.) than that demanded by the U. S. P.

Castor Oil in Croton Oil and Copaiba.—L. Maupy detects castor oil in croton oil by treating the mixture to dry distillation with an alkali, thus forming sebacic acid and caprylic alcohol from the ricinoleic acid. The sebacic acid obtained by treating the solution with a mineral acid is insoluble in cold but soluble in boiling water. In testing copaiba, ten (10) Gms of balsam copaiba are carefully heated in a silver capsule with an equal quantity of soda. If, after frothing ceases, an odor of caprylic alcohol is perceivable, the presence of castor oil is certain. If the reaction product is further warmed with 50 Cc. of water, filtered, the filtrate heated in a porcelain vessel with an excess of nitric acid, raised to the boiling point and filtered while still hot, a white precipitate of sebacic acid will subside on cooling, if the supposed admixture was present. This principle is soluble in boiling water, and from this solution is reprecipitated by lead subacetate.—*Jour. Phar. Chem.*, 1894, 362.

Adulteration of Cumarin.—Fritzsche Bros. call attention to an adulterated product upon the market containing 36.05 per cent. acetanilide. The tests for this product may be applied as follows:

"When a little of the substance was heated with metallic sodium, the fused mass dissolved in water and tested with ferrous sulphate, etc., in the usual manner, a precipitate of Prussian blue was obtained, thus showing the presence of nitrogen, an element which is not contained in pure Cumarin. When heated with a 3 per cent. solution of potassium hydrate for an hour, at a temperature of about 60° C, it developed the peculiar odor of analine; and when a few drops of chloroform were subsequently added and the mixture again gently heated, the characteristic and intensely disagreeable odor of phenyl-carbylamine was produced — the so-called iso-nitrile reaction. With chlorinated lime it also gave the blue color reaction characteristic of analine. The alkaline solution, including the crystalline laminæ which separated therefrom on cooling, was shaken with ether, the ethereal solution separated and allowed to evaporate, when a crystalline mass was obtained, which, when crystallized from dilute alcohol, formed glistening laminæ, melting at 114° C."

Acetanilide, popularly known as Antifebrin, appears to have been quite extensively employed of late for the adulteration or sophistication of organic chemicals, for Messrs. Schimmel & Co. (*Semi-Annual Report*, Oct., 1893, p. 67; *Bericht*, October, 1893, p. 64) have found it to be the chief constituent of the so-called "Artificial Musk" and "Tonquinol," and to be contained in the following amounts in the preparations here enumerated:

Cumarol consists of about		30% Cumarin. 70% Antifebrin.
Heliotrop	" "	25% Heliotropin 75% Antifebrin.
Bigarol	" "	15% Nerolin. 85% Antifebrin.
Irisol	" "	2.5% Oil of Orris 97.5% Antifebrin
Ambrain	" "	15% Cumarin. 85% Antifebrin. And traces of another odorous body.

Estimation of Oil of Turpentine in Alcohol.—Alcohol containing turpentine will stand more or less dilution with water before a turbidity is produced. The more turpentine is present the less will be the amount of water required. On this fact the author bases his process for a quantitative estimation of turpentine in denatured spirits. 5 Cc. of the sample is put into a test glass and water is added from a burette until a permanent turbidity is produced. 5 Cc. of a 0.5 per cent. solution of turpentine in spirit of the same alcoholic strength as the sample is put into another test glass and also titrated. The mixture which consumes most water is the poorest in turpentine, and the author found that 1.1 Cc. o difference in water is equivalent to 0.25 per cent. of turpentine. The author also found that the turpentine cannot be removed by practical distillation over lime.—*J. Perl in Chem. Zeit.*, 1894, 1851.

Estimation of Alcohol in Wines.—A. Borntraeger dilutes 100 Cc. of the sample with an equal bulk of water, distills off two-thirds or more, dilutes the distillate to exactly 100 Cc., and takes its Sp. Gr. at 15.5°. Unless the sample contains more than 0.5 per cent. of volatile acridity, which is rarely the case, it is not necessary to neutralize before distillation.—

Zeitschr. f. angew. Chem., 1894, 108.—*Jour. Chem. Soc.* (Abst), 1894, 259.

Preservation of Milk for Estimation of Fat.—M. Weibull adds from 60 to 100 mgs. of potassium permanganate to about 20 Cc. of milk which will then keep for several months at 64 to 72° F. Sufficient permanganate is added to produce a dark brown color, the milk being shaken until it is completely dissolved; the color disappears in a few days when more permanganate is added. Comparative analysis with fresh milk and with milk kept 6 to 56 days, gave results in which the greatest difference was 0.1 per cent. whilst in 8 out of 11 cases the difference was 0 05 per cent. or less.—*Exper. Stat. Rec.*, 1894, 536.

Iron in Water.—A. Zega proposes the following method for a colorimetric estuation of iron in water. To 100 Cc. of the water (in which the iron has already been oxidized to the ferrric condition) 1 Cc. of nitric acid (Sp. Gr. 1.35 to 1.40) and 5 Cc. of a 5 per cent. solution potassium thiocyanate are added. The coloration develops rapidly and does not darken on remaining. 100 Cc. of distilled water is then similarly treated and a standardized solution of a ferric salt containing 0.01 mgm. of iron per Cc. run in until the coloration produced is equal to that in the water under examination. The quantity of ferric solution added represents of course, the quantity of iron in the water. In this way 0.01 mgm. of iron per 100 Cc. of water is easily estimated.—*Chem. Zeit.*, 1894. 1564.

Cinnamic Dichloride and Micro Organisms.—A. Starenhagen and H. Finkenheimer in *Ber. d. Chem. ges.*, 1894, 456. Cinnamic dichloride has been partially resolved by Liebermann and Finkenheimer into its officially active components. The present authors have treated 5 Gms. of the dichloride for four weeks with Aspergillus fumigatus and isolated 1.5 Gms. of an acid rotating $[a]_D = +1$. From 6 Gms. of dichloride treated with yeast for three weeks, 2.2 Gms of an acid was obtained, giving $[a]_D = +2.8$. The organisms had multiplied during the above periods, despite the formation of hydrogen chloride and chlorocinnamene. Blank experiments (without the organisms showed that while a small quantity of chlorocinnamene was formed, the acid remained inactive.)

Strychnos ignatia.—F. Ransonia, (British Pharm. Conference), results show that although the seeds of S. ignatia contain a larger proportion of strychnine as compared with brucine, than those of nux-vomica, the percentage of total alkaloids is considerably less.

Our Graduates.

"94 COLUMN."

FOR the benefit of many of my fellow students whom I dare say (like myself) have often been asked the significance of the '94 class pin, I have made a little investigation which netted me the following: Caduceus in mythology, was the staff with which Apollo used to drive the flocks of King Admetus. He gave it to Mercury (called Hermes by the Greeks) in exchange for the Lyre. It thus became the attribute of Mercury, and was his official satos or insignia of office, that of messenger of the Gods. Mercury, by the way presided over orators, druggists, tramps and thieves.

The rod of Caduceus represents rectitude accuracy and fidelity, the two serpents introducing it to wisdom, the two wings despatch. Among the Romans the Caduceus was probably an olive branch carried by messengers and embassadors as an emblem of peace.

DAWSON (262 Fifth ave.), is as good a boy as ever, the proximity of the celebrated tenderloin district having not as yet affected him.

RACE (56th st. and Sixth ave.), is looking greater and grander than ever, notwithstanding the fact that he has been in commission since commencement.

EX-SECRETARY LINNIG (498 Decatur st., Brooklyn), is "punching pills" with his characteristic vim in an atmosphere "cooled by Ocean breezes."

COL. WADE (86th st. and Park ave.), recently returned from a short trip to his home in picturesque Owego. This town proudly looks upon him as one of her most clever bicyclists.

THE first customer one of our brilliant Ph. G.'s was called to wait upon, meekly asked for a bottle of "cowsbath water." Upon receiving the Sprudel she hastily left the store only to return again shortly after for some Queen Anne pills and "a teeth brush to clean her tooths" as she expressed it.

The *Commercial Advertiser* speaks of ex-President Ehrgott as one of Jersey City's handsomest products. Last reports were to the effect that he is going to take an M. D. course.

NELSON S. KIRK,
9 East 59th st.

DR. HENRY D. LOVIS, graduate of the class of '90, an honor-roll and graduate of the College of Physicians and Surgeons, class '93, has been appointed Assistant Superintendent of the Seabury Pharmaceutical Laboratories.

MEDICINE AND PHARMACY *

By N. H. MARTIN, F.L.S., F.R.M.S., President of the British Pharmaceutical Conference.

At the outset of my address I desire to conform to a custom which I think we do well to honor, and that is to express to you my sense of the distinction which you have conferred upon me by electing me to be your President: To be thought by my *confreres* to be fitted, in some small degree, to stand in the place which has been occupied and adorned by such distinguished men and Pharmacists as Deane, Hanbury, Stoddart, Brady, Redwood and others who have occupied this chair, is a sufficient cause for modest and honorable self-respect, and I should not be human if I did not appreciate that honor and feel proud of the dignity. I do not propose to occupy your time by expressions about my own unworthiness, for although the fact, and the causes of it, are better known to me than they can possibly be to you, the attempt to put them into words would miss that ring of true sincerity which I have tried to make the touchstone of my life. I prefer to accept your decision in silence as to my own shortcomings, and to tell you that since your choice has fallen on me, I have done my best to make my own unworthiness more worthy of your acceptance.

As you are all aware, we are indebted to the courteous invitation of the Pharmacists of this city and neighborhood for our meeting here to-day, and I congratulate the Conference upon the opportunity of assembling for the first time in its history in this ancient University city.

Oxford is as fresh to me, as I have no doubt it is to many of you, but we shall every one of us share an Englishman's just pride in the renown of this historic seat of learning. Perhaps to some of us it was a dream and a hope of our early days that our own education would have embraced an Oxford or Cambridge career, but such dream may have been rudely dispelled by the force of circumstances, and the ideal of education which we thought would have been obtained here, by the culture of surroundings, we have only been able to seek after by much plodding and gleaning in outside fields. If I were free to occupy your time with thoughts other than those connected with Pharmacy, what a fruitful source of inspiration this place would be. The beauty and the history of its buildings, the men who have walked these streets, and lingered in these ancient halls and colleges, and who have gone out from here to influence, so profoundly, the whole history of the world would indeed furnish any audience of Englishmen with food for profitable meditation. In our thoughts about Oxford most of us will have connected it with classical and mathematical studies, and with the remembrance that here have been trained some of the deep thinkers in the realms of philosophy, of theology and of history. To us, as Pharmacists, however, and as workers in the domain of Natural History and Science, the Oxford Museum cannot fail to be an object of the deepest interest, and while I hope you will take away from Oxford many delightful mental pictures of art, of architecture and of natural beauty, I would commend the museum, and all that pertains to it, to your most thoughtful attention and study. I may not linger here, but I should like to point out the wide difference which exists between the Oxford Museum and our ordinary conception—and I am afraid

* Pharm. Jour. Trans., Aug. 4, 1894. Read at the 31st Annual Meeting of the British Pharmaceutical Conference.

I must add our experience— of museums in general. In the dictionary you will find a museum defined as a "repository of interesting objects," and in too many cases in this country they are "repositories" and nothing more. Here, however, you will find the museum is not the grave of curious and interesting specimens, but is the centre of a vital contact with nature and science. You will find the museum proper surrounded by suitable buildings, and by every provision for education, for study, and for research in the various branches of natural science, and the objects in the museum are used to fulfill their proper function in illustrating the lectures of the professors, and enriching the knowledge of the students. In my own city we have a Natural History Museum rich in specimens, and we have Colleges of Science and of Medicine under wholly different management at no great distance, and every lover of scientific truth in the North must regret with me that the dry bones of the Museum are not vivified by contact with the living teachers and students of Science. It is an evidence of the clear judgment and breadth of view which university life and training imparts that here in Oxford the Museum has not been conceived in the spirit of the miser to collect and to hoard, but the collections are used to communicate pure streams of accurate knowledge to all who will come and drink at this fountain. You will see that medicine forms no inconsiderable part of the teaching associated with the Museum, but according to Sir Henry Acland "the function of the Oxford Museum towards Medicine is to train good scientific observers and thinkers to become observers and thinkers of pathological and therapeutic and preventive processes." I trust it is not a mere dream to hope that some day Pharmacists will be found here amongst the students, laying the foundation to become "good scientific observers and thinkers."

The subject of my address will be Medicine and Pharmacy, and however well the story of these may have been told by my predecessors, I am, by virtue of my position, under the necessity of keeping to the beaten track, and I have no desire even to shirk the responsibility. I purpose to take full advantage of my position as your President, and to speak to you *ex cathedra*. I do not expect that you who hear me, or that those who may afterwards read what I shall say, will agree with all that I express, but of the one thing I beg to assure you, my views upon this subject have not been hastily adopted, and they are not lightly held. They are the outcome of more than thirty years of a wide contact with Pharmacy and Medicine, and of loving service to Pharmacy which during that period has been to me, not alone a source of income, but the means of bringing me into contact with a large proportion of the purest pleasures that have come into my life.

It is not possible to exaggerate the importance of Medicine and Pharmacy in the body politic. The duty of healing and caring for the sick should call forth in every right minded man with the spirit of true nobility in his soul, feelings of the highest chivalry and honor, and he is surely one of the most miserable of human beings who is satisfied to pursue these callings for mere gain, and to measure the success or failure of his life devoted to medicine by a money standard.

Our own daily work and our thoughts are more intimately connected with Pharmacy, but we meet Medicine on the common ground of drugs, their preparation and application in the treatment of disease. Medicine, in the persons of those who practice it, and in the pages of its representative Journals, does not hesitate to criticise, and even to castigate Phar-

macy, and I propose to extend my remarks to revealing short comings in the practice of Medicine.

Let us turn first, however, to Pharmacy, and ask the question whether if in its own special domain its condition is satisfactory, and if not, what is the cause of this, and what suggestions for its improvement can be offered? The Pharmaceutical Society has had an existence of more than fifty years, and we have had a compulsory Act of Parliament for twenty-six years. In that period advances have been made which are obvious, and I need not recount them any more than I need place before your confirmatory evidence of the fact that the majority of those who are on the Register of Chemists and Druggists are dissatisfied with the actual practice of Pharmacy to day. Complaints are loud and deep against the Pharmaceutical Society because it does not bring about an improved condition of things, but in no case have I seen the confession by any large section of men on the Register that they have failed to realize the privileged position in which they were placed by the Act of 1868, and that they have neglected to conform to the keynote and true spirit of that Act which was education. I think you will agree with me that the greatest evil from which Pharmacy is suffering to-day — unbridled and dishonest competition in prices—is mainly due to the enormous extent to which the use of proprietary medicines have increased, and to the fact that this has played the role of introducing Grocers, Limited Companies, and other unqualfied and unregistered individuals and bodies to assist in their distribution, and has tempted them to add to their sale a large number of the drugs in common use, and finally, has envolved that monstrosity of the nineteenth century, the "Company Pharmacist." Who is to blame for this? Surely not the Pharmaceutical Society; for, whatever individuals may have done, the whole spirit and teaching of the Society is in direct opposition to Pharmacists becoming the medium of distributing articles about which they have absolutely no personal knowledge, and about which they can give neither to Physician nor to Patient any information prising company, and is presented to him with a sample bottle, a pamphlet bristling based upon their scientific training and experience as Pharmacists. No, it is not the Pharmaceutical Society which is to blame, but it is the men at the Register who, in the past, in their several localities, by their endorsement of the falsehoods of these advertising quacks, have created, on the part of the public, this enormous and unhealthy demand for proprietary medicines, and have brought this Nemesis upon Pharmacy.

Here I must mention a further development of the proprietary medicine system which has recently taken place, and which is fraught with far more peril to the existence of pharmacy than the proprietaries for domestic use, and in this both medicine and pharmacy have been ensnared by the wily commercial adventurer. In various guises, and by persistently advertising claims to improvements in pharmacy, men seeking gold, have induced medicine and pharmacy to become their tools to enable them to reach the million. There are two chief methods by which this has been accomplished, one is by the registration of a word for some particular form in which drugs may be administered, the other is by the invention of names, ("discretional names" I see one medical writer euphemistically calls them,) which are are used as blinds to suggest some original or added virtue for compounds, the properties of the ingredients of which are perfectly well known. These enterprises would have met but with poor success if medical men and the medical journals had been true to themselves and to their own teaching.

To be continued.)

THE Alumni Journal

PUBLISHED BY THE ALUMNI ASSOCIATION
OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK.

Entered at the New York Post Office as Second Class Matter.

Vol. I. New York, November, 1894. No. 7.

THE
Alumni Journal

PUBLISHED BY THE ALUMNI ASSOCIATION
OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK.

Vol. I. New York, November, 1894. No. 7.

A MICROSCOPICAL AND CHEMICAL EXAMINATION OF CLOVES.*

BY HENRY KRAEMER.

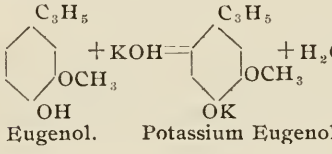
MORE than a year ago, a sample of a spice was submitted to the author, an examination of which revealed the presence of a large quantity of starch. The question was then asked: "How much is there of this adulteration?" A quantitative answer was desired without a chemical analysis. This was the beginning of the present work, and very naturally the thought arose. Is it possible to obtain quantitative as well as qualitative results with the microscope? The results are embodied in this paper—which is intended, however, merely as a preliminary paper—on the comparison of quantitative microscopical with chemical examinations, and it is hoped will reveal the possibilities of research in this direction. At the same time are given the results of analysis of some commercial samples of clove oil and cloves by Thoms' method (with perhaps a slight modification) of determining the eugenol in the form of a benzoyl compound.

Extraction of oil from cloves.—10 Gm. of the powder were mixed with 10 Gm. of dried calicum sulphate, wrapped in filter paper and extracted in a Soxhlet apparatus by means of petrolic ether. Some of the ether was recovered, and the remainder was siphoned off by means of a siphon and a suction of air. The oil thus obtained had a viscous appearance, and on the addition of alcohol about 0.16 per cent. of a white resinous compound separated, which on the filter assumed the form of a very fine gauze. To this filtered solution from 8 to 10 C.c. alcoholic potash solution (1 C.c. = 0.09856 KOH) were added. The alcohol was removed on a water-bath, and to the nearly dried mass from 2 to 2½ C.c. of benzoyl chloride were added. The mixture, in a flask similar to that in which the extraction had been done, was stirred with a glass rod until the reaction was complete. Water containing some KOH was then added, and the whole heated on a water bath for a few minutes, then removed and placed in ice water, and when cooled the clear liquid decanted, and if there were any floating oily particles, these were removed in a separatory funnel by means of ether. This washing was continued 3 or 4 times, and finally the benzoyl eugenol was separated from the water by means of a

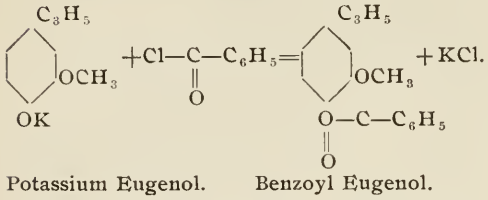
* Read at the 42d Annual Meeting of the American Pharmaceutical Association, Asheville, Sept., 1894.

separatory funnel with ether. The ether was evaporated off (assisted by siphoning the vapor and the use of suction of air). The mass on cooling crystallized. These crystals were dissolved in 15 C.c. alcohol (90 per cent.), heated to solution and recrystallized by placing in ice water and shaking the flask repeatedly. The solution was decanted and filtered through a small filter from the crystals, and the latter simply washed with an additional 15 C.c. of alcohol (90 per cent.). The crystals in the flask with filter paper were dried at 100° C. and weighed.

1 Gm. eugenol requires .341 Gm. KOH.
1 Gm. " " .693 Benzoyl eugenol.
5 C.c. alcohol (90 per cent.) will dissolve .110 Gm. benzoyl eugenol.



Eugenol. Potassium Eugenol



Potassium Eugenol. Benzoyl Eugenol.

Thoms has worked out an algebraic formula for hastily calculating the results, which may be translated as follows:

a=weight of benzoyl eugenol.
b=weight of oil taken.
c=+0.110 Gm. for every 5 C.c. of alcohol used (being the weight of benzoyl eugenol dissolved in 90 per cent. alcohol).
x=per cent. of eugenol.
Molecular weight of eugenol=164.
Molecular weight of benzoyl eugenol=268.
Then:

$$268 : 164 = (a+c) : \text{weight of eugenol.}$$

$$\text{Weight of eugenol} = \frac{164(a+c)}{268}.$$

$$b : \frac{164\,(a+c)}{268} = 100 : x.$$

$$x = \frac{164(a+c).100}{268b}$$

$$x = \frac{4100(a+c)}{67b}$$

The following results have been obtained by this method from the commercial samples of powdered cloves and clove oil:

Powd. Cloves.	Per cent. of oil.	Per cent. of Eugenol.
No. 1	17.50	59.74.
" 2	17.75	60.45.
" 3*	12.75	66.16.

Clove Oil.	Per cent. Eugenol.
No. 1	76.06.
" 2	78.12.
" 3	83.45.

Coming to the subject of quantitative microscopical analysis, while accurate results may be possible, so far only approximate figures have been obtained. These may not be without interest and value, and it seems probable that an analyst, who is able to use the microscope, may by a few moments' careful examination obtain evidences that will materially aid him in subsequent chemical analysis. Regarding the statements made by some that "the results of microscopical examination are not always uniform," I must refer them to the non-conformity in results of analytical chemists in organic and even inorganic analyses, unless by practice the individual masters the difficulties. And again it has been recently said, "that in the case of the deterioration of vegetable drugs through atmospheric influences or age, as well as in the adulteration of a genuine with inferior drugs, the difficulty of determining with the microscope the respective extent of change or adulteration is almost insuperable." This may seem to be so, and while chemical analysis is necessary, still there are many cases where the quantitative determination of admixtures and adulterations, if they are to be determined, can be done so only by means of the microscope.

It would not be a hard matter to prepare a lengthy paper on the difficulties attend-

* This sample was determined by the microscope to contain powdered clove stems, although sold by a large house in New York as powdered cloves.

ant upon research in this direction. Was there anything more difficult a few years ago than the study of bacteria? Not until Koch devised a convenient and comparatively easy method for this kind of investigation did this department, which to-day is recognized as a branch in science, became so popular. Even the medical student of the first and second year is taught to recognize and diagnose the insignificant Bacillus tuberculosis.

As has been said before, this paper is but a preliminary one, and while the author has been at work upon the subject for some time, the work has been done under rather disadvantageous circumstances, and it is presented at this meeting to elucidate a principle, and present the results of what may be an incomplete method, for your consideration. The method of procedure is as follows: A measured quantity (about .200 Gm.) of substance is thoroughly mixed with a measured amount (2 or 3 C.c.) of water. One, two or three drops formed on the finger of this mixture are placed in the slide and covered with a cover-glass. In the eye-piece of the microscope is slipped a piece of glass corresponding to an ocular micrometer, containing 100 square Mm. By a little practice a slide may be prepared that is fairly uniform, or uniform places upon it may be selected. This being done, then a count is made of the number of starch grains, fibres, or characteristic tissue in the spurious substance, contained in 100 square Mm., and the same compared with a genuine sample. For instance, mixtures were made of genuine cloves with potato-starch, wheat-starch, cedar-wood, turmeric, and it was observed that quantitative relations by comparison, do to some extent hold even in this crude way of procedure. In determining the oil a slightly different method was pursued.

I. A sample of pure potato starch was examined and 100 (Mm.)^2 was found to contain (32+28+32+35) 127 starch grains. Another 100 (Mm,)$_2$ contained (32+30+28+30) 120 starch grains.

II. A sample of powdered cloves admixed with 50 per cent. of potato starch yielded the following results:

(1) (14+15+12+15) 56 grains = 45.34 per cent.
(2) (13+11+18+13) 55 " = 44.53 "
(3) (17+16+16+13) 62 " = 50.20 "

III. A sample containing 30 per cent. of potato starch:

(1) (10+10+11+11) 42 grains = 34.00 per cent.
(2) (7+10+11+ 8) 36 " = 29.14 "

IV. A sample containing 20 per cent. of potato starch:

(1) (7+8+7+8) 30 grains = 24.29 per cent.
(2) (7+6+9+9) 31 " = 25.10 "

V. A sample containing 10 per cent. potato starch:

(1) (4+2+3+2) 11 = 8.90 per cent.

VI. A sample of pure red cedar yielded the following;

(1) (10+10+8+9) 37 fibres to 100 (Mm.)^2

VII. Cloves containing 20 per cent. red cedar yielded:

(1) 7 = 18.91 per cent.
(2) 9 = 24.35 "
(3) 8 = 21.60 "

VIII. Cloves containing 10 per cent. red cedar yielded;

(1) 4 fibres = 10.8 per cent.
(2) 3 " = 8.10 "

All of the above results were obtained by using ¼-inch objective. In the examination of tumeric ½-inch objective was used.

IX. Tumeric pure using one part of water:

(1) (11+11+6+5) 33 grains.
(2) (7+8+6+5) 26 "
Average+2 = 118 "

X. Cloves containing 10 per cent. tumeric using 2 parts of water:

(1) 10 = 8.47 per cent.
(2) 11 = 9 32 "
(3) 10 = 8.47 "

While the above results show a variance, and one that is not constant in any one direction, still they are of some encouragement. Hoping that the possibilities of this kind or research, was not limited to mechanical admixtures, the author experimented with the view of obtaining quantitative results upon the oil contained in cloves. For this purpose a small ex-

tractor, graduated to a mark, was made out of a piece of glass tubing. This was filled to the mark with cloves and exhausted with ether, the whole operation requiring about one minute. The ether containing the oil was allowed to drop in a watch crystal containing a few drops of alcohol KOH solution, the potassium eugenol forming at once and the ether evaporating. To the residue was then added a known quantity (2–3 C.c.) of water, the mixture thoroughly stirred, and a drop of the liquid collected on the finger and used on the slide. 25 $(Mm.)^2$ were examined and the number of $(Mm.)^2$—approximately—filled with crystals were counted.

XI. Pure sample of cloves:

(1) 9.
(2) 6. } Average = 8.
(3) 9.

XII. Sample containing 50 per cent. of cloves contained:

(1) 4.
(2) 3. } Average = 11 = 45 per cent. oil.
(3) 4.

Three commercial samples were examined, one that was said to contain much allspice. An examination based on the "port wine" cells of allspice yielded the following results:

XIII. Genuine allspice sample yielded:

(5+9+3+3) = 20 "port wine" cells.

XIV. Commercial sample gave:

(3+3+4+3) = 13 "port wine" cells = 65 per cent. allspice.

A sample supposed to contain a large amount of wheat starch yielded a surprisingly amount comparatively, as was shown conclusively on comparing with pure mixtures of wheat starch and cloves:

XV. Pure samples of wheat starch contained:

(69+68+67+69) 273 grains.

XVI. Sample of cloves containing 25 per cent. of wheat starch:

(16+19+16+18) 69 = 25.28 per cent.

XVII. Sample of cloves containing 10 per cent. of wheat starch:

(13+9+7+10) 39 grains = 14.2 per cent.
(9+7+9+8) 33 grains = 12.0 per cent.

XVIII. Commercial samples, adulterated with wheat starch:

(1) 100 $(Mm.)^2$ = 18
(2) " = 24
(3) " = 28
(4) " = 24

4)94

23.25

The sample contained therefore 8.93 per cent. of wheat starch, probably 10 per cent.

XIX. Commercial samples of a slight clove odor. Under the microscope this revealed the presence of clove stems and starchy material. It yielded scarcely any potassium eugenol, but a green-colored liquid to ether. This sample showed adulteration, and either an extraction of oil by distillation or loss of oil.

Any one who has labored with microscopical work for other than mere pleasure can readily comprehend the difficulties that must have been overcome by the author in this investigation thus far. And they who will attempt to corroborate these results or do original work in this direction, must not be disappointed if results are not at once forthcoming. "Nature is taciturn, and one must wrench her secrets from her." But after these secrets are well obtained and the way discovered, the work is not so difficult.

The author hopes to elaborate upon the principles contained in this article, and that by similar methods, especially extraction and microchemical tests, the more important plant constituents even may be determined in a quantitative manner. Smaller squares than Mm. may be employed. Instead of tests being made upon a few milligrams of material, several grams should be used to obtain more uniform results. It is believed that by preparing carefully a series of powders with the adulterants, fairly accurate results may be obtained—certainly sufficient to determine approximately the extent of adulteration without recourse to elaborate and prolonged chemical analyses. By employing the most accurate methods of

sampling in use in the assay laboratory, samples must be obtained that are representative. Enlargements by photomicrography, and subsequent cutting out and comparing by weight the tissues printed and the remaining part may be of service. Finally, much time must be yet devoted in ascertaining the real and permanent value of quantitative microscopical results to that of chemical results. It is hoped that many will pursue similar lines of research.—*School of Mines, Columbia College.*

Applications of the Centrifugal. With the introduction of the various improvements in manipulations the variety of applications have increased to such an extent as to render the centrifugal an almost indispensible equipment of the laboratory of the chemist. One of the forms adapted for laboratory use is illustrated in the Proceedings of the American Pharmaceutical Association, 1893, p. 374, or Coblentz's Handbook of Pharmacy, p. 214.

Among the various applications of this piece of apparatus are the following:

First.—For the microscopical examination of starches, meal, etc., from 5 to 10 Gm. are taken, well mixed with a little cold water, then 500 Cc. of water are added and then heated for fifteen minutes on a water bath until a smooth paste results. Then 100 Cc. of this paste is mixed with 1 Cc. of a 50 per cent. solution of potassium hydrate, another portion of 100 Cc. is mixed with 2 Cc. of sulphuric acid; each of these solutions is heated for thirty minutes on the water bath. The fluids are then centrifuged which causes the particles of the hulls to separate in the bottom of the cylinders. The precipitates can be readily removed from the almost clear supernatant fluid and examined under the microscope.

Second.—For the detection of phosphorus in iron and steel, the sample is dissolved in nitric acid, oxidized with permanganate, the excess being removed by means of oxalic acid, ammonium nitrate is added, and the phosphoric acid precipitated by means of molybdic solution. The phosphomolybdic precipitate is centrifuged and the volume read off by means of graduations on the tube; with the aid of a table, the percentage of phosphorous may be ascertained.

Third.—Examination of sputum for presence of Bacillus tuberculosis. The expectorated matter is mixed with its equal volume of hot water, or a dilute aqueous solution of borax, then heated for ten minutes on a water-bath, agitating repeatedly. The mixture is then centrifuged and the fluid is decanted off from the precipitate, which is then examined.

Fourth. — Examination of milk for Bacillus tuberculosis. 20 Cc. of the sample of milk are mixed with 1 Cc. of a 50% solution of potassa, warmed for two minutes on a water-bath, until the fluid has taken on a yellow brown color, then 20 Cc. of glacial acetic acid are added, shaken and heated again for three minutes on a bath. The fluid should then be of a uniformly smooth consistency and free from flocculent matter. This is then centrifuged. Any of the bacilli present will settle in the bottom of the tubes, while the butter fat swims on the surface of the mixture. The fluid is decanted off from the sediment, to which is added 40 Cc. of hot water and the mixture again centrifuged. After decanting the clear supernatant fluid, the sediment may be examined with the microscope.

Fifth.—Separation of urinary sediments. 50 Cc. of the sample of urine is centrifuged and the sediment examined.

Sixth.—This same process may be employed for the microscopical examination of substances which cause the turbidity of beer, wines, liquors, etc.

Seventh.—For the separation and examination of suspended matters as infusoria, algae, etc., in drinking water. Usually 50 Cc. of the sample of water are selected. For identifying typhus or cholera bacilli 100 Cc. of the water are shaken with 0.1 Gm. of the finest levigated talc (sterilized) and centrifuged. The talc serves the purpose of assisting the rapid separation and collection of the bacilli in the bottom of the tubes.

Eighth.—For the determination of fats in milk, 10 Cc. of an average sample are placed in a tube of the centrifugal, 1 Cc. of a 50 per cent. solution of potassa added, and mixed by rotation; then warmed two to three minutes on a water bath, until the mixture takes on a more or less brown color; it is then again rotated and glacial acetic acid added, until the caseine is dissolved. It is again warmed and centrifuged. The amount of fat is simply estimated by reading its volume.

Ninth.—For estimating the percentage cream in milk. 20 Cc. are centrifuged and the volume read off by means of the graduations on the tube.

Tenth.—For determining the fatty acids in soaps, a weighed amount of the soap is dissolved in water in the centrifugal tube, an acid (H_2SO_4) is added, and the mixture centrifuged, after which the amount of fatty acids may be read off. V. C.

A BRIEF STATEMENT INTENDED TO ANSWER MOST OF THE QUESTIONS PROPOSED BY THE SECTION ON EDUCATION OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

BY PROF. HENRY H. RUSBY.

I HAVE taken the somewhat unusual course of requesting the President to accord the first place in the order of time to my paper, because it seems to bear naturally upon many of the questions proposed, and to take note of the only sound basis upon which they can be discussed. I should propose the following statement :

Since the United States Pharmacopœia is the official and authoritative guide to the practice of pharmacy, no degree implying a fitness for such practice should be conferred until the student shall have become fitted to understand and employ that work. In other words, a thorough mastery by the undergraduate of the principles and processes embodied in the U. S. P. should be regarded as the primary essential of a pharmaceutical education.

No proving or supporting of this proposition is here entered into, because it appears that no exception will be taken to it by any one. I shall, therefore, merely point out its authority in determining the answers to several of the queries proposed. It answers perfectly questions 3, 4, 10, 11, 14, 15, 16, 17 and 18, and aids in the solution of several others.

Question 3. "Can a minimum standard of time of attendance and quality of pharmaceutical education be adopted by American colleges?" The minimum standard of quality should be the rule proposed above. The minimum standard of time must vary according to the facilities afforded by the location and equipment of the several colleges and the system, methods and quality of the instruction given. Those who are deprived of the advantages of drug store training in connection with their college course will of necessity require from two to three times as long to acquire the same degree of ability to conduct a pharmacy as those who do not suffer from this deprivation. Uniformity in time among the different colleges cannot in my opinion be attained with propriety.

Question 4. "How can we get the pharmacy laws of the various States more uniform in their requirements?" The pharmacy laws of the several States should be uniform in making conformity to the above standard the test of fitness of candidates for a license.

Question 10. "Should graduates in pharmacy be compelled to pass the examinations of Boards of Pharmacy before being registered?" It is indisputable that some schools of pharmacy are not honest in their application of the above standard, even though professing to apply it. Therefore, Boards of Pharmacy should thoroughly and impartially smoke out the graduates of such schools.

Question 11. "What principles should guide Boards of Pharmacy in framing their examination questions." This question calls for the same answer as Question No. 10.

Question 14. "Should any candidate be permitted to graduate in pharmacy before he is able to apply the tests and assays of the United States Pharmacopœia;" Question 15. "What should be the minimum limit of knowledge in Microscopy before being permitted to graduate;" Question 16. The same, applied to Botany; Question 17. The

same. applied to Materia Medica; and Question 18. "Should candidates for graduation in pharmacy be able to make all preparations, a process for which is given in the United States Pharmacopœia?" are obviously directly answered by my opening proposition.

Questions 19 and 12 are only partly answered by this standard.

No. 19 asks, "Where, in pharmacy teaching, are the limits between practical and impractical knowledge, and what constitutes a practical examination?" Any instruction which properly finds a place in a school of pharmacy does not admit of a division into the practical and impractical, except as to a merely formal and technical division. A knowledge of the fundamental theories essential before taking up practice is in its spirit quite as practical as the subsequent application of those theories. To limit the adjective "practical" to the subsequent instruction in which the student is set to applying this knowledge is perhaps necessary, but it is liable to mislead as to the real nature of the fundamental instruction.

Question 12. "How can dull and lazy students, in colleges of pharmacy, be kept as near as possible abreast of the work done by the intelligent and diligent?" The progress of the student in acquiring command of U. S. P. methods should be tested at frequent intervals. As soon as found deficient, he should be returned to the preceding form and made to work and to pay for the same over again. This process should be repeated until he comes up to the mark or grows weary and betakes himself to some neighboring diploma mill.

Question No. 2. "Should such students give their whole time during college years to study, or divide it between attending college and working in a store?" This question cannot be decided upon any general principle. Each college should be left entirely free to render an individual decision. If a college which is favorably located and circumstanced has found by long experience that the incorporation of drug store training into its course has resulted in producing clerks who are preferred by employers and druggists, a larger percentage of whom make business successes, they should not be coerced into abandoning this system because other colleges are less favorably circumstanced or have been misled into taking a different view.

This discussion would not be complete without reference to other instruction than that demanded as a minimum by my opening proposition. It is to be remembered that our Pharmacopœia is not perfect or complete. It does not aim to embody at once the requirements which are impractical for a majority of pharmacists in the present state of the profession, but it aims to add such requirements gradually, and it looks to pharmaceutical education to prepare the way for such addition. It is therefore at least highly important that pharmacy schools should to a moderate extent exceed the absolute requirements of the current edition of the Pharmacopœia, supplementing with instruction suitable to such advances in the work as are likely, or desirable, to be made at the next succeeding revision.

The business of a pharmacist being what it is, and the virtual object of the student in attending a pharmaceutical school being to fit himself for safely and successfully conducting that business, it follows that there is much extra pharmacopœial work to be done in instructing him, or at least in determining that he has been otherwise so instructed, before conferring his degree; as to how much, ideas are likely to continue to differ widely, according to the field of vision of the respective observer.

In conclusion, I would emphasize the fact that, in the opinion of your speaker, the instruction above demanded is only such as relates to work leading to the degree of graduate in pharmacy. Care has been taken to avoid trenching on the subject of post-graduate instruction and post-graduate degrees.

THE GRAIN WEIGHT.—A STUDY OF WHEAT.*

BY J. U. LLOYD.

HISTORICAL.

THE cereal *Triticum sativum* is th most valuable of food producing plants, its seed, under the name of "wheat," being the principal bread stuff of civilized nations. The plant is accepted by some to have been a grass that originated in the Mediterranean country, but this impression seems largely to be based on conjecture, and its origin as a food plant is probably lost in the darkness of antiquity.

Scripture mentions the plant and by some persons its origin has been ascribed to ancient Egypt. China is said to have introduced wheat 2700 years before Christ. These points are records of general history and pass comparatively unaltered through ordinary literature.

Standard modern dictionaries inform us that the weight of the fruit of this plant is the basis that six hundred years ago in England was used to establish the grain weight. Most authorities make the same general statement to the effect that a plump grain of wheat was used as the standard employed to establish the grain, but Prof. Remington (Remington's Pharmacy) gives the matter a historical record better than any other pharmacy work consulted, and with which in a general way my own researches agree.

As the statements of authorities as a rule coincide with that of Webster, it may be taken as typical, to wit ;—"*Grain.*—The unit of the English system of weights, so-called because considered equal to the average of grains taken from the middle of the ears of wheat." This would lead us to believe that a grain in weight should be the counterpart of an average grain of wheat.

Concerning the origin of the grain weight, C. W. Pasley, "Measures, Weights and Money," London, 1834, p. 8, says : "—those days of feudal ignorance, in which the standard of English lineal measure was referred to the average length of a barley corn, and the standard of weight to the average weight of a dry grain of wheat from the middle of the ear," which might also lead to the inference that our present grain weight represented the weight of an average grain of wheat at the time of standardization.

But careful preliminary weighings which I had made of good samples of wheat, convinced me that an inference drawn to that effect would be erroneous, and that modern grains of wheat do not average a grain in weight. It is exceptional for a single, abnormally large wheat grain to weigh a grain.

Giving the literature on the subject some further study, in order to find an explanation of the inconsistency mentioned, I arrived at the fact, that while the grain weight actually represented the weight of average grains of wheat about 600 years ago, this standard was changed 200 years afterwards.

Johnson's Universal Cyclopedia, 1893. gives the following summary of that fact in the definition of the word "Grain :" "*Grain.*—A statute of Henry III. (in the year 1266) enacted that *32 grains* of wheat from the middle of the ear, well dried, should weigh a pennyweight, of

* As a study of the grain weight in its connection with the grain of wheat, perhaps this paper is sufficient. As a study of wheat in an economic sense many gaps should be filled. For example, England, New Zealand, and Australia should each be averaged in an equal number of specimens to those of other countries. And now I desire to express my thanks to my friend, Dr. Sigmund Waldbott, who, with painstaking care assisted in the detail work of the investigation and to whose patience I am largely indebted for the completeness of this paper.—L. (Read at the 42d Annual Meeting of the American Pharmaceutical Association, Sept., 1894).

which 20 should go to the ounce ; but finally in the twelfth year of Henry VII, the pennyweight came to be divided into *24 grains*."

Thus it is seen that 32 standard grains of wheat were used six hundred years ago to establish the *pennyweight*, which then became the *unit* of weight. This pennyweight, about two hundred years afterwards was divided into 24 parts, and thus produced the number of grain weights (24) that now (providing that no other changes were made in the standard) make a pennyweight. Hence, one pennyweight (or 24 grains in weight) should now balance 32 grains of wheat, if wheat still conforms in size and weight to the standard taken as an average of wheat in the year 1266. In order to conform to the standard inaugurated by statute of Henry VII, 100 grains of wheat should only weigh 75 grains.

COMPARISON OF DIFFERENT WHEATS.

We have thus (if no subsequent change was made) a well-established standard concerning the weight of wheat six hundred years ago, and an average of the wheat of the world now should show us the effect that time and cultivation have had on the size of the fruit. It is not enough for this purpose to take the product of a single state, or of one country ; a broad average should be made of the wheats of the world. This seed, like other plants, is affected by drouth and climatic influences, and yet, an average of the wheat products of the principal wheat yielding lands of civilization might give us a record that may be accepted as indicating either that the grain, so far as size is concerned, is being improved or is retrograding. The English grain weight has probably remained intact since its second standardization,* and if any change has occurred, it is to be looked for in the weight of the seed of the wheat. According to the statute of King Henry III, (already cited) the standard grains are "well dried," and in the determinations made herein, well-dried is taken to have meant, air-dried. We are told by the Century Dictionary that such countries as yield a surplus of wheat are, the United States, Canada, Russia, Hungary, India, Australia, Egypt, Roumania and Turkey. In addition to specimens from most of these countries, I procured also specimens from New Zealand, England and several South American States. These specimens are taken from commercial lots, and are averages of such as are sold in large amounts in the grain market, all of crop 1893 † except Rosario, 1892.

From the list furnished by J. U. Lloyd the two following tables are abstracted:

I—AVERAGE WEIGHT OF WHEAT FROM EACH COUNTRY.

	Grains.
Australia and New Zealand	71.895
England	71.108
India	66.765
South America	56.119
United States and and Canada	51.541
Russia	47.795
Total average	60.870

II—AVERAGE WEIGHT OF THE HEAVIEST SAMPLE FROM EACH COUNTRY.

	Grains.
India	84.190
South America	77.890
Australia and New Zealand	77.878
England	77.378
United States and Canada	74 430
Russia	56.638
Total average	74.734

SUMMARY.

1st—Accepting that the standard grain weight was created from grains taken

*"Fortunately, one unit common to Troy, apothecaries' and avoirdupois weight has been saved,—namely, the *grain*." *Remington's Pharmacy*, p. 35.

† Weighings were made the second week in August, 1894. A loss of 6.77 per cent. resulted in new wheat out of the harvest field after five days' exposure to a temperature of 138° F. in a drying room.

from the middle of a selected head of wheat, it is shown that from bulk lots of wheat that appear in most of the markets of the world, an average of the heaviest samples will yield a grain as heavy as was the grain of the original standard.

2d—The general average of all the samples is below the standard grain weight being 60.870, when it should be 75.000.

3d—With few exceptions, white wheat headed the list as far as weight and size of grain is concerned.

4th—Warm countries seem to yield the largest grain, and also contributed the greatest proportion of white wheat according to these samples. Thus India furnished but one specimen of red wheat out of eight considered, and supplied three specimens to head the list in comparative weight, while Russia furnished but one specimen of white wheat (which, however, came from the Baltic Provinces), out of nine samples, and averaged last in the list.

Table III summarizes all the values obtained herein and classes the wheats according to their origin; moreover, within each division the wheats are arranged according to the size of the grain, which figures are found in the second column.

TABLE III.

COMPLETE SUMMARY.	100 gr'ns of wheat.		Densities.	20 Ccm. com'cial wheat.	
	Weigh.	Occupy space.	Weight of 1 Cc. Wheat subst.	Weigh.	Contain impurities by weight.
	1	2	3	4	5
Australia and New Zealand.	grs	cm	gms	grs	p.ct.
*1, New Zealand, White	77.9	3.75	1.346	233.	0.00
2, " " Red	69.97	3.34	1.358	233.	0.65
*3, Australia	67.8	3.10	1.377	242.	0.47
Average	71.9	3.42	1.360	236.	0.37
England.					
4, England, Red	77.4	3.75	1.337	238.	0.00
*5, " White	64.8	3.12	1.346	237.5	0.15
Average	71.1	3.43	1.341	237.7	0.07
India.					
*6, No. 1, Club, Bombay	84.2	3.94	1.389	232.5	4.76
*7, No. 1, Bombay	79.1	3.78	1.356	225.	5.73
*8, Choice, Bombay	78.1	3.75	1.350	232.	6.29
*9, New Choice, Bombay	72.1	3.39	1.377	241.5	0.67
*10, Kurrachee, Soft, White	56.9	2.73	1.349	222.	2.41
*11, Kurrachee, White	54.7	2.61	1.357	220.5	15.67
*12, No. 2, Calcutta	54.9	2.60	1.368	232.5	8.48
13, Kurrachee, Red	54.2	2.56	1.371	212.5	19.42
Average	66.8	3.17	1.364	227.3	9.18
Russia.					
*14, Baltic	56.6	2.78	1.320	220.5	0.55
15, Azima, Fine	53.4	2.55	1.358	231.	9.16
16, Odessa, Azima	51.98	2.48	1.362	223.5	11.68
17, Black Sea, Ghirka	49.5	2.36	1.360	221.5	2.64
18, Ghirka, Fine	49.3	2.34	1.364	227	0.97
19, Black Sea, Azima	46.1	2.16	1.383	226.5	8.94
20, Odessa, Azima	42.9	2.07	1.343	219.	6.76
21, Ghirka, Fine	42.8	2.06	1.345	223.5	3.56
22, Ghirka	37.5	1.78	1.371	227.5	2.13
Average	47.8	2.28	1.355	224.4	5.15
South America.					
*23, Chili	77.9	3.79	1.332	237.5	0.23
*24, Chili	66.6	3.26	1.323	228.5	1.41
25, Barletta	55.3	2.67	1.342	227.5	2.53
26, Rosario, Argentine, 1893	54.2	2.61	1.346	231.5	1.73
27, Patagonia	53.7	2.52	1.380	232.	2.39
28, Entre Rios	51.4	2.43	1.370	225.	4.01
29, River Plate	46.1	2.20	1.357	23.5	3.21
30, Rosario, Argentine, 1892	43.8	2.13	1.331	219.5	7.97
Average	56.1	2.51	1.347	230.1	2.92
United States and Canada.					
*31, California, Choice	74.4	3.59	1.343	229.5	2.61
*32, California, No. 1	60.3	2.88	1.353	235.5	1.25
*33, California, Blue Stem	54.9	2.66	1.338	221.5	0.93
34, Ohio Poole, Winter	53.6	2.56	1.357	233.5	0.03
35, Baltimore, Red, Winter	51.9	2.43	1.383	230.5	0.46
*36, Ohio, White, Winter	51.4	2.40	1.387	235.5	0.87
37, Chicago Spring	47.8	2.25	1.377	236.	0.30
38, Wisconsin, Spring	47.4	2.23	1.377	227.	0.14
*39, Washington State	45.7	2.23	1.327	224.5	0.49
40, Duluth, Hard, Spring	46.7	2.17	1.394	233.	1.37
41, Manitoba, Hard, Spring	43.9	2.05	1.388	232.5	0.72
42, Duluth, Spring	40.5	1.90	1.380	227.5	2.15
Average	51.5	2.44	1.367	230.5	0.94

RECAPITULATION.

PART FIRST.—THE GRAIN WEIGHT.

Standard modern dictionaries and other authorities inform us that the grain weight was established in England 600 years ago from the weight of carefully selected wheat grains. (Webster, Pasley.)

From these statements an inference might be drawn, as though the average wheat grain should equal a grain in weight. Experiment shows, however, that it is exceptional for a grain of wheat to weigh as much as a grain.

This seeming contradiction is readily explained by the historical fact, viz. :—that by statute of King Henry III, (1266) it was enacted that 32 grains of wheat,

from the middle of the ear, well dried, should weigh a pennyweight; and that in 1497, by statute of King Henry VII, this standard was changed, inasmuch as the same pennyweight was then subdivided into 24 grains. (See Johnson's Cyclopedia).

Thus until 1497, 32 average grains of wheat weighed 32 grains, providing grainweights were then employed, but after the enactment of Henry VII, the 32 grains of wheat weighed but 24 reconstructed grains. Since then the grain standard so far as I can determine, has suffered no further change. 100 average grains of wheat should therefore weigh 75 grains.

In comparing with one another the weights of 42 separate lots, each of 100 grains from specimens of wheat from different countries, (Australia, England, India, Russia, South America, United States and Canada), the general average in the weight of wheats from all the aforenamed countries was found to be far below the given standard, it being only 60.87 grains. However, an average of the heaviest of the specimens, one from each country, came very close to that of the original standard, viz.:—74.734, instead of 75.00 grains.

This would seem to show that cultivation and climatic conditions during a period of 600 years have exercised but little, if any, influence on the weight of selected wheat.

PART SECOND.—ECONOMIC.

A few experimental comparisons between the different wheats were made on the following basis:

1) Determination of impurities.

2) Determination of densities, involving, *a*) Determination of the weight of 100 grains of each wheat specimen, *b*) Determination of the volume of the same 100 grains.

I. According to the amount of impurities in the wheats, the averages from each country are:

	Averages per cent.	Maximum per cent.	
England	0.07	0.15	England, White.
Australia and New Zealand	0.37	0.65	New Zealand, Red.
United States and Can.	0.91	2.61	California Choice.
South America	2.92	7.97	Rosario, 1892.
Russia	5.15	11.68	Odessa, Azima.
India	9.18	19.42	Kurrachee, Red.

II. As regards density and size and weight of the grains in general, it can be demonstrated from Table III, that while the weights of the different lots of 100 grains seemingly run parallel with the space they occupy, the members of these two series do not stand in exact proportion to one another; as a consequence, the densities are variable, which is seen in Column 3, Table III.

White wheats (marked *) are usually large in size and weight, but inclined to be low in density. (Compare Tables I and II.)

III. If we outline a tabulation of our wheats by intersecting, in a general way, gradations in their densities, with gradations in the dimensions (size and weight) of their grains, we arrive at a classification of these 42 samples, which assigns each specimen a place according to its intrinsic value From Table IV (see original article) thus obtained we draw the following general conclusions:

Australian and New Zealand wheats, (3 specimens), and some Bombay samples, combine high weight and large size of grain with high density, and thus rank first in the list.

Then follows England, (2 samples) California, Choice, and last Chili, which has lowest density combined with large size and high weight.

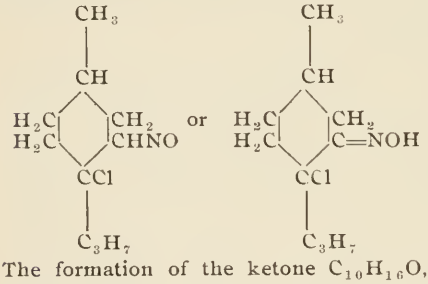
The bulk of the United States and Canada samples belongs to the class with small size, low weight, but high density of the grain. One American specimen

(*Washington State, Walla Walla,) ranks low in Table IV.

Patagonian wheat and Black Sea, Azima, Russia, class with the American samples of high density.

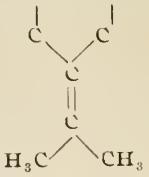
The rest of all the Indian and Russian wheats occupy a medium position in Table IV. Special mention is due perhaps to the Ghirkas (Spring wheats) for their comparative superiority of station within the table; they are also cleaner than the Azimas (Winter wheats). Also Entre Rios, South America, deserves our attention. More detailed conclusions are to be found appended to Table IV. (Abstracted).

Hydrocymenes and Derivatives.—E. Kremers (3d Report of the Amer. Pharm. Asso., on Menthol and substances derived therefrom), from his experiments concludes that the nitrosyl chloride addition product of menthene has the structure



The formation of the ketone $C_{10}H_{16}O$, of menthone $C_{10}H_{18}O$ and of menthol $C_{10}H_{19}OH$ the corresponding secondary alcohol, leave no doubt as to the position of the nitroso (or oximido) group, and consequently as to the position of the chlorine atom. Whether the group NO immediately rearranges itself with the hydrogen into the group = NOH or only in the formation of the nitrosomenthene, is still an open question.

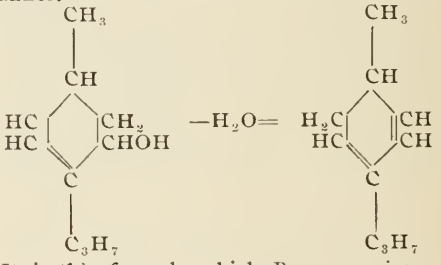
Wallach considers that whenever the group NO is added to a carbon atom connected with a hydrogen atom, a rearrangement into the group = NOH takes place. Thiele has recently obtained a nitroschloride from tetramethylethylene $\begin{matrix} H_3C \\ H_3C \end{matrix}\!\!>\!C=C\!<\!\begin{matrix} CH_3 \\ CH_3 \end{matrix}$. This is blue in color. In this compound there must be present a true nitroso group NO, since no hydrogen atom is present with which it can rearrange itself into the isonitroso group = NOH. Baeyer considers the formation of a blue nitrosochloride from terpinolene as a proof of a double linkage in this compound like this;



Recently Tilden and Forster have shown that a number of so-called nitrosochlorides are oximido derivatives. They call attention to the fact that a blue color appears to be characteristic of true mononitroso-compounds and consider that the blue color produced by the action of nitrosychloride or of nitrous acid upon unsaturated bodies is probably due to the formation of a nitroso compound as a first step in the process.

The assumption of an oximido group in the menthene nitroschloride may therefore not be out of place until its presence has been disproved.

Upon dehydration the alcohol may be expected to yield a terpene (terpadiene) in this manner:



It is this formula which Baeyer assigns to the synthetic terpene (terpadiene) obtained by him from methyl-isopropylchinit. The same hydrocarbon might be expected by splitting off hydrobromic acid from menthene dibromide. A terpene has been obtained in this manner by Berkenheim. Experiments undertaken in this laboratory have yielded a terpene $C_{10}H_{16}$ in the same manner. Its odor reminds one strongly of that of phellandrene, and upon treatment with nitrous acid yielded a very small quantity of a nitrosite, showing at first a melting point of 87°, but after repeated precipitation from a chloroformic solution by means of ether, it melted at 115-116°. Berkenheim describes his compound as having a limonene odor, and was unable to obtain a crystalline addition product.

Whether this hydrocarbon is a mixture of two or more terpenes, future experiments must decide. The yield of nitrosite is so very small that a homogeneous compound can hardly be expected.

If the dehydration of the alcohol $C_{10}H_{18}O$ proves successful, a comparison of the hydrocarbon obtained with that from menthene dibromide will be made. (Abstract.)

THE Alumni Journal

Published under the auspices of the

Alumni Association of the College of Pharmacy

OF THE CITY OF NEW YORK,

115-119 WEST 68th STREET.

Vol. I. November 1, 1894. No. 7.

THE ALUMNI JOURNAL will be published Monthly.

Entered at New York Post Office as second-class matter

SUBSCRIPTION:

Per Annum, . . . One Dollar

Single Copies, . . . 15 Cents.

All copy for publication, or changes of advertisements should reach us on or before the 20th of the month previous to the issue in which they are to appear.

All matters relating to publication should be written on one side of the paper only, and sent to the editor,
HENRY KRAEMER, 115-119 West 68th Street.

All communications relating to finances, subscriptions and advertising, should be addressed to
A. HENNING, Treas., 115-119 West 68th Street

THE ALUMNI ASSOCIATION.

HENRY WARD BEECHER was invited, shortly after the war, to deliver a lecture in the Academy of Music of Richmond. Naturally, because of his well-known influence in England for the preservation of the Union, the people crowded the hall almost beyond its capacity. With that matchless power which he possessed in reading his audience, and the tact that was his alone of inspiring his hearers and carrying them with him, on being introduced he said something like this: "From the numerous engravings which I have seen, I believe I see before me the face of General Robert E. Lee, against whom and whose cause my powers have been used for some years, but before whom and this people to-night I stand as a friend, and as a friend I extend my hand and ask him to accept it." For a moment there was the utmost stillness (the silence can but be imagined) then the great General arose and accepted the hand of the friend amid the applause expressing the gratitude and the friendship of the Southern people. So the Alumni Association each year extends to all of the graduates of the New York College of Pharmacy and the students especially its outstretched hand and says, "I am your friend, will you accept my hand?"

At the beginning of another year the Alumni Association of the College of Pharmacy of the City of New York offers a special course of lectures, which are highly instructive and intended for the purpose of bringing together in closer fellowship the students with the members of the Alumni and the college. Heretofore the students hardly had the time or the occasion to meet the graduates save at commencement time. This lack of social intercourse and consequent growth of the association has been so perceptible to those members that are always pushing ahead, that they decided that this course of lectures would best educate and cultivate a strong membership for the great work that is entrusted to them by their Alma Mater. Each alumnus is the custodian of a privilege and a duty to unite with his fellows in assisting the students and the college in a manner that only an Alumni Association can. The Alumni Association is all that an institution possesses to show the real value of that institution. Graduates of well recognized institutions are uniting with their degrees the name of the institution from which they obtained the same. It is a well known fact in history that these institutions alone are handed down to us whose alumni have been strong and steadfast.

The course of lectures for this year is as interesting as that of last year. It is somewhat different, however, in that shop talk will not only be given. For instance, the first lecture is to be given by Robert Collyer, a man well known as a preacher, lecturer, philanthropist and patriot. A man who, long before many of us who shall hear him were born, was enjoying his prime and meriting a national—yes, an international reputation. The subject of the first lecture is "*From the anvil to the pulpit*," and will doubtless embody all those questions that arise to the conscientious young man who is so anxious to make his vocation sure; therefore we refrain from saying so much of the man whose life and whose work is resplendent with noble endeavors and fruitful results. The Alumni Association is to be heartily congratulated for securing the services of the man who was the friend of so many of the men who are fast leaving us—like Oliver Wendell Holmes, Whittier, George William Curtis, James Russel Lowell, Alfred Tennyson, and the hosts who have been true to principles when it cost to say which side they were on. It does seem to us a rare privilege to hear the man who is the very personification of Henry Ward Beecher, and who represents the class of men who are going to the higher life and leave us but their works to enkindle the flame of promise and enthusiasm, that shall lead us on to the high road of honor, truth and principle.

Within a short time it has dawned upon us the great purpose and power of the Alumni Association of the College of Pharmacy of the City of New York. A moment's reflection will show the deep insight of the Alumni in securing this great teacher for one lecture this winter. The Association evidently realizes to the fullest the remarks of Prof. Power (quoted by Prof. Kremers, ALUMNI JOUR., 1894, 102) that: "The greatest need of pharmacy to-day, as of other professions, is *men*, and by this I mean not only intelligent and educated men, of whom we have a good proportion; but those who have sound and just convictions, which they are *fearless to express*, and are willing to openly confront the evils which tend to nullify the best educational efforts, or even undermine the very foundations upon which all hope for progress may rest." Unquestionably the greatest need to-day is of men of character and convictions who are not afraid to express what they know to be wrong or right. In the State and City of New York at this time this lack is the cause of imminent peril to the commonwealth. The great danger that confronts us is liberality. We are not decisive enough and on the plea of expediency or fear, excuse much that we ought in duty to denounce. It is highly probable that in no other profession or business is it so necessary at this time that *a man shall be a man* in the fullest sense of the word, as in pharmacy. We are threatened by unscrupulous men who are "like wolves in sheep's clothing" and whose only end is one of personal aggrandizement and under whom many of us suffer. The evil does not lie in that we do not know our duty. For we do know on "which side our bread is buttered" and "rather than eat no bread at all we will be content with but half a loaf." And in taking this position we do so in the most servile and contemptible manner, that would make those who came in the Mayflower blush at our weakness and cowardice.

It is not our purpose at this time to call the attention of our readers to their duty—but to express what we believe to be the motive power back of the Association in the course of lectures that are to be given under its auspices this season. We believe the keynote to be in helping to make men of the students and

graduates. We have, as Prof. Power claims, a fair amount of educated and intelligent pharmacists, but we have not enough men—men of character that are strong like the Pilgrims, and Washington, Franklin, Holmes, and others. We need to come more and more in touch with such men, and therefore the Alumni Association in the beginning of this course has secured one of the few living representatives of these men who knew what it was to have a purpose and "through thick and thin" to stand by that purpose regardless whether it pays or not, and who in the strength of this conviction and in the light of truth have gone on to the perfect day. We cannot lay too great stress upon the development of character in the student and the necessity of the formation of a man in connection with his work. The greatest privilege to the student is to be permitted to enter into the private laboratory of his teacher, who is a man. We are losing sight of this side of our educational work and do not realize that the formation of one *man* out of a class of a 100 or more graduating students may be sufficient to assist us in remedying the evils that confront us. For as Longfellow says:

"Be noble and the nobleness that lies in other men,
Sleeping but never dead, will rise in majesty to meet thin own."

We believe with the Alumni Association in the cultivation of character and we believe only in the definition of genius as expressed by Emerson* "the power of taking infinite pains." The energy that can be so concentrated upon one's vocation that he can see the wrong and eliminate it; cultivate the good and inspire the hearts of all men. "Energy of will may be defined to the very central power of character in a man—in a word it is the *Man* himself. It gives impulse to his every action and soul to every effort. True hope is based on it—and it is hope that gives the real perfume to life. There is a fine heraldic motto on a broken helmet in Battle Abbey, "L'espoir est ma force," which might be the motto of every man's life. "Woe unto him that is faint-hearted," says the son of Sirach. There is, indeed, no blessing equal to the possession of a stout heart. Even if a man fails in his efforts, it will be a satisfaction to him to enjoy the consciousness of having done his best. In humble life nothing can be more cheering and beautiful than to see a man combating suffering by patience, triumphing in his integrity, and who when his feet are bleeding and his limbs failing him, still rallies up his courage."

On another page is given the list of lectures for this season. Later we shall again speak of this course and the lecturers. At this time it seemed desirable to bring the attention of the readers to this work of the Association in founding this Lecture Course and appeal to the heart and the reason of all to assist in every manner the work of the Alumni Association of the College of Pharmacy. It is certainly a work which is well fitted to carry out and we do hope that all can secure seats to listen to the first lecture by Rev. Robert Collyer.

*Quotation from memory.

NEW LITERATURE.*

Botany.

Anleitung zur botanischen Beobachtungen und pflanzenphysiologischen Experimenten. — F. Schleichert, 26 Aufl. Langensatza; H. Beyer u. Söhne.

A work for the aid of the teacher in school instruction. It treats especially of biology and plant physiology and contains 54 illustrations taken principally from Dettmer's "*Pflanzen-physiologischen Prakticum.*"

Atlas der officinellen Pflanzen. — Berg u. Schmidt. 2te verbesserte Auflage. Lief. 12 u. 13 Leipzig: A. Felix.

* Readers desiring any of the works contained in this list can obtain them through B. Westerman & Co., 812 Broadway, Gustav E. Stechert, 810 Broadway, or other foreign booksellers.

Atlas der Diatomaceenkunde.—A. Schmidt In Verbindung mit Gründler, Grunow, Janisch u. Witt herausgegeben. 48 u. 49 Heft. Leipzig: O. R. Reisland.

Lehrbuch der Botanik. — K. Giesenhagen München: E. Wolff.

Chemistry.

Die wissenschaftlichen Grundlagen der Analytischen Chemie elementar dargestellt.—W. Ostwald. Leipzig: W. Engelmann. Small 8 vo., pp. 187.

This work in the scientific foundations of analytical chemistry consists of two parts: Theory and Applications. The author considers the theory of solutions, chemical equilibria, the course of chemical procedures, reactions with the liberation or absorption of gases and the influence of the conditions of the ions. Also the measurement of substances quantitatively. The author also gives the general principles for the analysis of compounds belonging to the groups of the system of Mendeleeff and to the non-metals.

Einfache Versüche für den Unterricht der Chemie.—B. Tollens. Zweite, durchgesehene Auflage Berlin S. W.: Paul Parey.

Einführung in das Studium der qualitativen chemischen Analyse. 8. Auflage. C. Friedman. Berlin: Carl Zabel.

The Discovery of Oxygen.—J. Priestley. Part I. (Alembic Club reprints, No. 7.) Edinburgh, W. F. Clay.

——— C. W. Scheele. (Alembic Club reprints, No. 8.)

Reactionen und Reagentien. — C. Schueller. 1. Bd. Eichstätt: A. Stillkrauth.

A handbook for physicians, analysts, apothecaries and chemists. The author has arranged the work in the nature of a lexicon, giving the names of the original authors and comprises a general review of the application and use of the important reagents, etc.

Handbuch der Stereochemie.—C. A. Bischoff. Frankfurt a. M.: M. H. Bechhold.

Organic Chemistry.—F. S. Kippling and W H. Perking. Part I. Phila.: J. B. Lippincott Co.

Descriptive Catalogue of Essential Oils and Organic Chemical Preparations.—F. B. Power. New York: Fritzsche Brothers

Encyklopädie der Naturwissenschaften. — 2. Abth. 85 Lief. Handwörterbuch der Chemie. 65. Lief. Breslau: Ed. Trewendt.

Repetitorium der organischen Chemie.—A. Pinner. 10. Aufl Berlin, S. W.: Robert Oppenheim (G. Schmidt).

Select Methods in Chemical Analysis (Chiefly Inorganic).—W. Crookes. 3d Ed. Re-written and enlarged. New York: Longsmans, Green & Co.

Logarithmische Rechnentafeln für Chemiker. —F. W. Küster. Leipzig: Veit & Co.

This work is intended for use in laboratory instruction with elucidations.

Qualitative Analysis.—L. Medicus. Translated by J. Marshall. Philadelphia; J. B. Lippincott.

For use in instruction in chemical laboratories.

Electro - Chemical Analysis.—E. F. Smith. 2d Ed. Philadelphia: P. Blakiston, Son & Co.

The author brings this valuable work up to date, including references to the work of the Munich Polytechnic School, Elbs and Oettel and his own work and that of his pupils.

The Decomposition of the Fixed Alkalies and Alkaline Earths. — By Humphrey Davy, 1807-1808. (Alembic Club Reprint, No. 6.) Edinburgh: W. F. Clay.

A New System of Chemical Notation and Nomenclature.—T. K Gajjar. Bombay: The Education Society's Steam Press.

The author proposes an international notation based on the Periodic Law of Newlands and Mendeleeff and applies to those symbols in the Devangari dialect, with their equivalents in English; the numerals are also designated by a system of vowel sounds.

Traité de Chimie légale. Analyse toxicologique. Recherches spéciales.—E. Barillot. Paris: G. Masson.

Simple Experiments for Science Teaching.— J. A. Bower. New York: E. & Y. B. Young & Co.

This includes 200 experiments fully illustrating the elementary physics and chemistry division in the evening school continuation code.

Geschichte der Chemie von den ältesten Zeiten bis in die Gegenwart.—E. von Meyer. Zugleich Einführung in das Studium der Chemie. 2 te verbesserte u. vermehrte Auflage. Leipzig: Veit & Co.

Hygiene.

Lehrbuch der Hygiene.—M Rubner. 5 Aufl. Wien: F. Deuticke.

A comprehensive and systematic review of Hygiene and the important methods of investigation.

Handbuch der praktischen Gewerbehygiene (Industrial Hygiene).—Unter Mitwirkung von E. Claussan, G. Evert, K. Hartmann, W. Opperman, Th. Oppler, R. Platz, C. Specht, A. Villaret, herausgegeben von H. Albrecht. 2. Lief. Berlin: R. Oppenheim.

Perfumery.

Die Fabrikation der Parfümeriewaaren.—M. Hauer. Weimer: B. F. Voigt.

Pharmacy.

Coblentz's Handbook of Pharmacy.—We understand that the first edition is nearly exhausted in less than the first month. This is the strongest attestation of the value of the book.

Photography.

Beginner's Guide to Photography.—Showing how to buy a camera and how to use it. 5th Ed., revised and enlarged. London: Perken, Son & Rayment.

Photographische Chemie.—R. E. Liesegang, Düsseldorf: Ed. Liesegang.

A book for beginners.

Physics.

Practical Work in General Physics, for use in Schools and Colleges.—W. G. Woollcombe. Oxford: The Clarendon Press.

This work contains directions for about 50 Experiments in general physics.

Theoretische Physik.—W. Voigt. Erster Band. Mechanik starrer und nichtstarrer Körper; Warmelehre. Leipzig: Veit u. Co.

Lehrbuch der Experimental Physik.—Adolph Wüllner. Erster Band. Allgemeine Physik und Akustik. Leipzig: B G. Trübner.

Theorie der Gase. — O. E. Meyer. 1. Abth. 2. Anfl. Breslau: Maruschke u. Berendt.

Fortschritte der Physik im Jahre 1888.—Dar gestellt von der physikal Gesellschaft zu Berlin. 44. Jahrg. 2. Abth. Braunschweig: F. Vieweg u. Sohn.

Therapeutics.

Die Oele (Oleosa) als Arznei- und Volksheilmittel. — Therapeutisch-pharmaceut. Mittheilungen.—A. A Michaelis. Leipzig-Reudnitz: R. Michaelis.

Materia Medica, Pharmacy, Pharmacology and Therapeutics. by W. Hale White, M. D., F. R. C. P. Edited by Reynold W. Wilcox, M. A., M. D., LL.D. Second American edition, thoroughly revised. Pp 661. P. Blakiston Son & Company, Philadelphia.

We have now for the first time a genuine text-book of materia medica, written with an express view to the requirements of pharmacy students. It is true that we have had many text-books of materia medica, so called, but they are all either works on therapeutics, adapted solely or especially for medical students, or works treating almost wholly of pharmacognosy. The best of the latter, that of the late Prof. Maisch, is marred rather than improved by the therapeutics which it contains. Pharmacy students require, or are restricted to but a small amount of therapeutics, but that little should be rather the better because of its small amount. The attempt to combine what may be called the rational part of materia medica with pharmacognosy in the same text-book, or in the same teaching course, is rendered very difficult by the nature of the case. The attempt to adapt a single book treating of the former portion of our subject to the needs of both medical and pharmaceutical students is scarcely less difficult, but Dr. Wilcox has attained a result in this direction quite remarkable in view of the small size of his book.

As this work has now been adopted as one of the required text-books of our college, it seems desirable to present in THE ALUMNI JOURNAL an analysis of it, pointing out at the same time its field of usefulness to the student.

The essentials of knowledge by pharmacy students of the subject of materia medica, exclusive of pharmacognosy, may be considered as follows:

1. A definite and full knowledge of Latin and English titles and of all synonyms in actual use.

2. The official definition, as fixing the origin and identity of the article, and also in many special cases information on this subject additional to that contained in the definition.

3. The geographical source or sources of supply, with frequently special information relating thereto. Not essential, but of considerable importance in this connection, is a general knowledge of the nature of the plant and of the mode of collection and preparation of the drug.

4. The constituents which are important in their relation to (a) the medicinal properties and (b) requisite processes of manufacture and dispensing.

5. The general therapeutics, and in some cases special knowledge in this direction, in which we may include general toxicology.

6. The employment of the article in medicine, which unfortunately has often too little to do with its real medicinal properties, and has, therefore, to be considered separately therefrom.

7. A thorough knowledge of posology.

Dr. Wilcox's book appears to meet the most of these requirements in a very satisfactory manner.

From the first three pages the student will learn the limitations of the different departments of pharmacology and of the nature of the Pharmacopœia. The four following pages are devoted to defining the various classes of plant constituents to which the pharmacist must pay attention. The principal pharmaceutical processes are next defined, tables of weights and measures given, and fifteen pages devoted to defining classes of pharmaceutical processes, these being arranged in alphabetical order. To each definition is appended a list of the official preparations of that class, if any. Most of the instruction here noted is of especial use for medical students, whose college course is lacking in that direction, but it is entirely discounted by the ample instruction of this kind which is given to our pharmacy students in their college course. Yet even they will frequently consult this portion of the book with great profit,—and doubtless with especial satisfaction to themselves as the date for the examination draws near. The principles of posology and prescription writing and reading, with ample illustrations, follow, and then comes, in sixty-seven pages the author's physiological classification of medicines, his twelve divisions being subdivided, under capital letters, into groups, and all the articles belonging to each group enumerated after its description. The remainder of the work is devoted to the individual study of the drugs in order of their grouping. The same principles of treatment are applied to both the inorganic and the organic divisions. We are here more particularly concerned with the latter.

The names are limited to the official title and commonly, if not in all cases, a single synonym. This exceedingly important subject is not fully enough treated for the wants of the pharmacist. The English official title should in all cases be carefully distinguished from other synonyms and it is very desirable from a pharmaceutical standpoint that the latter be more completely given.

The close condensation of the official definition, taken verbatim, and of the habitat is admirable. The official description which follows is perhaps useful for physicians, and is certainly for those pharmacy students who do not receive a complete course of instruction with the drugs actually in hand. But for our own students, who are so thoroughly instructed in this department, these descriptions are quite superfluous.

Composition, dose, principal impurities or sophistications, preparations, actions and uses then follow and, while treated with ample fullness for the purposes of a handbook, are condensed to a degree which would scarcely be thought possible without detracting from the requirements of necessary information.

Two features of this part of the work are especially valuable. Preparations into which articles or their preparations enter, though not mentioned in the list of preparations named in the pharmacopœia are carefully introduced. Secondly, the entire work abounds in italicized notes calling attention to errors or misunderstandings which experience has shown to be likely to arise in the work of either the pharmacist or the physician, and constitute a very important collection of danger signals.

It will thus be seen that the second edition is made even more characteristically a multum in parvo than its predecessor, and that properly used it must prove an invaluable aid to students of pharmacy. H. H. R.

THE MOST RECENT WORK.

Pharmaceutical Fellowships.—With the progress of our own institution and especially since we have (in a previous issue) called the attention of the readers of THE ALUMNI JOURNAL to the valuable paper by Prof. E. Kremers and the presidential address of Edgar L. Patch bearing on this subject, it is with pleasure and peculiar gratification that we announce that the School of Pharmacy of the University, of Wisconsin, has endowed a *Pharmaceutical Fellowship* for three years.

American Peppermint Oil.—F. B. Power and C. Kleber (*Pharm. Rund*, *July 1, 1894*,) have examined the constituents of peppermint oil. It contains acetic, (0.044 per cent.) aldehyde and isovaleric aldehyde (0.048 per cent.) and also small amounts of free iso-valerianic and acetic acids. The portion distilling between 100° and 155° was suspected to contain amyl-alcohol. Between 155° and 170° gave a part which yielded crystals of pinene piperidyl-nitrolamine. This pinene appears to be chiefly either per se inactive, or a nearly compensating mixture of the dextrogyrate and laveogyrate forms. The authors positively conclude that American Peppermint Oil *does not contain menthene.* From the portion boiling at about 170° C nitrite of phellandrene was obtained. The portion distilling at 174–177° C. contained cineol. The portion between 175° and 177° C. yielded dipentene tetrabromide; limenene tetabromide was readily obtained from the respective fraction. It appears somewhat

doubtful whether dipentene is contained in the original oil, for it may possibly have been formed from the other terpenes or from cineol as a secondary product.

The fraction between 177° and 205° C yielded menthone and menthol. The portion between 209° and 220° C consisted chiefly of menthol. After distilling up to 220° C. the portion remaining in the flask by subsequent treatment yielded a resin and an oil which by distillation was resolved into menthol and a thick oil (270° and 280° C.) possessing an odor resembling cedar wood. It was thus evident that esters of menthol were contained in the original oil. The oil of cedarwood-like odor yielded cadinene and it is due to the latter compound that the peculiar color reactions of peppermint oil are due. A substance was also obtained—possessing an odor of borneol camphor and because of reactives with sodium in potassium hydrate is characterized as a lactone. Solutions of oxy-acid or of the lactone do not decolorize bromine, nor do its solutions in alkali decolorize a cold solution of $K_2Mn_2O_8$. At the temperature of the water-bath, however, permanganate gradually becomes decolorized. By treatment with the latter a product was obtained in needles (M. P. 90° C) of composition $C_{10}H_{18}O_3$ consisting chiefly of the unattached oxy-acid. The authors are continuing their investigations but express the supposition that the acid in question is formed from menthol by the oxidation of a methyl group to carboxyl. Besides acetic and iso-valeric esters an acid of the formula $C_{10}H_{16}O_2$ was obtained in the form of a yellowish oil.

Rhubarb.—B. S. Proctor gives a table of results of the action of different solvents upon the root. The general conclusion is that the removal of the dark colored outer portion ought not to be countenanced since that portion is richer than the interior in the alcohol soluble extractive matters of which the medicinal value of the root depends. The color of the powder which may indicate absence of decayed roots may also indicate low percentage of active constituents and a high percentage of calcium oxalate. The odorous principles of the root may be extracted with chloroform without impairing the medicinal value of the drug, but the powder so deodorized will acquire smell again. If the chrysophanic acid is thoroughly extracted by benzol, a further development of the acid may be effected by the actions of the air, water and KOH. A proof spirit tincture should contain all that is active. An improvement in the B. P. syrup consists in employing proof spirit or spirit 20 to 30 overproof and adding this tincture to syrup.—*Pharm. Jour. Trans., 1894. 233.*

Subgallate of Bismuth (*Dermatol*).—According to A. Hartz (*Phar. Rundschau*, 1894, 12-182) 306 Gm. of bismuth subnitrate are dissolved in a mixture of 328 Gm. of nitric acid (Sp. Gr. 1.35) and 200 Gm. of water; the fluid is then filtered through glass wool and evaporated to 600 Gm. After five or six hours a crystalline mass results, from this the mother-liquor is drained off. The crystals are then dissolved in 980 Gm. of glacial acetic acid and mixed with 8 liters of water. To this is added, with constant stirring, a hot solution of 183 Gm. of gallic acid in 8 liters of water. After settling the precipitate is washed five or six times by decantation with hot water; it is then drained off and dried on porous plates or tiles at a temperature not over 80° C. V. C.

Phosphoric Acid Determination.—Hugo Neubauer has found that the precipitate of ammonium magnesium phosphate only possesses the correct composition ($MgNH_4PO_4$) when an excess of magnesia has been employed with not more ammonia present than is absolutely necessary for separation. For the exact determination of phosphoric acid the following directions are given: The acid is precipitated by means of molybdate solution, the well-washed precipitate being dissolved in 100 Cc. of 2 5 per cent. of ammonia water, then add, dropping in slowly as many cubic centimetres of magnesia mixture* as there are centigrammes of P_2O_5. After standing three hours the precipitate is collected and washed with 2.5 per cent. ammonia water, then ignited bringing it slowly to the temperature of the blast lamp flame, then weighing. V. C.

Chemistry of Ipecac.—Former investigations by Paul and Cownley have demonstrated that ipecac root contains at least two alkaloids. Later they have found that one of these bases is soluble in caustic alkalies and is obtainable in crystalline condition from etherial solution, while the other is only obtained in amorphous condition. The salts of these bases are distinguished from one another in that those of the former do not crystallize and that only the halogen salts and nitrate of the latter yield crystalline compounds. These investigators have retained the name *emetin* for the base insoluble in caustic alkalies, naming the other base *cephaëlin*. Both of these principles are present in the Brazilian as well as the Carthagena ipecac. The alkaloids are separated by exhausting the drug with alcohol, treating with subacetate of lead and acidifying the solution freed from lead. The alkaloids are separated by means of alkali and ether. These principles are characterized by the following: Emetin is amorphous; melting point 68°C.; forms crys-

* The magnesia mixture consists of 55 Gm. of cryst. magnesium chloride, 70 Gm. of ammonium chloride and 1000 Gm. of ammonia water of 2.5 per cent.

talline salts with the halogens, and nitric acid, the acetate, sulphate and oxalate do not crystallize; the platinochloride is amorphous, insoluble in water and alcohol; its empirical formula being $C_{15}H_{22}NO_2$. Cephaëlin crystallizes from ether in silky needles; melting point being 96 98°C.; its salts are not crystalline; its empirical formula is $C_{14}H_{20}NO_2$. Commercial *emetin* consists of a mixture of both bases. Physiological experiments have shown that both possess like emetic properties. V. C.

Bottles for Containing Poisonous Substances.—An improvement consists of a metallic band fastened round the neck of a bottle, this supports a vertical rod or wire terminating in a ring or loop, so that a bottle containing poisons are provided with this attachment may be distinguished from other bottles. The wire ring attached to its vertical support and standing over the mouth of the bottle, may also serve as funnel holder.—*A. Reed in Jour. Soc. Chem. Ind., 1894, 788.*

Tincture Ergotæ Ammoniata.—J. T. Hornblower thinks that this preparation remains clear on adding water to it because the oil (fixed) of the ergot and the soap formed from it by the ammonia, respectively removes part and prevents the remainder of the essential oils from being thrown down from solution; this, however, can only apply when the whole of the tincture has been in contact with the ergot as in percolation—for if made by maceration, and any deficiency in quantity of finished tincture made up by adding Spirits Ammon. Arom., a cloudiness would be produced, dependent on the amount added.—*Pharm. Jour. Trans., 1894, 242.*

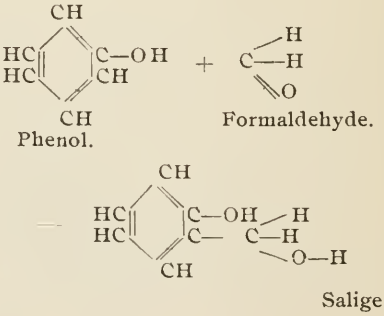
$KClO_3$ Manufacture.—An improvement in manufacture (F. Hunter) consists in electrolysing the solution of potassium chloride in a metallic vessel which forms the outside. This is coated inside with a mixture of Portland cement, salt, sand and water which forms a porous diaphragm. The anode consists of a sheet or sheets of platinum.—*Jour. Soc. Chem. Ind., 1894, 810.*

Human Milk and Cow's Milk.—One of the best distinctions is in the nature of the casein. Casein from cow's milk contains 6.6 per cent. of calcium phosphate, whilst that from human milk contains 3.2 per cent. The mean ash content of casein from cow's milk is 7.2 per cent. It appears that the whole of the phosphorus in the casein molecule is present in the form of a phosphoric acid, and two series of researches gave respectively 1.18 per cent. and 1.50 per cent. of P_2O_5 in the casein molecule. It further appears that casein is a double compound of calcium casein and calcium phosphate—the properties represented by the formula $Ca_3[PO_4]_2$, Ca casein. There seems to be no doubt but that cow's milk casein and human milk casein are two distinct substances. [1] They differ in amount of calcium phosphate, and, [2], in sulphur contents, the casein of human milk containing 1.09 per cent. of this element.

The coagulation of cow's milk and woman's milk by acids is characteristically different. In cow's milk the precipitated casein collects in flocks and sinks to the bottom, that in human milk does not settle. The difference is traced to the fact that the proportion of fat to casein in the precipitate from cow's milk is so much lower than that from human milk. In order to make an artificial human milk which shall resemble the natural secretive as closely as possible, cow's milk should be diluted with water until its casein contents is identical with that of human milk, and cream, milk-sugar, and white of egg should be added until the mixture contains the properties of fat, sugar and albumen in human milk.—J. Lehman and W. Hempel in *Archiv f. Physiol*, 1894, 558.

Saligenin.—Through the action of acids and ferments (emulsin saliva, etc.) Salicin is split up into saligenin and glucose. This same reaction takes place in the human organism, when salicin is taken internally; yielding, however, only 43 per cent. of saligenin. A dose of 12 Gm. of salicin corresponds to about 5.2 Gm. saligenin. It has been proposed therefore to administer saligenin instead of salicin in the treatment of malaria, rheumatism, typhus fever, etc, being particularly adapted for dyspeptics.

Von Heyden of Radebeul have succeeded in preparing this synthetically through the condensation of phenol with formaldelyde, as the following equation will illustrate:



Such compounds, as the cresols, thymol, guaiacol, eugenol, etc., yield analogous condensation products with formaldehyde.

Saligenin crystallizes in colorless scales or needles (M. P. 86°); soluble in alcohol and water. Very feeble bitter taste. V. C.

Scopolamin.—Raehlmann recommends this as being free from the unpleasant after effects experienced in the use of Atropin. The hydrobromate in solution of the strength of 1 to 1000 being employed by opthalmogists. It is claimed that this alkaloid is in every respect superior to atropin. Pharm. Centralh. 1894, 34. V. C.

Tussol.—Antipyrin amygdalate. This salt is claimed to be superior to Antipyrin. Dose for children: 1 year 0.05–0.1 Gm., 1 to 2 years 0.1 Gm., over 4 years 0.5 Gm. V. C.

Brasilin and Haematoxylin. — These two bodies by methylation produce methyl derivatives. Other derivatives [as alkyl] are also produced, which are only noticed in substances standing in close relationship to xanthone. Baeyer has also shown that fluoresceïn and eosin, with respect to a hydroxyl group, behave exactly like the substances of the xanthone group, and R. Meyer has pointed out that fluoran, the root-substance of fluoresceïn, is a body of perfectly analogous constitution to xanthone. Therefore, in brasilin and haematoxylin we have compounds similarly constituted, in all probability to xanthone or fluoran.—J. Herzig in *Monatsh. f. Chem.*, 1894, 139.

Synthesis of Gentisin.—Kostanecki and Tambor have succeeded in synthesizing a sufficient quantity for identification. *Gentisin* ($C_{14}H_{10}O_5$), the coloring matter of gentian root, loses methyl on boiling with hydriodic acid, forming *gentisein* $C_{13}H_8O_5$, in which three hydroxyl groups are found to be present by acetylation; the parent body, gentisin, only containing two. On methylation *gentisin* gives a monomethyl ether, the same substance being formed by analogously treating *gentisein*, two methyl groups being introduced during the process. In either case the third hydroxyl group can be substituted by acetylation or benzoylation, yielding the same product, whether *gentisin* or *gentisein* be the starting point. On fusion with KOH *gentisein* forms phoroglucol and hydroquinone carbonic acid, whence the constitution of *gentisein* must be that of the trihydroxyxanthone. The reproduction of *gentisein* from these two decomposition products is somewhat difficult, but by carefully working with small quantities at a time, using acetic anhydride, the authors have succeeded in producing a small quantity, and by careful methylation of *gentisein*, have converted it into a monomethyl ether, identical in all respects with gentisin.—*Ibid.*, xv., 1.

Testing Oil of Lemon. — A. A. Barrett finds that the polariscope and refractometer both fail to give results by which one is able to detect adulteration. Turpentine may be so employed with the oil that by a simple proportion a mixture can be made that is indistinguishable, either by means of the polariscope or refractometer. The tests for mineral oil, with alcohol, by evaporation on a piece of paper, are delicate and reliable. The direction in which progress is to be looked for now is chemical rather than physical examination. What is wanted is to select some one constituent which is present in constant proportion, and determine the amount of this.—*Pharm. Jour. Trans.*, 1894, 255.

Nitro-Cellulose Filter Paper.—E. Cramer recommends the use of filter paper, consisting wholly or partially of nitro-cellulose in operations requiring incineration. Such papers offer the additional advantage of filtering very rapidly, and of not being as hygroscopic as ordinary filter-papers.—*Zeitschr. f. Angew Chem.*, 1894, 269.

Iodine Liniment.—J. J. Annery makes a solution of iodine in oleic acid. It is claimed that it will not stain, and is readily absorbed by the skin.—*Jour Soc. Chem., Ind.*, 1894, 836.

Resins and Ethereal Oils.—A. Tschirch has inquired into the formation of these constituents in plants, and examined the following products: Sumatra and Siam benzoin [Styrax benzoin], Peru balsam [Myroxylon pereirœ], Tolu balsam, Styrax [Liquidambar orientalis] and Galbanum [Ferula galbanifera, F. rubicaulis, etc.]. When hydrolysed, they yield, on the one hand, aromatic [chiefly benzoic and cinnamic] acids or alcohols, and a group of "resin alcohols" or "resinols," on the other. Benzoresinotannol [$C_{16}H_{20}O_2$]; resinotannol [$C_{18}H_{20}O_4$]; siamresinotannol [$C_{12}H_{14}O_3$]; peruresinotannol [$C_{18}H_{20}O_5$]; storesinol [$C_{12}H_{19}O$]; and galbaresinotannol [$C_6H_{10}O$] were obtained. The termination "tannol" signifies that the alcohols give the tannin reaction. Resin alcohols yield with aromatic acids, or with other alcohols, ethers which seem to be identical with the natural ethereal salts of resins Resins frequently contain free acids and alcohols, as well as ethers. The fact that the highly carbonaceous resins and oils are formed at the earliest period of the life of the plant, when all

disposable matter is utilized in the building up of new tissues, would seem to indicate that these compounds play an important biological rôle.—*Bot. Centralbl.*, 1894, 18.

Constitution of Benzene.—J. W. Brühl discusses at length the present views on the constitution of benzene and concludes that Kekulé's formula, in which three double bonds are supposed to exist in the benzene ring is in closer agreement with the fact than Claus's diagonal formula, which is supported by v. Baeyer. The author considers that the thermochemical data for benzene derivatives obtained by Stohmann and supposed to be evidence strongly supporting the views of v. Baeyer are in complete accordance with Kekulé's benzene formula. Stohmann's and v. Baeyer's works are discussed at length.—*Jour. f. prakt. Chem., 1894, 201.*

Crystalline Constituents of Coto Bark.—O. Hesse, on re-examining his old specimens of cotoin and cotoin acetate, confirms the formulæ $C_{14}\ H_{12}\ O_4$ and $C_{14}\ H_{10}\ O_4\ (C_2\ H_3\ O_2)_2$ of Ciamician and Silbes (see ALUMNI JOURNAL, Sept., 1894), He has also confirmed the molecular weight by Raoult's freezing point method. Hesse believes that the methoxyhydroxyphenylcoumarin acetate obtained by Ciamician and Silber when acetylising cotoin was due to impurity of their material as he obtained no such compound. Cotoin appears to be dimosphous, crystallizing in prisms and plates, both of which yield the same acetate.—*Ber. d. Chem. Ges.*, 1894, 1182.

Spirit of Nitrous Ether.—C. M. Ford suggests the following improvement upon the U. S. P. method:

Sodium nitrite	136 grams
Sulphuric acid, U. S. P	104 grams
Alcohol sp.gr. .816	100 grams
Water	1,000 grams

The sodium nitrite was dissolved in 600 grams (or C.c.) of the water; this solution mixed with the alcohol; the mixture cooled to 10° C. and poured into a half-gallon retort, the retort placed in a bath of the same temperature, the sulphuric acid mixed with the remainder of the water (400 C.c.) the mixture cooled to 10° C. and cautiously and gradually added to the mixture in the retort. Distillation begins at once and continues sufficiently active throughout. By the time the operation has closed the temperature of the mixture in the retort will have risen to 26° C.

Heat may now be applied to the retort without any apparent effect and probably without doing any harm. Before disconnecting the apparatus 100 C.c. of a 5 per cent. solution of carbonate of sodium were poured into the tubulated receiver through a thistle tube extending beneath the surface of the ether. There was no apparent change in the volume of the ether, showing the absence of alcohol, and very slight effervescence due probably to air or ether bubbles, showing absence of acidity. After the receiver became perfectly cooled again its contents were poured into a tarred separator, the aqueous liquid at once withdrawn and the separator weighed. Net weight of the ether was 110 grams, which was 74 8 per cent. of the theoretical yield. Two subsequent trials of the process were made, neither of which were satisfactory or as profitable as the one just described.

It was not convenient to make an assay of the product at this time. It was mixed with an equal quantity of alcohol and put away in a cool cellar. Some weeks afterward, when it was diluted to the proper strength for the U. S. P. spirit, an assay was made by the official method and the finished product was found to be $\frac{40}{55}$ of the full strength. This deficiency may have been due to some water weighed as ether and to evaporation during the interval, or it may have been due to decomposition.

The numerous washings directed by the Pharmacopœia are needless and wasteful. The first washing is especially wasteful for the reason that working with the official quantities there should not be less than 700 C.c. of distillate, and to wash this with one-seventh of its volume of water would in the event of the distillate containing very much alcohol render the aqueous liquid so alcoholic os to cause a large loss of ether. If it coutain a very small proportion of alcohol, as is most probable, it can be most effectively washed with about an equal quantity of water containing the alkaline carbonate. The use of carbonate of potassium is also superfluous. The quantity of water which nitrous ether will carry is constant and can be allowed for in making up the official spirit. Otherwise the presence of so small a quantity of water is unimportant. The Allen method of assay introduced into the Pharmacopœia for ease of execution and unvarying accuracy leaves nothing to be desired. Each succeeding edition of the U. S. P. informs us that sweet spirits of nitre should not effervesce when a crystal of bicarbonate of potassium is dropped into it. That is as true as Gospel, but if it is a test for acidity, as is commonly supposed, it is ridiculous. If the spirit were as acid as vinegar, it would fail to respond to such a test. It

requires the presence of water to decompose the bicarbonate. In the recent edition of the U. S. Dispensatory is to be found, note on page 1270, a synopsis of a process given by Dunstan and Dymond for making nitrite of ethyl in the cold. The operation is a pleasant one, because the results are singularly true to theoretical calculation. The process is identical with that of the U. S. P., except that the ether is produced at a temperature of 0° C. or lower, and no distilling apparatus required. The facility with which nitrate of ethyl will form at this temperature readily explains many of the faults of the official process, and, in the hands of some ingenious pharmacist, suitable apparatus could be invented and an easy-working process elaborated. (Amer. Pharm. Assoc. Meeting, Sept., 1894.)

Bragantia wallichü, R. Br.—A shrub (N. O. Aristolochiaceœ) of India and Malaya. The roots are light brown in color, knotted and twisted, about one inch in diameter at the thickest part, and tapering. The cortical portion is soft and corky. The substance of the root is tough in consistence. The odor of the bruised root is terebinthinate and the taste nauseously bitter. A transverse section of the root shows a rather remarkable appearance. There are no very evident concentric zones in the wood, but it is broken up in a radiating manner into thin wedge-shaped masses extending in some instances from the cambium to the centre of the root. There is no proper pith and the parenchymatous system is distributed in alternating layers with the wedge-like bundles of wood like exaggerated medullary rays. Wood cells are long and yellowish brown. Parenchyma contains a large quantity of starch almost white in color.

Its constituents are a soft neutral resin, golden-brown color, giving a reddish-brown solution with sulphuric acid. A golden-brown resin acid. The resinous bodies are not analogous to *aristolochin* found in several species of Aristolochia. It also contains an alkaloid giving a greenish-red solution with sulphuric acid, a yellowish one with nitric acid, destroyed the red color of potassium permanganate and afforded a crystalline acetate. The alkaloid is probably allied to *aristolochine*, the source of bitterness in certain plants of this order. A substance related to dulcite was also present.—*David Hooper in Pharm. Jour. Trans., 1894, 231.*

Preventing of Bumping in Liquids.—V. Gernhardt (Ber. d. Chem. Ges., 1894, 964) improves upon Beckmann's apparatus by replacing the platinum with enamel alone. The author noticed that while using the improved Beckmann apparatus when the platinum wire is sealed by means of the new Jena enamel that the boiling took place not from the platinum rod itself, but from the red enamel. Beckman originally introduced a piece of platinum wire into the bottom of the flasks, the function of the platinum being to promote a steady ebullition in the liquid by disturbing the chemical equilibrium at one point by partial superheating and thus preventing superheating throughout the whole mass.

Camphor as a Reagent for Sugar.—Neitzel (Deutsch Zuckerind, 1894, 254,) recommends camphor instead of alpha-naphthol as a reagent for sugar. Camphor will detect the smallest quantities of sugar in commercial investigations and is not like alpha-napthol affected by the presence of small quantities of nitrates.

NOTES HERE AND THERE.

It is reported that the manufacture of sugar of milk is abandoned in New Jersey. We also note in the new Tariff bill a reduction of duty on the same from eight cents to five cents. We wonder if there is any relationship between these two statements.

Tooth-Ache Bush.—A common name applied in various localities to Aralia spinosa, L. and to various species of Xanthoxylum. Recently the Editor received from J. M. Pringle a specimen of so-called "tooth-ache bush" collected on the Sea Islands off of South Carolina. It consisted of a few pinnate leaves; seven leaflets, the rhachis being quite prickly. These characters with the crenate margin of leaflets and the peculiar aromatic and acrid taste prove it to be the Xanthoxylum carolinanum, Lam. (now X. clava-herculis, L.). This species is known as the "prickly ash" of the Southern States. G. H. Colton (*Amer. Jour. Pharm., 1880, 191*) subjected the carefully identified bark to proximate examination. He obtained besides the fixed and volatile oil (the latter in a very small quantity) a little tannin, a crystallizable and an acrid resin, a small quantity of a yellowish, amorphous, very bitter substance which he believed to be alkaloidal in its characters (it seems to differ from berberine, being soluble in alcohol and water, insoluble in benzine, ether and chlorform and becomes purplish brown with sulphuric acid and bright red, changing to

yellow with nitric acid) but which requires further examination. The ash contained chlorides, carbonates and phosphates of potassium, calcium and magnesium—Prof. Lloyd isolated (Nat. Disp.) in 1876 from Xanthoxylum fraxineum, Willd., a crystalline substance which is identical with the one previously mentioned; being insoluble in water, soluble in boiling alcohol, turned yellow by nitric acid and dissolves with a deep red color in sulphuric acid.

The Xanthoxylum clava-herculis, L. is supposed to possess similar properties to X. fraxineum, Willd.

Two great evils in medicine are the dispensing of medicines by physicians and the prescribing of medicines by pharmacists. In some instances and under certain circumstances the duties of the physician and of the pharmacist merge together. In no instance is it intended that the physician and the pharmacist shall be combined in one person for all time. The physicians' province is to prescribe medicines. It is the physicians privilege and right to have his prescriptions compounded by the pharmacist. The physician cannot be excused in our large cities—or even in towns having over 10,000 inhabitants at least—for combining in his practice the art of compounding and dispensing, or dispensing medicines compounded by another. On the other hand it is the equal privilege and right for the pharmacist to compound the prescriptions of the physician and to influence and to send to a regular and competent practitioner those whom he encounters who are either misusing or likely to abuse any of the medicants ordinarly sold in the shop. The pharmacist should work to the interest of the physician and vice versa.

College Notes.

Now that the college course for 1894 and 1895 is begun, the students and faculty have an opportunity for testing the work of the Building Committee. This session marks an era in the history of the college. Whether it is the "finest," "unsurpassed," building in the country does not matter. Every institution, almost, attempts to claim this. It will pay you to see the new college building, and decide how well adapted it is for instruction in pharmacy. It is certain, however, that it is a substantial building, equipped in all its departments to do a very creditable piece of work in pharmaceutical education. It is creditable to the school in that pharmacy, pharmacognosy and chemistry are taught in the laboratory almost exclusively. This is exactly in accordance with the tendency of pharmaceutical education. A student should be taught in such a manner that all his senses, and indeed his whole being, are brought to bear upon his labors. A college cannot take the place of the shop; neither can the shop take the place of the college. Of course it is upon the man always, in every vocation, that success depends. Yet proper training is more requisite to-day, for every one in his or her calling, than ever before in the history of the world. If a mining engineer or a chemist is required to attend college before he is competent to practice his art, why does it seem so very inconsistent to some to require a pharmacist to be educated before he is entrusted with the duties of the store? This is not a matter that can nor will be settled at once, but it is worth while to ponder over it, for it may be that hereon hangs the future of pharmacy.

EXECUTIVE BOARD MEETING.

The meeting was called to order by President Graeser at 8.45 P. M. There were present Miss Mahegin and Messrs. Graeser, Henning, Hohenthal and Hoburg. In the absence of the regular secretary, Harry Heller, Mr. Hoburg was appointed secretary *pro tem.*

The "Committee on Alumni Room Furnishing" then submitted their report, through the chairman of said committee, Mr. Hohenthal, which report, being very satisfactory, was adopted. The committee was then discharged with the thanks of the association.

It might be said right here that it is mainly due to the kindness and efforts of Mr. Hohenthal that the room was so substantially furnished for the money allotted for that purpose.

The report of the treasurer was very satisfactory, and was forthwith adopted.

A motion was then regularly made and seconded that half a dozen keys be made for the door of the Alumni room, for the use of the regular officers of the association.

There were several matters of minor importance discussed by the committee, to be put into effect at a later date. There being then no further business before the house, and the motion to adjourn having been regularly made and seconded, the meeting came to an agreeable conclusion.

WILLIAM A. HOBURG, JR.,
Secretary *pro tem.*

'94 NOTES.

EX-SECRETARY WURTHMAN matriculated before the College of Physicians and Surgeons of this city a short time ago. As he will attend the Alumni lectures this winter we will have an opportunity of personally hearing of his progress.

FRANK KELLAR is another of the '94 Boys "who never care to wander." He has a nice position in Patterson, N. J.

MAX AUERBACH is down in Old Virginia preparing to take the medical course in the University of that State.

GEO. F. HOLLAND, who secured a position in the Catskills for the summer, has returned, and at present is located at Flushing, L. I. He will probably spend the winter in California.

GEO. R. SAGAR is practicing the profession at 9th ave. and 59th st.

COL. WADE says that we are like thermometers, because we were graduated by degrees.

NELSON S. KIRK,
9 East 59th st.

PERSONALS.

CHARLES THEODORE WOLFF has moved to 47 East 125th st. His fellow-classmates are requested to note this as he is desirous of attending the next annual banquet and re-union of his class.

HARRY HELLER, Ph. G., class of '93, and Secretary of the Alumni Association, is now doing a flourishing business of his own, at 157 7th ave.; he is as jovial as ever, or even more so, due probably to his recent marriage.

"DOC" BENJAMIN F. WILLIAMS, class of '94, is still with the W. B. Riker & Son Co,, in their prescription department, with whom he has been connected now for the past two years.

J. HORTON UHLE, Ph. G., the *tallest* member, but one, of the class of '93, is now doing business under his own name at Rockland Lake, N. Y.

EUGENE C. WEBB, the able valedictorian of the class of '93, is about to open up a business of his own at the corner of 87th st. and Lexington ave., together with his cousin, Mr. A. P. Stevens, under the firm name of Webb & Stevens; the opening will be early in November.

CHARLES F. CUBIK, class of '93, is now head clerk in the prescription department of the Hegeman & Co. Corporation concern. on lower Broadway. Work seems to agree with him, as he is getting stouter every day.

TO THE SENIORS.

In reading over some old English literature came across the following, which gives us an insight into the Materia Medica of the 13th, 14th and 15th centuries.

In the poem the selection is spoken by the "Poticary."

What would my friends, the Seniors—who groan when they see such a word as "Aspidospermum quebracho blanco"—what would they say to the following:

"Here have I *diapompholicus*
A specyall oyntment as doctours discuse
For a fistula or for a canker."

"Here are others, as *diosfialios*,
Diagalanga and *sticados*,
Blanka, *manna*, *diospoliticon*,
Mercury sublyme, and *metridaticon*;
Pellitory, and *arsefetida*;
Cassy and *colloquintita*.
These be the thynges that brek all stryfe
Between mannes syckness and his lyfe."

Respectfully inscribed to the "Seniors" by
C. B., '93.

The Senior and Junior columns will be opened with the next issue when officers will have been elected. We anticipate interesting notes as the boys are aware of their duty and privilege regarding THE ALUMNI JOURNAL.

PAPERS FROM THE ANN ARBOR SCHOOL OF PHARMACY.

EXAMINATION OF KOLA. By C. O. Topping. Six Samples of Kola were examined for total alkaloids, for individual alkaloids (caffeine and theobromine), also for tannin.

Three methods for estimating total alkaloids were employed, viz., Heckel's, Squibbs', and modified Prollius'.

Lowenthal's method for tannin was adopted.

Mr. Topping also performed experiments to prove indirectly the presence of a ferment in kola, which, acting upon a glucoside "kolamin," under suitable conditions of heat and moisture, produced caffeine, glucose, and kola red.

The paper is accompanied by a tabulated statement of results obtained.

REDUCED IRON—*The quality dispensed by pharmacists.* By G. C. Steventon. The work confines itself mainly to the per cent. of metallic iron in the free and uncombined state, the per cent. of insoluble residue, together with the question of certain impurities within specified limits.

Of ten samples analyzed only three were equal to or above the standard—80 per cent.—required by the pharmacopœia of uncombined iron. The remainder were from 16 to 60 per cent. below the standard, while two contained from 2 to 5 per cent. less of total iron than that required of the free uncombined iron.

"From these analyses," the author states, "it appears that the preparation is of a very inferior quality, and presents an item which should not be treated lightly by pharmacists."

A tabulated statement of results also accompanies the paper.

WHITE CASTILE SOAP. Samuel R. Knox discusses the materials of which soap is made. The analyses include—

1. Estimation of water.
2. Estimation of unsaponified matter.
3. Estimation of relative proportions of fatty and alkali.

He concludes that white castile soap of the market is highly adulterated with other oils.

Tabulated results of the analysis of eight samples of white castile soap follows.

A MICROSCOPICAL STUDY OF CICUTA MACULATA (*Water Hemlock*). By F. Lyle Robertson. Illustrated by seven drawings of different sections of the root only.

GLYCERIN OF THE MARKET. By J. L. Tegarden. Thirteen samples of all grades and brands were examined, as follows;

Sp. Gravity.
Dextrose and Sugar.
Fixed impurities.
Acids.
Salts—Calcium.
Chlorides.
Arsenic.
The results all tabulated.

EXPERIMENTAL WORK ON THE SOLVENT POWER OF ALCOHOLIC MENSTRUA. L. D. Haverhill.

"The laboratory notes on 'The variation of menstrua in fluid extracts.' By Professor E. L. Patch, afforded a suggestion that one might enter upon an interesting and beneficial line of experiments to determine the menstrua best adapted for obtaining the active principles of drugs free from their inert extractives. Accordingly, a series of experiments were made on ten of the more potent medicinal drugs, using menstrua of varying proportions of alcohol and water."

"No general relation was found to exist between the per cent. of extractive and the per cent. of alkaloids."

He concludes by saying "It was very gratifying to note that menstrua directed by the present pharmacopœia were in nearly every instance the ones best fitted for extracting the active principles of the drugs on which experiments were made."

Three very complete and valuable tables accompany the work.

NOTES ON THE BEHAVIOR OF ALBUMINATE OF IRON AND FERRATIN WITH ARTIFICIAL GASTRIC JUICE. J. O. Schlotterbeck and S. R. Boyce.

In a recent paper which was read before the Cincinnati Academy of Medicine by Dr. G. A. Fackler, the following advantages of Ferratin over all other artificial albuminates of iron are claimed:

"1. In Ferratin we have a compound which because of the fact that it is not altered in the stomach or intestinal track is wholly absorbed and made available.

"2. Ferratin, due to the intimate union between it (iron) and the albumen is so closely attacked by the sulphuretted hydrogen that it is absorbed before an alteration into the sulphide can occur.

"3. Since, as a rule, the food which we ingest has been subjected to heat during the process of its preparation, and since in the above process—that of separating the natural iron compound from pig's liver—no other force but heat has been employed, we undoubtedly secure in this compound that form of iron which enters the stomach with animal food and which is in part absorbed and deposited in the various organs."

The results of their analysis are tabulated below;

Albumenate of Iron.	*Ferratin.*
Pale red powder.	Dark brown powder.
Iron, 2.1 per cent.	Iron, 5.4 per cent.
Insoluble in water.	Insoluble in water.
Soluble in dil. alkalies.	Soluble in dil. alkalies.
Soluble in dil. acids.	Soluble in dil. acids.
Begins to blacken with Am. S. in five seconds.	Begins to blacken with Am. S. in 20 seconds.
Pepsin and HCl converts 43 per cent. of the iron into ferrous and ferric chloride by one digestion.	Pepsin and HCl converts 37½ per cent. of the iron into ferrous and ferric chloride by one digestion.
By removing the peptones, etc., and subjecting to second digestion 42 per cent. more of the iron is converted into the inorganic form, or a total of 85 per cent of the original iron.	By subjecting to same operation 43 per cent. more of the iron is converted into the inorganic form, or a total of 80 per cent. of the original iron.

It will be seen that ferratin possesses no great advantage over ordinary albumenate of iron.—(Amer. Phar. Assoc. Meeting, 1893).

MEDICINE AND PHARMACY.

By N. H. MARTIN, F. L. S., F. R. M. S., President of the British Pharmaceutical Conference.

(*Continued from October issue.*)

You can imagine the incredulous smile with which an accomplished physician would receive the assertion of some antiquated herbalist that he knew a weed which was an universal cure, but when such a weed is made the basis, and furnishes the name to a compound manufactured by an enterprising company, and is presented to him with a sample bottle, a pamphlet bristling with comments from medical journals and testimonials, under the name of Liquor Curaline Co., the amiable physician falls into the trap and his next patient is dosed with the latest improvement in Modern Pharmacy, "Liq. Cure-all-ine Co." The Medical Journals, however, in their advertising columns, and in their literary pages are the strongest supporters of these quackeries, I do not suggest, and it would be preposterous to suppose that the learned and versatile editor of the *British Medical Journal* would listen to an appeal of this sort:

"Dear Sir—Advertising as we do in your valuable and esteemed medium, and being likely to continue the same in the future on an extensive an liberal scale, we shall esteem it a favor if you will kindly give us at an early date the superadded benefit of a free editorial, the substance of which we beg respectfully to submit herewith. We are, dear sir, yours faithfully, Bunkum, Quack & Co." There cannot be the slightest doubt of the reception which such a letter and such an appeal would get at the hands of the editors and proprietors of our leading medical journals. But let B. Q. & Co. approach the matter by advertising on an extensive scale in the Journal, and then send samples for analysis and report, and if we read nothing stronger it will at least come out something after the following:

"SKINNALINE

"It is claimed that the substance contains the active principles of skin in proportion of twenty grains to the pound. We have put these claims to the test as far as possible, and we are satisfied that they are practically justifiable, but we are not able to endorse all that the discoverer claims for the preparation, although there is no reason to doubt his statements." To the stern logic of science this is lukewarm enough in all conscience, but the astute advertiser is satisfied. He probably did not expect what was impossible, any definite analysis and report, but but he knows, cautiously worded and valueless as the paragraph is as to the merits of Skinnaline, he has only to quote the paragraph and add the magic words of the title of the journal, and the commercial result to him will be increased a hundredfold. I venture to assert that such notices are absolutely unworthy of the highest and best traditions of medical journalism, and they are the ruin of scientific medicine and pharmacy. I could give you many illustrations, but forbear to weary you. I believe the Americans were the first to make the discovery that the doctor might be made a cheap and efficient means of advertising, although the Germans have not unsuccessfully cultivated the same field, and it is to this source that we owe the experience that the consulting rooms of the medical practitioner are deluged with "physician's samples" of the most arrant quackery the world has ever seen. When will English medicine have the courage to purge itself of this corruption?

It will be interesting, I think, to in-

quire into the possible reasons why medical men have so readily fallen into these traps, and I think one great and most important cause has been the neglect to give the medical student adequate training in the knowledge of the properties and uses of drugs. Since the abolition of apprenticeship to a general practitioner, which used to precede in medical education the scientific course which in those days was called "walking the hospitals," the tendency has been for more and more of the medical student's time to be taken up with the abstract sciences which are the basis of his art, and the practical side of being able to treat and cure disease by the intelligent use of medicines has been very largely neglected. The result is that instead of the diagnosis and the cure going together in intelligent connection, they have been separated from each other, and it has happened to a brilliant and successful student of our medical colleges that after having made the most exact diagnosis the limit of his powers has been reached and his grim function has been to watch the patient die and to be able to predict the precise pathological changes which would be revealed at the necropsy. Another great cause, which I am sure has had a wider influence in discrediting the use of drugs in the treatment of disease than we can have any idea of, is the tender system under which many hospitals and infirmaries—where young men get their first lessons—are supplied with drugs. It is no secret that large quantities of inferior and almost useless drugs are year by year placed on the market, and I do not think it is in the least unfair or unjust to infer that these must largely find their way into the institutions and into the possession of those who make the price their sole criterion of value. It follows, quite in logical sequence, that teachers and taught are influenced by the variable and uncertain results obtained, and that sometimes in despair and sometimes in contempt there is produced a lack of faith in drugs as instruments of healing. I do not underrate in the smallest degree the importance of the medical student acquiring sound and extensive knowledge of physiology, pathology and so forth ; they are absolutely essential subjects, and I would not belittle the triumphs and advances which recent years have seen in these directions, but the subject of profound importance to the patient is to be cured. The exorbitant claims sometimes advanced on behalf of such subjects as physiology, pathology and chemistry have been fraught with no little danger to the art and practice of medicine, and it has happened that many a general practitioner, who in the realm of physical danger would be a hero, has been deterred by a sneer or an assumption of superiority on the part of some specialist, from contending for the reality of the knowledge which is the result of his life-long experience in the use of drugs, and the knowledge itself has, in some cases, been lost to the service of medicine in its combat with disease.

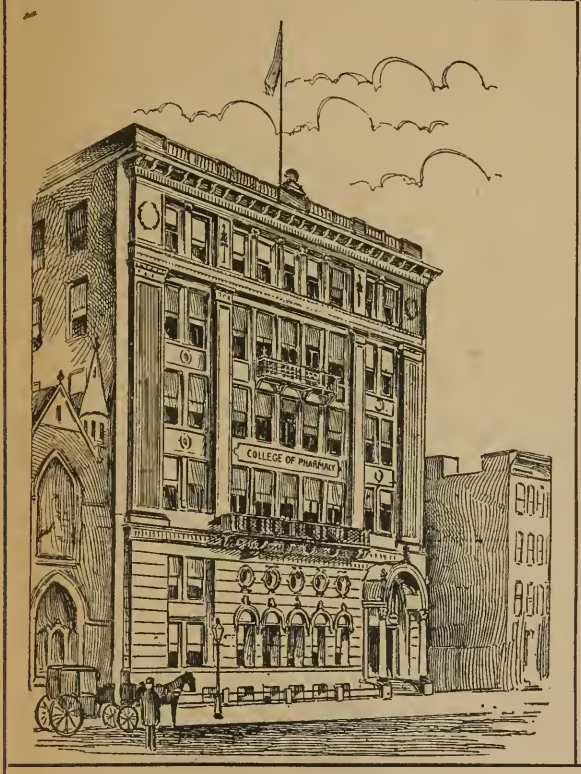
To return to Pharmacy, the small amount of relative success which has resulted from the work of the Pharmaceutical Society is in my opinion largely due to the grave mistake which was made in the fifth clause of the Pharmacy Act, 1868. By that clause it was decided to place on the register, without examination and without fee, all who claimed to have been in business as chemists and druggists prior to December 31st, 1868. If an adequate fee for this privilege of being registered had been imposed, I think it would have had the effect of considerably reducing the number of those who desired to be placed on the register from purely trade motives.

[*To be continued.*]

THE Alumni Journal

PUBLISHED BY THE ALUMNI ASSOCIATION
OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK.
Entered at the New York Post Office as Second Class Matter.

Vol. I. New York, December, 1894. No. 8.



THE
Alumni Journal

PUBLISHED BY THE ALUMNI ASSOCIATION
OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK.

Vol. I. New York, December, 1894. No. 8.

NOTES ON THE TESTING OF OILS AND FATS.

By H. T. VULTÉ, Ph.D.

IN the various text-books treating this subject there is a great fund of information, too much, in fact, for the ordinary observer, who becomes bewildered by the vast collection of what appears to be unassimilated material and he turns away, impressed with the idea that much study and experience are requisite in order to pursue any investigations in this most fascinating branch of organic analysis.

A comprehensive scheme for the testing of oils and fats may not be laid down with the inflexibility of the schemes of mineral analysis, but such a method as will serve in the majority of cases can be outlined with comparative ease. By applying these tests much useful information may be obtained, and it is not difficult then to compare these results with the figures obtained by former observers, and to judge with certainty of the purity and character of the samples in question.

Many of the recorded results of tests are of questionable value, and some of the information utterly unreliable — of this character are the various color reactions with acids, all of which are uncertain except those with sulphuric acid, and even this test must always be made in comparison with a sample of known purity and under scrupulously exact conditions.

A brief discussion of the constitution of oils and fats is not out of place in this article, and the subject may be so arranged as to simplify the usual complex classification. The ordinary distinction of oil and fat is one of temperature solely, and not of constitution, as it should be; it is better, then, to arrange these bodies in two great classes, viz: *Fats*, or true glycerides compounds of the fatty acids, bodies containing carbon, hydrogen and oxygen, with the tertiary alcohol, Glycerole. If these compounds are liquid at ordinary temperatures they may be called Oils or Oleins, if solid, under the same conditions, they may be called fats or stearines. To this class belong the fats of animal and vegetable origin.

Hydrocarbons, bodies composed of carbon and hydrogen only, with the same limitations as to temperature and state, when liquid, usually called mineral oils,

etc., according to origin, when solid, paraffine, although this sub-classification is not general or complete.

Waxes are compounds of a fatty acid with a primary alcohol unusually high in the series, and may be liquid or solid according to temperature, as Sperm Oil, a liquid wax, and Beeswax, a solid.

It is in all cases essential that the sample of fat, hydrocarbon or wax be clean and clear, free from water, suspended mineral matter and foots before applying any tests. In most cases preliminary drying with gentle heat, and filtration through dry paper or absorbent cotton will effect the desired result ; with the drying oils, however, such treatment would be detrimental, especially if prolonged, and the dessication might take place in a non-oxidizing atmosphere, as Hydrogen or Carbon Di-Oxide, or filters of water, absorbent material such as neutral Plaster of Paris, Spanish Earth and similar substances may be used without heating. As a rule too little attention is paid to these preliminary details of mechanical purification, and the result is unsatisfactory and unfair.

The samples should be sufficiently large, so that the indispensable physical tests may be applied with proper regard to conditions of accuracy, a minimum quantity should be fixed at eight ounces or 250 C.c.; in any event sixteen ounces or 500 C.c. will be sufficient. The tests applied should be of two general orders, viz., chemical and physical.

Of the physical tests that of specific gravity is the most important, provided the proper conditions exist. It must be observed that the heat plays a very important part with these bodies ; hence it is very necessary to make such observations at carefully regulated temperatures, and more certain information may be obtained by making such tests at two or more points, since it has long been the custom to fabricate mixtures which will exactly coincide with the density of a pure sample at any given point, say 15.5° Cent., and this falsification would be much more difficult or even impossible if the density was also taken at some elevated temperature, say 99° Cent.

	15.5°	99°
Cotton Seed Oil.	0.926	0.871
Linseed Oil,	0 936	0.880
Peanut Oil,	0 920	0.864
Rape Seed Oil,	0.913	0.862
Rosin Oil,	0.925	0.910
Mineral Oil,	0.930	0.850
Menhaden Oil,	0.932	0.877
Sperm Oil,	0.884	0.830
Butter fat,	0.904 at 40° C.	0.867 at 99° C.
Butterine,	0.898 "	0.859 "

There is some choice in the apparatus to be used in the determination of the density. The oleometer or hydrometer for oils is not sufficiently accurate, and the pyknometer or specific gravity bottle is too slow, besides requiring a balance of great accuracy, and is not applicable at elevated temperatures.

The specific gravity balance, either of Mohr or Westphal, fulfils all conditions, is accurate, rapid, and applicable in all cases. The instrument is so well known that no description is necessary—it suffices to say that for ordinary temperatures the thermometer body, with a range of 10°–20° Cent. is used, at all other points the solid glass body serves.

For high temperatures a deep closed copper water bath is used ; in the top of this bath are three holes—one for a test tube, holding the oil, one for a thermometer, and the other for a glass tube for steam exhaust. It is best to provide a small thermometer to place in the test tube of oil. Instead of the copper bath one can be improvised from an ordinary one-quart tin fruit can. Where the sample of oil is very small, application can be made of the so-called Sprengel tube—a U shaped tube of glass one-eighth inch

bore, with capillary ends. The following data are necessary, viz :

1 Weight of empty tube.
2 " tube filled with water at 15.5° C.
3 Weight of tube filled with oil at 15.5° C.

It is evident that 2 — 1 = weight of the water, and 3 — 1 = weight of the equal volume of oil, then

$$\frac{3-1}{2-1} = \text{Sp. Gr. at } 15.5^\circ \text{ C.}$$

If a determination at 90° C. is to be made, the Sprengel tube filled with oil is suspended in boiling water for some minutes until the desired temperature is reached, then the excess of oil running from the capillary ends is removed with absorbent paper, the tube is removed from the water, dried, cooled and weighed ; this result may be called 4, then

$$\frac{4-1}{2-1} = \text{Sp. Gr. at } 99^\circ \text{ C.}$$

Congealing point of an oil is usually determined by placing a four ounce vial, half filled with oil and carrying a thermometer with bulb immersed in the oil, in a freezing mixture of salt and ice in an upright position. When the contents are solid, remove the bottle from the freezing mixture and place in a horizontal position. Note the exact temperature at which the upright wall of frozen fat melts down to a liquid. This is the congealing point.

Melting point is determined by filling the bottom of a small cone of glass about one inch long, with capillary point, made from one-quarter inch bore tubing, with the fat. Strap one of these cones to the bulb of the thermometer with a rubber band, taking care to have the large end of the cone up. Now immerse the thermometer and cone in a beaker of distilled water, and raise the temperature slowly to boiling, at a rate not exceeding two degrees per minute. When the melting point is reached the particle of fat will instantly detach itself and rise to the surface of the water at this moment the reading of the thermometer must be taken. Instead of pure water in the bath it is frequently necessary to use a solution of salt and water, say ten per cent. This may be used in case the fat is slightly water soluble, viz., butter, cocoanut, stearine, etc.

All of the above tests may be made on the original glyceride or on the fatty acids obtained from them by the process of saponification and decomposition.

CHEMICAL TESTS.

The most important of these are the following:

1. Saponification or Koettstorfer process.
2. Reichert–Waller process.
3. Iodine or Hübel process.
4. Acetyl process.

The first applies to all saponifiable oils and waxes, and distinguishes them from each other and from the hydrocarbon class.

The second determines the amount of volatile soluble fatty acids present, and is important in butter analysis.

The third applies to oils which are unsaturated and absorb the halogen as an additive compound, *i. e.*, Oleins and Linoleins, and also to hydrocarbons which combine with the halogen by addition and by substitution, and in the latter case yield hydriodic acid as a bye-product.

The third test serves to distinguish the hydroxy fatty acids and their glycerides, *i. e.*, castor oil group, since they alone have the property of taking on the acetyl radicle.

Besides these, are the sulphuric acid color tests, useful when properly applied, the silver nitrate reduction or Bechi test, the elaidin test, the Maumené or rise of temperature with concentrated sulphuric acid, *vide* drying oils and Va-

lenta's test or the solubility in glacial acetic acid distinction between glycerides and hydrocarbons. The saponification test is actually the most useful and generally applied test. The figures given reading the number of milligrams of alkali, usually potassium hydrate, required to saponify 1 Gram of the fat or oil.

The alkali, KOH, is usually made approximately quarter or half normal, and should be alcoholic in order to avoid the high pressure necessary in saponifying with aqueous solutions.

Care must be taken in the selection of the alcohol; most commercial samples contain notable quantities of aldehyde and acetic acid, and turn very dark in a very short time. To purify alcohol the Waller process may be most easily applied. This consists in adding small quantities of finely powdered permanganate of potassium to the sample, shaking well after each addition, until quite a strong permanganate color remains, the manganese oxide is then allowed to settle and the clear supernatant liquid transferred to a retort and slowly distilled with the addition of some small fragments of calcite. The first portions of the distillate which contain some aldehyde are set aside for further treatment. Another method consists in slowly distilling a mixture of alcohol and free fatty acid, such as may be obtained from Koettstorfer residues.

To determine the Koettstorfer figure, weigh out 2.500 Grams of the fat or oil in a low wide mouth 4-oz. hard-glass flask, run in 50 C. c. of the alkali from a pipette, cover with a watch glass and place on a boiling water bath, at the same time run 50 C.c. of the alkali in a similar flask, cover with a watch glass and also place on a boiling water bath, the boiling alkali will rapidly combine with the fat, but the action is not complete until nearly all the alcohol has passed off. The two flasks, both blank and test, should evaporate at about the same rate. As they approach dryness remove the watch glasses and allow the last of the alcohol to pass off rapidly; when all is gone, add to each 100 C.c. of neutral alcohol containing 1 C.c. of phenol phtalein solution, replace the watch glasses and set again on the water bath, the blank should rapidly go into solution leaving no residue. A turbidity shows formation of carbonate, in which case the test will be unreliable; if clear, rapidly determine the exact strength by means of normal hydrochloric acid and note the result. Now remove the test flask in which the saponified oil should be in solution, place it on a piece of white paper or tile in front of window and run in normal hydrochloric acid from a burette until on looking at the white surface through the liquid no trace of purple is seen, and the liquid begins to cloud, this is the neutral point. Record the number of cubic centimetres of acid used and subtract from the amount used by the blank the difference will be the number of cubic centimetres used to saponify the 2.500 grams of fat. To determine the exact strength of the alkali, note the number of C.c. of normal acid used for 50 C.c. of alkali, multiply by 0.0561 the value of each C c. of acid in terms of KOH, and divide by 50 C.c. used.

The number of milligrams of alkali used to saponify the fat, divided by 2.5 Grams and multiplied by 100 will give the per cent. of alkali necessary for saponification, this amount multiplied by 10 will give the Koettstorfer figure.

The figures obtained this way do not distinguish between the glycerides or true fat and the free fatty acid, for the purpose of obtaining the true or ether figure (Esterzahl), it will be necessary to

determine the amount of free fatty acid present, calculate the quantity of alkali necessary to saponify it, and subtract from the first figure. The process is as follows: Weigh out in a glass flask same as used before, say, 5.000 Grams of the fat, add 100 C.c. of pure neutral alcohol and 1 C.c. of phenol phthalein solu., place on the water bath and heat gently, shaking occasionally, in about ten minutes remove from heat and run in from a burette tenth normal aqueous KOH, shaking well after each addition until a permanent faint pink color is established; observe the number of C.c. used, divide by ten and subtract from the number of C.c. of alkali used in the orginal Koettstorfer determination, calculate as before and the result will be the amount of KOH used by the true glyceride. The acid figure or rancidity is calculated by multiplying the number of C.c. of aqueous KOH reduced to normal strength, by 0.281 the corresponding value of each C.c. in terms of oleic acid; subsequent division by five and multiplication by 100 give the per cent. of fatty acid.

Certain fats of the butter class and also waxes do not saponify easily even with alcoholic alkali unless slight pressure is used. Furthermore, butyric and other volatile ethers are likely to form and would be lost under the ordinary conditions applied. To avoid this, provide the flask with a cork bearing about one metre or yard of glass tubing (¼-inch bore) to act as a reversed condenser.

Great care must be taken that the alkali does not absorb carbonic acid from the air during the test, this is not likely to happen unless the test is allowed to get cold or is allowed to remain too long in a dry state after evaporating off the alcohol. The duration of the operation from start to finish should be about one hour, and if carried through carefully the results are very satisfactory.

The test serves as a certain index of the presence of unsaponifiable matter and also of the character of the oil. If the residue from the evaporation is dark red, rosin is usually present, if fishy in odor some fish oil is present. These are only indications, but they are much more certain than many of the color tests.

The following table shows the variation due to insufficient saponification, etc. 1 Gram of cotton seed oil being taken:

Treatment of solution	Mg KOH per Gm.
Heated until clear	155.
Evaporated to dryness	189.
" " and diluted with water	160.7
Evaporated to dryness	189.3

(*To be Continued.*)

CIRCULAR LETTER TO PHARMACISTS.

The following circular letter to pharmacists generally has been issued by the Committee on Alcohol Legislation appointed at the Pharmaceutical Meeting of the Philadelphia College of Pharmacy, held Oct 16, 1894:—

Committee on Alcohol Legislation.

PHILADELPHIA COLLEGE OF PHARMACY,
145 North Tenth Street, Philadelphia.

DEAR SIR:—At a meeting of Pharmacists held at the Philadelphia College of Pharmacy on Tuesday, October 16, 1894, the section of the Tariff Bill enacted on August 28 last, relating to the repayment of tax on alcohol used for manufacturing purposes was discussed.

The section reads as follows:

"SECTION 61. — Any manufacturer finding it necessary to use alcohol in the arts, or in any medicinal or other like compound, may use the same under regulations to be prescribed by the Secretary of the Treasury, and on satisfying the collector of internal revenue for the district wherein he resides or carries on

business that he has complied with such regulations and has used such alcohol therein, and exhibiting and delivering up the stamps which show that a tax has been paid thereon, shall be entitled to receive from the Treasury of the United States a rebate or repayment of the tax so paid."

Resolutions were unanimously adopted asserting the desirability of having enforced the law relating to rebate of tax on alcohol used in making medicinal preparations. The members of the Philadelphia College of Pharmacy placed themselves on record as favoring tax-free alcohol for manufacturing purposes, and urged pharmacists to work in the interest of having the law retained and enforced, instead of being repealed.

At that meeting the undersigned were appointed a committee to place the question of tax-free alcohol before the retail pharmacists of the country, and to endeavor to have their views upon this matter of vital interest to their business properly presented to Congress and the executive officers of the Government.

It was stated that the wholesaler, the manufacturing pharmacist and the patent medicine manufacturer had each presented their views, but that retail pharmacists had not expressed their opinions, although, in point of numbers and legitimate use of alcohol in preparing medicinal preparations, they were more concerned than any other class of manufacturers.

The present tax on alcohol, $1.10 a proof gallon, amounts to $2.09 on every gallon of 95 per cent. alcohol, and this represents in many medicinal preparations the largest item of cost. According to our best information, there are about 40,000 drug stores in the United States. A very conservative estimate, it is believed, of the amount of alcohol used by each one annually in preparing medicines, would be two barrels of forty gallons each.

Such an allowance would indicate that the Government will collect as a tax from this source during the present year $6,688,000 The cost of our preparations are thus artificially increased to this extent, necessitating the employment of a large amount of capital from which no profit is derived.

During the year 1893, alcohol was supplied to the retail drug trade in Philadelphia at an average price of $2.18, of which amount but thirty-nine cents represented the cost of the alcohol, and $1.79 the tax on each gallon. This will give some idea of the degree to which medicinal preparations have been unjustly enhanced in value by the retention of the high tax on alcohol, and from this we ask relief.

We have no solvent that will take the place of alcohol in the extraction of most drugs; and in the preparations into which it enters, it becomes as much a part of the medicine as the contained drugs or chemicals. To no other cause so much as to the high tax on alcohol, extending over a period of more than thirty years, can be attributed the fact that the retail pharmacist has been largely diverted from the true character of his business.

The difficulty of recovering alcohol used in the manufacture of preparations on the small scale, has rendered this part of his calling no longer profitable, as he could not compete with the large manufacturer with facilities for working on an extensive scale. As a consequence, the manufacturer has flourished, and deprived the retailer of a large portion of his legitimate occupation.

With tax-free alcohol at thirty-five to fifty cents a gallon, every pharmacist could economically and correctly prepare his own medicinal preparations and

would be responsible for their purity: and thus the public would be protected from fraud. Tax-free alcohol would undoubtedly greatly improve and extend our knowledge of pharmacy.

It is the retail druggist who directly supplies the needs of the public, and through him it will derive such benefit as will result from the enforcement of this act. Some manufacturers have urged upon the Secretary of the Treasury such a restrictive application of the law as would exclude the retail druggists from its benefits. This, the very class through whom the benefits will be disseminated, and whose claim from a moral and economical standpoint should be the strongest, must now assert themselves, lest they be entirely ignored and excluded from sharing in the advantages of the act.

While the law has been enacted, this particular section requires that regulations are to be prescribed by the Secretary of the Treasury, and as such regulations have not been framed, it remains inoperative. The reasons assigned for the non-enforcement of this section of the act are:

(1) The loss of revenue that would legitimately occur if the section is enforced. The amount of tax collected by the Government from this source, as shown above, is large; but, surely, this argument entirely loses its force, but if we stop to think who ultimately pays this tribute money —the sick, the infirm, the wounded, the dying. Can we admit for one moment that the most enlightened nation of the nineteenth century finds it necessary to place a penalty upon her unfortunate sick? Surely such a barbarity cannot be defended and continued by an American Congress.

(2) The difficulty of framing regulations that would permit those entitled to receive the rebate provided for by the act, and at the same time amply protect the Government from imposition and fraud. This has been magnified into an insurmountable mountain. The Government has here a task, we believe, no more difficult than that of preventing illicit distilling, illegal brewing or manufacture of tobacco, with all of which it has successfully dealt. This Committee is not willing to admit that the great body of American pharmacists are not honest and ready to uphold any just regulations that may be imposed by the Treasury Department in the enforcement of this act. Pharmacists do not desire a rebate of the tax on alcohol entering consumption as cordials, bitters and beverages, nor on spirituous, distilled or malted liquors sold as such, but only on such alcohol as is legitimately used in the manufacture of medicinal preparations.

While hardly within the province of this Committee to outline regulations for the Secretary of the Treasury, we have reason to believe that any practical suggestion would be welcome. The Committee is of the opinion that regulations can be adopted as safeguards against the improper usage of alcohol on which tax is rebated, and has in mind already an outline of what those regulations should be, and would request suggestions from others on this subject.

(3) The neglect of Congress to make the necessary appropriation for carrying this section of the law into effect. This objection is not a permanent one, and can be easily remedied at the next session of that body. The cost of enforcing this section of the law will depend largely upon the regulations prescribed, but we have no reason to believe that it will be unduly large.

The Committee would urge upon every

druggist the necessity of exerting his influence in the direction of having this law enforced. We ask you to personally present this subject in all its bearings on pharmacy to the attention of your Congressional Representatives. The Committee requests the attention of pharmaceutical journals and pharmaceutical associations to this, the most important question affecting pharmacists that has arisen in years. We solicit your earnest co-operation. Get every pharmacist thoroughly aroused to its importance, and urge upon him the necessity of concerted action toward securing the necessary legislation to make the law operative.

The Committee requests that every druggist promptly send answers to the following: (Address your replies to the "Committee on Alcohol Legislation," Philadelphia College of Pharmacy, 145 North Tenth Street, Philadelphia, Pa.)

(1) What classes of pharmaceutical preparations do you now prepare?

(2) With tax-free alcohol what others would you prepare?

(3) How much alcohol do you estimate that you have used in the manufacture of pharmaceutical preparations only during the year 1893?

(4) What suggestions do you offer as to the character of the regulations that should be prescribed by the Treasury Department to prevent fraud?

Yours respectfully,

GEORGE M. BERINGER,
Chairman.

WILLIAM MCINTYRE,
ROBERT ENGLAND,
RUSH P. MARSHALL,
JOSEPH W. ENGLAND,
Secretary.

Committee on Alcohol Legislation.

Philadelphia, November 1, 1894.

Different Deportment of Atropin and Strychnin in Vitali's Reaction.—If strychnia is moistened with nitric acid, evaporated to dryness, and then the dry, cold residue is treated with alcoholic solution of potassium hydrate, a red to violet color results. This reaction can readily be mistaken for that of Atropin (Vitali's reaction).

Vitali calls attention to the following differences:

1st. After the oxydation of the alkaloid, and all of the nitric acid has been driven off, atropin emits a fragrant odor, while the strychnia residue remains odorless.

2d. Strychnia on being moistened with nitric acid turns a yellow color, this remains even after drying, while atropin under the same conditions retains its white color.

3d. If the dry, cold residue remaining after evaporating off the nitric acid from the atropin, is moistened with alcoholic potash a violet color results. If this residue is again evaporated to dryness and then moistened with alcoholic potash a second time the violet color is intensified. In the case of strychnia the violet color produced by the action of alcoholic potash, disappears on drying to a reddish yellow color.

4th. On evaporating atropin to dryness with nitric acid and then moistening the residue with aqua ammonia, a yellow colored solution results, this on addition of alcoholic potash turns a violet color. The same experiment repeated with strychnia gives on addition of aqua ammonia an orange-red color, while the subsequent addition of the alcoholic potash produces only a transient violet, which quickly passes into a blood-red colored solution. If the above ammoniacal solution of the oxidized alkaloidal residue be shaken with chloroform and the chloroformic solution evaporated to dryness, in the instance of atropin an almost colorless residue results, which upon addition of alcoholic potash gives rise to a permanent violet color. Strychnia under the same circumstances, imparts to chloroform only a faint yellow color, this solution on evaporation leaves a yellowish colored residue which on moistening with alcoholic potash gives rise to a bright orange red coloration.—*Bull. Chim. Farm.* 1894.-33-449. V. C.

Bulgarian Rose Oil.—The total output from Bulgaria will be about 2200 kilos, which exceeds that of last year by 10 to 15 per cent. Those contemplating purchasing large quantities of otto, will do best by awaiting further developments, as prices may recede.—*Schimmel's Report* (Oct.), 1894.

THE Alumni Journal

Published under the auspices of the

Alumni Association of the College of Pharmacy

OF THE CITY OF NEW YORK,

115-119 WEST 68th STREET.

Vol. I. December 1, 1894. No. 8.

THE ALUMNI JOURNAL will be published Monthly.

Entered at New York Post Office as second-class matter

SUBSCRIPTION:

Per Annum, . . . One Dollar

Single Copies, . . . 15 Cents.

All copy for publication, or changes of advertisements should reach us on or before the 20th of the month previous to the issue in which they are to appear.

All matters relating to publication should be written on one side of the paper only, and sent to the editor,
HENRY KRAEMER, 115-119 West 68th Street.

All communications relating to finances, subscriptions and advertising, should be addressed to
A. HENNING, Treas., 115-119 West 68th Street

TAX-FREE ALCOHOL.

THE Cleveland administration has distinguished itself probably more than any other in the history of the nation by its inertia and apparent inability to cope with the issues that have presented themselves during the past few years. However much some may feel encouraged by the recent elections, it is apparent from the present discussions in all of the American pharmaceutical journals that there is a momentous question to be decided by the next Congress which will be either for or against the interests of the pharmacist. The Philadelphia College of Pharmacy has started a movement regarding "tax-free alcohol." A circular letter regarding the same we publish in a prominent part of THE ALUMNI JOURNAL. As this matter is of more than ordinary interest, and as it is desired that the pharmacists of the vicinity of New York shall be identified with it, we venture to present some features of the movement that must be considered.

Men with eyes in their heads must see that at present there are at least three problems that concern American pharmacy, and that as we meet these problems now so will the future pharmacy be. They are regarding: (1) Patent medicines; (2) Physicians dispensing; and (3) "Tax-free alcohol" Regarding the first, it was hoped that when the tax on proprietary articles was removed that the solution was attained. The result of this action, as the years have shown, has been protection to the proprietors of such preparations, and the notable but sad fact that "the pharmacist is not in it." This problem is unsolved, and probably never will be solved, for the difficulties increase as the nation grows. Regarding the "dispensing by physicians," this is a more recent evil, but one of such a magnitude that there is scarcely a pharmacist in the vicinity of New York that does not sadly feel its effects, and we are inclined to believe that until "we have men of sound convictions, which they are fearless to express, and are willing to openly confront the evils which tend to nullify the best educational efforts or even undermine the very foundations upon which all hope for progress may rest"—until then and with well concerted action by such men, the end of this movement is inevitable ruin to the pharmacist whether we have tax-free alcohol or not.

Concerning "tax-free alcohol" we must say more, for upon first thought it presents a very alluring proposition to the pharmacist, and several important questions arise that must be considered

intelligently and carefully by the pharmacists themselves and the representatives who speak for them. In the first place, in the city of New York we have a great many dry goods houses and "cutting establishments" that sell the common essences and tinctures at exceedingly reduced rates. With "tax-free alcohol" can we expect other than that the price of spirits of camphor and essences of peppermint and ginger will be at 25 cents per pint or less? It is certain that they will be sold at the lowest margin of profit. Not considering the baneful effect of the use of such medicaments in large quantities that will follow, we fear that the results upon the position of the pharmacist will be much like "free trade without any tariff" in the United States at the present time. It would lower and not elevate; it would impoverish and not enrich the pharmacist.

A difficulty is set forth in this circular, "The difficulty of framing regulations that would permit those entitled to receive the rebate provided by the act and at the same time amply protect the government from imposition and fraud. This has been magnified into an insuperable mountain." The task is not insurmountable. Luther, on his way to Worms, had a far greater task. Nothing is insurmountable to the man of energy and purpose, and who can gather together those who shall be "the old guard" to the end. We look for the Sheridan to come up and inspire this disjointed, distracted and weak body of men — the pharmacists — to concerted action for the saving of the honor of the profession. The pharmacists to-day are the slaves of the men of personal ambition in one way or another. They are not freemen, and if you are satisfied that laws can be enforced to prevent the illicit use of this "free-tax alcohol," and that the offenders will not grow rich while paying the fines, and even serving imprisonment—and that the condition of American pharmacy will be improved—if you see your way clear thus far–go ahead. The work of the department of the Board of Health of New York, when Prof. Chandler was at its head, is worthy of some very careful reading just now in this connection.

Another reason is given that the pharmacist, with the "tax-free alcohol," will prepare his own medicaments, and be responsible for their purity. The same comparative conditions at the most will prevail then as now. Indolence is not met in a man by opportunity. The lazy pharmacist will be just as idle then as now, or may be engaged "in sending up perfumed air currents in front of his shop window as a means of attracting the crowd." The more conscientious pharmacist may not care to be responsible for the purity and strength of his preparations. He would rather fall back upon the reputation of the manufacturers whenever there is any claim as to strength. (*See Ebert, Am. Pharm. Assoc. Proc., 1893, p. 94*).

These are serious matters for the consideration of the pharmacist. This matter of "tax-free alcohol" ought to be considered by every pharmacist. It cannot be said to be a matter of opinion to those who are actively engaged in the business of pharmacy. There are very important reasons why it has been given into the hands of a committee in Philadelphia. It is a problem that must be considered on the broadest basis of the ultimate position of the pharmacist as well as present gain. That the pharmacist is destined like the American Indian and buffalo to be regarded only as curiosities in time to come, we do not believe. It is possible that his future may be largely decided by the decision

of American pharmacists regarding "tax-free alcohol" and the evils of "physicians dispensing."

There can be hardly a question but that a "tax-free alcohol" containing some inert substance, preventing its use as a beverage and in the manufacture of medicines but limiting its use in the manufacture of chemicals and in the arts is desirable. Also, a pure "tax-free alcohol" ought to be permitted the use of manufacturers of chloral and ether and possibly some other chemical preparations. Furthermore, regulations might be so made as to extend the use of "tax-free alcohol" among investigators. We are not favorably impressed with this movement at present—unless the reasons hereafter to to be given shall be more forcible than those presented—that shall have for its object the sale of "tax-free alcohol" to the retail druggist as he is to-day in America. For reasons already given it will not do good—but will do harm. We commend the "Circular Letter" to the attention of all our readers and for all to conscientiously aid this committee in the solution of this important problem that it has undertaken. It is for the pharmacist himself to decide, and each pharmacist knows his own business better than any one else and what he would do if "tax-free alcohol" were used. Only be sure that you will do what you think you will do.

HENRY KRAEMER.

NEW LITERATURE.*

Bacteriology.

Our Secret Friends and Foes.—Percy Faraday Frankland. A new edition, revised with additions. London: Society for promoting christian knowledge. New York: E. & J. B. Young & Co. Post 8 vo.

This is a popular work on bacteriology. The author describes fully the micro-organisms of air, and treats of the antiseptic treatment of wounds. The useful and malignant organisms as well as the influence of light on micro-organisms are fully considered.

Principles of Bacteriology.—A. C. Abbott. New 2 ed. Revised and enlarged. Philadelphia: Lea Brothers & Co. A practical manual for students and physicians.

Bibliography.

Meyers' Conversations — Lexicon.— Fünfte, gänzlich neubearbeitete Auflage. 6 ter Band. Leipzig u. Wien: Bibliographisches Institut.

This part includes the article from "Ethik" to "Gaimersheim."

Botany.

Die officinellen Pflanzen der Pharmacopœa Germanica.—F. G. Kohl. 22. Lief. Leipzig. Ambr. Abel.

This work is intended for pharmacists and physicians, and is handsomely illustrated. It is issued in parts, the 22d part being now issued.

Anatomischer Atlas der Pharmakognosie und Nahrungs Mittelkunde.—A. Tschirch u. O. Oesterle. 5. Lfg. Leipzig: T. O. Weigel (*Chr. Herm. Tauchnitz.*)

Practical Physiology of Plants.—Francis Darwin and E. Hamilton Acton. Illustrated. Cambridge University Press.

Chemistry.

Watts' Dictionary of Chemistry. — Revised and entirely re-written by M. M. Pattison Muir, H. Forster Morley and assisted by eminent contributors. In 4 vols. Vol. IV. with addenda. London and New York: Longmans, Green & Co. 1894. 8 vo. pp. 922.

This work is well known to all readers and workers in chemistry, and has been anxiously desired. As a work of reference the present edition is of increasing value.

Chemische Präparatenkunde.—A. Bender u. H. Erdmann. (2 Bände) 2. Bd. Stuttgart: F. Enke.

The first volume treats of the method preparing and testing inorganic chemicals. The various operations of crystallization, precipitation, filteration, etc., are described. Some 87 pages being devoted to this part of the work. Then follows nearly 450 pages devoted to the inorganic preparations themselves.

In volume II. is given a general survey of the necessary apparatus with explanations of use for making organic preparations. Then follows

*Readers desiring any of the works contained in this list can obtain them through B. Westerman & Co., 812 Broadway; Gustav E. Stechert, 810 Broadway, or other foreign booksellers.

nearly 600 pages devoted to the making of the preparations. Both of these volumes contains the methods of preparations, equations showing interactions, tests of preparations, formula and reference to literature bearing on both inorganic and organic preparations.

Einführung in die qualitative chemische Analyse.—U. Kreusler. Bonn : Ed. Weber (Jul. Flittner).

Kurzes Lehrbuch der chemischen Technologie.—L. Medicus. 2. Lfg. Tubinger : H. Lauff.

For use in high schools, and in preparatory studies of the chemist.

Das Atomvolumen in chemischen Verbindungen.—E. Mensel. Liegnitz : Ewald Scholz.

Handbuch der organischen Chemie.—F. Beilstein. 3. Aufl. 38. Lief. Lex. 8. Hamburg ; Leopold Voss.

Die Praxis des organ. Chemikers.—L. Gattermann. Leipzig : Veit u. Co.

Text book of Inorganic Chemistry,—G. S. Newth. London and New York : Longmans, Green & Co. Crown 8vo., pp. 667.

In his "Introductory Outlines" the author treats of dissociation, dectrolysis, periodic system and thermo-chemistry. In Part II. the four typical elements, hydrogen, oxygen, nitrogen and carbon, with their important elements, are considered. In Part III. the author takes up the elements (omitting the rarer elements) according to the periodic system.

A Laboratory Guide and Analytical Tables for the use of Junior Students.—James Grant. Manchester ; Smith & Wood. 8vo., pp. 49.

This is similar to other books treating on the same subject.

Organische Chemie für Aerzte in 12 Vorlesungen.—F. B. Ahrens. Stuttgart : F. Enke.

Anleitung zur qualitativen chemischen Analyse. — C. R. Fresenius. Für Anfänger und Geübtere bearbeitet. Mit einem vorwort von Justus v. Liebig. 16te neu bearbeitete und verbesserte Auflage mit Holzstichen und einer farbigen Tafel. Erste Abtheilung. Braunschweig : F. Vieweg u. Sohn.

Jahresbericht über die Fortschritte der Chemie und verwandter Theile anderer Wissenschaften, herausgegeben von F. Fittica. Für 1889. 6 Heft. (S. 2401–2880). Braunschweig : F. Vieweg u. Sohn.

Repetitorium der organischen Chemie. A Pinner. 10 Aufl. Berlin : R. Oppenheimer (Gus. Schmidt).

Prepared especially for students in medicine and pharmacy.

Foods.

Die neuere Entwicklung der Nahrungsmittel Chemie.—H. Trillich. Frankfurt a. M.: Jaeger.

The new developments in the chemistry of foods.

Hygiene.

The Indian Manual of Hygiene. — A. E. Grant. London : H. K. Lewis.

Lehrbuch der Hygiene.—M. Rubner. 5 Aufl. Wien ; F. Deutick.

A systematic presentation of the subject with the consideration of the more important methods of investigation.

Bibliothek für Nahrungsmittel—Chemiker.—Herausgegeben von J. Ephraim. 3 Bd. Von J. Mayrhofer. Leipzig : J. A. Barth.

This volume contains the account of apparatus and instruments in use in the examination of food products.

Perfumery.

Rhodologia : A Discourse on Roses and the Odor of Roses.—J. C. Sawer. Brighton : W. J. Smith.

An account of the cultivation and distillation of rose in the different countries, together with a description of those perfumes resembling the rose.

Pharmacology.

Lehrbuch der Pharmakologie für Thieraerzte. —G. Müller. Dresden : G. Schönfeld.

This work is based upon the German and Austrian pharmacopœias, and considers the drugs from the pharmacognostical, pharmaceutical-chemical and toxicological standpoints.

Pharmacy.

Apotheker Kalender für das Deutsche Reich, begründet von Oscar Schlickum. Fr. Kober. 1895. 13 Jahrgang. Stuttgart : E. Nägele.

This is intended as a practical help to the pharmacist, containing tables, indicators, newer remedies, etc.

Repetitorium der Drogenkunde.—M. Levy. Freiburgi, B.: Lorenz u. Waetzel.

A reference work for pharmacists and druggists.

Pharmaceutischer Almanach. — Hans Heger. 1895. 20 Jahrgang. Wien : Moritz Perles.

Intended for the pharmacists of Austro-Hungary, but containing much valuable information for all pharmacists.

Photography.

Die Reproductions-Photographie.—J. Husnik. 2, Aufl. Wieu: A. Hartleben.

La chimica fotografica.—R. Namias. Fasc. I. Modena: A. Namias.

Photo-Micrography. — Henri Van Heurck. English edition. Re-edited and augmented by the author from the fourth French edition, and translated by Wynne E. Baxter. Illustrations. London: Crosby, Lockwood & Co.

Physics.

Lehrbuch der Experimentalphysik.—A. Wüllner. I. Band. 5, Aufl. (x, 1,000 S. m. 321 Albbild.) Leipzig: B. G. Teubner.

This volume treats of general physics and acoustics.

Lehrbuch der Physik für Gymnasien, Realgymnasien, Oberrealschulen und andere höhere Bildungs-Anstalten.—J. Heussi. 6 te. Aufl. neubearbeitet von A. Leiber. Braunschweig: O. Salle.

Light: A Course of Experimental Optics Chiefly with the Lantern.—L. Wright. New cheaper edition. Revised and enlarged. New York: Macmillan & Co.

Physiology.

Laboratory Manual of Elementary Physiology and Urine Analysis.—John H. Long. Chicago: E. H. Colegrove & Co. Pp. 366.

Therapeutics.

Physiological Action of Nitrites of the Paraffin Series.—J. Theodore Cash and W. R. Dunstan. London: Kegan, Paul, Trench, Trübner & Co. Pp. 135.

The authors endeavor to throw further light on the mode of action of the paraffin nitrites when introduced into the animal organism, and observations were made regarding the action of the following eleven nitrites in a pure state on blood pressure, pulse, respiration, and stirated muscular fibre:

Methyl nitrite, ethyl nitrite, primary propyl nitrite, secondary propyl nitrite, primary butyl nitrite, secondary butyl nitrite, iso primary butyl nitrite, alpha-iso-primary amyl nitrite, beta-iso-primary amyl nitrite and tertiary amyl nitrite.

Certain of these nitrites were prepared for the first time, and some of those previously described were found to possess different physical properties to those usually ascribed to them. The selection made rendered it possible to compose the action of a series of substances containing an atom of nitronyl, NO_2, united respectively with CH_3, C_2H_5, C_3H_7, C_4H_9, and C_5H_{11}, and to determine the modifying influence exerted by these radicals upon the characteristic action of nitronyl. An abstract appears in *Pharm. Jour. Trans.*, 1894, 313. When the effects of primary, secondary and tertiary nitrites, alike in composition, were compared, it was found that the secondary compound had a more powerful influence generally than the primary and the tertiary than the secondary. The more marked effect of the nitrites and the largest molecules, but containing least nitronyl is supposed to be due to their decreased chemical stability; and the greater power of secondary as compared with primary and of tertiary as compared with secondary nitrites, is attributed to their respectively greater instability rather than to the number of methyl groups attached to the carbon combination of the nitronyl group.

LITERATURE.

PHARMACOPŒIAS IN THE S. A. D. SHEPPARD LIBRARY OF THE MASSACHUSETTS COLLEGE OF PHARMACY.*

UNITED STATES.

Pharmacopœia of the United States of America. By the authority of the medical societies and colleges. Boston, 1820.

The same. 2. ed. Boston. 1828.

The same. 2. ed. New York, 1830.

The same. By authority of the National Medical Convention, held at Washington, 1830. Philadelphia, 1831.

The same. By authority of the National Medical Convention, held at Washington, 1840. Philadelphia, 1842.

The same. By authority of the National Medical Convention, held at Washington, 1850. Philadelphia, 1851.

The same. 4th decennial revision. By authority of the National Medical Convention, held at Washington, 1860. Philadelphia, 1863.

The same. 5th decennial revision. By authority of the National Convention, held at Washington, 1870. Philadelphia, 1873.

The same. 6th decennial revision. By

*We are desirous of placing on record in THE ALUMNI JOURNAL, from time to time important and valuable works of reference that may be obtained in any part of the United States. Our readers are doubtless familiar with the Library of the College of Pharmacy of the city of New York in which alone is contained 127 Pharmacopœias.—[EDITOR.]

authority of the National Convention, held at Washington, 1880. New York, 1882.

The same. German reprint, 1842. Leipzig, 1844.

Instruction issued by 6th decennial Convention for the revision of the pharmacopœia to the Committee of Revision and Publication. New York, 1880.

Minutes of the 6th decennial Convention for the revision of the same. New York, 1880.

Circulars of Committee of revision and publication of the 6th decennial revision. New York, 1880-89.

Digest of Criticisms on the United States Pharmacopœia; 6th decennial revision. Published by the Committee of Revision. New York, 1889. (3 parts.)

Rice (C.), Report on the revision of the United States Pharmacopœia preliminary to the Convention of 1880. Being a rough draft of the general principles, titles, and working formulas proposed for the next pharmacopœia. New York, 1880.

American Pharmaceutical Association. The revision of the United States Pharmacopœia. (Circular, dated October 15, 1877.) New York, 1877.

Massachusetts Medical Society. The Pharmacopœia of the —. Boston, 1808.

New York Hospital. The Pharmacopœia of the —. Published under the authority of the physicians and surgeons of that institution, to which is added an appendix, containing a general posological table, and a comparative view of the former and present terms used in materia medica and pharmacy. New York, 1816.

GREAT BRITAIN.

British Pharmacopœia Published Pursuant to the Medical Act, 1858. London, 1864. (English.)

The same. London, 1864.

The same. London, 1867.

The same. 2. repr., with additions. London, 1874.

The same. 4. repr., with additions made in 1874. London, 1880.

The same, London, 1885.

Martindale (W.). The Extra Pharmacopœia. With the additions introduced into the British.

Culpeper (N.). Pharmacopœia Londinensis, or the London Dispensatory, further adorned by the studies and collections of the fellows now living of the said college. London, 1667. (English.)

London Pharmacopœia. London, 1680. (Latin.

The same. London, 1701. (Latin.)

Royal College of Physicians. London.

Pharmacopœia collegii regalis Londini. Amsterdam, 1722. (Latin.)

The same. London, 1724. (Latin.)

The same. London, 1747. (Latin.)

The same. London, 1788. (Latin.)

The same. Leipzig, 1847. (German.)

The same. London, 1851. (Latin.)

The same. Leipzig, 1851. (German.)

The same. 3. ed. London, 1837. (French.)

The same. London, 1841. (English.)

The same. London, 1809. (Latin.)

The same. Ed. Altera. Lipsiae et Soraviae, 1821.

The same. London, 1851. (English.)

The same. London, 1824. (English.)

London Hospitals. Pharmacopœia of the —. (Banyer.) London, 1739. (English.)

The same. 4. ed. Dublin, 1772. (English.)

The same. (P. Squire.) London, 1874. (English.)

The same. (Squire.) London, 1879. (English.)

The same. For throat diseases. (Mackenzie.) London, 1881.

Edinburgh. Pharmacopœia of —. (Baldinger.) 1744. (Latin.)

The same. Edinburgh, 1759. (Latin.)

The same. Edinburgh, 1826. (Latin.)

Royal College of Physicians, Edinburgh. Pharmacopœia collegii regii medicorum Edinburgensis, Edinburgh, 1736. (Latin.)

The same. Edinburgh, 1744. (Latin.)

The same. Transl. by Lewis. Edinburgh, 1748.

The same. Edinburgh, 1783. (Latin.)

The same. Edinburgh, 1816. (Latin.)

The same. Edinburgh, 1817. (Latin.)

The same. Lipsiae et Soraviae, 1822. (Latin.)

The same. Edinburgh, 1841. (English.)

The same. Leipzig, 1847. (German.)

Conspectus of the London and Edinburgh Pharmacopœias. Robt. Graves. Philadelphia, 1803. (English.)

The same. Thomson. Leipzig, 1827. (German.)

The same. Culverwell, London, 1857. (English.)

Conspectus of the British and United States Pharmacopœias. Thomson. New York, 1849. (English.)

The same. Thomson. New York, 1862.

Pharmacopœia extemporanea. London, 1705. Latin.)

Pocket Pharmacopœia. Barber. London, 1872. (English.)

Unofficial Pharmacopœia. Oldberg. Comprising over seven hundred non-official preparations. Philadelphia, 1881.

Royal College of Physicians of Dublin. Pharmacopœia collegii regii medicorum Dublinensis. Lipsiae. 1818. (Latin.)

The same. Lipsiae. 1826. (German.)

The same. Lipsiae. 1850. (German.)

Pharmacopœia Bateana. Amsterdam, 1709. (Latin.)

The same. Amsterdam, 1731. (Latin.)

The same. London, 1719. (Latin.)

The same. 1752. (Latin.)

British Homœopathic Pharmacopœia. London, 1882. (English).

Homœopathic Pharmacopœia. Translated from the works of Buchner and Gruner. New York, 1850. (English.)

GERMANY.

Pharmacopœa Germanica. Leipzig, 1860. (German.) Only four numbers published.

The same. 1865. (Latin.)

The same. 1867. (Latin.)

The same. Berolini, 1872. (Latin.) (The first official pharmacopœia.)

Commentary on above. Buchner. München, 1872. (German.)

The same. Hager. Berlin, 1872. (German.)

The same. Hirsch. Berlin, 1873. (German.)

The same. Transl. by Lochman. 1873. (English.)

The same. 1890. (German.)

Comparison of the German and Saxon Pharmacopœias. Leipzig, 1867. (German.)

Commentary on the German Pharmacopœia. Hager. Berlin, 1874. Vol. I and II. (German.)

Commentary on the German Pharmacopœia. Friedrich Mohr. Braunschweig, 1873. (German.)

Berlin; Pharmacopœia of —. For the poor. [Eitner.] Berlin, 1856. (German.)

The same. [Hufeland.] Berlin, 1810. (German.)

The same. Berlin, 1805. (German.)

Leipzig, Pharmacopœia of —. For the poor. Cerutti. Leipzig, 1829. (Latin.)

Wurtemberg, Pharmacopœia of —. Stuttgartiae, 1845. (Latin.)

The same. Stuttgart, 1741. (Latin)

The same. Stuttgart, 1847. (German.)

The same. Stuttgart, 1754. (Latin.)

The same. Stuttgart, 1771. (Latin.)

The same. Stuttgart, 1798. (Latin.)

The same. Stuttgart, 1750. (Latin)

Brandenburg, Pharmacopœia of —. Berlin, 1781. (Latin.)

The same. Berlin, 1713. (Latin.)

Hamburg, Pharmacopœia of —. Hamburg, 1835. (Latin.)

Supplement of above. Hamburg, 1868. Latin.)

The same. Leipzig, 1845. (German.)

Schleswig Holstein, Pharmacopœia of —. Kiliae, 1831. (Latin.)

The same. Leipzig, 1844. (German.)

Coblenz, Pharmacopœia of —. (Civil hospitals.) 1806. (French.)

The same. For the poor. Coblenz, 1855. (German.)

Bavaria, Pharmacopœia of —. Leipzig, 1822. (German.)

The same. München, 1823. (German.)

The same. München, 1856. (German.)

The same. München, 1859. (German.)

Prussia, Pharmacopœia Borussica. Berolini, 1799. (Latin.)

The same. 1805. (German.)

The same. 1808. (Latin and German.)

The same. Berolini, 1813. (Latin.)

The same. 4. ed. Berolini, 1827. (Latin.)

The same. 5. ed. Berolini, 1829. (Latin.)

The same. Leipzig, 1839. (German.)

The same. 6. ed. Berolini, 1846. (Latin.)

The same. Berlin, 1847. (German.)

The same. Dul. Leipzig, 1847. (German.)

The same. Leipzig, 1846. (German.)

The same. 7. ed. Berolini, 1862. (German.)

The same. G. A. Volcker. Berlin, 1862. German.)

The same. Berolini, 1862. (Latin.)

The same. For physicians. 1863. (German.)

The same. Military, Berolini, 1868. (Latin.)

Supplement to the Prussian Pharmacopœia.) Schacht. Berolini, 1864. (Latin.)

AUSTRIA.

Pharmacopœia Austriaca. Vienna, 1794.

The same. Military. Vienna, 1795. (Latin.)

The same. Vienna, 1818. (Latin and German.)

The same. Vindobonae, 1820. (Latin.)

The same. 4. ed. Vindobonae, 1834. (Latin.)

The same. Leipzig, 1834. (German.)

The same. Vienna, 1852. (Latin.)

The same. Vienna, 1855. (Latin.)

The same. Wien, 1860. (German.)

The same. Vienna, 1869. (Latin.)

The same. Military. Wien, 1872. (German.)

The same. Military. Commentary on above. Wien, 1874. (German.)

The same. Vienna, 1889. (Latin.)

RUSSIA.

Pharmacopœa Rossica. Petropoli, 1782. Latin.

The same. Lipsiae, 1821. (Latin.)

The same. Petropoli, 1840. (Latin.)

The same. Military. Leipzig, 1840. (German.)

The same. 1866. (Russian.)

The same. 1880. (Russian.)

Hungary, Pharmacopœia of —. 1871. (Hungarian and Latin.) Budapest, 1871.

Baden, Pharmacopœia of —. Heidelbergae, 1841. (Latin.)

The same. Leipzig, 1841. (German.)

Hessian Pharmacopœia. Cassellis, 1827. Latin.)

The same. Leipzig, 1827 (German.)

The same. Cassellis, 1860. (Latin.)

Hanover, Pharmacopœia of —. Leipzig, 1831. (German.

The same. Hannover, 1833. (Latin.)

The same. Hannover. 1861. (German.)

Augustana, Pharmacopœia of —. 1734. Latin.)

The same. 1672. (Latin.)

Bremen, Pharmacopœia of —. Bremen, 1792. (Latin.)

Leiden, Pharmacopœia of —. 1732. (Latin.)

Louvain Pharmacopœia. 1821. (French.)

Cologne, Pharmacopœia of —. 1627. (Latin.)

FRANCE.

Codex medicamentarius. Paris, 1748. (Latin.)

The same. Paris, 1732. (Latin.)

The same. Paris, 1748. (Latin.)

The same. Paris, 1818. (Latin.)

The same. Paris, 1819. (Latin.)

The same. Pharmacopée française, ou code du médicamens. Paris, 1837. (French.)

The same. Leipzig, 1839. (German.)

The same. Paris, 1866. (French.)

The same. Military. Paris, 1870. (French.)

The same. Paris, 1884. (French.)

SPAIN.

Codex medicamentarius sive pharmacopœia hispana. Lipsiae et Soraviae, 1822. (Latin.)

The same. Madrid, 1865. (Spanish.)

The same. Allopathic, Homœopathic and Veterinary. Paris, 1871. (Spanish.)

The same. Farmacopea official espanola. 6. ed. Madrid, 1884. (Spanish.)

ITALY.

Campana. Farmacopea Finarese. 5. ed. Firenze, 1808. (Italian.)

The same. Finarini. Bologna, 1825. (Italian.)

(*To be Continued.*)

THE MOST RECENT WORK.

Antitoxin Treatment of Diphtheria.—Antitoxin, as at present prepared, is the diseased, the poisoned serum, of a horse's blood. First the diphtheria bacillus is cultivated for some weeks in bouillon, and an attenuated, but deadly, virus is filtered off from the cultivation. This poison is injected in the horse's blood, at intervals of a fortnight or so, at first in minute doses which are gradually increased. In two or three months the horse can bear a dose which would at first have been certainly fatal to him, and ultimately becomes completely immune. Blood is then drawn from his veins, the serum is separated and bottled, and it is claimed that this being injected in certain doses into the blood of a diphtheria patient conveys its own immunity to that patient. A very important claim is put forward: that a single inoculation of the serum in a healthy person confers a sufficient immunity to protect the attendants on a diphtheritic patient from infection. The remedy is certainly not an agreeable one but it is better than the disease, and so far as it has yet been tried, it must be admitted that a promising degree of success has been reported. No dangerous effects have as yet been observed. Behring of Berlin appears to be entitled to the honor of having initiated and worked out this method of treatment, and Kossel, Ehrlich and Aronson of the same city were the practitioners whose clinical observations with the antitoxin first attracted attention. Roux's paper before the Buda-Pest Hygienic Congress brought the cure into prominence.—*Chem. and Drug.*, 1894, 644.

Bismuth Sulphite.—This is prepared by re-

action between neutral Bismuth nitrate* and sodium sulphite, according to the folowing:

$$2\ Bi\ (NO_3)_3 + 3\ Na_2\ SO_3 = Bi\ (SO_3)_3 + 6\ Na\ NO_3$$

The therapeutic value of this preparation is based on the action produced by the generation of sulphuretted hydrogen, which arises from the sulphurous acid which is set free in the system. The bismuth sulphite acts as an antiseptic, antifermentive, antiputrescent, hence its use would be indicated in treatment of abnormal fermentive disturbances in the stomach or intestines.—*Bull. Chim. Farm.* 10, '94. V. C

Latex of the Lac Tree of Tonkin.—According to G. Bertrand, the vapors given off by this latex produce erysipelic ulcerations of the skin. He has isolated a special diastase from the original substance which he names *laccase.* From the alcoholic solution after separation of the gum and laccase, he also obtained a volatile oily substance *laccol.* The latter approximates to the polyatomic phenols. Laccase appears to be an oxidizing diastase. — *Bull. Soc. Chim.*, (Paris), 1894, to 14.

The Nascent State.—J. C. Gregory calls attention to the somewhat sweeping denunciation of L. Andrews, of the the theory of nascent action. The author believes that while Andrews has not succeeded in disproving nascent action, in instances which he cites, still he has put forth a few fallacies which require us to revise our views on these points, and we may find nascent action to be less widely extended than we have heretofore believed.—*Chem. News*, 1894, 188.

Weights and Measures.—D. B. Dott is of the opinion that for presenting and dispensing the British system of weights and measures is to be preferred, while for analytical work the metric is more convenient. A man is more apt to write .01 gm. instead of .001 gm., than he is to write Gr. I instead of Gr. $\frac{1}{10}$, and when the writing is preceded by a calculation, there is even greater liability of the decimal point going wrong.—*Pharm. Jour. Trans.* 1894, 311.

Spiegler's Albumen Reagent.—The author of this reagent,† calls attention to the fact that in applying this test for albumen in samples of urine of a very low gravity, its delicacy is considerably improved. This may, however, be overcome by the addition of a small amount of a saturated solution of sodium chloride to the urine. This does not exert any solvent action upon the mercury albuminate. The delicacy of the reaction (1 to 350,000) may be increased to 1: 1,000,000 through concentration of the urine by evaporation. V. C.

Losses Attending the Determination of Glycerin in Wines and Hydroalcoholic Liquids.—The methods usually employed for the quantatives estimation of glycerin is that of Reicharts, which consists in evaporating the wine or fluid to dryness with a slight excess of slacked lime, the glycerin is extracted from the residue by washing with a mixture of alcohol and ether, filtering and evaporating the solution. P. Kulisch (*Chem. Zeit.* No. 23, 1894) has studied the various sources of error arising in this method of determination. First, he estimates the loss of glycerin which takes place in the evaporation of the alcoholic solution, which he finds to be from 3, 3 to 7, 7 per cent.; if the alcohol is removed by distillation, the loss arises to 13.7 per cent. A second loss arises through the difficulty encountered in extracting all of the glycerin from the lime residue, particularly in such samples of wines or fluids which contain sugar. In such instances a large amount of lime should be employed, in order that sufficient excess may be present to combine with the sugar, otherwise the latter will be taken up along with the glycerin. Two samples which contain less than 3 per cent. of sugar, to 2 Gm. of extractive, the author recommends the employment of 1.5 Gm. of calcium hydrate; and the use of not more than 25 C.c. of alcohol-ether for extraction of the glycerin. otherwise too much of the extractive is liable to be taken up. V. C.

Thioform.—By the action of monochlorid of sulphur on salicylic acid at 150° C. hydrochloric acid is evolved and two isomeric dithiosalicylic acids are formed,

$$\begin{matrix} S\text{—}Cl. \\ | \\ S\text{—}Cl. \end{matrix} + \begin{matrix} C_6H_4\ (OH)\ COOH \\ C_6H_4\ (OH)\ COOH \end{matrix} = 2HCl + \begin{matrix} S\text{—}C_6H_3\ (OH)\ COOH \\ | \\ S\text{—}C_6H_3\ (OH)\ COOH \end{matrix}$$

In one, the hydroxyl group is found in the ortho-position to the sulphur, while in the other it is in the para-position. The sodium salts of this are known as Dithion I. and II., respec-

*Crystallized bismuth nitrate, from which all moisture and adhering acid has been removed by drying on filter-paper, is dissolved in a little glycerin and then mixed with water.

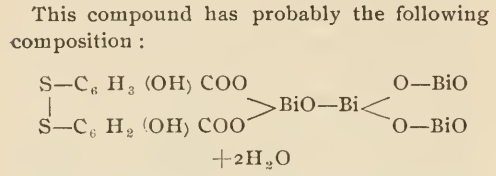
† Spiegler's albumen reagent :·

Hydrargyri bichlorati	2.0
Acidi Tartarici	1.0
Aqua Destillatæ	50.0
Glycerini	5.0

The reagent is placed in a test tube, and by means of a pipette, a sample of the urine is caused to flow over and form a distinct layer above the reagent. No white cloud or ring should form at the line of contact.

tively. Both compounds possess similar therapeutic properties (antiseptic). A mixture of both salts is sold under the name Dithion. If an aqueous solution of Dithion, which has been rendered alkaline by sodium hydrate, is brought into reaction with a solution of bismuth nitrate, a basic bismuth compound is precipitated, which, like most of such organic bismuth compounds, is rendered more basic by washing.

This compound has probably the following composition:



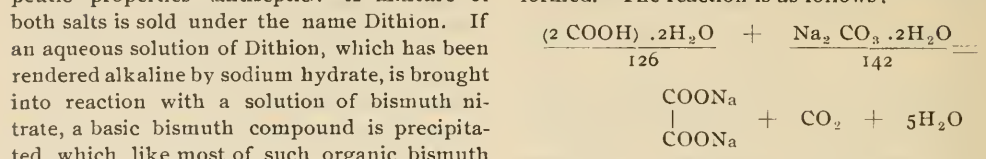
and is represented by the so-called Thioform of Messrs. Speyer & Gruno, of Frankfurt a. M.—Dr. Thoms, *Apoth. Ztg.* 1894—760. V. C.

Thioform.—This is entirely non-poisonous, as has been proven by large doses administered. In treatment of profuse suppurations it has shown itself superior to iodoform and dermatol. In treatment of moist eczemas it is applied in the form of a ten per cent. ointment. V. C.

Sodium Oxalate as Substitute for Oxalic Acid as Standardizing Agent.—Sodium Oxalate, because of the absence of crystal water, and the ease by which it is obtained of constant composition, offers a convenient substitute for oxalic acid, as the standardizing agent for volumetric solution of potassium permanganate. It may be prepared after the following:

In the necessary amounts of warm water dissolve 12.5 parts of pure anhydrous sodium carbonate and 10 parts of pure oxalic acid. The solution of the oxalic acid is poured with constant stirring into the warm solution of sodium carbonate. Carbonic acid is given off, and sodium oxalate precipitates as a granular powder in consequence of its comparative insolubility. The supernatant fluid is decanted off, and the precipitate is thrown in a Witts' filter, and by means of a pump washed rapidly with cold distilled water until the wash water reacts neutral. The precipitate is then dried at 70° C. This sodium oxalate forms a permanent fine white powder soluble in 31.5 parts of water at 15° C. In the preparation of the $\frac{N}{10}$ volumetric solution 6.7 Gm. of this correspond to 6.3 Gm. of oxalic acid.

In the preparation of this it should be observed that an excess of sodium carbonate is employed, otherwise an *acid* oxalate will be formed. The reaction is as follows:



—*Pharm. Centralh*, 1894, p. 605. V. C.

Microscopic Study and the Origin of Ores.—The method of the origin of ores by igneous injection has found few modern supporters. A modification of it as applied to masses of iron oxides or sulphides in basic igneous rock has strong claims to confidence. Microscopic study of rock sections has shown that these minerals are universally present in all gneiss rocks, though in small amounts in all of the acidic ones. They are among the first to crystallize. Microscopic work, in this accurate determination of minerals themselves and of their succession in order of formation, has done us a real service, and now we are greatly increasing our knowledge of their chemical and profound genetic relationship, we may expect no less significant advances as regards the enclosed ore deposits. The passage of basic rocks into masses of iron oxide have been recorded, and there can be little doubt that in this excessively basic development of an already quite basic magma large masses of iron ore can and do originate. The same method has been advocated by Vogt, of Sweden, for bodies of nickeliferous pyrrhotite in connection with diorite.—J. F. Kemp in *Mineral Industry*, 1893. Vol. II., p. 839.

Calcium Borate.—Calcium borate is prepared by mixing solutions of Iodium borate and Calcium chloride. It forms a white, inodorous and comparatively tasteless powder. Employed externally it forms a valuable deodorant and antiseptic. Internally it is employed in treatment of diarrhœa of children. Its antiseptic value depends upon its decomposition in the system.—*Rép. Phar.*, 1894, p. 50. V. C.

Soluble Cresol Preparations.—An examination of the most important soluble preparations of the market gave the following results.

Sapocarbal—An aqueous solution of pure or crude phenol in soap, intended as a substitute for lysol. This contained from 37 to 44 per cent. phenol.

Lysol—An aqueous neutral solution of cresol in soap. This contained 50 per cent. of cresol.

Solveol—A neutral solution of cresol in aqueous sodium cresylate. This contained 23.6 per cent. of cresol. V. C.

Lactophenin.—Under this title a phenetidin derivative has been introduced into medicine. This is a lactyl-p phenetidid $C_6H_4(OC_2H_5)NH\,CO.CH(OH)CH_3$. It forms colorless odorless, crystals, of a faint bitter taste, of melting point 117.5°C. Soluble in 500 parts water at 15° C, and 55 parts of boiling water. Nothing definite is known as yet as to its properties and dose. V. C.

Preparation of Cocaine from its Side Alkaloids.—The synthetic methods for the preparation of cocaine, embraces its manufacture from its side or accompanying alkaloids, that is its mother substance, ecgonin, or its derivatives cinnamyl and isatropyl cocaine. To illustrate the relationship of this important derivative ecgonin to cocaine, the following decompositions are cited:

1st. Cocaine on boiling with water is broken up into methyl alcohol and benzoyl ecgonin

$$\underset{\text{cocaine}}{C_6NH_{10}CHO(COC_6H_5)CH_2COOCH_3} + \underset{\text{water}}{H_2O} =$$

$$\underset{\text{benzoyl ecgonin}}{C_6NH_{10}CHO(CO\,C_6H_5)CH_2COOH} + \underset{\text{methyl alcohol}}{CH_3OH}$$

2d. Cocaine on being heated with concentrated hydrochloric acid is broken up into ecgonin, methyl alcohol and benzoic acid.

$$C_6NH_{10}CHO(COC_6H_5)CH_2COOCH_3 + 2H_2O =$$

$$\underset{\text{ecgonin}}{C_6NH_{10}CHOH.CH_2COOH} + \underset{\text{benzoic acid}}{C_6H_5COOH} + \underset{\text{methyl alcohol}}{CH_3OH}$$

The synthetic methods for cocaine usually employed, consist in converting the cinnamyl and isatropyl cocaine into ecgonin by boiling with conc. hydrochloric acid, whereby they are split up into the latter and organic acids.

Ecgonin is converted into cocaine after either of the following methods:

1st. Ecgonin, on treatment with benzoyl chloride, is converted into benzoyl ecgonin.

$$\underset{\text{Ecgonin.}}{C_6NH_{10}.CHOH.CH_2COOH} + C_6H_5COCl = HCl + \underset{\text{Benzoyl ecgonin.}}{}$$

$$\underset{\text{Benzoyl ecgonin.}}{C_6NH_{10}.CHO(COC_6H_5)CH_2COOH}$$

This benzoyl ecgonin is methylated, that is, converted into cocaine by dissolving in methyl alcohol and passing hydrochloric acid gas through the solution.

$$C_6NH_{10}.CHO(COC_6H_5)CH_2COOH + CH_3OH = C_6NH_{10}.CHO(COC_6H_5)CH_2COOCH_3\ (\text{Cocaine.}) + H_2O.$$

2d. Ecgonin is dissolved in methyl alcohol, and hydrochloric acid gas is passed through, converting it into its methyl ester; this, on heating with benzoyl chlorid is converted into its benzoyl derivative or cocaine.

If in place of methyl alcohol and benzoyl chlorid other alcohols and acid haloids are employed, a variety of alkylated products of ecgonin may be obtained, which possess a physiological action similar to cocaine.

Mess. Einhorn & Willstaetter have simplified the process in that ecgonin methyl ester is produced directly from the side alkaloids without first converting them into ecgonin. These side products (50 Gm.) are boiled from 3 to 4 hours with a mixture of methyl alcohol (300 Gm.) and Sulphuric acid (100 Gm.) in a flask with a reflux condenser. The alcohol is then distilled off and the syrupy fluid is poured into about twice its volume of water, whereby the aromatic acids (isatropic, truxillic, etc.) with their esters separate; after removing these chloroform is added to the acid fluid, saturating with potassium carbonate, whereby the ecgonin methyl ester (cocaine) separates as an oil which is taken up at once by the chloroform. Cocaine can be converted into its next higher homologue cocaethylin by passing a current of hydrochloric acid gas for 2 hours through a boiling saturated solution of cocaine in ethyl alcohol.

NOTES HERE AND THERE.

The Veto of Free Alcohol.—Secretary Carlisle continues firm in his refusal to recognize as mandatory a law which makes no adequate provision for its enforcement. There is much cavilling among a class of extensive producers of medicinal or "other like compounds" over the position of the Secretary relative to free alcohol, but it is a sort of wailing destined to be about as effective as the cries of Coxey and his army of tramps. It is more than hinted that the unaccommodating Secretary finds it especially difficult to do the impossible, because success could mean the loss of $20,000,000 annually of revenue, and the national treasury is not at the present time gorged to an extent that would

A HISTORICAL TABLE OF INSTRUCTION OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK.

BY PROF. H. H. RUSBY

	Physics & Chemistry.	*Prac'l Analyt. Chem.*	*Pharmacy.*	*Dir. Phar. Laborat'y.*	*Materia Medica.*	*Botany.*	*Practical Botany.*	*Physiology.*	*Pharmacognosy.*
1829	John Torrey, M. D.	None.	None.	None.	Stephen Brown, M.D.	None.	None.	None.	None.
1830	" "	"	J. S. Rogers, M. D.	"	J. S. Rogers, M. D.	"	"	"	"
1831	Wm. H. Ellet, M. D.	"	"	"	"	"	"	"	"
1832–1835	L. D. Gale, M. D.	"	"	"	"	"	"	"	"
1836–1840	J. H. Griscom, M. D.	"	"	"	"	"	"	"	"
1841	" "	"	"	"	"	"	C. R. McClellan, M.D.	"	"
1842–1848	Lawrence Reid.	"	B. W. McCready, M.D	"	B. W. McCready, M.D	"	"	"	"
1849–1856	R. O. Doremus, M. D.	"	"	"	"	"	Rev. J. F. Holton.	"	"
1857	" "	"	Geo. Thurber, M. D.	"	Geo. Thurber, M. D.	Geo. Thurber, M. D.	"	"	"
1858–1859	" "	"	"	"	"	None.	"	"	"
1860	" "	"	"	"	"	Geo. Thurber, M. D,	"	"	"
1861–1862	Ferdinand F. Mayer.	"	John M. Maisch.	"	John M. Maisch.	"	"	"	"
1863	" "	"	Ferdinand F. Mayer.	"	Ferdinand F. Mayer.	"	"	"	"
1864–1865	" "	"	Peter W. Bedford.	"	"	"	"	"	"
1866–1867	C. F. Chandler, Ph.D.	"	"	"	"	Ferdinaud F. Mayer.	"	"	"
1868	Arthur M. Edwards.	"	F. E. Englehardt.	"	F. E. Englehardt.	F. E. Englehardt.	"	"	"
1869–1871	C. F. Chandler, Ph.D.	"	E. R. Squibb, M. D.	"	Walt. de F. Day, M.D.	Walt. de F. Day, M.D.	"	Walt. de F. Day, M.D.	"
1872	" "	Isidor Walz, Ph. D.	Wm. M. Smith, M.D.	"	"	"	P. V. La Roy.	"	"
1873	" "	Charles Froebel.	Peter W. Bedford.	"	"	"	"	"	"
1874	" "	"	"	"	"	"	None.	"	"
1875–1878	" "	"	"	"	"	"	Aug. Koehler, M D.	"	"
1879–1880	" "	"	"	"	"	"	Rev. Alp. Wood, A.M.	"	"
1881–1882	" "	"	"	"	"	"	Joseph Schrenk.	"	"
1883–1884	" "	C. W. Parsons, Ph.C.	"	C. W. Parsons, Ph. C.	"	"	"	"	"
1885–1887	(Physics) " Prof. Elliott.	"	"	"	"	"	"	"	Joseph Schrenk.
1888	" "	A. H. Elliott, Ph. D.	"	"	Henry H. Rusby, M.D	Henry H. Rusby, M.D	Henry H. Rusby, M.D	Henry H. Rusby, M.D	Henry H. Rusby, M.D
1889–1890	(Organic) Prof. Chandler. (General) Prof. Elliott.	"	"	A. H. Elliott, Ph.D.	"	"	"	"	"
1891–1894	" "	"	Virgil Coblentz, Ph.D	Virgil Coblentz, Ph.D	"	"	"	"	"

make the loss of that twenty millions altogether pleasing. With the tariff revenues constantly shrinking, the receipts from the higher duties on alcohol suffering from the large withdrawals from bond before the passage of the law, and the points of the income tax not available until next year, it is not surprising that the Secretary of the Treasury finds it so difficult, especially in the face of the emaciated "gold reserve" to provide regulations for cutting off several millions a month of very precious income.

The hardest thing to learn how to do is to do what you don't want to do and don't dare learn to do. This is the very complex problem presented for the solution by Mr. Carlisle, and concerning which he has demonstrated such masterly inaptitude. It is said that ex-Secretary Boutwell, at the request of several patent medicine firms, has formulated a draft of regulations guaranteed to protect the government in the collection of every dollar of honest revenue and in the payment of honest rebates without the possibility of fraud; certain interested parties have, moreover, offered to advance the money for necessary expenses incident to proper enforcement of the law, but Mr. Carlisle insists that there is and can be no solution of the difficulty until Congress again convenes, by which time he is no doubt convinced that the solution will come by wiping out the problem. This form of solution, we may add, will find few mourners among the retail druggists of the country or their patrons, neither of whom had much to gain but very much to lose by the jug-handled piece of legislation.—*West. Drug.*, 1894, 401.

The Paint, Oil and Drug Review says that importers and merchants of San Francisco claim a serious blunder has been made in the new tariff law of the United States. Cocoanut oil is admitted free of duty, but copra, which is the raw material of which the cocoanut oil is manufactured, is subjected to a duty of 30 per cent. Copra is the raw, sun-dried product of the cocoanut, and cannot be used for any other purpose than making cocoanut oil, which is chiefly used in the manufacture of soap. Copra is not prepared and cannot be used as a desiccated cocoanut, and has been duty free.—*Brit. and Col. Drug.*, 1894, 430.

Peppermint Oil.—An examination of an oil of peppermint distilled in Chile, South America, possessed a specific gravity of 0 916, and was characterized by an intense odor of pennyroyal, a property which, of course, is not desirable in oil of peppermint.—*Schimmel's Report* (Oct.), 1894.

Alumni Association.

The first lecture of the Alumni course was one that aroused the feelings of endeavor and enthusiasm in everyone's breast at the meeting on Wednesday evening, Nov. 14th. It was very apparent that the lecturer was not unknown to our older members, for many were present even from distant parts. In a style that is characteristic of Dr. Collyer, he gave a resume of the important events in his life leading to the ministry. It was filled with suggestions and food for reflection to the young men. The essentials to a successful life according to the lecturer were: (1) to be well-born; (2) to be well raised, and (3) to do one's level best. To be well-born meant to possess the "royal blood" of health, honesty and endeavor. These must be coursing through the lives of parents, and the life must be filled with healthful, loving and cheering inspiration. The lecturer made this impression very strong, that these who are parents and likely to be so, ought to take good care of their health, for this is the greatest legacy that can be inherited. The Rev. Robert Collyer certainly possessed a father and a mother who shared these noble and health-giving qualities, and it was indeed a pleasure to the audience as he recounted the days of examples and healthful influence which his parents set to the young man. Dr. Collyer was well raised—not in the lap of luxury, but by parents that were honest, noble, economical and considerate of their home. Bread it was without butter, but the bread was paid for.

In declaring that to do one's level best, was an attribute of a successful life. Dr. Collyer showed that his was not a life as a teacher only, but that in his own life he had had many opportunities to put this to the test, and that as a result of his life

he draws the conclusion. How good it was to hear of the young man carrying the hod, beating stones on the country road and doing anything (the best thing that was offered), in order to make an honest living for his family. This might well serve to inspire the drug clerk as he engages in his drudgery, or the student who in these days attends the furnaces of private houses and are endeavoring to pay their way through college. This is the lesson we all can take to ourselves even if we have not been either well-born or well-raised, and that is that all those who pass through the door to success will find it labelled "push." Our own experience leads us to conclude that we can never tell what are the requisites to success. In irreproachable character and indefatigable energy seems to lie true success. And yet, as we go on in life and consider the past in the light of the present, we see all around us that some are called to be masters of men and others are to serve men, and true success evidently lies in the faithfulness of duty. Being faithful in whatsoever sphere we may be placed, is indeed a success. No one can do more—no man can do less. In this faithfulness to duty according to the light we receive, each one is successful no matter how men may consider our lives.

"'Tis not in mortals to command success;
But we'll do more Sempronius--we'll deserve it."

Minutes of the regular meeting of the Alumni Association held Nov. 14, 1894.

The meeting was preceded by a lecture, delivered by the Rev. Robert Collyer; entitled "From Anvil to Pulpit"—a lecture which proved very instructive, especially to the younger members of the audience. Some of the moral principles brought forward in his lecture could not help but be be beneficial, and I sincerely hope that they were thoroughly digested by the audience. Many thanks to the reverend doctor.

The meeting was called to order at about 9.30 P.M. by the President. There were present Miss K. C. Mahegin, Mrs. R. S. Brunner, and Messrs. A. Henning, A. C. Searles, Thos. F. Main, Julius Tannenbaum, L. J. Meighan, E. W. Runyon, C. T. Wolff, H. Kreuder, J. H. Wurthmann and N. S. Kirk.

It was regularly moved and seconded that the reading of the minutes of the last meeting be dispensed with. Carried.

Nominations were then made for a Secretary in place of Harry Heller, resigned.

William A. Hoburg, Jr., Secretary *pro tem.*, was nominated for the office, but declined to accept, because of not having sufficient time at his disposal to attend properly to business. There were several other nominations made, which were however, not confirmed, whereupon Mr. Hoburg withdrew his former objection and accepted the nomination, conditionally. It was regularly moved and seconded that the President cast one affirmative ballot for the Secretary, electing him to office. Carried; which being done, Mr. Hoburg became Secretary (still on conditions).

Two new members were then to be elected, Mr. Walter Arthur Bastedo and Mr. —— Johnson. Both having duly qualified, it was regularly moved and seconded that the Secretary cast one affirmative ballot, electing them to membership. Carried. Whereupon Messrs. Bastedo and Johnson became members of the Alumni Association.

There being no further business before the house, the meeting adjourned.

Respectfully submitted,
WILLIAM A. HOBURG, JR.,
Secretary.

'94 NOTES.

MAX AUERBACH, whom I spoke of in the last issue as taking the course in the University of Virginia, was prostrated with an attack of

typhoid fever at the beginning of the course, his condition for a time being very critical; but the timely arrival of a Washington specialist, together with the tender care of his mother, succeeded in placing him out of danger. So that he is now much better, but will not be able to resume his studies until the next session.

GEORGE HALL has left his "old homestead" under the Broadway Theatre, to accept the management of a pharmacy up the State. When last seen he was quite enthusiastic over his new position.

MORRIS, who had the reputation of conducting a class meeting (particularly when an election was to be held) without displaying the least symptoms of excitement, is with Messrs. Breitenbach, 57th street and Madison Avenue.

KRUEDER has joined ex Secretary Wurthmann at the P. and S. College. The reputation this pair made while with us will naturally cause an exceptional interest to be taken in their progress, and their many friends especially those in the Class of '94 are confident that they will make a fine showing when the final opportunity arrives.

TUNIS F. COOK is again located in New Jersey, he having recently accepted a position in East Orange. His present location will probably be permanent, as he is quite fond of his native soil.

NOT contented with his Ph.G. degree, or rather having Q. S. of the long hours, characteristic of our profession, Cowen is now studying law in this city. The reader is doubtless aware that he will not be the first druggist to be "admitted to the Bar."

I HAD the pleasure of meeting the following '94 boys at one of Dr. Chandler's lectures:—Grube Race Born, Col. Wade, ex-Secretary T. W. Lining, Jr., also saw Donovan, Boyd, Dauscha, Wm. Hall, Koch and Browne, who are our representatives in '95. It may be interesting to note that most of the latter delegation were "feeling in very good spirits" and were naturally confident of success at their next opportunity.

THE lack of enthusiasm (usually displayed by the '94 boys when an interesting lecture such as Dr. Collyer gave at the last Alumni meeting) may be attributed wholly to the slight attendance of the members of that class. Fortunately, however, a larger representation will be present to do justice next time. Among the interested audience I noticed Messrs. Bastedo, Wurthmann, Wolff, Eely, Clarke, Krueder and Race.

A POSTAL with your address will enable me to keep a "fin de seicle" '94 directory which may be of service later in the season.

NELSON S. KIRK, Ph.G.

9 East 59th St.

Our Graduates.

THE engagement is announced of Otto Raubenheimer, roll of honor '88, of Hoboken, N. J., to Miss Meta Holtzbacher, of Irvington, N. J.

Prof. F. J. WULLING. Class of '89, is delivering a course of twelve lectures on subjects of practical interest to pharmacists, under the auspices of the University of Minnesota College of Pharmacy Extension.

Senior Class Notes.

OFFICERS OF CLASS OF '95.

President,

Jesse Irving Bailey, 110 E. 16th st., N. Y. City.

Vice-President,

Harry B. Ferguson, 118 W. 70th st., N. Y.

Secretary,

Thos. Philson Heffley, 441a Greene av., B'klyn.

Treasurer,

Jas. Burton Carter, 242 Columbus ave., N. Y.

At a meeting held Wednesday, Oct. 24, 1894, H. S. Chambers temporary Chairman, officiating, the above named gentlemen were elected for the respective offices.

Minutes of First Regular Meeting, Class '95, Wednesday, Oct. 31, '94. J. I. Bailey, President, in the chair. Meeting called to order.

Election of the following members as Class reporters :

Section 1. F. P. Bannon, 129 W. 15th st., N. Y.

Section 2. F. L. Chambers, 321 Myrtle ave., Brooklyn.

Election of the following members for the purpose of taking up and completing arrangements for the formation of a College Glee Club :

Rudolph Gies, J. I. Bailey, George F. Sutorius, committee.

There being no further business, the meeting, on motion, adjourned.

The meeting was characterized by the high degree of enthusiasm displayed, and, owing to the energetic character of the various gentlemen, the prospects are for unusually interesting news regarding the Class, and for a first-class Glee Club.

T. P. HEFFLEY, Sec'y.

CLASS OF '95.

THE opportunities the present class '95 possess for distinguishing itself, are unsurpassed by any that have gone before or shall hereafter present themselves.

First, we shall have the honor of being the first class to graduate from the new college; and since the new college is but the realization of our faculty's fondest dreams and years of hope, it is only natural that the fruit of their first year's labor will be anxiously watched and the results carefully weighed.

When the class leaves this building, it will not then mark the cessation of our faculty's anxiety, for 'twill only have begun! Results are far more reaching. Their friends share this anxiety, and in fact, the eyes of the pharmaceutical world are upon us. With such unprecedented opportunities and close vigil—shall we not distinguish ourselves and reflect credit on the labors of our faculty?

The new building forms an epoch in the history of the college, and the success or failure of our class to make for itself a name, will constantly be pointed out as a criterion or as a shoal. I am sure we feel the responsibility on us and will do our utmost to meet the occasion.

The class of '95 after one or two efforts, have succeeded in organizing, and are now in working condition.

After some deliberation, it was decided to appoint a committee of three from each section, to meet as a joint committee and report at a later meeting, nominations for the various offices.

The committee was composed as follows from section 2: Messrs. Gies, Broesler and Hensel. From section 1 Messrs. Sheahan, DeSoto and Bannon.

The following nominations were reported: President, Messrs. Henchel, Brown and Bailey.

Vice-President, Messrs. Hall, Ferguson and Broesler.

Secretary, Messrs. Heffley, Miller and Hensel.

Treasurer, Miss Mahoney and Messrs. Carter and De Soto.

The meeting was called to order by Mr. Watling, vice-president, for our junior year. Mr. Frank Chambers was elected chairman, and it is but justice to him to state that he wielded the gavel in an admirable manner. The committee's report was handed in, and on motion of Mr. Cooley, was accepted.

After little discussion it was decided to vote for the four officers on the one ticket.

Mr. Vanderbeck's motion empowering the chairman to appoint tellers was carried, and the following named gentlemen were appointed: Messrs. Gies, T. P. Heffley and Watling.

The election which followed resulted in the following named gentlemen being chosen:

For President. Jesse Irving Bailey, of Armington, Ill.

For Vice-President, Harry B. Ferguson, of Little Falls, N. Y.

For Secretary, Thomas Philson Heffley, of Brooklyn, N. Y.

For Treasurer, James Burton Carter, of Alfred Centre, N. Y.

The meeting then adjourned.

President Bailey called a meeting on the Wednesday following to elect class reporters and to talk over plans for the formation of a glee club.

Mr. Frank Chambers was selected as reporter from section 2, and Frank Bannon from section 1. The question of the glee club was then taken up, and on motion of Mr. Chambers, Messrs. Bailey, Gies, and Sutorius were appointed a committee to make arrangements for the same.

This committee gave notice to those desiring to join the club to meet them at the pharmaceutical club, at 37 East 19th street, on Friday, Nov. 9. The following named gentlemen were present:

Messrs. Bailey, Gies, Sutorius, Sherman, Cooley, Wells, D. M. Harding, Hilliard, Gieschen, Brenke, Dosh and Bannon. The boys were all agreeably surprised to find in their fellow classmate, Mr. Rudolph Gies, a musician and a musical instructor of rare ability.

It is to be hoped that a sufficient number of the boys will take an interest in this department sufficient to repay him for his work so cheerfully given, and add to their own glory and the honor of the college. As guests of the pharmaceutical club, the above named gentlemen have nothing but praise for the members of the club, who treated them so hospitably in their pleasant and neatly furnished rooms. It is the opinion of the writer that the pharmaceutical rooms at 37 East 19th street are thoroughly up to date for batchelor pharmacists to spend pleasant evenings. Of course, married pharmacists always spend their evenings at home.

After Mr. Cooley and Mr. Dosh who were engaged with others in a pool match, had driven the balls in all directions, except the direction of the pockets; the party adjourned to the reception room where Mr. Gies made a few pleasant and appropriate remarks, in regard to the glee club and the arrangements made for the training of the same. During the evening Messrs. Bailey and Gies gave some choice selections on

their respective instruments which were well received. The party enjoyed a very pleasant evening, and adjourned to meet there again on Friday night of each week.

Make it a success, boys. It is also to be hoped that we will be able to organize an orchestrial club composed of members of our class. It is understood that there is some excellent material in the class for the formation of the same.

The class of '95 will establish a precedent which they can look back to with pleasure and pride.

As the new building out-does the old one, so also it is hoped our class will out-do any of our predecessors.

The second meeting of the glee club took place Friday last, and was a very successful affair. All of the old members were present with the following additional: Carter, Kilborne, Manville, Murray, Thum, Knueper, Brudner, Dun. It was voted to have a quiz each meeting night of 30 or 40 minutes. The quiz master for next Friday night will be Mr. Gies. Get to work, boys, and l make our class a rouser.

WHICH will be the next college, following in Yale's wake, to dispense with her valedictorian and salutatorian?

MEMBERS of the class are urgently requested to attend the class meetings and take an interest in class affairs. Meetings will not be held any oftener than is absolutely necessary, and when they are called, it will be to get the voice of the class. The present officers represent no clique or section but the entire class, and desire to give a government for the class and by the class. Several matters of importance are to be taken up at these meetings, so please attend.

THE importance of taking THE ALUMNI JOURNAL, cannot be too strongly impressed on the members of the class. All matters pertaining to the college and college graduates, that can possibly interest them, will be given space in this Journal, It is the only medium by which they can keep in touch with their classmates after they have left the college and have branched into business on their own account. So subscribe now and renew each year. Take an interest in your Alma Mater. You now have, without exception, probably the finest College of Pharmacy in the world, and it will devolve upon you (as graduates and members) to keep it in the first position it now holds. Let the history of the class be synonymous with the history of the college.

STUDENTS are invited to hand in designs for a class pin; and it is earnestly hoped that the talented members of the class will excel themselves in this matter, in view of the important year we are now entered upon. Our emblem will be looked upon and considered by all subsequent classes.

ANY member of the class who may be possessed with any information that he believes would interest or benefit the other members of the class or college, is invited to send the matter to the Editor of THE ALUMNI JOURNAL, or hand it to one of the class reporters.

IT is reported that Mr. Thum is about to have his hair cut, if so, look out for a large reduction in hair mattresses soon.

Do not confound Gies with the plural of Goose.

OUR friend Hilliard, who comes from the land where mosquitos use cows' horns to pick their teeth with, inclines us to the opinion that they must have fine voices, as he seems to have caught a few of their upper notes.

HOW does a telegraph pole look with the sun behind it? Ask Mac.

MORSE'S sideboards have created an admiration society among the girls.

Request—that he keep them out of sight.

B'S escape from Prof. Elliott's lecture through the lecturer's door, after he had tried both other avenues of escape a few nights since, caused not a little merriment.

After he had tried the second door in vain, not even the wreath of hirsute appendages which adorn his face, could conceal the painful expression which his expressive expressiveness expressed.

Moral: Don't tamper with the doors during lecture hours.

F. B. BANNON, Sec. 1.
F. L. CHAMBERS, Sec. 2.
Class Reporters.

Junior Notes.

The following officers were elected on Nov. 20, 1894.

President—S. Thornhill.
Vice-President—G. H. Carter.
Secretary—F. H. Finley.
Treasurer—G. Norcross.
Reporter—J. Y. Cantwell.

Further notes will appear in next issue. A column will be devoted to the Juniors.

ALUMNI ASSOCIATION OF ST. LOUIS COLLEGE OF PHARMACY.

The nineteenth annual reception and banquet of the Alumni Association of the St. Louis College of Pharmacy was held Tuesday evening, October 16, 1894, in the college building, 2108 Lucas place.

Long before the hour appointed for the occasion members and friends with their ladies began filing into the spacious and tastefully decorated and radiant hall and anteroom of the college building. After a few minutes of general hand-shaking and renewal of old friendship, all passed into the lecture hall, which, by eight o'clock was comfortably filled with a large and appreciative audience.

President Charles A. Lips having opened the evening entertainment with a few well chosen remarks, introduced the lecturer of the evening, Dr. Charles O. Curtman. The Doctor, in his lecture, an able and profound piece of work on "Electricity," succeeded in highly fascinating an appreciative audience with his wonderful demonstrations and illustrations.

At the close of the lecture the guests repaired to the banquet room, where an elegant repast, prepared by the ladies' committee, awaited them. A new feature of the evening was then introduced in the shape of a debate, the subject of discussion being, "Does it pay to study pharmacy?" The affirmative side of the question was represented by the able and eloquent speakers Messrs. G. H. Chas. Klie and Theo. A. Klipstein, while Messrs. O. E. Smith, M. D., and S. P. Randall launched forth some very effective arguments in behalf of the negative view of the same. This was to have been a contest to a finish, but, owing to the lateness of the hour, only a limited number of rounds were fought.

Thus ended the grandest social event ever given under the auspices of the alumni. Much credit is due the Committee on Papers and Queries, whose chairman, Mr. Wm. C. Bolm, by his untiring and laborious efforts, has attributed a great deal to the success of the social and scientific meetings of the alumni.

B. J. Otto, Cor. Secretary.

Oil of Red Cedar Leaves.—Material collected in November yielded 0 14 rectified (0 2 crude) oil of Sp. Gr. (at 15° C.) 0 886; optical rotation in 100 mm. tube, +59°5′. That distilled in August, gave Sp. Gr. 0 887, and optical rotation +59°25′. The indications are that it is rich in dextrogyrate limonene. — *Schimmel's Report* (Oct.), 1894.

MEDICINE AND PHARMACY.

By N. H. MARTIN, F.L.S., F.R.M.S.,
President of the British Pharmaceutical Conference.
(*Continued from November issue.*)

It would have created in the minds of those who were registered a wholesome feeling of respect for the body to which it had cost something to become affiliated. The result was that a large number of persons were placed upon the register who were actually antagonistic to, and were active propagandists against, the educacational standards of the Society. It was probably thought that in the course of a generation these men would all die off, and that when the register was composed entirely of men who had been placed there as the result of examination—again without a fee, I regret to say—a different spirit would prevail. But unfortunately our experience has shown it to be otherwise, and the baneful influence of the trade element is still predominant on the register, and to such an extent that it has captivated the judgment of some prominent men in the Society itself, and threatens to overthrow the very Principle upon which the Pharmacy Act was obtained.

Pharmacy, as practised by the registered chemists and druggists of this country, is attempting an impossibility. It is seeking to grasp the commercial advantages, which in other callings can be obtained by the exercise of legitimate trade while it desires to retain the rewards which properly belong to professional services. This cannot go on much longer, and pharmacy must make its choice between trade and profession, but before I indicate in which direction I think the choice should be, let me briefly mention one or two more of the prominent features which characterize the two.

The very essence of trade is that it is capable of indefinite expansion, and there is no limit to the extent to which

a tradesman may sell his goods at the hands of assistants, or through the agency of any number of intermediate persons between himself and the user of the article he sells. Apply this test to pharmacy, and you will see it is impossible for it to expand indefinitely in the fulfilment of its own proper functions, of dispensing the prescriptions which the physician has written for the individual patient, or prescribing for the smaller accidents and ailments to which human beings are liable. There will perhaps spring into your minds instances of the indefinite expansion which has followed the advertising of nostrums, but that is not pharmacy, but in many cases is merely obtaining money under false pretences. You all know Jerome's friend who visited the British Museum to read up the treatment for hay fever, and plodding conscientiously through the book from A to Z, found that the only complaint he had not got was "housemaid's knee," and so it is with nostrums. The complaint is more often than not suggested by the literature of the nostrum-monger before the nostrum effects the wonderful cure which is recorded in the testimonial.

The essence of a profession, on the other hand, is that the members of it receive a special education, and give evidence before a legally constituted body that they have been so educated, and that the service rendered is personal and direct, and cannot legitimately be multiplied indefinitely through the agency of unqualified persons.

Tried by these criteria I think you will agree that pharmacy in the exercise of its legitimate function towards the public is a profession and not a trade. English people, through their legislature, admitted this in 1868, when by statute they laid down the conditions upon which pharmacy should be carried on, and imposed restrictions of a similar kind to those which had before belonged to the other professions, and which were not and are not imposed upon any trade. How does it happen that the very essence of pharmacy being a profession, that the Pharmaceutical Society and the Legislature having decided, in effect, that it is a profession, we seem as far off as ever from its being practically recognized as such by the pharmacist and the public? It is due to the excessive preponderance of the trade element and of the commercial spirit among the registered men.

This has handicapped the Pharmaceutical Society and rendered it impossible for the Society to advance upon the lines and in the spirit of the Pharmacy Act. We have seen the kindred profession of medicine increase its curriculum or period of compulsory training from three to four years, and again to five years, and in so doing it has steadily and deservedly risen in public esteem and respect, whilst notwithstanding the convictions and earnest desire of the Pharmaceutical Society, we have as yet no curriculum at all, and the voluntary training (for our examination) which our young men undergo in a vast majority of the cases, cannot be described by any less objectionable word than that of cram. The consequence is that notwithstanding that the English people were willing to accept Pharmacy as, and to give it the opportunities of, a profession in 1868, they are almost compelled in 1894, by the conduct of those who practice it, to come to the decision that pharmacy is nothing but a trade after all, and so it comes to pass that the grocer and the company pharmacist are so far on the road to win the rights and the privileges which belong to pharmacy. Pharmacy as a trade is a failure, and I go further and say that pharmacy as well as medicine, con-

ducted as a trade and in the spirit of a commercial venture, ought to fail. If we use our knowledge to exploit human ailments, to excite men's fears, and to play upon human credulity for gain, we ought most ignominiously to fail. You will be prepared to hear that my own strong conviction is that pharmacy should realize its privilege, and seriously proceed to take steps to accept its responsibilities as a profession, and no time should be lost in setting about it. I will only very briefly indicate the steps which are necessary, and trouble you as little as may be with small details. Our entrance examination should be made a much more stringent test of a young man's intellectual powers and of his school training than it is. It is useless to expect men to be able to grasp the problems of organic chemistry whose knowledge of mathematics has not gone beyond the simple arithmetic which our present examination requires. This examination should include algebra and geometry, the Latin should be extended to a knowledge of the selected authors beyond a mere cram of the meaning of words, history and geography and a modern language should be included, and the examination should be passed not earlier than at 17 years of age, but before apprenticeship. Following this should come three years of actual (not nominal) apprenticeship, during which the powers of observation should be cultivated, and by continual exercise in the practical operations of pharmacy, under suitable instruction, all that deftness of manipulation and that wise caution in handling things which is characteristic of the trained pharmacist, should be acquired. A large amount of knowledge of the physical characters of drugs and preparations would necessarily be obtained during this period, and the apprentice whose mind was in his work, would certainly do some reading in connection with it.

Then should come the curriculum, or the period of enforced study upon a Syllabus taught in recognized colleges and schools throughout the country. This period should not be for less than two years, and the whole time of the student should be engaged in training and preparing for the work of his life. During this two years, at certain intervals, the progress of the student should be officially ascertained, and at the end his fitness to become a pharmacist should be tested by one week or more of examination, written, oral and practical, in the subjects of Botany, Chemistry and Materia Medica, and if the result was satisfactory I would give the qualification and title of pharmacist. The training and examination should take the student at least as far—I should advocate further in some directions—as our Major examination, and I would abolish all intermediate names which even suggest qualification. When the pharmacist has undergone this as a minimum of his training and proof of his qualification, I think he will have some right to consider himself, and to be considered by the public, a professional man. But now will arise in your minds the question that having elevated your pharmacist to the status of a professional man, what is he to do and how is he to live? Medical men to an enormous extent dispense the prescriptions for their own patients, and they are exceedingly emphatic in their protest against the pharmacist prescribing.

The treatment and cure of disease are the legitimate functions of medicine and pharmacy in co-operation, and no rigid line of demarcation is possible. Broadly the operations of surgery, the diagnosis of disease and prescribing belong to medicine and the preparation and dispensing of the remedies to be used in the treatment of disease belong to pharmacy.

(*To be continued*)

The Modern Application

of the digestive ferments by the FAIRCHILD processes to the predigestion of food for the sick, may be considered as direct, natural and scientific a development of the resources lying at our hands as the art of cookery itself, by which we seek to perfect the adaptation of food stuffs to the needs of mankind.

The sick require a food suited to the impaired digestive functions, a food which presents no inassimilable waste matter.

PANOPEPTON——bread and beef peptone,—is the food par excellence in all conditions where a fluid, quickly assimilable, agreeable and comprehensive nutriment is required. Made by **FAIRCHILD BROS. & FOSTER, NEW YORK.**