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CANADIAN  
PHARMACEUTICAL JOURNAL

PUBLISHED BY AUTHORITY OF THE  
ONTARIO COLLEGE OF PHARMACY.

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EDITED BY  
E. B. SHUTTLEWORTH.



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VOLUME X.—1876-77.

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TORONTO, CANADA: ,  
THE MONETARY TIMES PRINTING ESTABLISHMENT, 64 AND 66 CHURCH STREET,

1877.



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# CANADIAN PHARMACEUTICAL JOURNAL

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VOL. X, No. I. TORONTO, AUGUST, 1876. WHOLE No. XCVIII

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## THE CONSTITUENTS OF SYRUP OF PHOSPHATE OF IRON.

BY E. B. SHUTTLEWORTH.

So long as the syrups and elixirs containing the salts of the acids of phosphorus retain their popularity the subject of their production will be regarded with particular interest by the pharmacist. The preparation of this extensive class of compounds generally falls to the lot of the retail druggist, and more seldom to the wholesale manufacturer. The processes involved require neither costly or special apparatus, nor great skill; are unattended with the evolution of injurious or disagreeable gases, and can therefore be readily carried out in the shop. Operations of this kind should always be performed when at all practicable. They tend to keep up an interest in chemistry, and keep before the mind the fact that a pharmacist is a chemist as well as a druggist; they also provide a means of diverting the mind from the tedious duties of mere shop-keeping, and are at the same time attended with considerable pecuniary gain.

During the past few years, and more particularly the last three months, there have appeared in the pharmaceutical journals numerous papers and notes on phosphate of iron and the syrups containing it. Several of these are exceedingly valuable, and have already been published in this journal, while others of later date have not yet been reproduced in America. Amongst the latter may be mentioned a very lengthy and exhaustive paper read by Mr. W. L.

Howie, F.C.S., before the North British Branch of the Pharmaceutical Society at Edinburgh; and that of Mr. Rees Price, read at an evening meeting of the Pharmaceutical Society of Great Britain. Both these papers elicited considerable discussion, drawing forth many interesting facts and practical details.

I think that a useful purpose may be served by reviewing the literature, and presenting in as concise a form as possible the main points of the subject, omitting all unessential details. In order to perform this service in as systematic and useful a form as possible, I shall not encumber this paper with special references relating to authors or periodicals, and shall work in such observations of my own as may have been made during a fair experience with tolerably large quantities of materials. For those whose time and opportunities will permit more extended reading, a list of authorities is subjoined.\*

*Phosphoric Acid.*—Of this substance there are several varieties. The *tribasic* acid, having the composition  $H_3PO_4$ , combining weight 98, is that used in medicines. In order to distinguish this form from the others, add a little tincture or solution of perchloride of iron; if the mixture remains clear, the tribasic acid is present—otherwise, a whitish precipitate is produced. The official form of this acid is the *Acid. phosphoric. dilutum*, but, in order to avoid disappointment, it is always well to submit this preparation to the above test. If a precipitate is produced, boil down the acid to the consistence of syrup, *allow it to cool*, and add water up to the original bulk. If the official acid is not at hand the glacial acid may be substituted, being previously treated with nitric acid after the manner of the *United States Pharmacopœia*. This will not always furnish

\* CARTIERS. Pharm. Jour. & Trans., March, 1871.

JONES. Pharm. Jour. & Trans., Vol. v., p. 541.

SHUTTLEWORTH. Can. Pharm. Jour. July, 1872.

DOHME. Proc. Amer. Pharm. Assoc., Vol. xxii, pp. 431-511.

THOMPSON. Pharmacist, May, 1874.

BROAD. Pharm. Jour. & Trans., June, 1874. Can. Pharm. Jour., August, 1874.

MARKOE. Proc. Amer. Pharm. Assoc., 1875.

DOHME. Proc. Amer. Pharm. Assoc., 1875. Can. Pharm. Jour., April, 1875.

DANIEL. Pharm. Jour. & Trans., Dec., 1874. Can. Pharm. Jour., Jan., 1875.

CROFT. Can. Pharm. Jour., June, 1875.

MAISCH. Am. Jour. Pharm., Oct. Can. Pharm. Jour., Dec., 1875.

SHUTTLEWORTH. Can. Pharm. Jour., Feb., 1876.

PRICE. Pharm. Jour. & Trans., March 4th, 1876, p.p. 701-716.

HOWIE. Pharm. Jour. & Trans., April 7th, 1876. April 15th, p. 834.

the tribasic acid, and simple solution and evaporation of the glacial acid, without the addition of nitric acid, often gives as good results. Neither method can be relied upon with all samples of acid. The preparation of phosphoric acid from phosphorus should never be attempted by the pharmacist. The process requires much care and experience, is not economical, except with large quantities, is attended with the evolution of poisonous and disagreeable gases, and, like all operations with phosphorus, is always more or less dangerous.

For preparing syrups, and, indeed, for most purposes, an acid stronger than that official (10 per cent. anhydrous acid), might be advantageously employed. The so-called *syrupy* acid, which can be obtained from some manufacturers, and which is about five times stronger than the other (49 per cent. anhydrous acid, and of specific gravity 1.5), will be found very useful.

*Phosphate of Iron.*—Five methods have been recommended for preparing this substance: (a) By mixing together solutions of sulphate of iron and phosphate of soda; (b) by using these salts with the addition of acetate of soda; (c) by substituting carbonate or bicarbonate of soda for the acetate; (d) by employing an excess of phosphate of soda; (e) by forming the phosphate by direct combination of phosphoric acid and metallic iron. By the first method, which is that of the *United States Pharmacopœia*, and Parrish's *Pharmacy*, about 30 per cent. of the phosphate of iron escapes precipitation, as the free sulphuric acid, liberated in the reaction, dissolves or holds this amount. The framers of the *British Pharmacopœia* sought to escape this loss by employing acetate of soda for neutralizing the free sulphuric acid, as in the second method. This addition has been shown to be an improvement, but is still in great part ineffectual, as from 22 to 28 per cent. of the phosphate is lost. In the third method, that of Mr. Schweitzer, in which carbonate or bicarbonate of soda are employed, the loss is reduced to less than one per cent. The fourth method, that of Mr. Rees Price, is said to yield results equally satisfactory, but nearly three times the usual quantity of phosphate of soda is required. On the score of economy this is quite a consideration. The fifth method, that of direct combination, answers well where time is not an object. If acid of sp. gr. 1.5 be used it should be diluted with an equal weight of water,



### Syrup of Phosphate of Iron.

and the iron should be in the form of filings, preferably of Swedish, or wrought metal. In order to produce a preparation similar to the *Syr. Ferri Phosphatis*, B. P., and containing one grain of phosphate in each fluid drachm, the following formula may be employed :

Iron .....	38 grains.
Phosphoric acid, sp. gr. 1.5.....	6 fluid drachms.
Water .....	6 " "
Syrup .....	8½ " ounces.

Mix, in a flask, the phosphoric acid and water ; add the iron, and plug the mouth of the flask with cotton ; when the iron is dissolved, filter the solution and add it to the syrup.

The blue phosphate of iron is not a substance of very definite composition, and it is questionable whether the above methods furnish compounds which are identical. Even when the same ingredients are used in proportions exactly alike, the products may differ if the details of manipulation be changed. In all cases the intention is to produce *ferrous* phosphate, but this is never altogether accomplished, as a great portion of the salt passes to the *ferric* condition ; or, as may be better understood, passes from a *proto* to a *per* salt. An analysis of six samples of commercial phosphate showed a range of from 20 to 46 per cent. of ferrous salt. It appears likely that the last method noted above would yield a preparation richer in ferrous salt than any of the others, but it is said that the third method gives a salt containing 51 per cent., which is more than 5 per cent. better than the B. P. standard.

Taking everything into account, I much prefer this process, and have used it with satisfaction for several years. The proportions of the sulphate of iron and phosphate of soda, as given in the B. P. may be retained, but instead of one ounce of acetate of soda, about half that quantity of bicarbonate of soda must be used. A better form is that of Mr. Howie :

Sulphate of iron .....	7½ parts.
Phosphate of soda.....	6½ "
Bicarbonate of soda.....	1½ "

Dissolve the iron salt in ten times its weight of water, which has been previously boiled, in order to expel air ; and the phosphate of

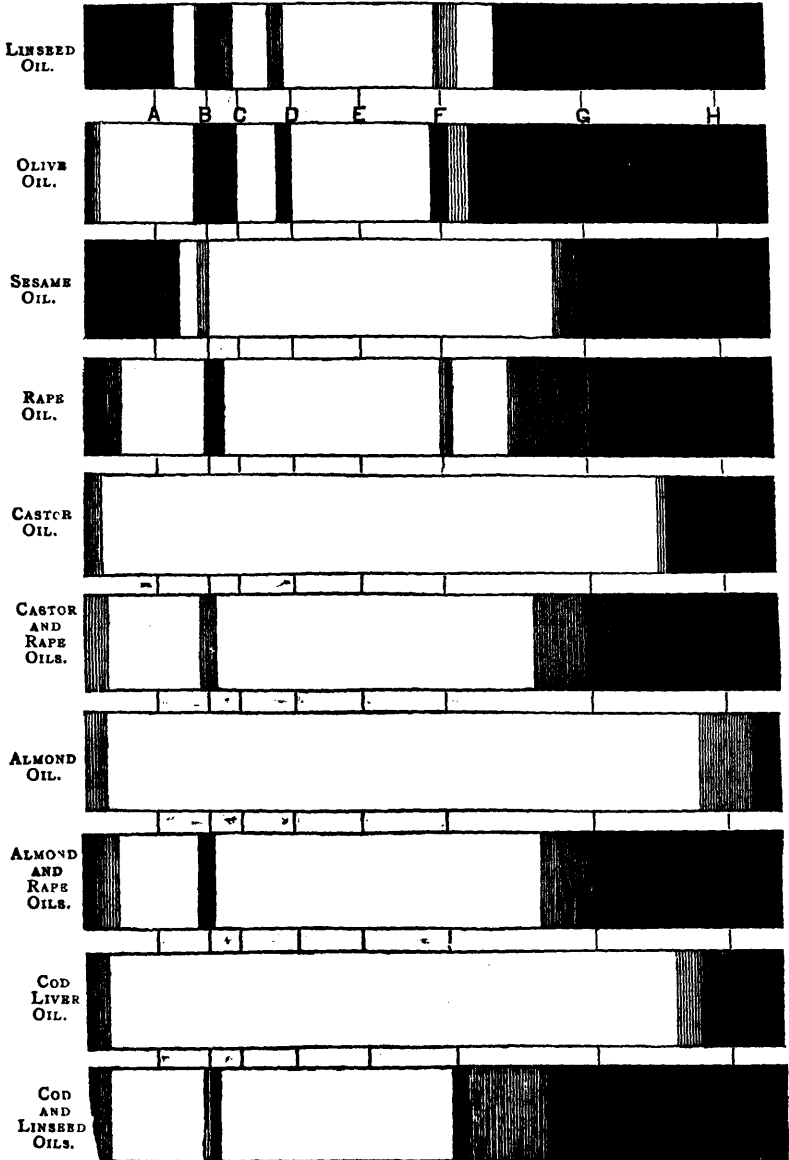
soda in a like quantity, similarly treated. Let the solutions cool to between  $100^{\circ}$  to  $135^{\circ}$  F., and pour the phosphate very gradually into the iron, with constant stirring. Add the bicarbonate, either in powder or solution. Let the precipitate subside; decant; wash well with previously boiled water; collect on a filter and squeeze out as much water as possible, either with the hand or an ordinary press. These details of manipulation must be rigidly adhered to—more especially those relating to the order of mixing and temperature—or uniform results cannot be obtained. If, in the above formula, the *parts* be held to indicate *drachms*, it may be read as part of Parrish's recipe for the so-called Chemical Food, published in his *Practical Pharmacy*, p. 425, and the iron strength of the resulting preparation will accord with the compound sold as genuine.

*Sugar.*—Some English writers have enlarged considerably on the importance of obtaining pure cane sugar. It is said that beet sugar is very abundant in the English and French markets, and is largely substituted for that of the cane. I do not know that this adulteration is practised in America, but am quite certain that the sugars with which we are supplied are now anything but pure, and that a great many of the pharmacists' troubles relating to the fermentation and precipitation of syrups are referable to this cause. In Canada we formerly had an article, made by Redpath, which was unexceptionable, but since that refinery has been closed the average quality has become sensibly lower. Inferior grades of American and Scotch imperfectly refined loaf sugar have been introduced, and I doubt not but my brother pharmacists have already realized the effects of the change. I am not aware of any sugar at present in the market which will be found so good as that of the best loaf of the Decastro & Donner Sugar Refinery Co., New York. Though not quite so good as that of Redpath, it is much better than any other which I have used, and a vast improvement on some of the New York brands. It is a matter of prime importance to secure a good article, but I know of no other ready method of attaining this end than comparing samples and selecting that which has neither color, odor, nor taste, other than that of sweetness, and which is in the hardest and most sparkling crystalline lumps.

I shall reserve for another occasion any remarks on the syrups of which phosphate of iron forms a part.

THE SPECTROSCOPE APPLIED TO THE DETECTION OF ADULTERATION, ETC., OF FIXED OILS\*.

BY W. GILMOUR.



\* From the Pharm. Jour. and Trans., June 10th, 1876.

Having occasion recently to examine some olive and other oils, out of mere curiosity I placed a sample of one of them in my spectroscope (an ordinary two prism), and was much gratified to find that it gave a most beautiful and well-defined spectrum. Thus encouraged I was not long in trying other oils in a similar manner, and was much interested to find that each oil not only gave a spectrum in some respect or another quite characteristic, but that from the nature of the spectrum which each yielded all the fixed oils might conveniently be divided into two great classes—namely, band-giving and non-band-giving. Olive oil, for example, gave a most beautiful spectrum, being intersected by three dark bands, one of them near to the line B of the solar spectrum being very dark, and of some little breadth, and quite apparently a chlorophyll band, the other two near to the lines D and F respectively being much less marked, but still quite decided and readily recognized. The spectrum had this further characteristic—namely, that all the blue and violet rays were absorbed, as, also, some little portion of the extreme red. Linseed oil gave the same bands, all of them, however, being more decided, whilst the spectrum had only a small degree of shading beyond the dark band at F, and then broke abruptly off. The extreme red of the spectrum was also considerably brightened, and this, together with the abrupt absorption of all immediately beyond F, I found to be thoroughly characteristic of this oil. Sesame oil has only one band at B, faint in comparison with the two foregoing oils, but still distinguishable, whilst rather more of the red was absorbed and the blue transmitted than in the case of the olive. Rape oil gave two bands, one at B and the other at F, when the same depth of oil, as in the previous instances, was examined. On examining, however, a larger volume of oil the third band at D also appeared quite distinctly, whilst the absorption at the two extremes of the spectrum differed very materially from that of the other oils. Castor, almond, and cod liver oils gave no bands, and in other respects, as shown in accompanying diagram, they closely assimilated. On mixing them, however, with even a minute quantity of any of the band-giving oils, their presence was at once indicated, not only by the bands, but also by their action on the extremes of the spectrum. I could readily detect the presence of linseed oil by the bands in any of these, to the extent of between two and three per cent., and probably the reaction might even be more delicate if the light in testing was transmitted through a greater volume of oil than I employed. The addition of a non-band to a band-giving oil was likewise very readily detected. In this case even a very minute addition quickly caused the two delicate bands at D and F to disappear, whilst the difference in other respects of the two spectra (the genuine and the mixed) could at once be detected on comparing the two by the help of the side prism. In short, little difficulty I think will be experienced in detecting not only any of the ordinary oils, but also if the

sample be pure and unadulterated. This received a somewhat singular confirmation during the course of my investigations. Being anxious to test as many different kinds of oils as possible, I endeavored to obtain samples of at least all those in common use. Amongst others I obtained from a respectable warehouse a sample of what is known as lard oil. In placing it in the spectroscope I was much amused to find the dark band at B stand out very distinctly. Though totally ignorant of the characteristics of lard oil, I knew perfectly this could not be one of them, and a little further investigation proved it beyond all doubt to have been adulterated with rape oil. Were the spectroscope to do no more than this, namely, detect band-giving from non-band-giving, which would, in other words mean detect the presence of the band-giving in the non-band-giving oils, it would be an invaluable addition to the somewhat defective appliances presently at command for the detection of adulterations in oils. From all the experiments, however, which I have made (and they are not inconsiderable, having tried many experiments, and with oils not mentioned in the foregoing remarks), I am firmly persuaded it will do even more than this. I believe any one will be enabled with even little experience to detect adulteration, where such exists, and this with an ease and precision hitherto unknown in this department of pharmacy. In my experiments I have employed a column of oil varying from one to five inches in diameter, but after many trials I think the larger dimensions the more preferable. A set of beakers, for example, answer the purpose admirably, and having fixed upon one of a certain diameter the same should always be employed for purposes of comparison. The use of the side prism is also absolutely required in every step of the investigation.

These remarks I hope will be taken only as indicating the value of this as a new field of inquiry and investigation, and not in any way as exhaustive of the subject.

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## DYEING WITH ANILINE COLORS.\*

BY G. DUBELLE, PH. D.

I take pleasure in presenting to the readers of the *Druggists' Circular* the following instructions in the art and method of dyeing with aniline colors. Every formula has been well tested by long experience and oft-repeated trial, and every color is warranted to be sharp, bright, and clear, provided the material has been thoroughly cleansed from all grease, oil, soap, and other matters, and that the aniline colors used are of first-class quality.

\* From the *Druggist's Circular*.

**BLACK.**

Dissolve the dye-stuff in boiling water.

*Silk.*—Dye in a bath of hot water, with the addition of a little acetic acid.

*Wool.*—Dye in a bath of boiling water.

*Cotton.*—Prepare with tannic acid, then add a little bichloride of tin or chloride of lime, and afterwards dye.

BLUE, soluble in alcohol.

Dissolve one pound of blue in sixty pounds of spirit of 95 degrees; boil and filter.

*Silk.*—Dye in a bath of boiling water, with the addition of a little sulphuric acid and some soap liquor.

*Wool.*—Dye in a bath of boiling water, with the addition of a little sulphuric acid and half a pound of bichloride of tin to twenty pounds of wool.

*Cotton.*—Boil in a soap-bath, dry without rinsing; then dye in a bath of boiling water, with the addition of some acetate of alumina; afterwards pass again through the first soap-bath, wash and dry.

BLUE, soluble in water.

Dissolve the product in boiling water.

*Silk.*—Dye in a bath of boiling water, with the addition of a little sulphuric acid; you may also add some soap liquor.

*Wool.*—Little used.

*Cotton.*—Prepare in the same manner as for black; test with tannic acid and lime; dye in a bath of hand-warm water, with the addition of a little alum and acetic or sulphuric acid.

**ALKALI BLUE.**

Dissolve in boiling water.

*Silk.*—Same as for wool; or with soap liquor instead of borax or silicate of soda.

*Wool.*—Add the dye very slowly to a bath made alkaline with silicate of soda or borax, and work at a temperature just below the boiling point; afterwards wash and develop the color in a separate bath of water slightly acidulated with sulphuric acid. If the dye-bath is sufficiently alkaline, the dyed material will come out nearly colorless, or of a pale sky-blue, but is at once sprung into a bright fast blue by immersion in the second bath of acid and water. On no account must the acid be put into the same bath as the color. As the dye-bath cannot be exhausted, it should be worked continuously.

**BISMARCK BROWN.**

Dissolve in boiling water.

*Silk.*—Dye in a bath of hot water, and add a little acetic acid.

*Wool.*—Dye in a bath of boiling water.

*Cotton* is to be prepared before with tannic acid.

## METHYL GREEN.

Dissolve in boiling water.

*Silk.*—Dye in a bath of hot water, and add a little acetic acid. You may also add some soap liquor.

PICRIC ACID for yellow shades.

*Wool.*—Dye in a warm water bath, with the addition of a little water of ammonia; then pass through a hot water bath containing a little acetic acid and as much picric acid as is necessary for the desired shade. Avoid copper or iron vessels.

*Cotton.*—Prepare with sumac or tannic acid, and dye in a bath of hand-warm water to which is added a little acetic acid. You may after the preparation with sumac, put the cotton first into a solution of bichloride of tin.

## MAGENTA.

Dissolve in boiling water.

*Silk.*—Dye in a bath of cold water, with addition of a little acetic acid.

*Wool.*—Dye in a bath of boiling water.

*Cotton.*—Prepare with tannic acid; then add a little bichloride of tin, and afterwards dye.

CRIMSON, GRENAT, ROSEINE, SCARLET, SOLFERINO.

Same as for magenta.

## METHYL VIOLET.

Dissolve in boiling water.

*Silk.*—Dye in a bath of hot water, with the addition of a little tartaric acid.

*Wool.*—Dye in a bath of boiling water,

*Cotton.*—Same as for magenta.

## YELLOW.

Dissolve in boiling water.

Dye in a bath of hot water, with the addition of a little sulphuric acid or bichloride of tin.

If the above instructions are carefully complied with, there will be no difficulty in dyeing silk, cotton or woollen manufactures satisfactorily.

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 THE OIL RESOURCES OF AFRICA.\*

It is hardly possible to study the progress which has been made during late years in the art of utilization of previously-wasted substances, without being impressed with the anomalous course

\* From the Journal of Applied Science.

which the world has followed relative to the vast natural products of Africa. To the economist the question may well suggest itself whether an energy and skill akin to that which scientific men have expended in discovering sundry of these utilizing processes, if devoted to devising means for developing the resources of the great and almost unknown continent, would not have yielded results far more valuable to mankind in the increase of raw material placed at its disposal. A striking instance is found by comparing the labour devoted to the extraction of fatty matters and grease of all kinds—labour (including the long voyages of the whaler, the sinking of wells in the oil-bearing earth, and the manifold operations known to chemistry) dependent on countless varying circumstances—with the fact that for miles along the West Coast of Africa extending between Cape Blanco and St. Paul de Loando, there are vast forests of palms, the oleaginous fruit of which has for centuries rotted unused upon the ground. The plam forests back of the coast line Cape Palmas and Elmina are said to be practically inexhaustible; and so also, in the neighbourhood of Fernando Po, immense tracts are covered with the trees. The total export of the palm oil to England exceeds 50,000 tons, or a value of £1,500,000 per annum; but it will readily be seen that this represents an exceedingly small commerce compared to what might be the case were the enormous resources fully or even moderately utilized. The Fernando Po oil crop, as an example, seldom equals 400 tons per annum, although 4000 might easily be produced.

The difficulties in the way of the development above indicated are the unhealthiness of the country and the monopolies controlled by slave dealers. One of the latter buys the entire right to a large and valuable region by paying the King of Dahomey £2,500 a year. The iniquity of this monopoly is increased, says a recent writer, by the King binding all the traders to give palm oil to this trader at a price fixed by the King himself, without reference to market prices. The penalty of non-compliance with the King's command is decapitation. Trade is carried on by the most primitive means. The cluster of fruit from which the oil is obtained grows in the form of a large cone, about the size of a man's hat. It is covered with long spines which protect the nuts, the latter being about the size of a large olive and of a deep golden colour. The palm tree forests, in the midst of which most of the factories exist, are said to be very picturesque. The trees, which tower to an enormous height, are as thick as it is possible for them to be, forming in some places large and impassable clumps, and in others opening in wide and tortuous vistas. The trunks are often covered at the lower part with tufts of lovely fern, the emerald green of whose long fronds, as they droop gracefully to the earth, forms a beautiful contrast to the sombre brown of the trunks which they ornament. In the open spots in the forests, the factories, mere collections of huts, are built. In Dahomey



the nuts, when gathered, are thrown into a trough formed by marking off a small area about six feet square, beating down the earth to form a floor, and enclosing it in a wall about eighteen inches high. Into this receptacle the husks are thrown, to be trodden under foot by women until the husks and the oil which exudes together form a kind of putty. The mass is then thrown into vessels of hot water, when the oil rises to the top and is skimmed off. In Fernando Po it is the practice to let the nuts rest in heaps until almost putrified; hammering with stones follows, and then simmering of the pulp in the kettle, after which the women squeeze out the oil with their hands. The men do not engage in the manufacture, their labour ending with the climbing of the trees and shaking down the fruit. It will be observed that the outside of the nut only enters into the process. The kernel separately yields a so-called black oil, and forms the staple of a trade with England, where the hard portion is subjected to the action of powerful crushing machines.

Oil from the palm nut is, however, by no means the only fatty product to be obtained from rank African vegetation. No one has ever estimated the vast resources of this description which abound in the countries bordering on the river Niger; and it is only in the shape of experimental and comparatively small exports that we get a glimpse of them. From Senegambia and Guinea come Touloucunna oil, used by the natives for anointing their bodies and for burning in lamps, and Galam oil, a natural vegetable butter from *Bassia Parkii*, very much used in Africa for preparing food. The castor oil plant grows wild with great luxuriance in Senegambia; and throughout West Africa there is an immense yield of pea and ground nuts, which already has given rise to a large commerce. In the northern part of the continent, and especially Algeria, there are enough olive trees to supply, if fully developed, the demands of all Europe. The province of Kalbye is one enormous olive tree forest. The cocoanut palm grows in immense forests in Zanzibar, where its fruit is exported to France and England for making stearine for candles. The *Trichilia capitata* on the Zambesi produces small black seeds which contain a large quantity of solid fat. The "forna" nut of Central Africa yields an excellent oil for culinary purposes, and is cultivated by the natives. A tree discovered by Dr. Kirk on Lake Nyassa also gives a rich oil, which even the natives have not utilized.

There is no doubt but that, in the gradual progression of commercial colonies for the development of the resources we have indicated, the most rapid means for opening up the interior of Africa will be found. Such expeditions as those of Stanley, Cameron and of other isolated explorers, though they may add to our knowledge of the resources, do nothing towards their utilization, but rather only show us how great is the task which civilization sooner or later must accomplish, in overcoming the natural obstacles of a neglected continent.

**ÆRATED WATERS.\***

BY G DUBELLE, PH. D.

The preservation of health is the great question of the day. Many means are suggested by which the spread of disease may be prevented, but sanitary engineering, and all the other arrangements which town authorities are called upon to make, will not materially reduce the death rate unless the people are more careful in their eating and drinking.

We are accustomed to see cart-loads of aerated waters, lemonade, ginger ale, etc., left at hotels, bar rooms, and private residences. The consumption of these liquids is enormous, and if the evils accruing from the system could be accurately ascertained and exposed, it would form a frightful cause of death. I have analyzed a sample of ordinary soda-water taken from a fountain, and must say that it is at least highly dangerous, for it contains more than 2 to 3 grains of lead dissolved in every gallon. Ginger ale is even worse, while lemonade is hardly ever free from the poisonous influence of lead. People who are in the habit of drinking such preparations will do well to adopt the following well approved formulas for making wholesome and agreeable summer beverages without a machine.

**PLAIN SODA POWDER.**

Powd. bicarbonate of soda.....8 ozs.  
 Powd. citric acid..... 6½ "

Mix the powders, recently dried, in a warm mortar, and immediately put the mixture into a dry bottle, and cork securely. For use put one teaspoonful into a glass of water, and stir it until dissolved. By adding a desert-spoonful of raspberry, strawberry or vanilla syrup, any kinds of soda water can be produced, such as are dispensed by druggists and others.

**PLAIN MESSINA LEMONADE POWDER.**

Powd. white sugar.....7 pounds.  
 " Citric acid.....4 ounces.  
 Conc. essence of lemon..... 4 drachms.

Mixed and used as before.

**PLAIN SEVILLE ORANGEADE POWDER.**

Powd. white sugar.....7 pounds.  
 " Citric acid..... 3½ ounces.  
 Conc. essence of orange....3 drachms.  
 " essence of cedrat.....1 "

Mixed and used as before.

\* From the Druggist's Circular, June.

*Glycerole of the Subacetate of Lead.*

## AERATED MESSINA LEMONADE POWDER.

Powd. double refined sugar.....	14	ozs.
“ Bicarbonate of soda.....	3½	ozs.
“ Citric acid.....	4½	ozs.
Conc. essence of lemon.....	60	drops.

The powders must all be separately and carefully dried, at a moderate temperature, before mixing, and when mixed be carefully secured from the air. A dessert spoonful will make a tumbler of lemonade.

## AERATED SEVILLE ORANGEADE POWDER.

Powd. double refined sugar.....	14½	ozs.
“ Bicarbonate of sugar.....	3½	ozs.
“ Citric acid.....	4	ozs.
Conc. essence of orange.....	60	drops.
“ essence of cedrat.....	12	drops.

Mixed and used as before.

## BELFAST GINGER ALE POWDER.

Powd. double refined sugar.....	16	ozs.
“ Bicarbonate of soda.....	3½	“
“ Citric acid.....	4½	“
Conc. essence of ginger.....	1½	“
“ essence of cayenne.....	4	drs.
“ essence of lemon.....	40	drops.

The soda, acid and sugar must be very carefully dried, separately, and at a temperature not exceeding 120°. Before drying the sugar, the same must be thoroughly incorporated with the essences, to which a small quantity of caramel, as coloring, may be added. Used as before.

## MANHATTAN SPRUCE BEER POWDER.

Powd. double refined sugar.....	16½	ozs.
“ Bicarbonate of soda.....	3½	ozs.
“ Citric acid.....	4	ozs.
Conc. essence of spruce.....	1	oz.

Mixed and used as before.

The formula of Prof. Wayne for a popular Southern summer beverage is also given in the journal above noted, as also others obtained from various sources.

## ROOT BEER.

Fl. extract of American sarsaparilla,		
“ “ Pipsissewa of each 10 fl drachms.		
“ “ Wintergreen.....	4	“ “
“ “ Licorice.....	2	“ “
Root beer flavoring.....	1	ounce.

Refined molasses ..... 1 gallon.  
 Water ..... 9 gallons.

Mix, and ferment with one quart of beer-yeast. Instead of fermenting, a better process is to introduce the mixture into an ordinary soda-fountain, and to charge it with carbonic acid gas in the usual manner.

ROOT BEER FLAVORING.

Oil of wintergreen.....4 drachms.  
 “ Sassafras .....2 “  
 “ Cloves .....1 “  
 Alcohol .....4 ounces.

Mix, and dissolve.

NEW ORLEANS MEAD.

Sarsaparilla root, contused,  
 Licorice “ “ of each 8 ozs.  
 Cassia bark “ 8 ozs.  
 Cloves “ 2 ozs.  
 Coriander seed “ 3 ozs.  
 Ginger “ 8 ozs.

Boil for fifteen minutes, in eight gallons of water; let it stand until cold, or for several hours, to settle down. Then strain through flannel, and add to it, in the fountain:

Syrup .....12 pints.  
 Honey ..... 4 pints.  
 Tincture of ginger..... 4 ounces.  
 Solution of citric acid ..... 4 ounces.

*Catawba.*—Prepare a very heavy simple syrup, using sixteen pounds of sugar to a gallon of water. Add to a portion of this an equal bulk of fine catawba wine having a rich bouquet. Hock, claret and other wine syrups are prepared in a similar manner. Some dealers prefer to keep the simple syrup on draught, and after drawing a sufficient quantity in the glass to properly sweeten the contents; add the wine just previous to filling with soda water.

*Milk Punch.*—To one pint of heavy syrup add a half pint each of brandy and Jamaica rum. Flavor with two teaspoonfuls of an extract prepared by macerating two ounces of ground nutmegs in eight ounces of alcohol. The syrup is first to be poured into the glass in the proper quantity, and ordinary cream syrup added before drawing the soda water.

*Champagne.*—To one quart of good Rhine wine, with a rich bouquet, add two ounces of old Otard brandy, one tablespoonful of good sherry, and three pounds of pulverized sugar. Dissolve the latter by stirring without the application of heat. This syrup should

be kept very cold, and used with soda water from a highly charged fount. It forms a much better substitute for genuine champagne than any of the numerous doctored cider imitations.

*Sherry Cobbler.*—To one pint of good sherry add an equal measure of heavy simple syrup and one lemon cut in very thin slices. Allow the syrup to stand a few hours, strain through a sieve, and bottle for use.

*Compound Syrups.*—Under the names of Ambrosia, Nectar, etc., many variously flavoured combinations are from time to time set forth by the dealer to give variety to his list of syrups, and attract custom by their novelty. As no special uniformity need be observed in this regard, a few formulas are given, to any of which the dealer using may assign that name which his fancy may suggest.

i. Take of simple syrup one pint, syrup of wild cherry and good port wine, of each four ounces. The flavor of this is exquisite when made from fine materials.

ii. Raspberry syrup one pint, vanilla syrup one pint, Sauterne wine one half pint.

iii. Vanilla syrup one quart, pineapple syrup one half pint, raspberry syrup one half pint.

iv. Heavy simple syrup one pint, lemon syrup one half pint, brandy one half pint, extract of nutmeg ten drops.

v. To one quart of good Rhine wine add one lemon and one orange each thinly sliced, one half of a small pineapple, sliced, and three pounds of fine sugar. Allow them to stand for a few hours, heat gently over a water bath, stirring until the sugar is dissolved, and strain for use.

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## GLYCEROLE OF THE SUBACETATE OF LEAD.\*

BY BALMANNO SQUIRE, M.B., SURGEON TO THE BRITISH HOSPITAL  
FOR DISEASES OF THE SKIN.

The Pharmacopœia already contains a certain number of glyceroles. The exceptional solvent powers of glycerine, its property of preserving for a very long time various substances, such for example as tannic acid held in solution by it, which cannot be kept for long unchanged in the form of aqueous solutions, and the adhesive properties of glycerine, have commended this menstruum already as a convenient vehicle in the composition of certain preparations. However, in my belief it has not yet obtained the consideration it fairly merits, and more especially as a vehicle for applying remedies

\*From the Pharm. Jour. and Trans.

to the skin, Greasy preparations and aqueous preparations are in many cutaneous diseases alike unsuitable as therapeutic agents, but glycerine seems to me to hold a convenient middle place between the two as a vehicle. But to enter into details on that head would be out of place here. I have to add to this, that I have found that lead in the form of the basic acetate is of more avail, speaking generally, than the remedy which is on the whole the most popular one in the treatment of cutaneous disease, namely, oxide of zinc, for achieving those ends for the furtherance of which zinc is most commonly employed. In short, I believe that the glycerole of subacetate of lead, as soon as it shall have come into extensive use, as I believe it will when it has once been generally tested by practitioners, will be an article in very large demand. If general medical opinion should prove to endorse a very long experience on my part of the action of this application in chronic eczema, a disease which is the commonest of all of that very common class of disorders—the diseases of the skin—then without question the demand for this remedy will at least equal the enormous demand which has long existed for zinc ointment. I think it therefore not unnecessary that I should describe in this Journal the mode of preparing it, since it is a preparation which although simple enough in composition requires certain special precautions in its manufacture, and is moreover a material which cannot readily be manufactured at the moment, but requires to be kept in stock. The preparation consists simply in making the plumbi subacetatis liquor with glycerine instead of water. The article thus obtained serves as a stock solution, to be diluted with seven times or three times its quantity, or even with a less proportion of pure glycerine, and to be thus used as an application to the diseased skin.

In the preparation of the substance the direction of the Pharmacopœia in reference to liquor plumbi, that the liquid shall be boiled, can scarcely be carried out, since glycerine, unlike water, decomposes at the boiling point, evolving acrid fumes, and the result would be scarcely a simple solution of the basic acetate in unmodified glycerine. On the other hand I find that if the process be conducted in a boiling water bath, the white insoluble residue left is more considerable than if the process be conducted, as I subsequently directed it to be done, in a boiling glycerine bath; although in either case the residue is less than that left in the preparation in the ordinary way of the plumbi subacetatis liquor. In other words I find glycerine to be a somewhat more ready solvent than water of the basic acetate of lead. However, the acrid fumes evolved by the boiling glycerine bath, although they do not affect the purity of the preparation itself, since the glycerine actually used in the preparation does not of course reach the boiling point, are nevertheless a cause of considerable personal inconvenience to the pharmacist, and I am indebted, for a useful suggestion, to my brother Peter. He has

adopted the simple expedient of using an oil-bath in the place of a glycerine bath, and thus while attaining the requisite temperature, keeping it a little below the boiling point of glycerine, has avoided the drawback of creating an unbearable atmosphere. A solitary fact remains to be told. The solution when made has a much greater viscosity than that of pure glycerine; indeed the solution is very viscid indeed. If filtered in the ordinary way, that is to say at the ordinary temperature, it would take a week or two at the least to filter even a small quantity of it, but if filtered at a tolerably high temperature the solution, like pure glycerine itself, temporarily loses its viscosity and runs readily through the filter. It is necessary, therefore, that the filtration should be performed in a hot chamber, a gas-oven, or steam-oven of moderate heat, so as not at least to char the filtering-paper, since in that case the filtered solution will be found to have acquired a disagreeable dark brown colour; but the filtration of course should be conducted below the boiling point of glycerine.

In conclusion I may say that the preparation has the advantage of being what in pharmaceutical phrase is termed an "elegant," that is to say an acceptable, preparation. It has the sole drawback of being somewhat but by no means distressingly "sticky" in feel when spread over the skin, but it is not objected to nearly so much as greasy preparations of any kind by those who have had to use it. It has a clear, almost perfectly colourless solution, resembling, except as to its greater viscosity, pure glycerine, whereas the speedy relief it affords in the numerous class of cases to which it is suitable readily excuses any trivial discomfort its first application may occasion.

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## THE PROPERTIES OF THE COCA LEAF OF SOUTH AMERICA (*ERYTHROXYLON COCA*)\*

BY P. L. SIMMONDS.

The properties of the Coca leaf having again become the subject of discussion and inquiry, owing to its use by Weston, the pedestrian, in his recent feat, and from the attention drawn to it last year by Sir Robert Christison, it may be well to condense such details and information as are available, in order that the alleged merits of this vegetable substance may be more seriously inquired into. For as yet there is a good deal of discrepancy in the accounts published, and no fair opportunity has been afforded for testing its merits and virtues in Europe, where the leaf has only been received in a dry and unsatisfactory state. What is wanted is the opportunity of analysing

\*From the Chemist and Druggist.

it in its fresh condition, and more accurate and detailed information as to how long it retains its asserted invigorating and sustaining properties.

The address of Sir Robert Christison to the Edinburgh Botanical Society last year having been the means of drawing attention here to the alleged virtues of the coca leaf, many ineffectual endeavours have been made by chemists to obtain tolerably fresh samples.

Sir Robert Christison, an elderly man, relates how he made the ascent of Ben Voirlich, and arriving at the summit greatly fatigued, chewed a portion of coca leaves, and found himself able to make the descent with firmness and juvenile elasticity. He, moreover, adds that with the assistance of the coca leaf he could walk 16 miles with ease, while without it he felt (on other occasions) very much fatigued. According to Dr. Alexander Burnett, this plant, when taken into the system, affects the pulse and respiration, increasing both in frequency, and the former in force at first; subsequently, if the dose is large, it diminishes both.

Dr. Pigeaux, of Paris, after a trial of several months with leaves submitted to him by the Society of Acclimation, reports, in their "Bulletin" for March, 1865 (vol. I, second series, p. 112), that he found it less exciting to the nerves than either tea or coffee, and that from its comparative cheapness it was far preferable to much of the second rate tea sold. It might be made, he says, the beverage of children, infants, and brain workers, and it ought also to be used in the army and navy, and by all hard toilers. Like all leaves dried simply by desiccation, it soon imbibes moisture, but its valuable properties might be preserved by transport in well-chosen cases, or in sacks lined with tinfoil.

A decoction of the leaves has long excited attention in France as possessing a peculiar stimulating power, and favouring digestion more than any other known beverage, and a tonic wine and an elixir are made from them. It seems to be admitted that the leaves, chewed in moderate doses of from four to six grams, excite the nervous system, and enable those who use them to make great muscular exertion, and to resist the effects of an unhealthy climate, imparting a sense of cheerfulness and happiness. In larger doses it is alleged that coca would occasion fever, hallucinations, and delirium. Its exciting power over the heart is twice that of coffee, and four times that of tea.

In South America the leaves are used in various ways—dry, masticated, or chewed in a bolus, sometimes in infusion either alone or mixed with alkalis, potash, or lime.

We should have to go back to the early mythological history of Peru to discover the first traces of the use of coca, but the leaves have played, and continue to play, an important part in the habits of the natives. The Incas retained in their own hands the exclusive monopoly of the supply, and distributed the leaves as a special favour



to their nobility and the foreign chiefs who voluntarily submitted to their laws.

These leaves were also the appendage of the priests of the Sun, constituting one of the essential bases of their religious ceremonies, and popular superstition transformed them into a symbol of the divinity.

The Spanish conquerors profited by this superstition, and maintained the culture and promoted the consumption by supplying large quantities to the administrations of mines, by which means colossal fortunes were rapidly made. In the sixteenth century plantations, of which the rents ranged from 20,000 up to 200,000 francs, were by no means rare, and the tax levied became considerable.

The mines of Potosi, which alone used up 90,000 to 100,000 bales of 25 lbs. each, yielded a revenue to the Government of 100,000*l.* In some of the succeeding centuries the interior commerce in coca rather declined, owing to foreign, religious, and other causes, but about 1794 it again increased, and advanced to 600,000*l.*, and in later years even exceeded this sum.

An extended notice showing the effects of coca on the system was published by Dr. Mantegazza, of Milan, a translation of which appeared in the *Pharmaceutical Journal* in June, 1860. He found that it had a comforting and satisfying effect on the stomach, but after a time a slight burning sensation in the mouth and pharynx and an increase of thirst was noticed. It also caused a circumscribed erythema, an eruption around the eyelids resembling ptyriasis, and from time to time a not unpleasant pricking or itching was felt. An infusion of coca increased the action of the heart, and the pulse rose from 70 to 134 beats. From this experiment he drew the following conclusions:—

The leaves chewed or taken in weak infusion, have a stimulating effect on the nerves of the stomach, and thereby greatly facilitate digestion.

In a large dose coca increases the animal heat and augments the frequency of the pulse, and consequently of respiration. In a medium dose, three or four drachms excite the nervous system in such a manner that muscular exertion is made with great ease; then it produces a calming effect. Used in large doses it causes delirium, hallucination, and, finally, congestion of the brain.

All travellers who have visited Peru attribute to the use of this leaf by the Indian miners the power of sustaining hard toil. Possessing an exciting and tonic property, it enables them to withstand famine, thirst, want of sleep, severities of climate, the injurious metallic exhalations from mines, and to support excess and fatigue night and day. Hence it has been thought it might render equal service to travellers who have to pass through marshy lands and polar regions, by rendering them less sensible to miasmatic fevers and extreme cold.

All the Indians, indiscriminately, chew the coca leaf as sailors do tobacco, and when it has become slightly saturated with saliva they add what is called locally the "llipta," which is a small hardened cake composed of lime and calcined wood ashes, in some districts they only add a little quick-lime. Each Indian carries, suspended from his belt, a small calabash containing the coca leaves, from which he helps himself with a spoon or bent stick as occasion requires.

Mons. E. Colpaert, in an interesting account of the culture of coca in Peru ("Bulletin Soc. of Accl.," Paris, 1862, p. 956), states that it appears that this leaf has the property of allaying the craving of a deficiency of food, and that a person who uses it can subsist many days without eating, and without being sensibly debilitated. Also that an Indian has made a journey of 200 or 300 leagues, executing daily his 60 miles, nourished solely by coca leaves, without his health suffering.

But while he believes and admits that coca is a strengthening substance, he is of opinion that its abuse has very injurious effects upon the intellectual faculties. Any one who has visited a mineral district will have noticed this, for there the Indian miners use this leaf to excess. Not content with chewing it from the moment they awake to the time they go to sleep, they even indulge in it during the night, and it ultimately reduces them to a complete state of idiotcy, brutalising them as opium does the Chinese when taken in excess.

M. Colpaert says that often when passing the grand chain of the Andes he has chewed coca to combat the cold, and always with the best effect. The leaves have a bitter taste, but do not burn the tongue, as is alleged. Those who use it continually, and with "llipta," have an insupportable smell.

The first time he tasted it he felt, after a few minutes, slight shiverings of fever, the blood mounted to his head and pressed forcibly on the temples. He felt this for about ten minutes, after which a complete reaction took place, and he experienced from head to foot a pleasant and agreeable heat. Arrived in the evening at his resting-place, he took coca in the shape of tea before going to sleep, only throwing away the first steeping and drinking the second water of infusion. Notwithstanding the snow and the intensity of the cold, he experienced a pleasant heat, perspiring so freely as to wet the mattress.

The Indians attribute to coca many virtues, and employ it in different forms. It is for them an indispensable and favourite sustenance, for the deprivation of every other substance is less felt by the Indian than that of his favourite coca.

Every traveller passing through the country should lay in a stock, for it is the best medium of currency, and that most appreciated among the Indians. Often in the mountains not a thing could be obtained with dollars or coin of any kind, but a handful of coca will

act on the Indian like a talisman, and for it he will place his hut and all that it contains at your disposal. They also use coca leaves for every external malady, whether it be a cut in the hand, to stop hemorrhage, to heal ulcers and boils, or for neuralgia and headache. In the latter case a moistened leaf of coca is applied to each temple and, whether it be superstition or reality, immediate relief is said to be obtained. The following narrative of the virtues attributed to coca by the Indians was told M. Colpaert by an actual witness of the proceedings.

In one of his later journeys to Vilcabamba, one of the richest mineral districts of Peru, he arrived in the town at the moment when they were carrying out to his home one of the miners, who for many years had been afflicted with a dreadful malady, which defied all the efforts of medical skill to cure. His body was covered with external ulcers, and the unfortunate given over as incurable, and, suffering martyrdom, implored to be put to death. An old Indian, who had formerly worked under his orders, demanded permission to undertake his cure, which was granted. The patient was laid on the floor of the room, stripped, and half a dozen Indians commenced chewing coca and llipta, singing and dancing round him with strong cabalistic actions. After about a quarter of an hour, when the leaves had been sufficiently masticated and impregnated with saliva, evidenced by the abundant foam, they again commenced dancing round and spitting on the body of the unfortunate. This lasted for about half an hour, when each Indian placed his quid of chewed coca on the ulcers of the patient, who was then enveloped in cloths, and left to repose. The same scene was renewed every two days, and at the end of the month the patient who was named Gonzales, was thoroughly cured. This treatment took place in 1850 and he was living eleven years after, when M. Colpaert wrote his narrative.

Poppig, Waddell, Von Martins, and others have pronounced favourably on the chewing of coca; but Von Tschudi and Dr. Scherzer (who accompanied the Austrian *Novara* expedition) give the most remarkable accounts of its stimulating effects.

The former informs us that during his stay in Peru he has employed an Indian in some very fatiguing digging for five days and five nights, and that this man did not partake of any food during the whole time, and rested even only two hours in the night; but he constantly chewed coca leaves, consuming an ounce every two or three hours. After the work was done the same individual accompanied Von Tschudi during a ride of 63 English miles over elevated plains, keeping pace with his mule, and taking only a short rest for his coca chewing. After all these hardships he was quite willing to go through them again without eating anything, provided he had plenty of coca supplied him.

A similar case is reported by Dr. Scherzer, where an Indian accomplished a journey of 243 English miles in four days. After

resting for one day he set out for his return, on which he was obliged to pass a mountain of 13,000 feet in height. He actually returned on the fifth day, and during the whole journey there and back he had only taken a little roasted maize and plenty of coca.

Those who once take to coco-chewing can scarcely abstain from it, and in this respect coca shows even a greater power on the human habit than tobacco does.

From the general observations made, a moderate use of coca does not appear to be injurious to health, and Von Tschudi even feels inclined to think the contrary, basing his opinion on the fact that many Indians attain a very great age without losing any of their mental faculties.

Dr. Pickering, in his "United States Exploring Expedition," states that he found "coca formed the resource and consolation of the miners of Alparmarca, and its use in preference to tobacco has extended to European residents. I was here first struck with the superior powers of endurance of the aboriginal American, an important item, as it has appeared to me, in the profitable working of the South American mines.

"Whilst ascending on foot to the mines of Alparmarca, we remarked the frequent necessity of resting for the sake of taking breath. The cause did not seem difficult of explanation, for at the elevation of 15,000 feet the atmosphere had lost one-half of its density, so that we were obliged to double the number of our inspirations to procure our accustomed supply of air. The English superintendent stated that 'a residence of years does not relieve this shortness of breath and inability of long-continued muscular exertion, and that the aboriginals born on the spot suffer equally with strangers.'"

The coca plant is described by Castlenau as a bush which rarely attains six feet in height, and does not often exceed three; its foliage is of a bright green, its flower white, and its fruit small and red. When the plants are about eighteen inches high they are transplanted from the seed beds into fields called cocales. The mature leaves are gathered with the fingers; they are dried by spreading them in the sun, sometimes on woollen cloths. This operation requires great care, for the plant must be protected from all dampness, which changes its colour and thus diminishes its value. It is then packed in bags, weighing from 50 to 150 lbs., which are afterwards transported to great distances. The large heaps of the freshly-dried leaves, particularly while the warm rays of the sun are upon them diffuse a very strong smell, resembling that of hay in which there is a quantity of milfoil. It is doubtful whether the fruit, which is in the form of a small cherry, would bear transport across rigorous and variable climates.

Dr. Poppig reckoned the profits of a coca farm to be 45 per cent. The annual produce of coca in South America is reckoned at 30,000,000 lbs. Coca will not answer where there is frost, but require as

pretty equal climate throughout the year, like coffee or cinchona. The smell of the leaf is agreeable and aromatic, and when chewed it gives out a grateful fragrance. The properties are to enable a greater amount of fatigue to be borne with less nourishment and to prevent the occurrence of difficulty of respiration in ascending mountain sides. This would be a great boon in India, and even in parts of Europe. Mr. C. R. Markham in his "Travels in Peru," says, "I chewed coca, not constantly, but very frequently, and besides the agreeable soothing feeling it produced, I found I could endure long abstinence from food with less inconvenience than I should otherwise have felt, and it enabled me to ascend precipitous mountain sides with a feeling of lightness and elasticity, and without losing breath."

In Peru coca is almost confined to the Urumbamba Province, and is not exported from the coast, as it is consumed in Cuzco, Puno, and Arequipa. It is considered inferior to the coca of the Yungas, Bolivia, which is most esteemed by the Indians. The annual production of the leaf of this plant in Bolivia is estimated at 60,000,000 arrobas of 25 lbs. It grows in abundance on the surface of the Yungas of the Department of La Paz. The Indians, of whom there are about a quarter of a million in the State, chew it continually, as it has the reputation of staying hunger, allaying thirst, and doing away with the necessity of sleep.

This plant is also cultivated in vast tracts of Peru known under the name of *cocales*.

This plant is indigenous to the valleys of Bolivia, and is cultivated with much care for its leaf, which is collected three times a year. It requires a warm and humid climate, where the temperature is never below 10° Reaumur. It resists great heat, but will not survive the slightest frost. The shrub, which attains a height of 2 feet to 4½ feet, has a thick and handsome foliage.

From time immemorial the dried leaves have been used by the Indians. They attribute to its juice nourishing and fortifying properties, which contribute to the extraordinary sobriety of the native races of Peru and Bolivia. However, its usage has not been adopted by the Spaniards or their descendants, who, besides a want of appreciation of the flavour, are of opinion that it stupifies the intellectual faculties.

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### PERSIAN OPIUM.

The editor of the *Pharmaceutical Journal and Transactions* furnishes the following particulars regarding this drug: "During the last few years Persian opium, which according to the authors of the 'Pharmacographia,' was formerly seldom met with as such in the European market, has been imported in considerably increased

quantities, Some specimens examined in 1860 by Dr. Reveil yielded only from 5 to 8·15 per cent. of morphia. In 1873 M. Carles found only 8·3 per cent. But a short time since Mr. W. D. Howard reported in this Journal that he had obtained 10·40 per cent. of morphia from a specimen of "perfectly pure Persian opium."

A memorandum included in a recent consular return to Parliament on the trade of Muscat and Persia gives some interesting information respecting the cultivation and exportation of opium in Persia.

Persian opium is cultivated principally in Yezd and Ispahan, and partly in the districts of Khorasan, Kerman, Fars and Shushter.

The opium grown in Yezd is considered to be better than that in Ispahan and elsewhere, owing to the climate and soil of that place being better adapted for the growth of the drug. But the district of Yezd, notwithstanding the existence of a large cultivable area, is not capable of any considerable extension of the cultivation of opium, owing to the insufficiency of the means, both natural and artificial, of irrigation.

Ispahan, however, differs from Yezd in this latter respect, as it abounds in streams and rivers, and is capable of greater extension of the cultivation of the drug. But the cultivation of cotton and cereals takes up a large part of those resources and tends considerably to reduce the culture of opium.

A few years ago, the profits of the opium trade having attracted the attention of the Persians, almost all the available or suitable ground in Yezd, Ispahan, and elsewhere was utilized for the cultivation of opium, to the exclusion of all cereals and other produce. It was then supposed by some that the opium cultivation would be indefinitely extended in Persia. But the desire of the natives to enrich themselves by the cultivation and growth of a profitable article of trade caused them to neglect to provide for the necessities of life, and this combined with drought and other circumstances, resulted in the famine of 1871-72. The costly experience then gained has made the Persians more careful and provident, and they are now using a limited space for the cultivation of opium.

The largest produce of opium in Persia, in one year, occurred in 1869-70; it then amounted to 2600 cases. In 1871-72, consequent on the drought and famine, it fell to 870 cases; in 1874-75, it again reached 2000 cases.

The quantity exported between 1st January and 31st December, 1874, was 2002 cases. Of these 1139 cases were shipped to Hong Kong, 80 to Singapore, and 583 to London. 583 cases were the produce of the crop of 1873-74, and 1419 that of 1874-75. The probable export for the year 1874-75 is estimated at 2030 cases."

## Editorial.

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### DOCTORS AS DRUGGISTS.

We have always been a firm believer in the truth of that old maxim which requires the cobbler to stick to his last, and whether the principle be applied to doctor or druggist we maintain it to be equally applicable. The practice of counter dispensing, as carried beyond the limits of reason, expediency, and common sense, has always been denounced in these columns, and the rights of druggists have been as strongly upheld. If a student spends a considerable portion of his time and money in gaining a knowledge of his profession, and succeeds in passing the ordeal of examination ordained by those who strive to maintain the standing of the class to which they belong, we think that our Legislature should, in common justice, encourage such persons, and protect them from those who usurp a position which they are not qualified to fill.

It may be said that this is a narrow and interested view to take of the question, partaking too strongly of class legislation. It may be so, and for this reason we have never urged it. There is, however, another aspect of the case in which all are interested—that is the public safety. If it be found that it is not safe for druggists to prescribe medicines, let the law put a stop to it. On the other hand, if the public suffer from the ignorance of doctors who attempt to dispense medicine, let proper restrictions be at once made and enforced. This principle has already been half carried out by our legislature, and a rigid law prevents the druggist from taking the position of prescriber. It is fully time that the next step should be taken, and that doctors should be prevented from attempting that which they do not understand.

During the present summer there have already been brought to light two cases of poisoning, originating with dispensing doctors—one by strychnia, which resulted fatally, and was noted in this journal; another, to be shortly described. If the Legislature and the public were thoroughly aware of the existing state of circumstances, the evil of which we complain would very quickly be remedied. We have a Pharmacy Act which has been of incalculable advantage,

but which is still defective in several particulars: notably in that of exempting doctors from the operation of the Act. The effect has been that young men who desired to keep drug stores, and who possessed not the slightest qualification; and unsuccessful candidates who had failed in passing the Pharmaceutical examinations, managed to borrow the name of some unscrupulous doctor, and have thus evaded the spirit of the law. Many stores are also kept by young doctors, and so-called medical men, who are not capable of successfully practising their profession. In this way scores of drug stores have, during the last few years, been opened throughout Ontario. One instance of the effects of this occurred lately in Toronto, and is thus described in one of our city papers:

"A man named Owen McKay, boarding at No. 28 Francis street, went into Dr. Richardson & Co's. drug store, on King street east, and asked for a dose of salts. The young man who was attending the store told him they were out of that drug, but stated that he could give him *distilled salts*, which would answer the same purpose. McKay bought an ounce of the latter, and carried it around in his pocket until the following Thursday. About ten o'clock that morning, while at work, he felt slightly ill, and took a dose of the salts. A short time afterwards he was seized with an attack of vomiting, which continued for about three hours. When the vomiting ceased, McKay felt severe cramps in his stomach and legs, and had to be driven to his boarding-house in a cab. Dr. Gahen was called in and gave him some powders, which relieved the pains. Two other physicians who examined the unfortunate man stated that it must have been oxalic acid that he had taken. His throat and stomach are fearfully inflamed, and he has been unable to eat anything since. McKay was very low this last evening, but is a little better to-day; he thinks himself that he will not recover. Dr. Richardson states that it was not he who waited upon McKay, but his assistant.

In pursuance of this narrative we may state that our reporter called upon the patient, who corroborated the above account, and also stated that the so-called "distilled salts" rapidly sank to the bottom of the glass of water in which he mixed the medicine, and that a tumblerful of water was not sufficient to effect solution, but that he added considerably more afterwards. In a week after the occurrence the man was still in an apparently dying condition, but it is now hoped that he will ultimately recover. Our reporter also obtained from the store in question "a dose of salts" which was handed to him in a conical parcel, twisted up at the ends, without string, and unlabelled. It is needless to state that it was deemed unnecessary to run the risk of taking the medicine.

We hope this state of things will soon come to an end, and think that the next time the amendments to the Pharmacy Act come



before the Legislature, public feeling will be found stronger than the efforts of the little clique of medical M.P's, who strive to oppose all attempts at improvement or progress in pharmaceutical legislation.

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### NEW ISSUE OF THE BRITISH PHARMACOPŒIA.

From an editorial notice in the *Pharmaceutical Journal and Transactions* we learn that a new and amended issue of the Pharmacopœia may be expected within the next year. At a meeting of the Medical Council it was stated that, since the publication of the edition of 1867, 29,000 copies of the work have been sold, and of the "Additions" 10,754 copies. At this rate the present stock will not be sufficient for the next twelve months, and it was suggested and agreed to that any alterations or corrections of the present text, which might be fairly considered editorial, should be made. To this end a committee consisting of Drs. Quain, Pitman, Haldane, Smith and Macnamara were appointed, and empowered to carry out the wishes of the Council. It was also recommended that an edition or re-issue of 5,000 copies should be published.

We are pleased to think that our national standard is to be freed from the burden of errors which, until the present, seemed likely to encumber it for another decade. As pointed out by ourselves in this journal, last December, and more recently by Dr. Farquharson, in a paper reprinted in our last number, the corrections necessary are very numerous and important. In the article first referred to we instanced the preparations of opium, which, like those of ergot cited by Dr. Farquharson, are not at all consistent with one another, neither as regards stated strength nor dosage. A very careful revision is necessary, and we hope it will this time be done thoroughly.

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### MEETING OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

The twenty-fourth annual meeting of the Association will be held in the hall of the Philadelphia College of Pharmacy, 145 North Tenth Street, on Tuesday, September 12th, 1876, at 3 o'clock, p.m. Ample arrangements are being made by the local

Secretary, in connection with the friends of the Association in Philadelphia, for the comfort and social enjoyment of visiting members. We may also remark that druggists visiting the Centennial, are, at any time, invited to visit the College, where they will be cordially received, and information and assistance valuable to strangers will be given.

There can be no doubt but the meeting in September will be the largest ever held, and we hope to see our Canadian provinces well represented—as well by delegates as those who may in the meantime join the Association. We may say that the annual contribution is five dollars; and that every information to intending members will be given by Professor Maisch, Permanent Secretary, 145 N. Tenth Street.

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#### MEETING OF THE COUNCIL.

The semi-annual meeting of the Council will be held on Wednesday, August 2nd, at the rooms of the College, in the building belonging to the School of Practical Science. The examinations commence on July 31st, and will be continued during the next day. A large number of students have already entered their names.

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## Books and Pamphlets.

*Micro-Photographs in Histology, Normal and Pathological.* By Carl Seiler, M.D. In conjunction with J. Gibbons Hunt, M.D., and Joseph G. Richardson, M.D. Philadelphia: J. H. Coates & Co., 822 Chestnut street.

The first two numbers of this new monthly have come to hand, and fully justify the promises held out by the publishers in their prospectus. "This publication is designed to take the place of the microscope, as far as possible, for those who have neither opportunity nor leisure to make observations with the instrument for themselves, and also to furnish microscopists, for comparison, correct representations of typical specimens in the domain of normal and pathological histology." This purpose has, so far, been admirably fulfilled, and though we cannot agree with the idea of substituting

plates for microscopic slides, and actual microscopical work, yet we believe that the publication is calculated to be of great service; and to the student or physician, inexperienced in the examination of specimens, it will prove a very accurate and useful guide.

The two numbers already issued contain eight plates:—I. Section of Skin; II. Epithelioma of Lower Lip; III. Pavement Epithelium, from a Triton; IV. Endothelium from the diaphragm of a Guinea Pig; V. Elastic Connective Tissue; VI. Scirrhus of Mammary Gland; VII. Non-elastic Connective Tissue from Omentum of a Cat; VIII. Connective Tissue Corpuscles, from Cornea of a Frog. The work is in quarto form, 9x12 inches, and the actual enlargement or size of the picture is five inches. The plates are obtained directly from the objects by means of the photographic process, and the printing is also direct from the negative, so there can be no doubt of their being faithful copies. The work may be obtained from the publishers at 60 cents per number, or six dollars per annum. The first number was issued in May.

*On Stricture as the Initial Cause of Gleet*, with Remarks on the Urethral Calibre. By Fessenden N. Otis, M.D. New York: D. Appleton & Co. 1876.

This pamphlet contains a reply to a paper by Dr. H. B. Sands, and is mainly intended to point out and correct certain alleged fallacies for which the latter writer is responsible. We confess to a rather superficial knowledge of the subject, and an inability to form correct judgment of the merits of the argument. We therefore merely bring the pamphlet before the notice of our medical readers, who may be desirous of acquainting themselves with all the *pros* and *cons*.

*Studies upon Essential Oils*. By G. Dragendorff, Dorpat, Russia.

We are indebted to the learned author for this very exhaustive paper, a summary of which we intend to lay before our readers at our earliest opportunity.

*On some Practical Points in the Treatment of those Forms of Eye Diseases of most frequent occurrence in General Practice*. By A. M. Roseburgh, M.D., Toronto.

*A Brief Report of Cases of Sympathetic Ophthalmia and Sympathetic Irritations*. By the same author.

*Treatment of Acute Iritis in Adults*. By the same author.

## Editorial Summary.

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THE ACTIVE PRINCIPLE OF CAPSICUM FRUIT.—Mr. J. C. Thresh details in the *Pharmaceutical Journal and Transactions*, the results of certain experiments made with a view of determining whether the fruit of capsicum contains an alkaloid, and, if so, whether it is to this that the activity of the drug is to be attributed. Several writers speak of *capsicin*, and some give it as the active principle, but its composition and properties are not very definitely stated. Mr. Thresh has not yet completed his investigation, but so far he thinks that the active principle is not an alkaloid, and that the so-called *capsicin* does not exist. An alkaloid recalling that of conium, was, however, detected, but not of sufficient quantity to admit of examination as to its properties, but it was found to form well defined salts. The mode in which this body was obtained may be briefly stated. The fruit of the plant, *C. fastigiatum*, as found in commerce, was deprived of the seeds, which, after being thoroughly washed and dried, were found to be entirely devoid of acidity or pungency, and in taste resembling dried beans. 100 grains of the pericarp was powdered, packed in a percolater, and thoroughly exhausted with benzine. Upon evaporation of the percolate, 20 grains of a red, fatty substance, of intense pungency, were obtained. This, dissolved in ether, and agitated with successive portions of dilute sulphuric acid, giving an aqueous fluid of an acrid taste which gave the reactions of an alkaloid. On being neutralized with barium carbonate, a red fat separated, which, treated both with excess of alkali, and shaken with ether, gave a brown oily residue, smelling of conium. Further purification of this substance proved it to be undoubtedly an alkaloid, and in proportion as the purification was carried so did the acidity disappear, proving that the activity of capsicum must be attributed to another source. Mr. Thresh will continue his investigations.

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SPIRIT OF NITROUS ETHER.—It is asserted by Mr. J. U. Lloyd, (*Am. Jour. Pharm.*), that for every pound of pure spirit of nitrous ether sold in the United States there are sold one hundred pounds of an adulterated article; and that, in nearly all cases, the adulteration consists of water. The actual ether strength is not, at first, affected by this dilution, as the water merely takes the place of alcohol; but it is said that the water detracts from the keeping properties of the preparation, and that decomposition, in which nitric and acetic acids are liberated, rapidly ensues. The dilution with

water is, of course, the result of competition in price; manufacturers really make no more profit on the diluted form than that consisting of alcohol, but customers demand a cheaper article and the demand must be supplied. Specific gravity is the test by which this admixture may be detected. Four samples examined gave ·890, ·910, ·930, ·940; that of the official spirit is ·837.

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**APOTHECARIES' OATH.**—At the annual meeting of the Midland Counties Chemists' Association, the president, Mr. Barclay, delivered an address, in which he traced the progress of pharmacy, more particularly in its relations to the medical profession and legislation. When the company of apothecaries was formed, during the reign of James I., considerable jealousy existed between doctor and druggist, and in France a similar state of things existed, until, finally, the physicians succeeded in making the apothecaries take the following oath, which, though unfitted for our days, is still very commendable in many of its features:—"I swear and promise before God the Author and Creator of all things, one in spirit and divided into three persons eternally blessed, that I will observe strictly the following articles,—First, I swear and promise to live and die in the Christian Faith. Secondly, to love and honour my parents to the utmost; also to honour, respect and render service, not only to those medical doctors who have instructed me in the precepts of pharmacy, but also to my teachers and masters from whom I have learnt my trade. Thirdly, not to slander any of my ancient teachers or masters, whoever they may be; also, to do all I can for the honour, glory and majesty of physic. Fourthly, never to teach to ungrateful persons or fools the secrets and rarities of the trade; never to do anything rashly, without the advice of a physician, or from the sole desire of gain; never to give any medicine or purge to invalids afflicted with acute disease, without first consulting one of the faculty. Fifthly, never to examine women privately unless by great necessity, or to apply to them some necessary remedy; never to divulge the secrets confided to me. Sixthly, never to administer poisons, or recommend their administration, even to our greatest enemies; or to give drinks to produce abortion, without the advice of a physician; also to execute accurately their prescriptions, without adding or diminishing anything contained in them, that they may, in every respect, be prepared *secundum artum*. Seventhly, never to use any succedaneum or substitute without the advice of others wiser than myself; to disown and shun as a pestilence the scandalous and pernicious practices of quacks, empirics and alchemists, which exist to the great shame of the magistrates who tolerate them. Lastly, to give aid and assistance indiscriminately to all who employ me; and to keep no stale or bad drug in my shop. May God continue to bless me so long as I observe these things!"

## SOLUTION OF HYDROBROMATE OF QUINIA FOR HYPODERMIC USE.

—Mr. W. S. Thompson (*Amer. Jour. Pharm.*), states that the commercial bromide of quinine is not sufficiently soluble for hypodermic use, and strongly recommends the following formula as yielding very satisfactory results:—Quinia sulphate, 96 grains; distilled water; diluted sulphuric acid; water of ammonia, and hydrobromic acid; of each a sufficient quantity. Dissolve the quinia sulphate in four fluidounces of distilled water, with sufficient diluted sulphuric acid. Mix one hundred and fifty minims of water of ammonia with four fluidounces of distilled water, add to the solution of quinia, constantly stirring, and transfer the whole to a muslin filter. The solution of ammonium sulphate, which passes through the filter, should be tested, and if the presence of quinia is indicated, add a little more water of ammonia to the whole of the solution and return it to the filter. After the quinia is drained, wash it with distilled water; transfer the moist magma to a tared capsule and add, gradually, just sufficient hydrobromic acid to dissolve it. Evaporate the solution thus obtained on a water bath until it is reduced to a transparent mass, the weight of the quinia hydrobromate is thus ascertained, while, at the same time, any excess of hydrobromic acid is driven off. Lastly, dissolve the mass in a sufficient quantity of distilled water, so that each fluid drachm shall contain twelve grains. The resulting solution will measure about one fluidounce.

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THE SO-CALLED KENTUCKY SHOWER OF FLESH.—In our last number we cited the opinion of Mr. Brandeis, a writer in the *Sanitarian*, that the flesh-like substance consisted of *Nostoc*. There is, however, on this subject considerable difference of opinion. Professor Parker, of Lexington, Kentucky, thinks that the substance is undoubtedly flesh, and most probably that of the sheep. As to its origin it is suggested that a flock of buzzards may have been feeding on a carcass and disgorged the partially digested flesh. Professor J. Lawrence Smith at first inclined to the opinion that the substance was the spawn of frogs, but, on further examination, he is convinced that it is veritable flesh. Other investigations confirm this conclusion, and affirm the presence of lung tissue, fat cells, and other constituents revealed by the microscope.

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IMPORTATION OF ANILINE COLORS INTO RUSSIA.—According to the *Farberzeitung*, published by Prof. Reimann, the Russian authorities have forbidden the importation of all the anilines except fuchsine. The order also embraces artificial alizarin. It is said that the object of this is the protection of the madder industry.

# Transactions of Pharmaceutical Colleges and Societies.

## ANNUAL MEETING OF THE PHARMACEUTICAL ASSOCIATION OF THE PROVINCE OF QUEBEC.

The Sixth Annual Meeting of the Pharmaceutical Association of the Province of Quebec was held in Laval University, Quebec, on Tuesday, June 13th, 1876, at 11 a. m., H. R. Gray, Esq., President, in the chair. Before entering on the business of the meeting, the minutes of the previous annual meeting, held in Montreal, June 8th, 1875, were read by Mr. E. Muir, Registrar and Secretary, and duly confirmed, after which the President delivered a very interesting address, and at its conclusion called upon the Secretary to read the annual report of the proceedings of the Council for the past year, and Mr. J. Kerry, in the absence of the Treasurer, to present the financial statement.

### ANNUAL REPORT.

The Council of the Pharmaceutical Association of the Province of Quebec respectfully present their Report of the proceedings of the years 1875-76.

Your Council have held nine regular and two special meetings during the year, for the discussion of various questions of interest for the promotion of the welfare of the Association. Among others, three prominent questions received their special consideration, namely—1st, The prosecution of three persons for keeping open store as Dispensing Chemists, contrary to the Quebec Pharmacy Act of 1875, they having failed to take out their licenses as required by the Act, and sufficient notice having been given them, the Solicitors of the Association, Messrs. Mousseau, Chapleau and Archambault, were instructed to take legal proceedings against them. A lawyer's letter from these gentlemen had the desired effect in two of these cases; but your Council are sorry to say that in the other case—that of Mr. W. H. LaRoche, of Quebec—there has, as yet, been no settlement, and he still remains doing business, in contravention of the Act. The matter is in the hands of the Association's solicitors, and, we trust, will shortly be settled.

The second important question was an application for Registration from a Mr. C. D. Morin, of Montreal, who claimed his right to a license under clause 3 of the Act. His application was refused by the Council, as they did not consider that his case came within the provisions of the Act. As the result of this decision, Mr. Morin brought an action of damages and to compel the Council to grant him the license. The case came before the Superior Court on the 18th of April, and your Council are happy to report that their action has been sustained, by judgment having been given on the 2nd instant in favor of the Association, the Court dismissing the action of Mr. Morin with costs. Your Council would congratulate the members on the satisfactory issue of this suit, as it fully establishes the benefits of the Association and the discretionary powers of the Council.

The third important question referred to was the drafting and forwarding to the Legislature a petition against a Bill, brought before Parliament at its last session, by Mr. Taillion, to confer certain arbitrary powers on charitable institutions, giving them the right to enter into the various

branches of trade, including the preparation, sale, and dispensing of medicines to the public for profit, notwithstanding their original Acts of Incorporation prevented their doing so. Your Council believe that through their action, combined with that of other bodies, the obnoxious Bill was withdrawn.

Other matters of general interest to the Association occupied the remainder of the Council's meetings.

The Board of Examiners, under the direction of the Council, held their annual examinations on the 18th and 19th of April. Fourteen young men presented themselves for examination for Certified Clerk, and two for Licentiate in Pharmacy; of these, eight for the minor and one for the major examination obtained the required number of marks to entitle them to pass, and the Registrar was authorized to place their names on the Register as "Certified Clerk" and "Licentiate in Pharmacy" respectively. Six of the candidates for the minor and one for the major examination failed to pass, and were referred back for further study.

Your Council, feeling that it would be to the advantage of the Association that the requirements of the Quebec Pharmacy Act of 1875 should be more fully known, have had the Act published in pamphlet form in English and French, and it is now for sale by the Registrar at 20 cents per copy.

The Registrar reports on the Register for 1875 and '76 the following, namely: 137 Licentiates and Members, 27 Certified Clerks, and 72 Certified Apprentices.

The Treasurer's Statement for the past year will be laid on the table for your inspection. It shows a balance on hand of \$17.93; this balance may appear small out of so large receipts, but the members of the Association must bear in mind that the disbursements have been of an unusual character, such as the expenses of getting the Act through Parliament, the engraving and printing of Diplomas and Certificates, printing By-Laws, Rules and Regulations, Circulars, &c., all of which had to be revised under the new Act, and other heavy incidental expenses, most of which will not occur again the incoming year. These extra expenses amount to between five and six hundred dollars.

Your Council would take this opportunity of recording the obligation the Association is under to the Rector of Laval University, for his courtesy in permitting the use of the commodious rooms of the University at our Annual Meetings and Examinations.

They would also here record their thanks to the Editor of the PHARMACEUTICAL JOURNAL of Toronto for the various notices of the proceedings of this Association which have appeared in its columns, and would respectfully urge upon all connected with this Association to aid that journal by their subscriptions.

In conclusion, your Council would congratulate the members of the Association on its success, which have been beyond their anticipations; and they would endeavor to impress upon every "Licentiate," "Certified Clerk" and "Certified Apprentice" the necessity of aiding the Registrar in carrying out the provisions of the Act.

All of which is respectfully submitted.

Mr. Mercer moved the adoption of the report, and that the report and financial statement be printed in English and French, and circulated among the members. In rising to present his motion, he congratulated the Association on the satisfactory position it had attained, and stated that



although the report made mention of several important matters, yet there was a vast amount of work done by the Council and Registrar which did not appear therein.

Mr. Edmond Giroux, of Quebec, seconded, and Mr. R. McLeod of the same place supported the adoption of the report—both of these gentlemen making short and appropriate speeches, one of the points touched upon by Mr. McLeod being the advisability of the interchange of Certificates with other Associations.

Mr. Gauvereau moved, seconded by Mr. Martel—"That the thanks of this meeting be given to the retiring officers for their services during the past year." Carried.

Moved by Mr. McLeod, seconded by Mr. John Kerry—"That the thanks of this Association be presented to the Rector of Laval University for his courtesy and kindness in granting the use of the rooms of the University for our annual meeting." Carried.

The Chairmann nominated Messrs. F. E. Gauverau and E. Muir scrutineers, who, after collecting and counting the proxies, declared the following gentlemen elected to the Council for 1876-7, with the numbers of votes polled for each, namely:—Messrs. J. Kerry, 42; E. Muir, 41. E. Giroux, 40; N. Mercer, 37; J. Goulden, 36; A. Manson, 35; H. Lyman, 29; Jas. Hawkes, 21; these, with the following who remained in office, namely, Messrs. H. R. Gray, J. D. L. Ambrosse, R. McLeod and T. J. Tuck, will compose the Council for the coming year.

The Auditors elected are Messrs. W. H. Clare and H. F. Jackson.

A vote of thanks was presented by Mr. Mercer, seconded by Mr. Giroux, to Mr. H. R. Gray for his services as presiding officer, after which the chairman declared the Sixth Annual Meeting of the Association closed.

### REGISTRAR'S ANNUAL STATEMENT

SHEWING THE SOURCES FROM WHICH THE REVENUE OF THE ASSOCIATION WAS OBTAINED DURING THE YEAR ENDING APRIL 30TH, 1876.

April, 1876.

To Cash from	137 Licentiates and Members, \$5.00 each .....	\$685 00
" " "	27 Certified Clerks, \$3.00 each .....	81 00
" " "	72 " Apprentices, \$1.00 each.....	72 00
" " "	30 Minor Examinations, April and May, \$5 each...	150 00
" " "	5 Major " " " \$10.00 each	50 00
" " "	77 Poison Books sold at \$1.50 each .....	115 50
" " "	Arrears Collected .....	54 00
" " "	14 Minor Examinations, April, 1876, \$5.09 each. ....	70 00
" " "	2 Major " " " \$10.00 each ...	20 00

\$1297 50

### PHARMACEUTICAL ASSOCIATION OF THE PROVINCE OF QUEBEC,

*In Account with* JAMES GOULDEN, *Treasurer.*

May, 1875-76.

To Cash returned to candidates by	Secretary.....	\$30 50
" Salary of E. Muir, March and April.....		50 00
" Postage Stamps, &c.....		30 00

To Caretaker for April and May, 1875 .....	3 00
" Mousseau, Chapleau & Archambault's account.....	116 00
" Expenses Board of Examiners to Quebec. ....	38 25
" Use of Tables.....	1 50
" Bentley's Account.....	38 25
" Postage, &c., and use of tables for Conversazione .....	10 71
" Parliamentary Expenses per N. Mercer, in connection with the passage of the Pharmacy Act of 1875.....	157 83
" Caretaker.....	3 00
" Stationery, postage, &c .....	12 10
" Cash returned to Candidates for May, 1876 .....	25 00
" Six Months' Rent .....	96 00
" Gas Account, \$4.30, 2.30, 4.65, 5.15, paid by Treasurer .....	16 40
" Minerve Account.....	10 00
" Bishop's Account .....	77 00
" T. & R. White's Account.....	136 00
" <i>Le National</i> .....	9 94
" St. Hyacinthe Printing Co.'s Account .....	7 36
" Morton, Phillips & Bulmer's Account .....	14 64
" Bentley's Account.....	4 75
" Weir's Account .....	1 82
" Mousseau, Chapleau & Archambault's on account of Morin's suit .....	50 00
" Six Months' Rent .....	96 00
" Twelve Months' Salary per receipt Secretary.....	300 00
" <i>Morning Chronicle</i> .....	25 86
" Balance .....	17 93
	<hr/>
	\$1379 84

May, 1875-76.

By Sundries and Cash received from Secretary .....	\$1297 50
" Balance from last year .....	82 34
	<hr/>
	\$1379 84

Balance on hand 1st May, 1876..... \$17 93

Examined and found correct.

W. H. CLARE, } Auditors.  
J. A. HARTE, }

June 22nd, 1876.

N.B.—At a subsequent meeting of the Council held June 20th, 1876, the following were elected officers for the current year, namely:—President, H. R. Gray; 1st Vice-President, Edmond Giroux (Quebec); 2nd Vice-President, A. Manson; Treasurer, John Kerry; Registrar and Secretary, E. Muir.

The Board of Examiners elected are as follows, namely:—Messrs. R. McLeod (Quebec), J. D. L. Ambrosse, N. Mercer, H. R. Gray, A. Manson, H. F. Jackson.

## Varieties.

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SASSAFRAS AS AN ANTIDOTE TO VEGETABLE POISON.—The *Cincinnati Lancet and Observer* for April, has a paper by Dr. A. W. T. Lyle, of Castleton, Ind., in which attention is called to the statement by Dr. Thompson, of Nashville, concerning the antagonistic properties of sassafras to henbane and tobacco. Dr. Lyle mentions the case of a child four years old who had eaten stramonium flowers, and showed symptoms of poisoning. After the administration of emetics, ten drops of oil of sassafras were given every half hour until six doses had been taken, when consciousness returned, and, after taking a dose of castor oil, the child was playing the next day, and free from all pains or disturbances following poisoning.

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## Registrar's Notice.

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### RENEWALS CONTINUED.

Allison, C. B., Picton.	Meldrum, H., Hillsburg.
Bache, J. H., Woodstock.	Munro, L. C., Fergus.
Banks, J. H. Weston.	McCollom, C. J., Port Burwell.
Beardsley, A. W., Barrie.	McCollum, J. H., Port Burwell.
Blaicher, P. C., Hamilton.	McLean, G. S., Sarnia.
Bond, J. R., Schomberg.	McLennan, C., Harkworth.
Boulton, H. C., Aberarder.	McMahon, J., Clarksburg.
Bower, A. P., Lakefield.	Paffard, H., Niagara.
Brown, W., Owen Sound.	Parker, S. J., Owen Sound.
Deacon, Joseph, Bradford.	Parker, Mrs. J., Owen Sound.
Dennant, R. E., Delta.	Perry, R. H., Fergus.
Dutton, John, Stratford.	Preston, E., Harriston.
Eccles, D., Parkhill.	Priddy, R. S., Chatham.
Ellis, F., Brantford.	Revell, R., Woodstock.
Geary, T. J., Sarnia.	Robinson, W. S., Yorkville.
Hall, J. J., Woodstock.	Rolls, J. F., Brighton.
Hamilton, A., Hamilton.	Saunders, W., London.
Harvey, E., Guelph.	Shapter, J. T., Toronto.
Hewson, G. H., Smithville.	Smith, W. B., Drayton.
Higginbotham, J., Bowmanville.	Smith, W. G., Guelph.
Higginbotham, J. W., Oshawa.	Smith, S. W. B., Whitby.
Jaques, H. W., Merrickville.	Stark, Robt., Woodstock.
Jeffrey, A., Toronto.	Strong, R. S., Galt.
Kelly, P. D., Alliston.	Templeton, R., Belleville.
Lanġ, Abel, Drummondville.	Thompson, D., Toronto.
Lander, J., Yorkville.	Tidey, J. A., Norwich.
Langford, W. J., Ottawa.	Weeks, A. D., Uxbridge.
Lowe, John, Amherstburg.	Williams, J. F., Bradford.
Lowry, M., Tyrone.	Yeomans, Horace, Belleville.
Lumsden, Robt., Seaforth.	Yeomans, L. H., Mount Forest.
Maxon, G. C., Leamington.	Yeomans, L. W., Belleville.

WHOLESALE PRICES CURRENT.—AUGUST, 1876.

DRUGS, MEDICINES, &c.		\$ c.	\$ c.	DRUGS, MEDICINES, &c.—Contd.		\$ c.	\$ c.
Acid, Acetic, fort.		0 13	@ 0 14	Sang Dracon.		0 60	
Benzoic, pure		0 22	0 27	Scammony, powdered		5 50	6 00
Citric		1 00	1 05	" Virg.		14 50	—
Muriatic		0 03½	0 05	Shellac, Orange		0 57	0 60
Nitric		0 10	0 13	Gum, Shellac, liver		0 40	0 45
Oxalic		0 16	0 20	Storax		0 40	0 45
Sulphuric		0 03	0 05	Tragacanth, flake.		1 10	1 75
Tartaric, pulv.		0 49	0 50	" common		0 53	0 65
Ammon, carb. casks		0 18	0 20	Galls		0 22	0 30
" jars		0 18	0 20	Gelatine, Cox's 6d.		1 15	1 20
Liquor, 880.		0 20	0 22	Glycerine, common		0 18	0 23.
Muriate		0 14	0 15	Vienna		0 25	0 28.
Nitrate		0 45	0 60	Prices		0 60	0 75
Ether, Acetic		0 45	0 50	Honey, Canada, best.		0 16	0 17
Nitrous		0 40	0 42	Lower Canada		0 14	0 16
Sulphuric		0 50	0 50	Iron, Carb. Precip.		0 16	0 20.
Antim. Crude, pulv.		0 15	0 17	" Sacchar.		0 40	0 55.
Tart		0 50	0 55	Citrate Ammon.		1 10	1 20
Alcohol, 95 per ct.	Cash	2 19	0 00	" & Quinine, oz.		0 40	0 85
Arrowroot, Jamaica		0 18	0 22	" & Strychine		0 17	0 20
Bermuda		0 50	0 65	Sulphate, pure		0 08	0 10
Alum		0 02½	0 03½	Iodine, good		3 20	3 50.
Balsam, Canada		0 33	0 38	Resublimed		3 90	4 20
Copaiba		0 90	0 95	Jalapin		1 25	1 50
Peru		2 90	3 20	Kreosote		2 40	2 50
Tolu		2 90	3 25	Leaves, Buchu		0 22	0 32.
Bark, Bayberry, pulv.		0 18	0 20	Foxglove		0 25	0 30.
Canella		0 17	0 20	Henbane		0 35	0 40.
Peruvian, yel. pulv.		0 35	0 50	Senna, Alex		0 27	0 60
" red		1 60	1 70	" E. I.		0 14	0 20
Slippery Elm, g. b.		0 18	0 20	" Tinneville		0 20	0 30
flour, packets.		0 28	0 32	Uva Ursi		0 15	0 17
Sassafras		0 15	0 18	Lime, Carbolate	brl	5 50	—
Berries, Cubeb, ground		0 20	0 25	Chloride		0 05	0 06
Juniper		0 06	0 10	Sulphate		0 08	0 12½
Beans, Tonquin		1 00	1 20	Lead, Acetate		0 14	0 16½
Vanilla		18 00	24 00	Leptandrin	oz.	0 60	—
Bismuth, Alb		2 25	2 50	Liq. Bismuth		0 50	0 60
Carb.		2 40	2 65	Lye, Concentrated		1 30	1 50.
Camphor, Crude		0 23	0 35	Liquorice, Solazzi		0 50	0 55
Refined		0 55	0 40	Cassano		0 23	0 40.
Cantharides		1 85	1 90	Other brands		0 14	0 25.
Powdered		2 00	2 10	Liquorice, Refined		0 35	0 45.
Charcoal, Animal		0 04	0 06	Magnesia, Carb.	1 oz.	0 20	0 25
Wood, powdered		0 10	0 15	"	4 oz.	0 19	0 20.
Chiretta		0 23	0 30	Calcined		0 65	0 75
Chloroform		0 90	1 55	Citrate	gran.	0 60	0 75
Cochineal, S. G.		0 55	0 70	Mercury		1 05	1 15
Black		0 75	0 90	Bichlor		1 25	1 40
Colocynth, pulv.		0 60	0 65	Chloride		1 40	1 50
Collodion		0 70	0 80	C. Chalk		0 55	0 60
Eliaterium	oz	3 20	4 00	Nit. Oxyd		1 60	1 75
Ergot		1 50	1 75	Morphia Acet		3 15	3 25
Extract		1 80	1 90	Mur.		3 15	3 25
Belladonna		1 25	1 75	Sulph.		3 30	3 50
Colocynth, Co.		0 50	0 60	Musk, pure grain	oz	25 20	.....
Gentian		0 00	0 95	Canton		10 60	1 20
Hemlock, Ang		3 00	3 20	Oil, Almonds, sweet		0 45	0 47
Henbane,		5 00	5 50	" bitter		14 00	15 00
Jalap		1 75	2 00	Aniseed.		3 25	3 50
Mandrake		0 40	0 50	Bergamot, super		5 50	5 00.
Nux Vom.	oz	1 40	1 50	Caraway		3 20	3 50.
Opium	oz	5 00	5 50	Cassia		2 00	2 25
Rhubarb		1 00	1 20	Castor, E. I.		0 10½	0 12
Sarsap. Hon. Co.		3 50	4 00	Crystal		0 22	0 25
" Jam. Co.		0 70	0 80	Italian		0 26	0 28
Taraxacum, Ang		0 17	0 25	Citronella		1 05	1 15
Flowers, Arnica		0 8	0 32	Cloves, Ang.		3 75	3 80
Chamomile		0 70	0 80	Cod Liver		1 50	1 60.
Gum, Aloes, Barb. extra		0 40	0 50	Croton		1 40	1 50
" good		0 16	0 20	Juniper Wood		0 80	1 00
" Cape		0 20	0 30	Berries		2 75	3 00.
" powdered		0 50	1 35	Lavand, Ang.	oz.	0 00	1 00.
" Socot.		1 00	0 00	Exotic.		1 25	1 50
" pulv		0 38	0 60	Lemon, super		3 90	4 00
Arabic, White		0 60	0 75	ord.		0 00	0 00
" powdered		0 9	0 24	Orange		3 00	3 25.
" sorts		0 42	0 50	Origanum		0 65	0 75
" powdered		0 13	0 16	Peppermint Ang.		15 00	16 00
" com. Gedda		0 25	0 30	" Amer.		4 00	5 00
Assafetida		0 13	0 15	Rose, Virgin		8 50	8 75
British or Dextrine		0 35	0 75	" good		7 00	7 75
Benzoin		0 12	0 15	Sassafras		0 75	0 90
Catechu		0 25	0 30	Wintergreen		4 40	4 60.
" powdered		0 40	0 45	Wormwood, pure		4 00	6 00
Euphorb, pulv		1 00	1 20	Ointment, blue.		1 05	1 15
Gamboge		0 35	1 00	Opium, Turkey.		7 50	7 75.
Guaicum		0 50	0 80	pulv.		9 50	9 75
Myrrh							

	\$ c.	\$ c
<b>DRUGS, MEDICINES, &amp;c.—Cont'd</b>		
Orange Peel, opt.	0 35	0 36
" good	0 15	0 20
Pill, Blue, Mass.	1 10	1 20
Potash, Bi-chrom	0 16	0 18
Bi-tart	0 32	0 35
Carbonate	0 14	0 20
Chlorate	0 30	0 35
Nitrate	8 00	9 00
Potassium, Bromide	75	0 80
Cyanide	0 60	0 70
Iodide	2 90	3 00
Sulphuret	0 25	0 35
Pepsin, Boudault's.....oz	1 40	—
Houghton's.....doz.	8 00	9 00
Morson's.....oz.	0 85	1 10
Phosphorus	1 10	1 20
Podophyllin	0 50	0 60
Quinine, Pelletier's.....	—	2 45
Howard's	2 25	—
100 oz. case.	2 22½	—
25 oz. tin..	2 20	—
Root, Colombo	0 13	0 20
Curcuma, grd	0 12½	0 17
Dandelion	0 17	0 20
Elecampane	0 16	0 17
Gentian	0 08	0 10
" pulv	0 15	0 20
Hellebore, pulv	0 00	0 00
Ipecac	1 50	1 60
Jalap, Vera Cruz	90	1 15
" Tampico	0 70	1 00
Liquorice, select	0 12	0 13
" powdered	0 15	0 20
Mandrake	0 20	0 25
Orris	0 20	0 25
Rhubarb, Turkey	2 10	2 25
" E. I.	1 00	1 10
" pulv	1 10	1 20
" 2nd	0 60	0 70
" French	0 75	—
Sarsap., Hond	0 60	0 65
" Jam	0 95	1 00
Squills	0 10	0 15½
Senega	1 00	1 10
Spigelia	0 25	0 30
Sal., Epsom	2 00	2 50
Rochelle	0 30	0 32
Soda	0 01½	0 02½
Seed, Anise	0 13	0 16
Canary	0 15	0 16
Cardamon	2 00	2 10
Fenugreek, g'd.	0 08	0 09
Hemp	0 06½	—
Mustard, white	0 14	0 16
Saffron, American	0 65	0 75
Spanish	10 00	11 00
Santonine	13 00	13 50
Sago	0 08	0 09
Silver, Nitrate.....Cash	14 50	16 00
Soap, Castile, mottled	0 11	0 14
Soda, Ash	0 03½	0 05
Bicarb. Newcastle	4 00	4 25
" Howard's	0 14	0 16
Cautic	0 03½	0 04
Spirits Ammon., arom	0 35	0 35
Strychnine, Crystals	2 00	2 20
Sulphur, Precip	0 10	0 12½
Sublimed	0 03½	0 05
Roll	0 03	0 04½
Vinegar, Wine, pure	0 55	0 60
Verdigris	0 35	0 40
Wax, White, pure	0 70	0 80
Zinc Chloride.....oz	0 10	0 15
Sulphate, pure	0 10	0 15
" common	0 06	0 10
<b>DYESTUFFS.</b>		
Annatto	0 35 @	0 60
Aniline, Magenta, cryst	2 65	2 80
" liquid	2 00	—
Argols, ground	0 15	0 25
Blue Vitrol, pure	0 09	0 10
Camwood	0 07	0 08
Copperas, Green	0 01½	0 02
Cudbear	0 16	0 25
Fustic, Cuban	0 03	0 04
Indigo, Bengal	2 40	2 50
Madras	0 75	0 80
Extract	0 26	0 30

<b>DYESTUFFS—Continued.</b>		
Japonica	0 07	0 08
Lacdye, powdered	0 33	0 38
Logwood	0 02½	0 03
Logwood, Camp	0 02½	0 03
Extract	0 12	0 13
" 1 lb. bxs	0 15	—
" ¼ lb. "	0 16	—
Madder, best Dutch	0 10½	0 11
2nd quality	0 10	0 11
Quercitron	0 03	0 05
Sumac	0 06	0 08
Tin, Muriate	0 10½	0 12½
Redwood	0 05	0 06
<b>SPICES.</b>		
Allspice	0 11½ @	0 12
Cassia	0 26	0 28
Cloves	0 50	0 55
Cayenne	0 20	0 25
Ginger, E. I.	0 18	0 20
Jam	0 26	0 30
Mace	1 40	1 60
Mustard, com	0 20	0 25
Nutmegs	1 15	1 25
Pepper, Black	0 18	0 20
White	0 26	0 28
<b>PAINTS, DRY.</b>		
Black, Lamp, com	0 09 @	0 10
" refined	0 25	0 30
Blue, Celestial	0 08	0 12
Prussian	0 65	0 75
Brown, Vandyke	0 10	0 12½
Chalk, White	0 01	0 01½
Green, Brunswick	0 07	0 10
Chrome	0 16	0 25
Paris	0 30	0 35
Magnesia	0 20	0 25
Litharge	0 07	0 09
Pink, Rose	0 12½	0 15
Red Lead	0 07½	0 08½
Venetian	0 02½	0 03½
Sienna, B. & G.	0 07	0 08
Umbre	0 07	0 10
Vermillion, English	1 10	1 20
American	0 25	0 35
Whiting	0 1	0 1½
White Lead, dry, gen	0 08½	0 09
" No. 1	0 07	0 08
" No. 2	0 05	0 07
Yellow Chrome	0 12½	0 35
Ochre	0 02½	0 03½
Zinc White, Star	0 10	0 12
<b>COLORS, IN OIL.</b>		
Blue Paint	0 12 @	0 15
Fire Proof Paint	0 06	0 08
Green, Paris	0 30	0 37½
Red, Venetian	0 07	0 10
Patent Dryers, 1 lb tins	0 10	0 12
Putty	0 03½	0 04½
Yellow Ochre gen. 25 lb. tins	0 08	0 12
White Lead, gen. 25 lb. tins	2 35	—
" No. 1	2 10	—
" No. 2	1 85	—
" No. 3	1 60	—
" com	1 30	—
White Zinc, Snow	2 75	3 25
<b>NAVAL STORES.</b>		
Black Pitch	3 00 @	3 25
Rosin, Strained	3 30	4 25
Clear, pale	5 75	7 25
Spirits Turpentine	0 47	0 50
Tar Wood	3 80	4 00
<b>OILS.</b>		
Cod	0 65 @	0 70
Lard, extra	1 10	1 20
No. 1	1 05	1 10
No. 2	0 85	0 90
Linseed, Raw	0 55	0 58
Boiled	0 59	0 62
Olive, Common	1 10	1 15
Salad	1 80	2 30
" Pints, cases	4 20	4 40
" Quarts	3 25	3 50
Seal Oil, Pale	0 67½	0 70
Straw	0 62½	0 65
Sesame Salad	1 30	1 35
Sperm, genuine	2 45	—
Whale refined	—	—