

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

Coloured covers/  
Couverture de couleur

Coloured pages/  
Pages de couleur

Covers damaged/  
Couverture endommagée

Pages damaged/  
Pages endommagées

Covers restored and/or laminated/  
Couverture restaurée et/ou pelliculée

Pages restored and/or laminated/  
Pages restaurées et/ou pelliculées

Cover title missing/  
Le titre de couverture manque

Pages discoloured, stained or foxed/  
Pages décolorées, tachetées ou piquées

Coloured maps/  
Cartes géographiques en couleur

Pages detached/  
Pages détachées

Coloured ink (i.e. other than blue or black)/  
Encre de couleur (i.e. autre que bleue ou noire)

Showthrough/  
Transparence

Coloured plates and/or illustrations/  
Planches et/ou illustrations en couleur

Quality of print varies/  
Qualité inégale de l'impression

Bound with other material/  
Relié avec d'autres documents

Continuous pagination/  
Pagination continue

Tight binding may cause shadows or distortion along interior margin/  
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure

Includes index(es)/  
Comprend un (des) index

Title on header taken from: /  
Le titre de l'en-tête provient:

Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/  
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

Title page of issue/  
Page de titre de la livraison

Caption of issue/  
Titre de départ de la livraison

Masthead/  
Générique (périodiques) de la livraison

Additional comments: /  
Commentaires supplémentaires:

This item is filmed at the reduction ratio checked below /  
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	14X	18X	22X	26X	30X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12X	16X	20X	24X	28X	32X

## ORIGINAL AND SELECTED PAPERS.

### LABORATORY NOTES.

BY E. G. SHUTTLEWORTH.

#### UTILIZATION OF RESIDUE IN MAKING TINCTURE OF MYRRH.

In preparing this tincture by the directions of the *British Pharmacopœia*, a residue of about two-thirds of the original amount of myrrh remains. This consists almost entirely of gum or arabin, as the spirit of 84 per cent., used for percolation, exhausts the myrrh of resin and essential oil, leaving the gum, with the ordinary mechanical impurities, as sand, bits of wood, bark, &c. It occurred to the writer that this might be utilized as mucilage; and to put the idea into execution, the residue of the percolation of 52 pounds—the quantity required for 50 wine gallons of the tincture—was dissolved in boiling water, strained, and allowed to deposit. Twelve gallons of very tolerable mucilage was obtained, and which, although unfit for sale, or the nicer purposes of trade, was found an excellent substitute for ordinary paste, possessing unlimited keeping qualities, but scarcely as cohesive as mucilage from gum arabic. The latter property may, however, be given by the addition of a small quantity of molasses; and thus prepared, the mucilage will be found quite acceptable, and, certainly, cheap enough.

While speaking of tincture of myrrh, it may not be out of place to allude to a plan for its preparation, which was proposed by an American pharmacist, and which has, to some extent, come into use. It consists in forming an emulsion of the drug with hot water, and mixing this with alcohol. The resulting tincture is deep-colored and quite thick, conveying the vulgar idea of strength. Strong it is, but not in aroma, or fragrant resin. The practice cannot be discounted too strongly, as not only is the preparation quite different from what the *Pharmacopœia* requires, but the product is a sticky abomination.

#### ADULTERATION OF LARD.

Some time ago, the stock of prepared lard being exhausted, a quantity was procured from a respectable pork-dealer. It was beautifully white; so much so, that the writer was led to question his ability to produce anything equal to it. The first trial was in preparing ointment of nitrate of mercury. The

color, when the mercurial solution was added, was the reverse of citrine, indeed, decidedly saturnine, developing in a short time to a full slate color. Surprised at this unprecedented result, the usual precautions having been taken as to temperature, etc., the lard was suspected, and, on examination, was found to contain a large proportion of lime. Some time after, being in conversation with a lard-renderer, a hint was dropped as to the relation of lime to color, when the information was confidentially imparted that a common practice among lard-dealers was to mix from two to five per cent. of milk of lime with the melted lard. A saponaceous compound is formed, which is not only pearly white, but will allow of the stirring in, during cooling, of 25 per cent. of water. So much for appearances.

#### EXTRACT OF VANILLA.

The pods are commonly recommended to be rubbed up with sugar. A plan we have adopted gives more satisfactory results. The pods are first cut into short lengths with a pair of shears, and are then ground, or pounded, with the addition of a liberal amount of clean, broken glass (old bottles). The powder may be made of almost any degree of fineness, and the ground glass assists materially in the percolation. Fifty pounds of vanilla may be completely exhausted by twenty gallons of spirit.

#### COMPOUND SYRUP OF SQUILLS, SYRUP OF SENEKA, AND SYRUP OF IPECACUANHA.\*

BY J. C. WHARTON.

The tendency of some officinal syrups to ferment is strikingly manifested by the three above named, and although the present formulae for their preparation are improvements upon older ones, there are still serious difficulties in following implicitly the directions laid down in the U. S. Dispensatory. As a consequence, there are various inequalities in the resulting syrups, and, as I believe, fermentation is sometimes actually promoted by the tedious and lengthy proceedings required.

It will be sufficient to offer as an instance the compound syrup of squills. As it is not necessary to give the formula in detailed proportions, the reader is referred to the U. S. Dispensatory, where it will be seen that after a percolated tincture of three pints is obtained the directions read:—"Boil this for a few minutes, evaporate it by means of a water-bath to a pint, add six fluid ounces of boiling water, and filter. Dissolve the sugar in the filtered liquid, and, having heated the solution to the boiling point, strain it while hot. Then dissolve the tartrate of antimony and

potassa in the solution while still hot, and add sufficient boiling water through the strainer to make it measure three pints. Lastly, mix the whole thoroughly together."

In following these directions as strictly as possible, I have almost invariably found that a large amount of albuminous or "pectin-like" matter was deposited, and in fact this is the stated design of raising the liquid to the boiling point. Here arises the chief difficulty, in my opinion; at any rate I have found it to be a great one, for, in attempting to remove this deposit by filtration, especially if a considerable quantity of liquid is prepared, the filter is soon clogged by the gummy matter, and the liquid filters very slowly. I have known filtration to cease towards the close of the operation. In such a case the best that can be done is to provide a new filter and empty the old one into it, expressing it to avoid loss as much as possible. This is tedious and wasteful of the virtues of the drug. On one occasion I prepared a quantity of the tincture, and such was the tardiness of filtration that several days were occupied in completing it. Towards the end I noticed a few patches of a mouldy growth that had formed on the surface of the albuminous matter in the filter, and by smelling it perceived that the liquid was spoiled before the syrup was made. The failure was suggestive, and I concluded that if a few days were enough to spoil the liquid a few hours' time might injure it, and in fact, the germs of fermentation might begin to work as soon as the liquid was cold, since the protective agency of alcohol was gone.

Reasoning as above, I resorted to a method of filtration often used when a difficult precipitate is to be removed, namely, rubbing the muddy liquid with magnesia. In this case it acted with the double advantage of mingling its particles with the albuminous matter, thus facilitating filtration and neutralizing any free acid that might be present from incipient fermentation. The result was very satisfactory. Filtration was greatly hastened, and the syrup produced was not muddy-looking or translucent, as is generally the case, but was beautifully transparent. It was kept a year without fermenting, though almost daily in use.

I have since tried the same method of filtration with syrup of ipecacuanha and syrup of seneka, with like results.

There is a point that may seem objectionable in using magnesia or its carbonate as above, and it has been duly considered before offering these suggestions. It is this: Magnesia is alkaline in its reactions, and as the active principle of seneka is considered to be acid (polygalic), it would seem that they are incompatible; but as they are both feeble in their affinities, and as filtration proceeds rapidly, there is practically no objection to mixing them. There is, it is true, a very slight escape of carbonic acid when the carbonate of magnesia is rubbed with the concentrated liquid, but it may be due to a small amount of free acid of a different character, and even though a little polygalic acid should be removed by the magnesia, the amount is so trivial as to be of no importance, and the objection is more than coun-

\*From the American Journal of Pharmacy.

terbalanced by the complete removal of the albuminous and pectinous deposits which generate fermentation, and would soon decompose more polygalic acid than the magnesia removed.

I therefore submit the following formulæ, adhering as closely to the U. S. Dispensatory as practicable, and would remark that the use of carbonate of magnesia is sanctioned by that authority in the case of the active principle of ipecacuanha, which the reader will see by referring to the method of preparing *impure emetia*, U. S. D., under the article "*Ipecacuanha*."

*Syrupus Scilla Compositus.*

Take of Squill, in moderately coarse powder, Seneka, in moderately fine powder, each, four troy ounces.  
Tartrate of Antimony and Potassa, forty-eight grains.  
Sugar (refined) in coarse powder, forty-two troy ounces.  
Diluted Alcohol,  
Water, each, a sufficient quantity.  
Carbonate of Magnesia, sixty grains.

Mix the squill and seneka, and, having moistened the mixture with half a pint of diluted alcohol, allow it to stand for an hour. Then transfer it to a conical percolator and pour diluted alcohol upon it until three pints of tincture have passed. Boil this for a few minutes, evaporate it by means of a water-bath to a pint, add six fluid ounces of boiling water, rub the liquid with the carbonate of magnesia in a mortar till thoroughly mixed, filter, and add through the filter sufficient warm water to make the filtrate measure twenty-two fluid ounces. Dissolve the sugar in the filtered liquid, and, having heated the solution to the boiling point, strain it while hot. Then dissolve the tartrate of antimony and potassa in the solution while still hot, and add sufficient boiling water, through the strainer, to make it measure three pints when cold. Lastly, mix the whole thoroughly together.

*Syrupus Senega.*

Take of Seneka, in moderately fine powder, four troy ounces.  
Sugar (refined) in coarse powder, fifteen troy ounces.  
Diluted Alcohol, two pints.  
Water, a sufficient quantity.  
Carbonate of Magnesia, thirty grains.

Moisten the seneka with two fluid ounces of the diluted alcohol, then transfer it to a conical percolator and gradually pour upon it the remainder of the diluted alcohol. When the tincture has ceased to pass, evaporate it by means of a water-bath, at a temperature not exceeding 160°, to half a pint. Rub it with the carbonate of magnesia in a mortar till thoroughly mixed, filter, and add sufficient warm water through the filter to make the filtrate measure half a pint, and, having added the sugar, mix well together and note accurately the measure of the mixture while cold; then dissolve the sugar with the aid of a gentle heat, strain the solution while hot, add sufficient warm water through the strainer to bring the syrup, when cold, to the previously noted measurement, and mix them thoroughly.

*Syrupus Ipecacuanha.*

(Modified from former editions of the U.S.P.)  
Take of Ipecacuanha, in fine powder, two troy ounces.

Diluted Alcohol,  
Water, each a sufficient quantity.

Sugar (refined) in coarse powder, twenty-nine troy ounces.  
Carbonate of Magnesia, forty-five grains.

Moisten the ipecacuanha with one fluid ounce of the diluted alcohol, let it stand for twenty-four hours. Then transfer it to a conical percolator, and gradually pour upon it diluted alcohol until one pint of tincture has passed. Evaporate this by means of a water-bath to six fluid ounces, and ten fluid ounces of warm water, and, having rubbed it thoroughly with the carbonate of magnesia, in a mortar, filter, and add sufficient warm water through the filter to make the filtrate measure one pint; then add the sugar, and dissolve it with the aid of a gentle heat, and, having strained the hot syrup, add sufficient warm water, through the strainer, to make it measure two pints when cold.

It will be seen that the chief point of difference between the two first formulæ above given and the U. S. P. requirements is the filtration of the evaporated tinctures through carbonate of magnesia instead of paper only; but I would call the attention of the authors and revisers of both the Pharmacopœia and Dispensatory to the lack of explicit directions in many of the formulæ for syrups, from which I, with many others, have suffered loss and trouble. The difficulty is mainly in the want of full and accurate directions in regard to the various measurements. For example, the closing direction, in the formulæ for compound syrup of squill read thus:—"Add sufficient boiling water, through the strainer, to make it (the hot syrup) measure three pints" (while hot?) In view of the tartar emetic, the design of the formula must be to make the syrup measure three pints when cold, but a fair interpretation of the directions cannot mean that. Now it is plain that three pints of hot syrup will not, upon cooling, be three pints of cold syrup, admitting that no evaporation takes place in the act; but most commonly a considerable evaporation will take place during the process, and of necessity a crystallization of sugar takes place. The fault is even worse in the formula for syrup of seneka. The directions read: "*Filter, and, having added the sugar, dissolve it with the aid of a gentle heat and strain the solution while hot.*" No account is taken of the loss of liquid in filtering, nor of evaporation in dissolving the sugar. If the directions are followed precisely, in such cases crystallization will inevitably take place, even if the amount of sugar prescribed is not a little too great, as I am of opinion it is in the two first of the syrups herein discussed. I believe that in practice *twenty-nine troy ounces* would be found to answer as well as *thirty troy ounces*, or a proportional reduction of other quantities.

NOTES ON AROMATIC SULPHURIC ACID.

BY JOHN W. EHRLMANN.

Every dispenser is acquainted with the objections which may be brought up to the present official formula for aromatic sulphuric acid. As the committee on revision of the pharmacopœia is now in session, it is to be hoped that the formula under consideration may be modified, and with it several others of a like nature.

\*From the Chicago Pharmacist.

The aromatic sulphuric acid is used most extensively as a solvent for sulphate of quinia, in prescription, usually with watery or syrupy vehicles. When prescribed alone for the medicinal effects of the acid, it is not unfrequently diluted in order to modify its taste, and, avoiding the use of drops, to render its administration more convenient.

Now, when the elixir of vitriol is associated in this manner with watery fluids, the coloring and extractive matter, becoming insoluble in the menstruum, precipitates, and the result is a muddy mixture instead of the clear solution we should otherwise obtain. But the elixir of vitriol, even undiluted, is constantly undergoing change, with the continual deposition of a bulky precipitate, so that it can be dispensed in a bright condition only by frequent filtration. This, of course, is exceedingly annoying, and it is a reproach to the progress of pharmacy that the formula has been so long retained without material change. The old method of preparing it by exhausting the powders with the mixed alcohol and acid is preferable to that now employed, as it gives a preparation less prone to deposit by standing. The other objections, however, apply to this with equal force; for the ingredients afford to the menstruum principles, which must of necessity separate upon dilution.

In revising this formula we should keep in view the fact that the resulting preparation should be miscible with water without precipitation, hence aromatics of an oleo-resinous nature cannot be used.

The following formula we have used for some time, and have found entirely satisfactory:—

Take of Sulphuric Acid, three troy ounces;  
Fluid Extract of Orange Peel, one fluid ounce;  
Red Rose leaves, two drachms;  
Boiling Water, one fluid ounce;  
Alcohol, a sufficient quantity.

Add the acid gradually to half a pint of alcohol, and pour the boiling water upon the rose leaves; when both liquids have become cool, unite them, add the fluid extract, and sufficient alcohol to make up the measure of eighteen fluid ounces. Mix thoroughly and filter.

Elixir of vitriol, thus prepared, has a pleasant aromatic odor and flavor, and the beautiful red colour of the rose leaves, heightened by the presence of the acid. It is miscible with water without turbidity, and a specimen, after long keeping, has deposited but a trace of sediment.

CASTOR-OIL SOAP.\*

BY F. M. RIMMINGTON.

It is somewhat remarkable that our present English pharmacy has no pure medicinal soap possessing any characteristic property or medicinal activity. The ordinary Castile soap, being that which is commonly used for that ordered by the Pharmacopœia, can scarcely be considered a satisfactory article when we consider its composition and the mode of its manufacture. Having recently had occasion to direct my attention to this subject, it occurred to me that castor-oil offered some advantages, and would yield a soap possessing qualities very desirable in an article which so frequently formed the medium or adjunct for administering other active remedies. On putting this idea into practice,

\*From the Pharmaceutical Journal, London.

I found that a soap prepared from this oil has rather marked qualities, but my opportunities do not afford me the means of properly testing its medicinal properties. I believe it will be found that it has sufficient aperient power to relax the bowels when taken consecutively for several days, but I believe its greatest value will be found as an adjunct to other aperients. This at least is the result I have arrived at. It is, of course, well-known that the purgative principle of castor-oil has been ascribed by Soubeiran to the existence of a supposed oleo-resin, and that the ricinoleic acid is extremely acid. I find when the oil is saponified that this acid principle is either entirely or partially liberated, and does not continue marked as it is in the oil in its natural state, nor neutralized, as might be expected, by the alkali. It is to this fact, I think, we must look for any active property this soap may possess; and here I must leave the matter for the further investigation of the medical and pharmaceutical professions. The physical properties of the soap are in its favor for use in medicine. It has a clean yellowish-white color, is free from smell; it soon becomes dry, hard and is easily powdered; it has no tendency to soften or deliquesce on exposure to the air. In proof spirit it makes a perfectly clear and colorless solution, with only a little sediment. I shall forward a specimen to the Society for the inspection of those who may feel interested.

#### American Sumac.

Since the war, and in the reversal of fortune consequent thereto, many of the people of the South have turned their attention to other sources of revenue than the former staples of tobacco, corn, and cotton, and this necessity has developed new and heretofore neglected sources of revenue. For instance, it is said that one county alone of the State of North Carolina shipped North last winter about \$100,000 worth of quails (called partridges there), not to speak of the new industry of "truck farming," in which men are now making fortunes, who a few years ago would have thought it almost a disgrace to sell so apparently insignificant a thing as a strawberry.

Among these new industries, and rising rapidly into importance, are the gathering and manufacturing for market of sumac. This article is used as a dyestuff and for tanning morocco. Formerly all used was brought from Europe; now the southern States supply a large quantity, already supplanting the low grades of the foreign article, and we hope some day ere long also to take the place of the finer grade.

The difference between American and foreign, or, rather, American and Sicilian first grades, is probably due to the fact that the latter is cultivated; the former is as yet a wild product growing on those vast fields of so-called worn-out land abundant through the south from their former wasteful system of farming. However, one of the largest dye manufacturers informs me that the tannin in the Southern sumac seems to be in a different form from the Sicilian, and hence the latter is still preferred by dyers, especially for fine work. Still this may be due merely

to cultivation, as all know the changes that have been made from time immemorial in various grains, grasses, and fruits, by culture and care.

Tanners of morocco say that the Southern sumac when carefully gathered, free from sticks and dirt, the leaves and leaf stem only is equal in tannin strength to the best Sicilian; that with Sicilian at \$175 per ton such sumac finely ground should bring \$125 per ton. The usual price is \$50 to \$90, and it was sold at \$110. It is like everything else; it pays to put it on the market in the best order possible.

In treating of the operation of gathering and preparing for market we shall first state something of the different varieties of sumac. There are six botanically different varieties of sumac in the United States; of these, three are of value, one is of little or no use, and two are poisonous. The first three resemble each other very much in leaf and size, growing from four to ten and fifteen feet high, chiefly on dry uplands, in old fields. Of these three two have hairy berries and one has a hairy down on the branch, like a deer's horn, in summer; the third has a perfectly smooth berry and branch. The leaves of all these are valuable, though we think if care were taken to keep them separate that the hairy or stag-horn sumac would be found most valuable for dyeing.

Of the other three the dwarf sumac, one or two feet high, is valueless; another grows only in swampy places, and while its juice is said to make a fine varnish, used largely in Japan, yet it is so poisonous to many persons that it is best let alone; the third is the well known poison oak.

In gathering the sumac, leaves and leaf stems should be carefully picked without any of the woody stem, then dried under cover on lattice-work shelves to give free access to air, frequently stirring or turning to prevent heating. When thoroughly dried, at the end of two or three weeks, it is sent to New York or to the nearest mill for sale. In this state it is worth from \$1.25 to \$1.75 per hundred lbs., but woody stems and dirt detract from its value very much. The buyer in the interior of Virginia, North Carolina, South Carolina, and Georgia can seldom afford to pay more than \$1 per hundred.

At the mill it is ground very fine and screened. The mill is of the usual drug-mill form: an upright wheel revolving on its edge in a circular trough, as the old fashioned mill for grinding clay. It should be tightly enclosed; if not a large quantity of the light, fine, powdered sumac will escape and be lost. On care and economy in this operation depend the miller's profit. After grinding it is screened and packed in bags—162 lbs. to the bag—and thus sent to market. The bags to hold this quantity should be cut out 40x60 inches. Fourteen such bags will hold a ton. This is exactly the style and weight that Sicilian sumac is packed as sent to this country. To sell well it should be of a light green colour.

The time of gathering is from July 1st to just before first frost, not later; in some parts it may commence earlier. It should be done when the flower is in full bloom, not before.

It is stated that the consumption of sumac in Great Britain is over 20,000 tons per annum, and that it is yearly increasing. In this country we use 3,500 tons of native and

perhaps 3,000, or over, of foreign; probably 500 tons of native we export. As the demand and uses for leather never grow less, it is not at all probable that all which the South can produce, if properly prepared, will ever fill the needed supply; and if it should create a plethora on the market it would only cause new uses to be found for it, or engender the production of a finer article.

There is no reason why we should not export at least 5,000 tons to Europe, and supply all our own demands. The mill machinery is said to cost \$2,500 without power. With the crude article at \$1.50 per hundred even, \$12 to \$15 per ton for grinding and bags, \$10 for less, and \$10 for freight to New York, there is certainly a fair margin of profit at \$90 per ton at least, which price a good article will certainly always bring in New York. Our figures of cost, also, are rather high. There is plenty of room for at least ten more mills in the now unoccupied field of North Carolina, South Carolina, and Georgia. Any good business place in the upper or middle sections of these States will do as a site.

We have stated that sumac is used for tanning and dyeing. For these purposes the user generally makes his own decoctions, and uses them when fresh and warm. It is stated that the liquor injures by standing. For tanning it is valued, as it does not discolor the leather. It is used in the same manner as a decoction of bark. Best Sicilian contains, according to Muspratt, sixteen per cent. of tannin and Virginia ten per cent. We have no doubt the vastly improved mode of gathering and preparing the American sumac will now increase its quantity of tannin.

In dyeing it is used to produce a fawn and a rich yellow, a black, a peculiar shade of green, and a red. The mordants are usually tin or aluminous substances. With Brazil wood and tin solution it produces a red. With coppers and logwood a rich permanent black. With a solution of chloride of tin alone, a rich yellow, and this with Prussian blue, shades of green. It is used chiefly as a base, and has the quantity of giving great permanency to the colours dyed with it. The leaves of the hairy species called stag-horn are considered best to dye yellow.

The sumac berries are of very little value though we think in the progress of science a use will be found for them. They are said to contain large quantities of malic acid. They are now used in small quantities by the druggists, and when ripe make a very refreshing and cooling beverage. They should by all means be kept out of the gathered leaves, as they contain a red dye, hence would injure the quality of the sumac.  
—Scientific American

#### Oil of Peppermint as a Local Application in Neuralgia, etc.

A correspondent of the *Lancet* says;—"A few years ago, when in China, I became acquainted with the fact that the natives, when suffering from facial neuralgia, applied oil of peppermint to the seat of pain with a camel-hair pencil. Since then, in my own practice, I have frequently employed the oil of peppermint as a local anesthetic (?) not only in neuralgia, but also in gout, with remarkably good results. I have found the relief from pain to be almost instantaneous."—*Med. and Surg. Rep., Phila.*

## EDITORIAL.

**Correspondence** and general communications, of a character suited to the objects of this JOURNAL, are invited, and will always be welcome. The writer's name should accompany his communication, but not necessarily for publication.

**Subscriptions** will not be acknowledged by letter, as our sending the paper may be taken as sufficient evidence of the receipt of the money.

All communications connected with the paper to be addressed, post paid.

"EDITOR CANADIAN PHARMACEUTICAL JOURNAL  
TORONTO."

## REGISTRATION OF FIRMS.

The question has been asked as to whether it is necessary for the individual members comprising a firm to be registered separately, or whether the registration of the name or style of the firm would be sufficient. The wording of the Act is such as to leave no doubt on this point, and its intention is equally apparent. It is obviously necessary for the individual members of any partnership to register separately under their own names in order to entitle the firm to continue business. If the registration of one member, or of the style under which business is carried on, were permitted, the distinction between competent and incompetent persons would be lost; and this is precisely what the Act is intended to define.

## LIST OF REGISTERED PHARMACEUTICAL CHEMISTS.

In this number we publish a certified list of those persons who, by reason of having paid all arrears due to the College, are entitled to registration under the Act. The Registrar directs us to say that this list must not be considered as complete, as a large number of members have made enquiries as to the amounts due by them, and having received their accounts, have not yet had time to send in their fees. The list will be completed in next number, and after that issue no further additions will be made of persons entitled to registration through previous connection with the College.

## THE SALE OF POISON CASES.

Our readers will be gratified to learn that the trial of a large number of our city druggists, for the alleged illegal sale of laudanum, has resulted in the dismissal of all the cases. It will be remembered that the trial was adjourned from time to time, but was finally appointed for Saturday, April 15th. In the meantime, Gale—the satellite and only witness of Mason, the informer—having repented of the error of his ways, had severed his connection with the main orb, or had so far departed from his prescribed orbit as to be

wholly beyond the power of attraction—or, so to speak, had flown off into space, so that the best efforts of Mason were fruitless in recovering him from his erratic wanderings. We do not wish our readers to think he had been spirited away—such was not the case. The non-appearance of the witness was due to a private quarrel between the parties. As there was no evidence for the prosecution the cases were, of course, dismissed. We have, however, no doubt, that if the trial had been proceeded with, the result would have been the same, as the repeal of the old law, would have materially affected the decision. Having now entered upon the new order of things, we can bid farewell to the informer, who may aptly exclaim, with the Moor of Venice "Othello's occupation's gone!"

## PHARMACY IN QUEBEC.

We are pleased to learn that the efforts made in the direction of pharmaceutical legislation by the druggists of the province of Quebec have, at length, been attended with some measure of success. It will be remembered that, about two years ago, a bill for the better protection and fartherance of the interests of pharmacy, was brought before the local legislature, but, on account of a most determined opposition, which was brought to bear against it by some members of the medical profession, the measure had to be abandoned. To those who are unacquainted with the circumstances of the case, it may appear strange that any members of a profession, like that of medicine, could deliberately set themselves in the way of progress, and bar the advance of a science on which they are so largely dependant, and whose interests are so closely related to their own. The explanation of the opposition lies in the fact, that in Lower Canada—at least, as far as the small towns are concerned—the doctors monopolize both the practice of medicine and the dispensing of it; doctor and druggist are merged in the same individual, and, as might be reasonably expected, the general result is far from creditable to either profession. This monopoly is controlled by the sole power of granting licenses to carry on the business of an apothecary, being vested in the physicians. Any person who intends to commence business must first present himself before a board of examiners, composed exclusively of doctors, and from them he must obtain a certificate, before he can practise his legitimate calling. We do not intend to offer any comment upon this unjust law, or its pernicious workings, but would merely point to the state of pharmacy in the rural districts of the province of Quebec, as the most conclusive evidence which can be brought on the subject.

In the larger cities, as those of Montreal and Quebec, the druggists are subject to the same law, but in spite of its depressing influence have won for themselves a name and place in the foremost ranks of pharmacy. Nor have the physicians of these cities denied to recognize the claims of pharmacy to a separate existence, independent of the legitimate practice of medicine: nor, as a rule, have they offered any opposition to the efforts of the druggists to obtain the right of self government—on the contrary—many of those who fill the highest positions in the profession were found amongst the warmest supporters of the Pharmacy Bill; and we are assured that the measure was defeated solely through the influence of the multitude of petty practitioners who through the villages of the lower province, and disgrace, alike, both pharmacy and medicine.

As it was evident that the contest between doctor and druggist was an unequal one; the Montreal Chemists' Association desisted, for the time, in any further efforts towards legislation, and wisely changed its course of action by directing its energies to the augmentation of its power and resources. To this end the chief attention of the Association has been bestowed upon the education of its members. Classes in Chemistry, Botany and Materia Medica, have been organized, and lectures delivered on these subjects, during the course of the past two seasons, and the success realized has been such as to warrant an application being made to the legislature for an act of incorporation, which was granted towards the close of last session. This Act, which is styled "The Pharmaceutical Association Act of 1770," is simply one of incorporation, and does not directly affect the interests of the trade, as that recently passed in Ontario. The preamble declares that whereas certain persons have, for several years, associated together under the name of the "Montreal Druggists' Association," for the purpose of advancing chemistry and pharmacy, and increasing the opportunities for the education of those who practice the same, and, for that purpose, have given certain courses of lectures, and are desirous of founding a library and museum, said persons pray to be incorporated, so that they may be better able to increase their means of instruction.

To this end it is enacted that the "Pharmaceutical Association of the Province of Quebec" be a body politic and corporate, for the purposes aforesaid, and that the members of the Montreal Chemists' Association be members of the new Society, together with such persons as were established in business, as chemists and druggists, on their own account, prior to the passing of the Act; providing also for the admission, in future, of members who shall have been examined in

such subjects as the council of the corporation shall deem proper. Persons engaged in the sale of the common class of drugs ordinarily kept in country stores, shall not be entitled to membership by virtue of their assumption of the title of chemists and druggists. Persons holding licenses from the College of Physicians and Surgeons of Lower Canada, or from any college of chemistry and pharmacy recognized by the law of Great Britain, or the Dominion, may become members of the Association without examination. Associates of the old Society are admitted on the same footing in the new Association; but after the passing of the Act, all apprentices or clerks must pass an examination before they can be registered as associates.

The direction and management of the affairs of the Association are vested in a Council, consisting of twelve members, who are to be elected by ballot. At the close of every year, two thirds of the council are to go out of office, and new members are elected to fill their place, but old members are eligible for re-election. A provisional council has been appointed by the Act to hold office until the first general election. The members composing this council are Messrs. Benjamin Lyman, N. Mercer, H. R. Gray, J. Goulden, E. Muir, J. Kerry, J. B. Edwards, R. Bolton, W. H. Clare, T. Craithern, A. Manson and E. Giroux.

The council are vested with power to make such by-laws, rules, or regulations as they may deem proper, for the purposes of the Act, and may impose a penalty not exceeding ten dollars for any infraction thereof.

The by-laws have been already framed, and of course relate more particularly to the internal working of the association, but we notice some items of general interest. There are to be two examinations, the first in order relates to a knowledge of the English, French and Latin languages, and arithmetic. This is entitled the preliminary examination, the fee for which is \$2. The second, or major examination relates to the translation and dispensing of prescriptions, pharmacy, general chemistry, chemistry of poisons, toxicology, materia medica and botany, and every candidate must produce evidence that he has pursued his studies, for not less than four years, in a drug store. The fee for the major examination is four dollars. Should the candidate show to the satisfaction of the board, a sufficient knowledge of the above subjects, he is entitled to receive a diploma, and to enter upon full membership. The Board of Examiners is to be composed of five members of the association, the President, and such professors of science as the Council shall deem requisite. The annual subscription for members is \$5 per annum; for associates \$2. The annual meeting is to be

held alternately, in the cities of Montreal and Quebec, on the third Tuesday, in May, in each year. The election of the council takes place at this meeting, and not less than ten days prior thereto, the secretary is directed to issue to every member of the society, a voting paper, in which the names and residences of all the candidates for office are duly set forth.

We regard this Act as a most important stepping stone to the accomplishment of the independence of Eastern pharmacy, and are convinced that the time is not far distant when the certificate of the pharmaceutical board will not only qualify for membership in the association, but entitle its holder to the right of pursuing his calling without the interference of any other examining body.

#### PHARMACEUTICAL LEGISLATION IN NEW YORK.

If, in past years, apothecaries have complained of the neglect of legislators, there is certainly no reasonable ground for such charge at present. The last three years have been especially prolific in regard to pharmacy bills, and, as far as realized, we believe the general result has been satisfactory both to the druggist and the public. The latest addition is that of a bill regarding the practice of pharmacy in the city of New York, which passed last month, and of which the following is a brief summary:—The Mayor is directed to appoint, before the first of June, a board, consisting of one skilled pharmacist, one practical druggist, and two regular physicians, to hold office during the pleasure of the Mayor. These shall choose a practical druggist as secretary. This board shall examine and license all druggists and clerks now employed or hereafter to be employed as clerks in drug-stores. At the expiration of six months from the organization of the above board, any unlicensed person who shall make up a physician's prescription shall be deemed guilty of a misdemeanor, and shall be liable to a fine of not more than \$500, or imprisonment for not more than six months, or both. The salary of the members of the board shall be fixed by the Board of Supervisors, but shall not exceed \$2,500 per annum.

#### Education of a German Apothecary.

Of late years, it may be that the Germans have received an over-due amount of praise in regard to their proficiency in the various departments of science and art; but if we take their knowledge of the art of war, as evidenced by the late conflict, we must certainly come to the conclusion that they are thorough masters of one art, at least. This proficiency is due to the admirable system of early training to which they are subjected,

and which, by establishing a firm basis for knowledge, ensures the stability and substantialness of the superstructure. The profession of pharmacy is governed by the same system, and the qualification of those who practice it is guaranteed by law, whereby knowledge is no longer at the mercy of caprice or ambition, but becomes a matter of absolute necessity. A late issue of the *Springfield Republican* contains the following details of the training of a Prussian apothecary, which will no doubt prove interesting to our readers:

The elementary and grammar schools in Germany are followed by what the Germans call the "realschule," that is, a technical school where one is fitted for the average duties of life, studying mathematics, natural philosophy and the modern languages. But one who will become an apprentice to the apothecaries' craft must also have been through the gymnasium, in which we learn physics, botany, and other natural science, and peculiarly the classical course, with special reference to Latin. He has then to undergo an examination before a board comprising the district physician and a notary of the government. If he successfully passes this ordeal, he gets a permit to serve as an apprentice for four years in a pharmacy. At intervals during this period he is examined in the necessary branches of science, and if found deficient in any one, he is admonished to study that especial branch and is more strictly examined therein the next time. During these four years he is not allowed to put up prescriptions. He must acquaint himself with the properties of all drugs, make a herbarium—not ornamental, but practical; and is also allowed to compound drugs in the laboratory. During the fourth year of his apprenticeship, he puts up prescriptions under the strict surveillance of the proprietor, or of a responsible drug clerk. At the expiration of this term, he has an examination as drug clerk; verbally, by writing, and by practical exhibition of his skill, under direction of the examining board, composed of two physicians, two apothecaries and a notary, in all things requisite to the profession of an apothecary. Success entitles him to a diploma as a drug clerk, with which he must serve four years, as a clerk solely, and in different pharmacies. The four years service spent in one place will not answer the requirements of the law. At the end of this period, the embryo apothecary must spend one year in the university to complete his studies, and then comes the examination of the state, so called. The faculty of the university and certain delegates of the government are in this committee to fathom at once his initial and his final acquisitions. Past this trial with success, he receives his diploma as an apothecary, and is allowed to buy an old stand or enter an established firm, if he will, but he cannot set up a new one, for the government, which requires so much of the apothecary, also protects his interests. It is also to be noted that no man, whatever his wealth, can buy a pharmacy, unless he be a graduated apothecary. It is worth while to remark, in passing, that the law provides for the natural increase of population by ordering one pharmacy to, we believe, every 5000 inhabitants. Another remarkable feature of the Prussian law is the regulation of prices. A prescription costs precisely the same in every



pharmacy in the country. No apothecary can put up anything a penny higher or a penny cheaper than the authorized charge. He may give goods away, but he may not sell them for half price.

### Composition of Secret or Proprietary Medicines.

In the *American Journal of Pharmacy* for March, is a review by J. M. Maisch, of Wittstein's *Taschenbuch der Geheimmittellehre* (handbook of secret medicines). The reviewer gives the result of analyses of a number of the nostrums popular on this side of the Atlantic, and as many of our readers deal in such articles and should be familiar with the composition of what they sell, we reproduce the formula for their benefit:

**Coca Pills**, by Sampson, New York. According to Hagar and Jacobsen, composed of powdered coca and extract of coca in about equal quantities; value about one-fourth of price.

**Eau de Cythère**, a hair color restorer, consists of 4 chloride of lead, 8 hyposulphite of soda, 88 water. A similar composition was Eau de fees, which, a couple of years ago was introduced here. The writer found in a sample also some alkalies, earths and traces of nitric acid, originating probably in the spring or pump water used. Hagar and Jacobsen give the following formula: hyposulphite of lead  $\frac{1}{2}$ , hyposulphite of soda 3, glycerine 7, water 88 parts.

**Granular Effervescent Citrate of Magnesia**, by Bishop, of London, consists merely of bicarbonate of soda and tartaric acid.

**Pommade des Châtelaines**, a hair invigorator, consists of benzoated lard and some volatile oils.

**Hamburg Tea**, by Frese & Co., of Hamburg; Senna 8, ma ma 3, coriander 1.

**Magnesian Aperient**, by Moxon, of England, is according to Siller, anhydrous sulphate of magnesia 31, carbonate of magnesia 14, bicarbonate of soda 30, tartaric acid 25 parts.

**Lait de Perles**, according to Dragendorff, 1 white lead, 7 rose water.

**Swedish Essence of Life** is made also in this country, under various names. As usually made by apothecaries, it is a tincture prepared from 4 aloes, 1 agaric, 1 rhubarb, 1 sedoary, 1 gentian, 1 myrrh, 1 theriac, with 100 to 120 dilute alcohol. The secret medicine manufacturers usually substitute cheaper articles for the high priced saffron and rhubarb.

**Hoff's Extract of Malt** has been repeatedly altered in its composition. It is now a good beer, of a pretty constant alcoholic strength of 5 per ct., but varying in the amount of extract between 5.3 and 10 per ct. The beer sometimes contains an infusion of bitter herb (buckbean, blessed thistle) and of the bark of *Rhamnus frangula*. According to one original receipt, beer was mixed with a small quantity of a strong infusion of marshmallow root, coriander, staranise, and grains of paradise, and with some simple syrup, glycerin, oil of lemon, oil of orange and beer coloring (caramel). The consumers can make it for, at most, one sixth of its price.

**Zimmerman's Extract of Malt**, which, like the former, comes likewise from Berlin, is similar in composition.

**Matico Injection**, by Grimault, of Paris, for

gonorrhoea, is made, according to Bjoerklund, by dissolving 4 grains sulphate of copper in 8 oz. infusion of matico (from  $\frac{1}{2}$  oz.)

**Syrup of Horseradish**, by Grimault. Hagar gives the following directions: 50 p. each of fresh scurvygrass, buckbean, and watercress, 60 of horseradish, 40 of fresh orange berries, are infused with 3 cinnamon in 50 p. white wine, and after a day expressed; 250 p. sugar are dissolved in the filtrate.

**Iodized Syrup of Horseradish**, by Grimault, contains 10 iodine and 5 potassium iodide in 8000 of the former.

**Syrup de Lait Iodique**, by Bouyer, of Paris. 200 cow's milk, 60 cane sugar, a little soda, and 1-6 of potassium iodide, are evaporated to 100 parts.

**Myrrhine**, by J. B. George, of Paris, for the preservation of the teeth: glycerin 38, myrrh 7, arrowroot 5, chalk 54, oil of cinnamon 1 part.

**New York Pills**, by Sampson, of New York. The  $1\frac{1}{2}$  grain pills consist of powdered coca 25, extract of coca 30, powdered iron 35 parts.

**Opiate pour les Dents**, by Pinand. Syrup 70, chalk 21, gypsum  $\frac{1}{2}$ , magnesia  $1\frac{1}{2}$ , colored with anilin red, containing arsenic, and flavored with oil of cloves, and of spearmint.

**Brandreth's Pills** contain resin of podophyllum, inspissated juice of poke berries, saffron, cloves, oil of peppermint.

**Holloway's Pills** are composed of aloes, myrrh, and saffron.

**Morrison's Pills**,  $2\frac{1}{2}$  grains each, consist of aloes, cream of tartar and colocynth; another kind contains the same ingredients, besides gamboge.

**Rudway's Ready Relief**, according to Fecolt, is an ethereal tincture of capsicum, with alcohol and camphor.

**Rudway's Renovating Resolvent**, a vinous tincture of ginger and cardamom sweetened with sugar. (Hagar and Jacobsen.)

**Poudre Hémostatique Végétal**, by Bonnatour, consists of 4 rosin, 1 gum arabic, 1 wood charcoal.

**Poudre Unique**, by Godernaux, of Paris, lauded as a specific against epilepsy, is impure calomel, leaving when heated a slight reddish residue.

**Oil of Horsechestnuts**, by E. Genevoix, of Paris, is not the oil of the horsechestnuts, but another non-drying oil, altered by heat so that it has acquired a darker color, a pungent odor and acrid taste. (Wittstein.)

### Manufacture and Properties of Chloral.

In the *Proceedings of the American Pharmaceutical Association*, we find an interesting report of a communication made by Dr. Squibb in regard to his experiences in the manufacture of Chloral. After alluding to details in the history of the new anæsthetic, the Doctor said that he had used alcohol of various degrees of strength in preparing chloral, but had met with no success, except when using absolute alcohol. In regard to the time required to complete the process it was found that the slower the current of chlorine, and the longer the time taken to produce the chloral, the better the result. About twenty-eight days were required for one operation, in which sixteen gallons of absolute alcohol weighing 92 pounds, and

about a ton and a quarter of a mixture of binoxide of manganese and common salt, and about the same quantity of sulphuric acid, were required to produce 160 pounds of crude hydrate of Chloral. Dr. Squibb gives the following details of his manner of conducting the process:

The apparatus I have now at work is, about the tenth modification from the first one, and I started with all the knowledge on the subject then in the books. The liberation of chlorine from common salt and black oxide of manganese by running sulphuric acid into it is easy enough, but unless the current be steady the result is imperfect, and there can be no good or definite calculations made as to the time or the quantity. The black oxide of manganese and common salt need both to be assayed and added together in their equivalent proportion, and then the calculated amount of sulphuric acid in any given specimen is to be made upon its specific gravity, and the acid can only be added to the mixture by calculation, because, if added until chlorine ceases to be eliminated a great excess will be used. I mix 100 pounds of the mixture of black oxide of manganese and common salt with about ten gallons of water in a still, and then run seven gallons of 60° slowly into it, using "pan acid," 1.562 specific gravity, using a mechanical stirrer, and heating the mixture. In this way a tolerably uniform current of chlorine is eliminated. This is then conducted to the drying apparatus, which consists of a three-neck Woulfe's bottle, with a long narrow glass percolator ground into the middle neck. This percolator is filled with pieces of broken glass from which the fine particles have been sifted out, and into the top of this broken glass, concentrated sulphuric acid is supplied from an elevated reservoir. This acid percolates through the broken glass and accumulates in the Woulfe's bottle below until it reaches the level of an adjusted syphon, by which it is discharged through one of the necks of the bottle. Through the third neck the chlorine enters by a tube which dips under the acid in the bottle. Thus the gas is made first to bubble through the acid in the bottle, and then to pass over the extended surface of broken glass in the tall percolator, this surface being kept moistened with fresh portions of acid, and thus becomes thoroughly dried and in proper condition to enter the alcohol. The chlorine thus passed down into the alcohol at first increases the volume of the alcohol by one-fourth. At first, the whole of the bubbles of gas are absorbed, and the alcohol increases in volume and becomes heated, the bottle requiring to be kept cold; but after about three days the reaction between the chlorine and alcohol becomes more sluggish, and then a little heat in the bath is necessary. From that time the bath is made gradually warmer until the end of the process, which is determined by the gas pressing unchanged through the hot liquid in the bottles. The product is then the crude hydrate of chloral. Then if the contents of the bottles be allowed to cool a large proportion crystallizes. It will not run from one part of the bottle to another, but still is very moist. This is taken in portions of about twenty pounds at a time and shaken up with six or eight pounds of strong sulphuric acid, the whole mixture poured into a tubulated retort and the chloral distilled off. This is received in

a clean, dry vessel, is weighed, and then partially hydrated with a weighed quantity of water. Carbonate of lime and slacked lime are then added in the proportion of four ounces to each twenty pounds, and the mixture is again distilled from a clean apparatus. The result of the distillation now is partially hydrated chloral; it distils better partially hydrated than when hydrated entirely. The remainder of the water required by stoichiometrical calculation is now added, and the hot liquid poured on plates to crystallize, the plates being covered by a bell glass. In a few hours the crystallization is complete, and if well managed the contents of the plates is in a solid cake, which is rubbed into a coarse, damp powder in a clean mortar and filled into bottles.

Some accidents of an apparently trivial nature seemed to indicate that chloral is very liable to decomposition from contact with organic matter, but experiments have shown that it is not equally liable to this decomposition from all kinds of organic matter. Even the same kind of organic matter does not always produce the same effect with the same chloral. For example, where syrup of orange-peel is used as a vehicle, decomposition, with the production of hydrochloric acid, will sometimes commence in a day or two, and sometimes not for weeks, though the apparent conditions be the same. One observer will testify that with simple syrup it never spoils or decomposes, while another, equally trustworthy, will find the same chloral decompose with simple syrup very promptly. Under such circumstances, the only safe practice is to keep chloral as free as possible from all organic matter until we know more about it; and this particularly in view of the harm it does when given in even a partially decomposed solution. It appears to be by far the best practice to dispense it in simple watery solution in glass-stopped vials, since in this condition it keeps indefinitely, and can be added to any desired vehicle at the time of taking. And ice-water appears to be about as good a vehicle for this, as for all saline substances, as any yet devised. When given to patients who have been long fasting it is often found to disagree with them, or at best to affect them less favorably than when given near a meal, or when the gastric secretions are not in the condition of long fasting. Hence the syrup of orange-peel, or the mucilage, &c., with which it is common to give it, may not be without useful effect, and those physicians who have now abandoned these mixtures for the simple solution, often, if not generally, advise their patients to eat a cracker, or take some other light food in small quantity, before or immediately after an hypnotic dose. When the medicine affects persons unfavorably, it should always be examined for hydrochloric acid by smelling and testing, and by litmus paper. Nitrate of silver is too sensitive a test, for if the solution have been for some time made, and especially when water containing organic matter is used, a cloudiness may be produced with this test which it is quite safe to disregard.

If the chloral be given under favorable circumstances, only about eight to twelve minutes elapse before the patient is asleep. If the first dose, namely, the ordinary dose of twenty or thirty grains, is not effective, a second one may be given in fifteen minutes. For if the effect is not obtained in fifteen minutes it is not likely to be experienced at

all. If the second dose is inoperative, the physician may conclude that the medicine is inappropriate, since the heroic quantities that have been given have generally produced unpleasant effects. Unpleasant effects are, doubtless, often due to bad quality in the chloral. Of the various grades of it now in the market, it is, perhaps, not too much to say that a large proportion of it is unfit for use; none of it is as good as it should be, or as it will be when the makers get to know better how to make it, and when those who buy know better how to test it, and what to reject. Makers have generally followed the first usage, and placed it in the market in hard compact cakes, or, frequently, some made by sublimation, others by pressure, but this form of condition is by no means either a guarantee or indication of purity, but, on the contrary, is often a mask for impurities. There is no process of purification that, in my hands, has given such uniform good results as simple well managed crystallization. In results, I much prefer it to the common method by sublimation, as the natural impurities seem to be more easily and more perfectly separated. Besides it yields a softer cake, which should be broken up into a coarse powder before bottling. The present German practice of putting it up in hard compact cakes, necessitates its being thinned out and rubbed up before it can be weighed for dispensing, a proceeding which is not only troublesome, but renders the chloral liable to be spoiled by contact with metallic spatulas, dust, &c. The process by crystallization yields a chloral not quite so dry as sublimation, but the chloral is not the worse for this, since one of the very purest samples of chloral which I ever saw was of German make, and quite moist in ordinary weather, and almost liquid in hot weather. The drier it is the nicer it is, but not always better. By a little skill and management it may be obtained in quite large crystals, but these are no better, and have the same disadvantage as the cakes or plates, in requiring to be rubbed up before they can be dispensed. The small granular crystals, moderately dry, is, perhaps, practically, the best form for use. In all its forms it is very sensitive to a moist atmosphere, and deliquesces rapidly; but in a dry atmosphere it evaporates without liquefying or deliquescing at all. Damp chloral will, therefore, dry by exposure in a dry cool atmosphere, and I have seen the same specimen alternately become solid and liquid several times in succession by the natural changes of the hygrometric condition of the weather. Indeed, the result of a very successful crystallization may, if the cakes be rubbed up and bottled on a damp day, yield an unusually damp powder. But while dampness or dryness alone should not be accepted as conclusive evidence of bad or good quality, yet parcels which are so moist that the liquid settles out from the crystals should always be rejected. Freshly made solutions of chloral, especially if made from large crystals, are often more or less opalescent or milky, and this milkiness many continue for a few moments only or for many hours, but if the chloral be of good quality the solution will sooner or later become perfectly clear or will at once become clear on being warmed. Solution of nitrate of silver should give no reaction, or but the faintest cloudiness, with freshly made solutions of good chloral. But a little dust in the chloral, or a little organic matter in the water with which the solution may have been made,

will soon give a decomposition sufficient to produce slight cloudiness with this test. If the solution has been kept in a cork-stopped bottle it will always give a cloudiness.

The alcoholate of chloral, which is a very different salt, and much more easily made, has been largely sold for the hydrate, and is often not easily distinguished from it, is characterized by a higher melting and boiling point, and by yielding less chloroform upon volumetric decomposition. But as yet more simple and easy tests for the alcoholate are much needed—not so much to enable us to distinguish between them, when separate, for this is comparatively easy, but to detect the presence of the alcoholate either as an adulteration or an accidental impurity in the hydrate. Whilst so great a proportion of the chloral in the market is imperfect, or, impure and bad, there are several makers whose products are, perhaps, equally good. Therefore, so long as we know so little about it, and are so much in need of simple and easy tests of quality, the maker's name should always be required on the label, and no unknown make should be used, however contrary to common usage this may be now-a-days, when price and profit have become the prominent consideration in all things.

The recrystallization of chloral from very volatile liquids, in which it is very soluble, has not, in my experience, been either satisfactory or useful, although we have the high authority of Dr. Fluckiger to the contrary.

Chloral appears to be a hypnotic and not an anesthetic; it produces sleep, but it will not often relieve pain when the pain arises from any organic disease. If it be inflammatory pain or pain from injury, it does not relieve it, although it sometimes forcibly superinduces sleep. A person may have suffered an injury and take a large dose and get six or seven hours' sleep, but on waking the sleep will be found to have been unrefreshing. The knowledge of how to use it is not complete, but experience is accumulating every day upon it. Our greatest interest in it, is to know how to select, keep, and dispense it; as it absorbs moisture and becomes moist in a damp day, and becomes the opposite in a dry northwest wind, and is so liable to decomposition under conditions not yet well known, it of course requires much care and attention. The dose is from ten to one hundred and twenty grains, according to the purpose with which it is given and the varying susceptibility of persons to its influence. I have only heard of a fatal effect from it in one case, and then an entire ounce was taken. I don't remember to have heard of a single case where ten, twelve, or fifteen grain doses produced any disagreeable effect, but they are not so likely to produce the hypnotic effect in most cases as doses of twenty to thirty grains.

#### BOOKS AND PAMPHLETS.

PROCEEDINGS OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, at the Eighteenth Annual Meeting, September, 1870.

The present volume of the Proceedings is somewhat behind those which preceded it, both in regard to the value and number of its papers, and the completeness of its review of the progress of pharmacy during the year. In addition to the minutes of the annual meeting, the volume contains the following



ports and essays:—On the Artificial Preparation of Mannite, by Joseph M. Hirsh; on a Morphometric Process for the Pharmacopœin, by William M. Proctor, Jr.; On Glycyrrhizin, by Joseph M. Hirsh; On Abies Canadensis, by Wm. M. Proctor, Jr.; Indigenous Drugs, by C. Lewis Diehl; The Honey Trade of the United States, by B. F. Stacey; On Filtering Papers and Filters, by Joseph M. Hirsh; On Solution of Guaiac Resin, by James T. Shinn; On the use of Wax in Suppositories, by Charles L. Eberle; On the Specific Gravities indicated by Beaume's Hydrometers, by Wilson H. Pile; On Fluid Extracts and their Menstrua, by Dr. Edward Squibb; Note on Rhubarb, by Dr. Edward Squibb; On some Medicinal Plants of Canadian Growth, by W. Saunders; On Glycerine, its Quality, &c.; by Joseph P. Remington; On a Case of Poisoning by Aconite, by Dr. Samuel P. Duffield; Pharmacy in the Southern States, by James M. Caldwell; Pharmacy in California, by W. T. Wenzell. The Report on the Progress of Pharmacy extends over one hundred pages.

**THE CHEMISTS' AND DRUGGISTS' COMPENDIUM:**  
A Hand-Book of Practical Receipts and Processes in Chemistry, Pharmacy, &c. By R. JONES OWEN. London.

This is a neat and useful little book of receipts, containing, more especially, those of recent origin. Many new processes for the preparation of pharmaceutical productions, appear in the various scientific periodicals, and which in many cases, are lost for future reference by being mixed up with such a mass of other matter. Mr. Owen has rescued a number of these from such a fate, and by collecting them into one volume, and presenting them in their present handy shape, has done a good service, which we trust will prove mutually remunerative.

**SATAN IN SOCIETY.** By a Physician.

The author or publisher of a work bearing such a diabolical title must surely have mistaken the domain of the editor of a pharmaceutical journal, when the above work was forwarded to us for review. Since the decease of Dr. Faust, pharmacy has cut all connection with the black art. We have no Mephistopheles at our elbow to help us to unravel the mysteries of satanic agency, and, in the present instance, have not the slightest inclination to do so. It strikes us that the physician—if he is a physician—was himself somewhat out of his sphere when he attempted a treatise of this nature, however he might have been buoyed up in his task by generous and disinterested motives; besides, the field is already fully occupied. The retired clergyman, whose sands of life have nearly run out, and other theological writers of a similar stamp, have certainly pushed the subject to exhaustion.

Our readers may want to know what the book contains; we do not, however, feel inclined to particularize, and but for the very attractive appearance which it presents, and for our desire to help on the philanthropic efforts of "the physician" we should have remained silent; as it is we would merely say that the work is an incomprehensible jumble of demonology, theology, obscenity, woman's rights, and mormonism, put together in the style best known as numby-pamby. We would especially recommend it to—the flames.

**REPORT OF THE FIRST MEETING OF THE AMERICAN ASSOCIATION FOR THE CURE OF INEBRIATES,** held in New York, Nov. 20, 1870. Published by order of the Association.

## NOTES AND QUERIES.

*H. M.*—The method you propose for estimating the strength of acids, by observing the quantity of carbonic acid evolved from an alkaline bicarbonate, as indicated by the loss of weight, has been in use for many years. You will find it mentioned in most of the works on chemistry and technology—(see Ure and Watts.) Thanks for your paper, which, though well written, we must decline.

*W. A. C.*—The amount of the prize awarded has been placed to your credit, as you desire, and we shall be glad to expend it for you; if you should be fortunate enough to add to the sum.

*Druggist, Hamilton.*—The individual members of a firm must register, separately, in order to continue business after July 1st.

*An Apprentice without an Indenture.*—We have no doubt that if you can procure a certificate from your employer, to the effect that you have been employed in the capacity of an apprentice, for the stated time, the Registrar will accept such in lieu of the legal form.

*F. S. A.*—It is little to be wondered at that the pyroxylin which you prepared should explode well, and yet be comparatively insoluble in a mixture of ether and alcohol. This is the rule and not the exception; an explosive cotton is seldom very soluble, and a soluble cotton is never very explosive. The acids employed have been too strong, or the sulphuric acid has been in too great excess. Use more nitric acid, or try the process by nitrate of potash. A good formula is the following:

Powdered nitrate of potash,.....20 parts.  
Sulphuric acid, sp. gr. 1.345,.....30 "  
Cotton,..... 1 "

Add the cotton quickly, in small portions at a time; allow it to remain for about three minutes, stirring with a glass rod; remove into a large vessel of clean water, and wash quickly and thoroughly, until the water shows no trace of acid.

## STUDENTS' DEPARTMENT.

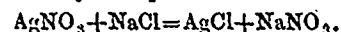
### QUESTIONS.

- I.—What quantities of sulphuric acid and charcoal are, *theoretically*, required to produce 1 lb. of acid sulphurosum?
- II.—What weight of gaseous ammonia is contained in 10 pints, wine, of *Spirit Ammon. Aromat., B. P.?*
- III.—What quantity of  $\text{NH}_3$  is contained in 10 pints, wine, of the aromatic spirit of ammonia, U. S. P.?
- IV.—What is the difference in the arsenical strength of Fowler's solution, as made by the B. P. and U. S. P.?
- V.—Describe the properties and tests for the purity of chloroform?

### ANSWERS.

Mr. H. MacLagan, of Lindsay, gives the following answers to questions in last number:—

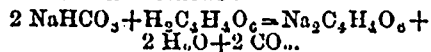
- I.—If 15 grs. of lunar caustic are completely precipitated by 4 grs. of common salt, the adulteration amounts to 22.5 per cent. When sodium chloride is added to silver nitrate, an interchange of elements takes place, silver chloride and sodium nitrate being formed; the former salt, being insoluble, is precipitated, the latter remaining in solution. The reaction is represented by the equation—



—170 parts of  $\text{AgNO}_3$  are decomposed by 53.5 parts of  $\text{NaCl}$ , as 58.5 parts of  $\text{NaCl}$  contain exactly sufficient chlorine to convert all the silver contained in 170 parts of  $\text{AgNO}_3$  into insoluble chloride. The simplest method of determining the amount of adulteration is to ascertain the amount of  $\text{AgNO}_3$  which may be decomposed by 4 grs. of  $\text{NaCl}$ , as the difference between that quantity and the quantity of caustic employed will of course be the amount of foreign matter present. The amount of  $\text{AgNO}_3$  decomposable by 4 grs. of  $\text{NaCl}$  is found by the proportion, 53.5:4::170:11.62, which is equivalent to 22.5 per cent.

- II.—22.4 grs. of sodium bicarbonate are required to neutralize 20 grs. tartaric acid. Tartaric acid is a bibasic acid, containing two atoms of replaceable hydrogen, and forming two series of salts; one in which only half the hydrogen is replaced by metal, and one in which the whole of the hydrogen is thus replaced. To obtain a neutral salt it is necessary that both hydrogen atoms be replaced, and the quantity of base required for that purpose depends upon the equivalent value or atomicity of the base employed. In the case of sodium, two atoms of metal will be required to form a neutral salt with one molecule of

acid, as sodium is a univalent element, one atom of it being capable of replacing only one atom of hydrogen. In neutralizing the acid with sodium bicarbonate, the reaction is as follows:—

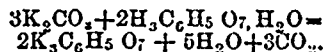


The two atoms of hydrogen are replaced by the two atoms of sodium, neutral sodium tartrate being formed. 168 parts of bicarbonate neutralize 150 parts of acid, the quantity necessary to neutralize 20 parts of acid is, therefore, found by the proportion—150 : 20 :: 168 : 22.4.

III.—When bismuth is submitted to the action of nitric acid, it is dissolved with violent effervescence, and the evolution of brownish acid vapors, a salt being produced which has the composition— $\text{Bi}_3\text{NO}_3$ . The brownish vapors consist of nitric peroxide, and are the result of a decomposition of a portion of the acid by the metal, in undergoing the process of oxidation, one molecule of acid being decomposed to furnish the oxygen required for that purpose. The reaction is represented by the equation— $\text{Bi} + 4\text{HNO}_3 = \text{Bi}_3\text{NO}_3 + 2 \text{H}_2\text{O} + \text{NO}$ .

Four molecules of acid react with one atom of metal, producing one molecule of normal bismuth nitrate, one of nitric oxide, and two of water; the nitric oxide becoming nitric peroxide in contact with the oxygen of the air. 252½ parts of  $\text{HNO}_3$  dissolve 210 parts of Bi; therefore the amount necessary to dissolve 2 parts is found by the proportion—210 : 2 :: 252 : 2.4. 2.4 oz. of  $\text{HNO}_3$  are equivalent to 3.4 oz. nitric acid, B. P., containing 70 per cent.  $\text{HNO}_3$ .

IV.—Potassium citrate is a neutral salt, and, by the officinal process, is prepared by dissolving citric acid in water, neutralizing the solution thus obtained with potassium carbonate, evaporating, and granulating. As citric acid is a tribasic acid, containing three atoms of hydrogen replaceable by metals, three atoms of potassium are required to form a neutral salt with one molecule of acid, potassium being a univalent element. The reaction which takes place is therefore as follows:—



Three molecules of carbonate and 2 of acid react to form two of neutral citrate, five of water, and three of carbon dioxide. The quantities ordered by the Pharmacopœia are 8 ozs. of carbonate and 6 ozs. of acid; but as this quantity of carbonate is considerably in excess of that actually required, the amount of product must be calculated from the acid. According to the above equation, 420 parts of acid produce 612 parts of citrate. Six parts of acid will therefore produce 8.7 ounces.

V.—Iodide of sulphur is a combination of

iodine and sulphur, produced by the direct union of the two elements, and consists of one atom of iodine 127, and one of sulphur 32; its formula is therefore  $\text{SI}$ , and atomic weight 159. 127 parts of iodine produce 159 of iodide; therefore, to produce 1 part of iodide, 0.798 part will be required. The amount of sulphur may be determined in the same manner. 32 parts produce 159 of iodine; 0.201 part will therefore be required to produce 1 part.

ORDER OF MERIT.

NUMBER OF MARKS AWARDED FOR ANSWERS.

Questions	I.	II.	III.	IV.	V.	EXTRA.	Total
1. H. MacLagan, Lindsay	6	6	5	5	5	10	35
2. W. A. C., Orono	5	5	5	5	5	5	30
3. W. M. Rose, Toronto	5	5	2	5	5	0	22
4. Price Jackson, Toronto	4	5	1	5	5	0	20
5. Orygen, Toronto	5	5	1	1	5	0	17

ONTARIO COLLEGE OF PHARMACY.

MONTHLY MEETING.

The regular monthly meeting was held at the usual place, on Friday evening, 14th inst., with the Vice-president in the chair.

After reading and adoption of the minutes of last meeting, letters were read from Messrs. Scott and White, regarding the display of certificates in branch establishments, from Mr. W. P. McLaren, as to the granting of a certificate to a retired druggist, and from Mr. Wyllie, respecting his position with the Society.

The Secretary said he had received no answer from Mr. Scott, to the questions proposed at the last meeting, and a discussion was entered into regarding the powers of the present meetings to deal with these communications, and it was moved by Mr. Hodgetts, and seconded by Mr. Love, That the Secretary be instructed to call a meeting of the Council for Wednesday, 26th inst., to make preliminary arrangements for carrying out the purposes of the Pharmacy Act. Carried.

Mr. R. W. Elliot, on behalf of the printing committee, wished to know the opinion of the Society, as to the insertion of advertisements in the Poison Books, to be printed he thought it might be a source of profit to the College, but many thought with him, that it would not be advisable. It was moved by Mr. Hunter, and seconded by Mr. Shuttleworth, That advertisements be inserted in the poison books at the discretion of the printing committee—carried. In reply to a question, Mr. Elliot said that it was intended to insert a list of antidotes to the principal poisons.

Meeting adjourned.

HENRY J. ROSE, Sec.

The Secretary of the College wishes us to state, in answer to numerous inquiries, that there is an unavoidable delay in the notification of arrears to members, which will be remedied in a few days.

LIST OF

MEMBERS AND ASSOCIATES

OF THE

Ontario College of Pharmacy

Who are entitled to Registration under the Act.

MEMBERS.

- Aylesworth, J. .... Tamworth.
- Barr, John Alexander ..... Hamilton.
- Butterfield, John A. .... Norwood.
- Brendon, F. .... Brantford.
- Britton, Charles ..... Lindsay.
- Bowman, W. H. .... Berlin.
- Bogart, D. P., M.D. .... Carleton Place.
- Barclay, M. T. .... Wardsville.
- Bray, Wm. .... Bothwell.
- Brown, James ..... Ottawa.
- Brydon, William ..... Toronto.
- Barker, W. J. .... Trenton.
- Berry, G. W. .... Lucknow.
- Brent, Charles ..... Port Hope.
- Burgar, J. H. .... Welland.
- Card, W. A. .... Orono.
- Carra, Thomas ..... Meaford.
- Chandler, E. .... Belleville.
- Chandler, Jr., E. .... Belleville.
- Jasselman, Charles ..... Winchester.
- Coad, James ..... Woodstock.
- Cullingford, John ..... Cobourg.
- Carpenter, E. R. .... Collingwood.
- Colclough, James ..... Mount Forest.
- Cormack, J. G. .... Pembroke.
- Combe, Jas. H. .... Clinton.
- Coombs, Joseph ..... Smith's Falls.
- Conklin, W. P. .... Tilsonburg.
- Charters, James A. .... Belleville.
- Cottrill, G. W. .... London.
- Coombs, John S. .... Perth.
- Dale, J. B. .... Wyoming.
- Dale, W. H. .... Petrolia.
- Davidson, Hugh ..... Walkerton.
- Dawson, C. .... Warkworth.
- Dagg, Wm. .... Tiverton.
- Dilworth, Joseph, ..... Toronto.
- Dyas, W. J. .... Strathroy.
- Everest, George M. .... Arkona.
- Ellis, G. .... Brantford.
- Evans, Wm. J. .... London.
- Foster, W. D. .... Simcoe.
- Frazer, Thos. B. .... Napanee.
- Fothergill, R. .... Newcasttle.
- Fead, S. G. M. .... Orangeville.
- Fraleigh, S. .... St. Mary's.
- Fleming, W. F. .... Ottawa.
- Fead, William ..... Stouffville.
- Green, W. A. .... Walkerton.
- Greenwood, W. W. .... St. Catharines.
- Gregory, E. .... Lindsay.
- Gissing, A. W. .... Princeton.
- Gray, Robert B. .... Pembroke.
- Gemmell, F. A. .... Sarnia.
- Greaves, Joseph ..... Collingwood.
- Hopkins, J. F. .... Dundas.
- Huffmann, T. A. .... Napanee.

Hodgetts, George.....Toronto.	Patton, R. M. M.....Chatham.	Coombs, R. McL.....Perth.
Howard, Samuel W.....Horning's Mills.	Parker, H.....Durham.	Coleclough, William.....Mount Forest.
Howitt, Wm.....Vittoria.	Robinson, W. S.....Yorkville.	Clark, W. H.....Napanee.
Hewson, J. H.....Smithville.	Robinson, J. F.....Oshawa.	Dalo, George.....Petrolia.
Harding, A. O.....Prescott.	Roberts, John.....Ottawa.	Depew, Peter.....Mount Forest.
Hall, K. H.....Rondeau.	Roper, John.....Caledonia.	Fothergill, Charles.....Newcastle.
Hurdon, W. H.....Kincardine.	Rich, C. H.....St. Thomas.	Geary, C. P.....St. Thomas.
Hacking, J. A.....Listowell.	Rubidge, H. A.....Peterboro'.	Gibbard, John.....Toronto.
Huffman, J. C.....Napanee.	Ross, H. M., M.D.....Kincardine.	Howse, W. R.....Toronto.
Harte, James A.....Montreal.	Riddell, C. J.....Toronto.	Hargreaves, W.....Walkerton.
Holbrook, R. C.....Hamilton.	Rushmer, W.....Aylmer.	Johnson, W.....Smith's Falls.
Harkness, G. W.....Mono.	Rose, Henry J.....Toronto.	Jeffroy, A.....Toronto.
Hey, Thomas.....Ailsa Craig.	Scott, George L.....Paris.	Kempt, C. W.....Peterboro'.
Holden, S.....Markham.	Scott, Thomas.....Woodstock.	Lucas, D. F.....Gananoque.
Hurdon, S.....Kincardine.	Sanderson, W. A.....Richmond Hill.	Mole, Charles.....Toronto.
Howarth, J. L.....Toronto.	Servis, Gordon.....Iroquois.	McIntyre, George.....St. Mary's.
Hacking, W. F.....Listowell.	Stratford, W. H.....Brantford.	Matthews, George.....Paris.
Hildreth, A. R.....Paisley.	Stott, D.....Bowmanville.	McHaffie, J.....Hamilton.
Jacks, Price.....Toronto.	Stark, W. G.....Hamilton.	Maclagan, H.....Lindsay.
Jackson, George.....Egmondville.	Simpson, C. H.....Newmarket.	Mitchell, Thomas.....Paris.
Jennings, John.....Manotick.	Saunders, Wm.....London.	Matheson, George.....Toronto.
Jones, C. R.....Montreal.	Strong, Wm.....London.	Mitchell, C.....St. Thomas.
Jordan, F.....Goderich.	Shuttleworth, E. B.....Toronto.	Mackid, John.....Goderich.
Jordon, W.....Goderich.	Twomey, M.....Amherstburg.	Nuthall, Wm.....Toronto.
Jackson, T. G.....Wingham.	Trott, S. W.....Collingwood.	Nevills, J. E.....Mount Forest.
Jamieson, W. A.....Ottawa.	Tapscott, S.....Brantford.	Patterson, M.....Ottawa.
Kemp, James, M.D.....Leamington.	Tibbetts, W. T.....Port Dover.	Parkinson, W.....Toronto.
Knowles, H. A.....Toronto.	Thompson, D.....Toronto.	Ruston, Wm. B.....Toronto.
Keiman, James.....Newmarket.	Trueman, J. H.....Hamilton.	Rowland, W. H.....Toronto.
Kempt, A. W.....Peterboro'.	Urquhart, J.....Oakville.	Rutherford, J.....Hamilton.
Kermott, C. H.....Bell Ewart.	Urquhart, G. C.....Paisley.	Smith, W. G.....Guelph.
Lambert, Preston.....Hamilton.	VanFelson, Charles.....Chatsworth.	Sheppard, C.....Durham.
Lec, Joseph R.....Toronto.	VanFelson, C. A., Jr.....Chatsworth.	Spencer, J. W.....Hamilton.
Leis, Robert L.....Ottawa.	Walford, James H.....Renfrew.	Smith, George.....Mount Forest.
Love, Neil C.....Toronto.	Warren, John.....Brooklyn.	Stickney, L. P.....Toronto.
Lang, George B.....Owen Sound.	Wilson, C. G.....Madoc.	Twomey, George E.....Amherstburg.
Lloyd, W. A.....Ottawa.	Wilson, Richard.....Cobourg.	Taylor, Edward B.....Whitevale.
Lutz, W. H.....Galt.	Wilson, Michael.....Madoc.	Thompson, Charles.....Woodstock.
Lyman, Benjamin.....Toronto.	Wood, Robert A.....Toronto.	Templeton, James.....Napanee.
Lyman, B. H.....Toronto.	Wightman, Robert.....Owen Sound.	Thompson, Robert.....Walkerton.
Lowe, J.....Amherstburg.	Woolhouse, J. B.....Port Hope.	Wood, John.....Erin.
Lumsden, R.....Searforth.	Wagh, G. J.....Stratford.	Williams, Joseph.....London.
Lind, A.....Drummondville.	Wade, Robert.....Angus.	Walker, John A.....Caledonia.
McCartney, W. J.....Thorold.	Walton, E.....Peterboro.	Williams, Samuel.....London.
McLaren, W. P.....Perth.	White, A.....Carleton Place.	Wilson, D. G.....Wingham.
Magurn, John B.....Brampton.	White, James.....Woodstock.	
Manley, Henry.....Owen Sound.	Whitfield, A. M.....Holbrook.	
McCullum, W. A.....Port Burwell.	Yeomans, L. H.....Mount Forest.	
Matheson, A.....Toronto.	Yeomans, L.....Belleville.	
McFavish, D.....Georgetown.	Zoellner, Heinrich A.....Waterloo.	
McCannon, S.....Gananoque.	Zoellner, Paul.....Tavistock.	
Morton, Henry H.....Ottawa.		
Mortimer, George.....Ottawa.		
McBain, J. R.....Almonte.		
Millar, D.....Toronto.		
Miller, Hugh.....Toronto.		
Murdoch, F. H.....Perth.		
Oliver, W. H.....Galt.		
Ockenden, Jos. K.....Manilla.		
Parker, S. J.....Owen Sound.		
Priddy, R. S.....London.		
Parrish, T. A.....Wallacetown.		
Parker, E. H.....Kingsion.		
Perry, R. H.....Fergus.		
Plummer, E.....London.		

HENRY J. ROSE,

Provisional Registrar.

## ONTARIO COLLEGE OF PHARMACY.

## REGISTRATION NOTICE.

Druggist in business and others entitled to be registered under the Pharmacy Act, will save delay by sending along with the fee of four dollars, a reference to a member of the Council.

Assistants wishing to be registered must send with the fee a proof of their having served three years as apprentice and one as assistant.

HENRY J. ROSE,

Provisional Registrar.

**A FEW NOTES ON PHARMACY.**

Editor Canadian Pharmaceutical Journal.

DEAR SIR,—Having a few spare moments at command, I employ them by making two or three notes, hoping thereby to make the Journal a medium for the interchange of ideas amongst its readers. I commence by stating what I conceive to be a fatal objection to Mr. Campbell's plan of making Fluid Extracts without the application of heat.

We have just been making 4 lbs. Fluid Extract Gentian. We reduced 64 Troy ounces to the necessary degree of fineness, moistened it, and carefully packed it in a conical percolator. We then gradually added the menstruum, intending when it commenced dropping, to put in a cork, and let it macerate for 24 hours before proceeding with the percolation. Before the dropping point was reached, the drug had absorbed twelve pints of diluted alcohol. How is it possible that the drawing off of four pints of Fluid Extract, as proposed by Mr. Campbell, or even of eight pints as proposed by Mr. Lartlett could completely exhaust the Gentian? If twelve pints were absorbed before dropping commenced, it seems to me that every particle of that twelve pints must have received a portion of the active properties of the Gentian; that it would take at least twelve pints to exhaust it; and that, consequently, evaporation was absolutely necessary to make an eligible Fluid Extract.

I have found "Aiken's" plan for the preservation of mucilage by the addition of 2 oz. of alcohol to the pint of mucilage, a good one, and beg to thank him for his hint. My mucilage has not gone sour since I tried it. Of course it should not be used where the mucilage is intended for cough mixtures, or in any case where there is danger of arousing inflammatory action.

I can cordially recommend an apparatus described in the earlier numbers of the JOURNAL as an efficient and economical source of heat for the large majority of operations necessary in a country store. It consists of a coal oil lamp, with a copper jacket (filled with water) in place of a chimney; the copper jacket communicates, by means of tubes, with a reservoir raised above the lamp, and filled with water. This water is raised to the boiling point by the flame of the lamp. It is a little slow in boiling, but once boiling there is no trouble. It will boil away all day without any attention at all. I use it for making syrups and ointments, distilling fluid extracts, and even spreading plasters.

Should not the Council shortly decide upon the text-books necessary for students to become acquainted with, and give some outline of the probable subjects for examination, so that employers may learn what course of study to stimulate their employees to take up?

Yours truly,

PAILE.

**PRACTICAL FORMULÆ.**

**Door Man's Plaster.**

Beeswax.....1 ounce.  
Tar .....3 ounces.  
Resin ..... 3 ounces.  
Melt together, and spread on paper or muslin.—*Druggists' Circular.*

**Solution of Santonine.**

Take Santonini, in pulvere.....gr. xij.  
Sodæ Bicarbonatis.....gr. xx.  
Aque Distillate.....ʒij.

Put the soda and water into a flask, keep the fluid near the boiling-point, and add the santonine about two grains at a time until the whole is dissolved. Solution is effected in about half an hour, during which time the water is reduced to ʒij., or if not, may be reduced to that bulk, when ʒj. will contain a full dose—six grains of santonine.

The solution is bright and permanent, strongly alkaline, free from odor, and, except that of carbonate of soda, taste. Carefully neutralized with acetic acid, an equally bright and permanent solution is formed. Both may be diluted to any extent with hot or cold water without impairing the solution of the santonine. The whole, or nearly the whole, of the santonine is precipitated in its original form of colorless rectangular plates, with bevelled edges, immediately by mineral acids, and after some hours by excess of acetic acid.—*DR. HAXLEY in the Practitioner.*

**Worcestershire Sauce.**

POLYPHISTOR, a well-known contributor to the columns of the *Druggists' Circular*, gives to that journal the following recipe, which is said to be that of Lea & Perrin, the originators of the sauce referred to:—

White vinegar.....15 gallons.  
Walnut catsup.....10 "  
Madeira wine..... 5 "  
Mushroom catsup.....10 "  
Table salt.....25 pounds.  
Canton soy..... 4 gallons.  
Powd. capsicum..... 2 pounds.  
Allspice, powd.....  
Coriander, powd., āā..... 1 pound.  
Cloves .....  
Mace.....  
Cinnamon, āā..... ½ pound.  
Assafoetida, ½ pound, dissolved  
in brandy..... 1 gallon.

Twenty pounds of hogs' liver is boiled for 12 hours in 10 gallons of water, renewing the water from time to time. Take out the liver, chop it, mix with water, and work it through a sieve: mix with the sauce.

**IMITATION NO. 1.**

White vinegar.....240 gallons.  
Canton soy..... 36 "  
Sugarhouse syrup..... 30 "  
Walnut catsup..... 50 "  
Mushroom catsup..... 50 "  
Table salt.....120 pounds.  
Powd. capsicum..... 15 "  
Allspice,  
Coriander, of each ..... 7 pounds.  
Cloves,  
Mace,  
Cinnamon, of each..... 4 pounds.  
Assafoetida, 2½ pounds, dis-  
solved in St. Croix rum... 1 gallon.

**On the Assay of Soap.**

M. F. Schulze communicates to the *Journal de Pharmacie et de Chimie* a rapid and convenient method of estimating the value of soap. The method is the same as that adopted for estimating the hardness of potable water, i.e., it is based on the fact that lime water precipitates a solution of soap yielding a liquor which does not give a persistent froth by agitation. The process is conducted as follows: A standard solution of lime is made by dissolving 1.6 grammes in water, with a little caustic soda, and making up the solution to one litre; Five grammes of the soap are weighed and dissolved in boiling water; the solution is allowed to cool, and is made up to a determinate volume, say 100 c.c. for soft soap, 200 c.c. for hard soap. Three c.c. of the standard lime solution are now added to 20 c.c. of distilled water, and to this diluted solution the soap liquor is added gradually from a burette. At first, the soap added is precipitated by the calcareous water, and a persistent froth is not produced by agitation, but, after a time, a point is reached at which the froth becomes persistent. The volume of soap solution requisite to produce this effect is then noted; the quantity is smaller the better the quality of the soap. If, moreover, an assay has been made on a sample of soap of standard value, a very exact appreciation of the value of any given sample of soap may be subsequently obtained by comparing the results.—*Chemist and Druggist.*

**TRADE REPORT.**

The spring trade opened at an unusually early period, and goods have gone off briskly. Stocks will now be low in all classes of heavy goods until the opening of navigation. Consequent on the great disturbance in the European labor market, very many goods are coming out higher; those who buy early will probably save considerably. The general tendency of prices is towards an advance.

The following articles in our Prices Current are quoted dearer:—Acid Tart., and Tartrates generally; Cantharides, Ext. Belladonna, Shellacs, Citrate of Iron and Quinine, and Mercurial preparations. Best Oil of Lemon, Potass Iodide and Iodides generally. Aniline Red, and Vermillion, have been very dear, but have slightly receded again. Sps. Turpentine is scarce and dear. Linseed Oils are advancing, as is also Olive Oil for machinery. Quinine maintains a high price, and is scarce. It is understood that Pelletier's manufactory is entirely disorganized, creating a deficiency of 6,000 ozs. per week. The following will be found quoted at reduced rates:—Ether nitrous, Bals. Tolu, Vanilla, Bismuth and preparations, Camphor crude, Ergot, Morphias, Opium, Sarza Honduras; Spanish Saffron, Strychnine, Ext. Logwood, Whiting, and Lard Oils.

WHOLESALE PRICES CURRENT.—APRIL, 1871.

DRUGS, MEDICINES, &c.		DRUGS, MEDICINES, &c.		DRUGS, MEDICINES, &c.		DRUGS, MEDICINES, &c.		DRUGS, MEDICINES, &c.	
S	c.	S	c.	S	c.	S	c.	S	c.
Acid, Acetic, fort	0 12 @ 0 14	Acid, Acetic, pure	0 25 0 35	Acid, Benzoic, pure	0 77 0 85	Acid, Citric	0 04 0 06	Acid, Muritic	0 11 0 15
" Benzic, pure	0 25 0 35	" Citric	0 07 0 08	" Muritic	0 04 0 06	" Nitric	0 11 0 15	" Oxalic do.	0 24 0 30
" Nitric	0 07 0 08	" Oxalic do.	0 24 0 30	" Sulphuric	0 03 0 07	" Tartaric, pulv.	0 40 0 45	" Tartaric, pulv.	0 40 0 45
" Sulphuric	0 03 0 07	" Tartaric, pulv.	0 40 0 45	Ammon., carb. casks	0 18 0 19	" jars	0 18 0 20	" Liquor, S50	0 18 0 25
Ammon., carb. casks	0 18 0 19	" jars	0 18 0 20	" Muriate	0 12 0 15	" Nitrate	0 45 0 60	" Ether, Acetic	0 45 0 50
" Muriate	0 12 0 15	" Nitrate	0 45 0 60	" Nitrous	0 25 0 30	" Sulphuric	0 45 0 50	" Antim. Crude, pulv.	0 15 0 17
" Nitrous	0 25 0 30	" Sulphuric	0 45 0 50	" Tart.	0 50 0 55	Alcohol, 95%	1 65 1 72	Arrowroot, Jamaica	0 19 0 22
" Sulphuric	0 45 0 50	" Antim. Crude, pulv.	0 15 0 17	Alcohol, 95%	1 65 1 72	Arrowroot, Bermuda	0 45 0 65	" Bermuda	0 45 0 65
" Antim. Crude, pulv.	0 15 0 17	" Tart.	0 50 0 55	Alum	0 02 0 03	Balsam, Canada	0 24 0 34	" Copaiba	0 63 0 75
" Tart.	0 50 0 55	Alcohol, 95%	1 65 1 72	Alum	0 02 0 03	Balsam, Canada	0 24 0 34	" Peru	3 80 4 00
Alcohol, 95%	1 65 1 72	Arrowroot, Jamaica	0 19 0 22	Balsam, Canada	0 24 0 34	" Copaiba	0 63 0 75	" Tolu	1 00 1 20
Arrowroot, Jamaica	0 19 0 22	" Bermuda	0 45 0 65	" Peru	3 80 4 00	" Tolu	1 00 1 20	Bark, Bayberry, pulv.	0 18 0 20
" Bermuda	0 45 0 65	Alum	0 02 0 03	" Tolu	1 00 1 20	Bark, Bayberry, pulv.	0 18 0 20	" Canella	0 17 0 20
Alum	0 02 0 03	Balsam, Canada	0 24 0 34	Bark, Bayberry, pulv.	0 18 0 20	" Canella	0 17 0 20	" Peruvian, yel. pulv.	0 45 0 50
Balsam, Canada	0 24 0 34	" Copaiba	0 63 0 75	" Canella	0 17 0 20	" Peruvian, yel. pulv.	0 45 0 50	" red	1 49 1 80
" Copaiba	0 63 0 75	" Peru	3 80 4 00	" Peruvian, yel. pulv.	0 45 0 50	" red	1 49 1 80	" Slippery Elm, g. b.	0 15 0 20
" Peru	3 80 4 00	" Tolu	1 00 1 20	" red	1 49 1 80	" Slippery Elm, g. b.	0 15 0 20	" flour, pk'ts.	0 28 0 32
" Tolu	1 00 1 20	Bark, Bayberry, pulv.	0 18 0 20	" Slippery Elm, g. b.	0 15 0 20	" flour, pk'ts.	0 28 0 32	" Sassafras	0 12 0 15
Bark, Bayberry, pulv.	0 18 0 20	" Canella	0 17 0 20	" flour, pk'ts.	0 28 0 32	" Sassafras	0 12 0 15	Barries, Cubeb, ground.	0 20 0 25
" Canella	0 17 0 20	" Peruvian, yel. pulv.	0 45 0 50	" Sassafras	0 12 0 15	Barries, Cubeb, ground.	0 20 0 25	" Juniper	0 06 0 10
" Peruvian, yel. pulv.	0 45 0 50	" red	1 49 1 80	Barries, Cubeb, ground.	0 20 0 25	" Juniper	0 06 0 10	Beans, Tonquin	0 69 1 10
" red	1 49 1 80	" Slippery Elm, g. b.	0 15 0 20	" Juniper	0 06 0 10	Beans, Tonquin	0 69 1 10	" Vanilla	14 50 17 00
" Slippery Elm, g. b.	0 15 0 20	" flour, pk'ts.	0 28 0 32	Beans, Tonquin	0 69 1 10	" Vanilla	14 50 17 00	Bismuth, Alb.	4 60 5 00
" flour, pk'ts.	0 28 0 32	" Sassafras	0 12 0 15	" Vanilla	14 50 17 00	Bismuth, Alb.	4 60 5 00	" Carb.	4 60 5 00
" Sassafras	0 12 0 15	Barries, Cubeb, ground.	0 20 0 25	Bismuth, Alb.	4 60 5 00	" Carb.	4 60 5 00	Camphor, Crude	0 33 0 35
Barries, Cubeb, ground.	0 20 0 25	" Juniper	0 06 0 10	" Carb.	4 60 5 00	Camphor, Crude	0 33 0 35	Refined	0 45 0 55
" Juniper	0 06 0 10	Beans, Tonquin	0 69 1 10	Camphor, Crude	0 33 0 35	Refined	0 45 0 55	Cantharides	1 90 2 01
Beans, Tonquin	0 69 1 10	" Vanilla	14 50 17 00	Refined	0 45 0 55	Cantharides	1 90 2 01	" Powdered	2 19 2 25
" Vanilla	14 50 17 00	Bismuth, Alb.	4 60 5 00	Cantharides	1 90 2 01	" Powdered	2 19 2 25	Charcoal, Animal	0 04 0 06
Bismuth, Alb.	4 60 5 00	" Carb.	4 60 5 00	" Powdered	2 19 2 25	Charcoal, Animal	0 04 0 06	" Wood, pow'd.	0 10 0 15
" Carb.	4 60 5 00	Camphor, Crude	0 33 0 35	Charcoal, Animal	0 04 0 06	" Wood, pow'd.	0 10 0 15	Chiretta	0 25 0 30
Camphor, Crude	0 33 0 35	Refined	0 45 0 55	Chiretta	0 25 0 30	Chloroform	1 00 1 50	Chloroform	1 00 1 50
Refined	0 45 0 55	Cantharides	1 90 2 01	Chloroform	1 00 1 50	Cochineal, S. G.	0 80 0 90	Cochineal, S. G.	0 80 0 90
Cantharides	1 90 2 01	" Powdered	2 19 2 25	Cochineal, S. G.	0 80 0 90	" Black	1 00 1 20	" Black	1 00 1 20
" Powdered	2 19 2 25	Charcoal, Animal	0 04 0 06	" Black	1 00 1 20	Colocynth, Pulv.	0 50 0 60	Colocynth, Pulv.	0 50 0 60
Charcoal, Animal	0 04 0 06	" Wood, pow'd.	0 10 0 15	Colocynth, Pulv.	0 50 0 60	Colloidion	0 67 0 70	Colloidion	0 67 0 70
" Wood, pow'd.	0 10 0 15	Chiretta	0 25 0 30	Colloidion	0 67 0 70	Elaterium	4 50 5 00	Elaterium	4 50 5 00
Chiretta	0 25 0 30	Chloroform	1 00 1 50	Elaterium	4 50 5 00	Ergot	0 55 0 65	Ergot	0 55 0 65
Chloroform	1 00 1 50	Cochineal, S. G.	0 80 0 90	Ergot	0 55 0 65	Extract, Belladonna	2 50 2 75	Extract, Belladonna	2 50 2 75
Cochineal, S. G.	0 80 0 90	" Black	1 00 1 20	Extract, Belladonna	2 50 2 75	" Colocynth, Co.	1 25 1 75	" Colocynth, Co.	1 25 1 75
" Black	1 00 1 20	Colocynth, Pulv.	0 50 0 60	" Colocynth, Co.	1 25 1 75	" Hemlock, Ang.	1 12 1 25	" Hemlock, Ang.	1 12 1 25
Colocynth, Pulv.	0 50 0 60	Colloidion	0 67 0 70	" Hemlock, Ang.	1 12 1 25	" Henbane	2 20 2 50	" Henbane	2 20 2 50
Colloidion	0 67 0 70	Elaterium	4 50 5 00	" Henbane	2 20 2 50	" Jalap	5 00 5 50	" Jalap	5 00 5 50
Elaterium	4 50 5 00	Ergot	0 55 0 65	" Jalap	5 00 5 50	" Mandrake	1 75 2 00	" Mandrake	1 75 2 00
Ergot	0 55 0 65	Extract, Belladonna	2 50 2 75	" Mandrake	1 75 2 00	" Nux Vomica, oz.	0 60 0 70	" Nux Vomica, oz.	0 60 0 70
Extract, Belladonna	2 50 2 75	" Colocynth, Co.	1 25 1 75	" Nux Vomica, oz.	0 60 0 70	" Opium	7 50	" Opium	7 50
" Colocynth, Co.	1 25 1 75	" Hemlock, Ang.	1 12 1 25	" Opium	7 50	" Rhubarb	7 50	" Rhubarb	7 50
" Hemlock, Ang.	1 12 1 25	" Henbane	2 20 2 50	" Rhubarb	7 50	" Sarsapar. Hon. Co	1 50 1 20	" Sarsapar. Hon. Co	1 50 1 20
" Henbane	2 20 2 50	" Jalap	5 00 5 50	" Sarsapar. Hon. Co	1 50 1 20	" Jam. Co	3 25 3 70	" Jam. Co	3 25 3 70
" Jalap	5 00 5 50	" Mandrake	1 75 2 00	" Jam. Co	3 25 3 70	" Taraxicum, Ang	0 70 0 80	" Taraxicum, Ang	0 70 0 80
" Mandrake	1 75 2 00	" Nux Vomica, oz.	0 60 0 70	" Taraxicum, Ang	0 70 0 80	Flowers, Arnica	0 25 0 35	Flowers, Arnica	0 25 0 35
" Nux Vomica, oz.	0 60 0 70	" Opium	7 50	Flowers, Arnica	0 25 0 35	" Chamomile	0 30 0 40	" Chamomile	0 30 0 40
" Opium	7 50	" Rhubarb	7 50	" Chamomile	0 30 0 40	" Gumbo	0 12 0 15	" Gumbo	0 12 0 15
" Rhubarb	7 50	" Sarsapar. Hon. Co	1 50 1 20	" Gumbo	0 12 0 15	" Sassafras	0 25 0 30	" Sassafras	0 25 0 30
" Sarsapar. Hon. Co	1 50 1 20	" Jam. Co	3 25 3 70	" Sassafras	0 25 0 30	" Euphorb, pulv.	0 32 0 40	" Euphorb, pulv.	0 32 0 40
" Jam. Co	3 25 3 70	" Taraxicum, Ang	0 70 0 80	" Euphorb, pulv.	0 32 0 40	" Gamboge	1 05 1 20	" Gamboge	1 05 1 20
" Taraxicum, Ang	0 70 0 80	Flowers, Arnica	0 25 0 35	" Gamboge	1 05 1 20	" Guaiacum	0 38 0 70	" Guaiacum	0 38 0 70
Flowers, Arnica	0 25 0 35	" Chamomile	0 30 0 40	" Guaiacum	0 38 0 70	" Myrrh	0 48 0 60	" Myrrh	0 48 0 60
" Chamomile	0 30 0 40	" Gumbo	0 12 0 15	" Myrrh	0 48 0 60	" Sang Dracon	0 69 0 70	" Sang Dracon	0 69 0 70
" Gumbo	0 12 0 15	" Sassafras	0 25 0 30	" Sang Dracon	0 69 0 70	" Scammony, pow'd	5 60	" Scammony, pow'd	5 60
" Sassafras	0 25 0 30	" Euphorb, pulv.	0 32 0 40	" Scammony, pow'd	5 60	" Virg.	14 50	" Virg.	14 50
" Euphorb, pulv.	0 32 0 40	" Gamboge	1 05 1 20	" Virg.	14 50	" Shellac, Orange	40	" Shellac, Orange	40
" Gamboge	1 05 1 20	" Guaiacum	0 38 0 70	" Shellac, Orange	40				
" Guaiacum	0 38 0 70	" Myrrh	0 48 0 60						
" Myrrh	0 48 0 60	" Sang Dracon	0 69 0 70						
" Sang Dracon	0 69 0 70	" Scammony, pow'd	5 60						
" Scammony, pow'd	5 60	" Virg.	14 50						
" Virg.	14 50	" Shellac, Orange	40						
" Shellac, Orange	40								