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CANADIAN

PHARMACEUTICAL JOURNAL

VOL. VII, No. 8. TORONTO, MARCH, 1874. WHOLE No. LXXI

Original and Selected Papers.

AMMONIO-CITRATE OF IRON.*

BY CHARLES UMNEY.

The variation in appearance of ammonio-citrate of iron, as met with in trade, must have been noticed by every observant pharmacist.

Since the time of its introduction into medicine by Beral, now about thirty years since, most manufacturers have adopted, notwithstanding the various officinal formulæ that have been published, one or other of the following methods for its production:

(*a*) By dissolving metallic iron (nails) in a solution of citric acid by the aid of heat to the complete saturation of the acid.

(*b*) By adding hydrated ferric oxide to citric acid dissolved in about twice its weight of water, assisting its solution by the heat of a water-bath until the oxide is no longer dissolved, and is visibly in excess.

Solution of ammonia in both cases being added after filtration, to produce the double salt. By either method the result is very similar, the amount of anhydrous ferric oxide resulting from a calcination of the salt with free exposure to air from 30 to 31 per cent., and the appearance of the scaled product nearly or quite identical.

* Pharm. Journ. & Trans., Dec., 1873.

A review of the various formulæ that have been published in the London and British Pharmacopœias will serve not only to show the relative amounts of ferric oxide directed to be added to the citric acid, but also to indicate (when the examination of commercial specimens is brought forward) that obsolete processes are followed by manufacturers.

As this iron salt is almost universally used it will be interesting at the same time to note the formulæ of the French Codex and the United States' and German Pharmacopœias.

London Pharmacopœia, 1851. (*First officinal.*)

Sulphate of Iron	12 ozs. Troy.
Carbonate of Soda	12½ ozs.
Citric Acid	6 ozs.
Solution Ammonia (·960)	9 fl. ozs.

British Pharmacopœia, 1864.

Solution of Persulphate of Iron (1·441)	8 fl. ozs.
Citric Acid	5 ozs. (Avoir.)
Sol. Ammonia (·960)	14 fl. ozs.

British Pharmacopœia, 1867.

Solution of Persulphate of Iron (1·441)	8 fl. ozs.
Citric Acid	4 ozs. (Avoir.)
Sol. Ammonia (·959)	19½ fl. ozs.

United States' Pharmacopœia, 1873.

Citric Acid	5 oz. 360 grs. (Troy).
Sol. Persulphate of Iron (1·320)	16 fl. ozs.
Sol. Ammonia (·960)	20 fl. ozs.

French Codex, 1866.

Acid Citric	100 parts.
Hydrated Peroxide of Iron	q. s.
Sol. Ammonia	18 parts.

Add such a quantity of hydrated ferric oxide as will correspond to 53 parts of anhydrous oxide iron.

Pharmacopœia Germanica, 1872.

Citric Acid	2 parts.
Oxide of Iron	q. s.
Then add Citric Acid	1 part.
Sol. Ammonia	q. s. to saturation.

The following table, deduced from these formulæ, will show at a glance the relative amounts of anhydrous ferric oxide to the same amount of citric acid :

	Citric Acid.	Ferric Oxide.	
London Pharm, 1851...	100 parts.	57·3	Added as ferrous salt.
British Pharm, 1864...	"	33·4	Added as ferric salt.
" " 1871...	"	41·8	"
U. S. " 1873...	"	40·0	"
French Codex.	"	53·0	"
Pharm. Germ., 1872...	"	?	"

The London and British Pharmacopœias describe the amount of ferric oxide resulting from incineration with free exposure to air, but the Codex and German and American Pharmacopœias do not state the amount of ferric oxide perfect specimens of their respective salts should contain.

Pharm. Lond.,	1851.....	34	per cent. Fe_2O_3
Brit. Pharm.,	1864.....	26·5	"
" "	1867.....	27·0	"
U. S.	1873.....	?	"
French Codex.....		?	"
Pharm. German.,	1872.....	?	"

Most of the recent formulæ have one feature in common, viz., the complete saturation of the acid by the oxide of iron, but the quantities ordered by each work with this object in view are very disproportionate.

The British Pharmacopœia, 1867, says, "*dissolve the citric acid in eight ounces of distilled water, and having applied the heat of a water-bath, add the oxide of iron, and stir them together until the whole, or nearly the whole, of the oxide has dissolved.*"

It is presumed that complete saturation is intended by the expression "*until nearly the whole of the oxide has dissolved,*" and that the amount of oxide produced by the precipitation of the persulphate of iron ordered is in slight excess of the quantity required for such saturation.

Be this as it may, upon referring to the Codex we find an amount of hydrated oxide ordered which shall be equal to 53 parts of anhydrous oxide, whereas the British Pharmacopœia, 1867, orders an equivalent of 42 parts only.

Practically I have found that the French Codex formula is much more like the basis of ammonio-citrate of iron of the best makers than is the British Pharm. formula, although fifty parts (half its weight) would more accurately represent the amount of ferric oxide

(added as hydrated oxide) required to saturate 100 parts of citric acid than would *fifty-three* parts, as named by the Codex.

A comparison of the formulæ of the British Pharmacopœias of 1864 and 1867, as to the amount of ferric oxide added to the acid, and the amount stated to be left by calcination is most conflicting; for instance, the 1864 Pharmacopœia shows that for 33·4 parts ferric oxide to 100 citric acid, as much as 26·5 per cent. is left upon calcination, whereas that of 1867 indicates that from 41·8 parts added to the same amount of citric acid, 27 per cent. is left by calcination.

The mean of the three analyses of ammonio-citrate of iron (B.P. 1867) gave ferric oxide by calcination 27·4 per cent., proving the accuracy of the present officinal test and the fallacy of the 1864 Pharmacopœia.

Of course it may so happen that the British Pharmacopœia does not intend that the acid shall be saturated with oxide, and has merely framed its formula with other objects in view.

If it were so contemplated I think a great improvement in the formulæ would have been made if a salt had been recognized that would have scaled easily, and represented the best specimens as met with in trade.

An examination of the ammonio-citrate of the leading London manufacturers indicate that at the present time uniformity is the exception rather than the rule; that the British Pharmacopœia scales are not to be met with; that the preparation of the London Pharmacopœia, or a modification of it is still used; and that the *complete saturation* process is in some cases followed.

London Pharmacopœia, 1851	....	34·0 (determined).
British Pharmacopœia, 1867	.....	27·4 "
Manufacturing Process (saturation).		30·7 "
Trade Specimens	..... (1.)	26·0
"	..... (2.)	24·1
"	..... (3.)	30·1
"	..... (4.)	30·0
"	..... (5.)	33·4
"	..... (6.)	33·3
"	..... (7.)	29.4

As uniformity in all substances used in medicine is of vital importance I would suggest that at the earliest convenient date the use of ferric oxide sufficient to complete the saturation of the acid by the aid of a water-bath heat be recognized, and that the formula of the British Pharmacopœia be amended by substituting *nine and a half fluid ounces* of the persulphate of iron solution for the present quantity of eight fluid ounces, or as much hydrated ferric oxide to one hundred parts of citric acid as shall be equivalent to fifty parts (49·6) of anhydrous ferric oxide.

Laboratory, 40 *Aldersgate Street, E.C.*

PHOSPHATE OF IRON AND ITS COMBINATIONS.*

BY CHARLES GEISSE POLK, M.D., OF PHILADELPHIA.

(Continued from page 251.)

SYRUP OF PHOSPHATE OF IRON AND AMMONIA.

Heat phosphate of soda to redness. Take of the pyrophosphate of soda so obtained ʒ ij. Dissolve in one pint of water. Take of the sulphate of iron ʒ iv. Dissolve in twelve ounces of water. Mix the solutions, collect, wash, and dry the precipitate at a gentle heat over a water-bath. Take of this precipitate ʒ i., liq. ammonia ʒ iss., water q. s. Dilute the ammonia water with an equal volume of distilled water, and rub it with the phosphate of iron in a mortar until the latter is dissolved. Then dilute to seven ounces, and preserve gentle heat until it is evaporated to six ounces, and add ten ounces of dense syrup. Each drachm contains four grains of the phosphate of iron with ammonium. The syrup is quite permanent and remarkably free from inky taste. It is, no doubt, a very good preparation. The only specimen I have ever seen of it was made by Dr. A. D. Hauverman, now practising at Chattanooga, Tenn., but not being at all partial to bibasic phosphates I have never used it. My partiality is, however, very strong for the following preparation :—

SYRUPUS FERRI ET AMMONII CUM QUINIÆ ET STRYCHNIÆ PHOSPHATI.

R.	Ferri sulphatis granulati	℥ vi.
	Sodii phosphatis	℥ x.
	Acidi phosphorici anhyd	ʒ xij.
	Acidi nitrici c. p....	℥ iij.
	Quinia sulphatis	ʒ i.
	Acidi sulphurici dil.....	q. s.
	Aquæ ammoniæ concent	q. s.
	Strychniæ citratis	grs. xiijss.
	Sacchari albi	℥ xxx.
	Aquæ destillatæ, q. s.....	℥ xlviij.

Prepare the anhydrous phosphoric acid by igniting phosphorus in dry oxygen. A soon as the combustion is completed dissolve twelve ounces of the white anhydrous phosphoric acid in sixteen

* Philadelphhia Medical Reporter, in Am. Drug. Circ.

NOTE.—Dr. Polk notices an error in the formula for Sprup of Phosphate of Iron, Quinia and Strychina, published in last number. This error did not originate with this journal, but occurred in the publication in which the paper first appeared. For "Syrupy Phosphoric Acid, f. oz. iv." read *two* fluid ounces, or half the quantity ordered.—ED. CAN. PHARM. JOUR.

ounces of distilled water; add the nitric acid, place on a sand-bath and apply heat until the fumes of nitric acid cease to be evolved. Dissolve the sulphate of iron in ʒ x of boiling water, and the phosphate of sodium in twenty ounces of boiling water. Mix the solutions and carefully wash the magma until the washings are tasteless. Dissolve the quinia and the strychnia in four ounces of water, and precipitate the alkaloids by slowly adding a weak solution of ammonia water, and carefully wash them. Add the phosphate of iron to six ounces of the solution of phosphoric acid, and apply gentle heat until dissolved. Dissolve the quinia and strychnia in four ounces of the solution of phosphoric acid. Saturate the remaining solution of the phosphoric acid with the concentrated ammonia water. Lastly, add the solutions of the phosphate of iron, the alkaloids and the phosphate of ammonium together in a bottle of the capacity of three pints, introduce sugar and sufficient water to complete the measures of forty-eight ounces.

The same result can be obtained by using twelve ounces of syrupy phosphoric acid. The iron, quinia, and strychnia being dissolved in six ounces of the syrupy phosphoric acid and the remaining six ounces saturated with the concentrated ammonia water, mix them, and then add the sugar and water as above directed. The only objection that can be urged against this preparation is the very large amount of phosphoric acid, but when we consider that it is nearly all in basic combination, the objection is less than it first appears. I regard this ammoniated syrup of the phosphates as a very valuable addition to our list of remedial agents.

Each drachm contains five grains of the phosphate of iron, six grains of the phosphate of ammonium, and one-fourth grain of the phosphate of quinia, and one twenty-eighth of a grain of the phosphate of strychnia. If therapeutically inferior to the syrup of the phosphates of iron, quinia, and strychnia, as a tonic, the phosphate of ammonia adapts it to an especial range of diseases. The permanency of the syrup also entitles it to important consideration. This formula differs very much from one previously published, and seems to be a better one.

PHOSPHATE OF IRON WITH AMMONIO-CITRATE.

The phosphate of iron with ammonio-citrate is a very valuable preparation, and possesses several advantages over the bibasic phosphate with ammonio-citrate. The profession is indebted to Mr. Creuse, of the *Physician and Pharmacist*, for the proper method of preparing it in scales (see the *Physician and Pharmacist*, November, 1867,) and to Mr. R. Rother for the syrup form. For several years past I have been accustomed to prepare a syrup of this form of iron thus, however using the potassic-citrate instead of the ammonic-citrate:

SYRUP PHOSPHATE OF IRON WITH POTASSIC CITRATE.

R. Liq. ferri tersulphatis..... ℥ viij.
Sodii phosph ..... ℥ ix.
Acidi citrici ..... ℥ xiv.
Potassii bicarb..... q. s.
Sacchar. alb..... ℥ xiv.
Aquæ..... q. s.

Dissolve the phosphate of sodium in one pint of boiling water, and slowly add to the solution the tersulphate of iron, stirring slowly until the phosphate of iron is completely precipitated. Then wash it in a funnel, on a muslin filter, until the washings are tasteless. Saturate the citric acid dissolved in one ounce of boiling water with the bicarbonate of potassium, add to the iron and apply gentle heat on a sand-bath until the iron phosphate is dissolved. If it is not dissolved readily a small amount of citric acid may be added, which very promptly secures a perfect solution. Evaporate to ten ounces, add the sugar, and continue a gentle heat until the sugar is dissolved. Each drachm represents fifteen grains of the citro-potassic ferro-phosphate.

This syrup can be very readily used as the ferric base of an elixir with quinia, cinchona, or gentian. Or the sugar may be omitted and the process of scaled ferric salts followed, by which very perfect olive green scales may be obtained. It will be observed that the process is almost precisely like that followed for the pyrophosphate of iron, only the tribasic phosphate of soda is used instead of the bibasic phosphate.

SYRUP OF THE SUPERPHOSPATE OF IRON.

Dissolve four ounces of glacial phosphoric acid in six ounces of water, raise the temperature to the boiling point, and add sufficient freshly precipitated phosphate of iron to saturate the solution, then introduce sufficient syrup to make thirty-two fluid ounces. If it be desired to unite quinia alone, or with strychnia, add the freshly precipitated alkaloids in the proportion of one grain of quinia and one-twenty-eighth of strychnia to each drachm, or two hundred and fifty-six grains of the former and eight grains of the latter to an ounce of water, and rub them up with nine drachms of syrupy phosphoric acid. Add sufficient syrup to the iron to form sixteen ounces, and sufficient syrup to the alkaloids to measure sixteen ounces, and add the two syrups together. This forms a powerful tonic, seldom disagrees with the stomach, is entirely void of the slightest inky taste, and proves a very effective preparation. Unfortunately, it is very unstable and deteriorates rapidly. This fault can be remedied by adding two ounces, instead of nine drachms of syrupy phosphoric acid, but then it will have the faults of the concentrated ferrous syrups without their tonic power, in relative doses.

In conclusion, I may here remark that the syrup of the hypophosphite of iron, quinia and strychnia exceeds in its therapeutical value every other preparation here given. Pharmaceutically, however, it is not perfect, and I would be very thankful for an economical and practical mode of preparing it. To me this preparation is yet an unsettled problem.

The syrup is also so expensive as to be an obstacle in its general use.

The syrup of the phosphates of iron, quinia, and strychnia prepared by my formula is an article of great value, and will seldom disappoint those who trust it as a general tonic.

The phosphate of iron with ammonium-citrate is a mild chalybeate, very soluble, readily incorporated into compounds, either as elixirs, syrups, or pills, and thus fills a very important desideratum. It is therapeutically and pharmaceutically superior to the bibasic phosphate, which it is destined to supersede in many preparations where the latter is now employed. I do not believe bibasic phosphoric acid possesses any remedial powers. The phosphate of iron with ammonium phosphate is worthy of further investigation. The more I have used it the more I have been impressed with its great importance, the wider its range of application, and greater my confidence in its remedial power. In chronic engorgement of the uterus, attended with aching pain in the left iliac region, with tenderness on pressure, morbid sensibility along the course of the spine, deranged digestion, attended with constipation, headache, nervous derangement of the heart, attended with marked anæmia, I have found this combination to give better results than anything else in the manner of constitutional treatment. In fact, in nearly every case unattended with ulceration or organic disease this syrup, assisted by enemas of cold water (one pint being injected into the bowels upon arising from the bed every morning), and an occasional blister over the region of the uterus, gave very prompt relief and produced a radical cure.

In certain forms of neuralgia it seems to exceed in its prompt and permanent relief every other known remedy. A few months ago I was consulted by a lady who had been for two years a victim of sciatica. Aconite, belladonna, bromide of potassium, iodide of potassium, colchicum, blisters, moxas, arsenic, morphia, quinia, and iron (the sub-carbonate) had been freely used without any permanent benefit. I prescribed for her this preparation, to be taken in teaspoonful doses three times a day, however increasing the amount of quinia to two grains in each dose, twenty grains of hydrate of chloral, twenty grains of the bromide of potassium, and one drachm of the valerianate of ammonium, to be taken in a wineglassful of port wine at bedtime, and a liniment composed of equal parts of saturated tincture of aconite (18 ozs. to the pint), chloroform, and sufficient camphor to saturate them. Within a week the

suffering was much mitigated, and in six weeks after the cure seemed perfect.

In neuralgia of the face and head, the result has been extremely gratifying. Cases that had defied every other treatment often obtained relief from this syrup. About four months ago a gentleman about fifty years of age placed himself under my treatment. He was suffering intensely with neuralgia on the left side of the head, his eyesight very much impaired, and his intellectual faculties reduced almost to the condition of a puling babe. I placed him on this preparation. The improvement was remarkable. In one week the acute pain had subsided to a slight soreness, the eyesight was very much improved, the change in his physiognomy was very marked, the pale, haggard, woe-begone expression, so marked on his countenance at the beginning of my treatment, was replaced by a bright, cheerful face. He used twelve ounces of the preparation, and then, not being able to procure it, was persuaded to use Easton's syrup—that it was just as good. It seemed for a couple of weeks to do a slight benefit. The physician then placed him on bromide of potassium, and all the good he had received from the iron treatment was speedily undone.

In those cases of subacute rheumatism associated with anæmia, nervous debility, and slight cardiac trouble, in fact, the very numerous class of rheumatics found in low, damp, malarial situations, I esteem the syrup of the phosphates of iron and ammonia, with quinia and strychnia, very highly. I, however, use it in alternation with the following :—

R. Tinc. guiac. amm..... ʒ ij.
Fluid ext. colchici rad..... ʒ ss.
Potassii iodidi..... ʒ iss.
Fluid ext. cardamomi..... ʒ iij.
Syrupus aurant. cort..... ʒ iij.
Aquæ q. s..... ʒ viij.

Tablespoonful every four or six hours.

This treatment has been generally very satisfactory in my hands, and holds my confidence in a higher degree than any other.

Although one might, *a priori*, infer that the main good resulted in such cases from the last recipe, I do not think so. The phosphate of ammonia is one of the most valuable remedies in rheumatism. Quinia is well known as an anti-rheumatic, especially in the class of cases above referred to. In diseases of the urinary and genito-urinary organs, this combination does much good. While a medical officer in the Federal army, I had very rare chances of using this remedy, and watching the effect, as it only can be watched in an army hospital, during the late civil war; and, taking my own experience as a datum, I am very positive in my conclusion that it often did more good than I obtained from other

remedies. In chronic diarrhœa, complicated as it very often was with Bright's kidney disease, this preparation often stayed the progress of this very obstinate malady, although I am sure not a single cure was permanent, except those sent to Northern hospitals, in which cases the removal from concurring and exciting causes did more advantage than could have possibly accrued from the entire paraphernalia of the materia medica.

In imperfectly cured pneumonia, where there has been extensive extravasation into the parenchyma of the lungs, the air-cells obstructed by the albuminous exudation, and a low state of inflammation still continuing, this preparation has given very good results, especially by adding about twenty grains of phosphate of ammonium to each dose. Such cases are generally diagnosed phthisis, dosed with cod-liver oil, and buried. A correct diagnosis and judicious treatment will cure nearly all of them. Such cases have given eclat to Jayne's Expectorant and other almost as vile nostrums. Although those abominations are usually very prejudicial to such cases, the conservative resources of nature surmount both the poison and the disease. Notwithstanding the poisonous properties of the so-called "Winslow Soothing Syrup" have received pretty extensive condemnation, I regard it as a comparatively harmless remedy alongside of this "Expectorant" of the "Prince of Quacks." The diagnosis between phthisis and chronic pneumonia is too seldom, I fear, definitely determined. The rapid destruction of the lungs after acute pneumonia is too often erroneously attributed to tubercles, and the true pathological lesion overlooked. In such cases the syrup of the phosphate of iron and ammonia, with quinia strychina, is entitled to favourable consideration, and I have no doubt that very many would recover under judicious treatment, who die from the sequelæ of pneumonia. In recommending the syrup of the phosphate of iron and ammonium, with quinia and strychnia, as a very valuable agent in the sequelæ of this disease, I need hardly remind the profession that the presence of inflammatory symptoms contra-indicate the preparation; the iron is very prejudicial to the already irritable air-cells. Phosphate of ammonium and phosphate of sodium seem to have a marked influence. Ten grains each, given in an ounce of camphor-water, and repeated four or five times a day, very often modifies the condition materially, if it does not dissipate every inflammatory symptom. Inflammatory symptoms being removed, the iron combination can be used with marked benefit. Phosphorus certainly exerts a marked influence over pulmonary troubles. I have seen several cases of acute pneumonia treated by phosphorus in 1-200 of a grain doses, and repeated every two or three hours. They did very well. The improvement was marked and rapid, and the cure effectual. I have, however, never ventured to trust a patient of my own to such treatment.

The hypophosphites are unquestionably the best medium by which phosphorus can be introduced into the system, by which the curative impression can be transmitted. The hypophosphites of iron, ammonium, quinia, and strychnia seem to equal, if not surpass, the phosphates of the same salts in nerve trouble, surpass that combination in pulmonary diseases, but prove very much inferior in rheumatism, gout, uterine and kidney derangements. As a tonic, no combination yet devised, of iron and alkaloids, equals the syrup of the ferrous phosphate, with quinia and strychnia, made according to my formula.

UNOFFICINAL FORMULAS.*

REPORTED BY J. F. HANCOCK.

COMPOUND POWDER OF COCHINEAL.

Take of Cochineal in powder	120 grains.
Alum, in powder	120 grains.
Carbonate of Potassium	120 grains.
Bitartrate of Potassium	240 grains.

Mix. Keep in well-stoppered vial.

COMPOUND TINCTURE OF COCHINEAL.

Take of Compound Powder of Cochineal	120 grains.
Diluted Alcohol	2 fluid ounces.

Slightly warm the diluted alcohol and mix with the powder, macerate in a stoppered vial for twelve hours, and filter for use. This is permanent, and imparts a beautiful red color to elixirs and solutions which have no acid properties.

SPIRIT OF ORANGE.

Take of Oil of Sweet Orange	1 fluid ounce.
Stronger Alcohol	15 fluid ounces.

Mix. This is made in proportions to conform with the spirits of the U. S. P., and is a pleasant and convenient form of orange flavor.

SIMPLE ELIXIR.

Take of Spirits of Orange	½ fluid ounce.
Stronger Alcohol	4 fluid ounces.
Cinnamon Water	6 fluid ounces.
Syrup	6 fluid ounces.

Mix.

This is a turbid mixture. For many purposes it is not neces-

* Report of the Committee appointed by the Am. Pharm. Assoc. to inquire into unofficinal formulas, with a view to the establishment of a uniform standard. (See "Books and Pamphlets).

sary to filter before using, but generally it should be clear, particularly when used for physicians' prescriptions, and in making some elixirs. Filtering-paper pulp, made by beating scraps of chemically pure filtering-paper in a mortar, in the proportion of sixty grains of paper to half fluid ounce of water, added to sixteen fluid ounces of the elixir, agitated briskly for a few moments, and filtered, renders the elixir perfectly limpid. The paper is free from the chemical objections urged against carbonate of magnesium, chalk, &c., which are frequently used as clarifying agents.

The very pleasant taste and odor of this elixir, its freedom from color and chemical impurities, commends it for general use as a medicating vehicle.

RED ELIXIR.

Take of Comp. Tincture of Cochineal ..... ½ fluid ounce.
Simple Elixir ..... 16 fluid ounces.

Mix.

This is sometimes preferred as a simple elixir because of its beautiful color.

ELIXIR OF CALISAYA BARK.

Take of Tinct. Cinchona, U. S. P., 1870 ..... 22 fluidrachms.
Simple Elixir..... sufficient to make 16 fluid ounces.

Mix and filter. This contains *the virtues* of two grains of Calisaya bark in one fluidrachm.

ELIXIR OF CALISAYA BARK WITH IRON.

Take of Elixir of Calisaya Bark ..... 15 fluid ounces.
Warm Distilled Water ..... 1 fluid ounce.
Citrate of Iron, *soluble* ..... 128 grains.

Dissolve the iron in the warm water and add the elixir. Filter if necessary. Each fluidrachm of the unfiltered elixir contains one grain of the iron salt, and the virtues of nearly two grains of Calisaya bark.

COMPOUND ELIXIR OF CINCHONA.

Take of Compound Tinct. of Cinchona, U.S.P.,
1870..... 22 fluidrachms.
Simple Elixir..... sufficient to make 16 fluid ounces.

Mix and filter. If not required for immediate use, this and also the Calisaya elixir should stand for about twelve hours before filtering.

COMPOUND ELIXIR OF CINCHONA WITH IRON.

Take of Compound Elixir of Cinchona..... 15 fluid ounces.
Warm Distilled Water..... 1 fluid ounce.
Citrate of Iron, *soluble* ..... 120 grains.

Mix. Proceed as for Elixir of Calisaya with Iron.

ELIXIR OF CITRATE OF IRON.

Take of Citrate of Iron, *soluble*..... 256 grains.
Warm Distilled Water ..... 1 fluid ounce.
Simple Elixir ..... 15 fluid ounces.

Dissolve the iron in the warm water and mix with the simple elixir. Filter.

ELIXIR OF PYROPHOSPHATE OF IRON.

Take of Pyrophosphate of Iron	256 grains.
Warm Distilled Water	1 fluid ounce.
Simple Elixir	15 fluid ounces.

Make according to directions for Elixir of Citrate of Iron.

This is the same in medicinal strength as Professor Diehl's formula.

ELIXIR OF CITRATE OF BISMUTH.

Take of Citrate of Bismuth and Ammonium.....	256 grains.
Warm Distilled Water.....	4 fluid ounces.
Water of Ammonia (drop by drop).....	sufficient.
Simple Elixir.....	.....sufficient to make sixteen fluid ounces of finished elixir.

This the same bismuth strength as Professor Diehl's formula, viz., two grains of citrate of bismuth and ammonium in each fluidrachm.

ELIXIR OF PEPSIN.

Take of Saccharated Pepsin, Scheffer's formula	256 grains.
Sherry Wine	14 fluid ounces.
Simple Syrup	2 fluid ounces.
Fluid Extract of Ginger	25 drops.

Dissolve the pepsin in the wine, mix the fluid extract of ginger with the syrup, and mix altogether. Filter if necessary. Contains two grains of pepsin to the fluidrachm.

ELIXIR OF VALERIANATE OF AMMONIUM.

Take of Valerianate of Ammonium in crystals..	256 grains.
Compound Tinct. of Cochineal	½ fluid ounce.
Simple Elixir	15½ fluid ounces.

Dissolve the valerianate of ammonium in two ounces of the simple elixir, and carefully add water of ammonia until the solution is exactly neutral to test-paper. Mix with the balance of simple elixir, and then add the compound tincture of cochineal.

This is the formula of Professor C. Lewis Diehl, with the exception of the simple elixir. Notwithstanding this preparation contains a larger quantity than usual of the valerianate of ammonium (two grains of the salt in each fluidrachm), yet its unpleasant taste and odor is effectually masked by the fragrance of the simple elixir.

ELIXIR OF VALERIANATE OF AMMONIUM WITH QUINIA.

Take of Sulphate of Quinia	128 grains.
Elixir of Valerianate of Ammonium ...	16 fluid ounces.

Mix. Filter if necessary. Sulphate of quinia is soluble in elixir of valerianate of ammonium to twice the quantity here ordered.

COMPOUND ELIXIR OF SUMBUL.

Take of Tincture of Sumbul (Brit. Ph. 1867) *	4 fluid ounces.
Syrup	4 fluid ounces.
Compound Tincture of Cochineal	½ fluid ounce.
Elixir of Valerianate of Ammonium ...	8 fluid ounces.

Mix.

The elixir is slightly turbid, owing to the resin of the sumbul, which, if filtered out, must lessen its medicinal powers. This is given as a type of *extemporaneous elixirs*, which should not be filtered, but dispensed with the direction, "*Shake the vial before pouring out each dose.*"

* This is made by macerating and displacing two and a half ounces avoirdupois of powdered sumbul with proof spirit, so as to obtain one imperial pint (f℥xix, f℥iss., U. S. measure) of tincture.

(*To be continued*).

FORMULÆ FOR PEPSIN PREPARATIONS.*

BY HENRY BIROTH.

All Formulæ for Elixirs and other preparations containing Pepsin, heretofore published, in the various Pharmaceutical Journals, differ so greatly in regard to doses, as well as the mode of preparing, that the demand for *uniformity* and *simplicity* in these Preparations has become quite necessary. Now for the last two years I have been manufacturing Pepsin, and consequently have paid much attention to the different preparations in which Pepsin is used. The results are the following formulæ, which I submit to the Pharmaceutical Profession. They are based upon the dose of the remedies used therein, and their simplicity is evident. Elixirs, &c. can be prepared according to these formulæ instantly, when prescribed, or kept on hand, in the smallest quantities; they are elegant, palatable, and may be modified by the Physician ad libitum.

The dose for children is from a half to one *tea*spoonful. For adults, from a half to one *table*spoonful.

*Chicago Pharmacist, February, 1874.

Each teaspoonful contains, in grains,

Pepsin.	Iron.	Bismuth.	Quinine.	Strychnia.
2	1	½	¼	1-128

Each tablespoonful contains, in grains,

Pepsin.	Iron.	Bismuth.	Quinine.	Strychnia.
8	4	2	1	1-32

SYRUP OF PEPSIN.

Powdered Pepsin.....256 grains.
Muriatic Acid ..... 1 dram.
Syr. orange flower water 16 ounces.
Mix.

WINE OF PEPSIN.

Powdered Pepsin.....256 grains.
Muriatic Acid ..... 1 dram.
Sherry wine ..... 16 ounces.
Mix.

ELIXIR OF PEPSIN.

Powdered Pepsin.....256 grains.
Muriatic Acid ..... 1 dram.
Orange flower water.... 8 ounces.
Bitter Almond water.... 2 ounces.
Simple Sprup ..... 2 ounces.
Glycerin ..... 2 ounces.
Deodorized Alcohol ... 2 ounces.
Mix.

ELIXIR OF PEPSIN AND IRON.

Elixir of Pepsin ..... 16 ounces.
Citrate of Iron, soluble.128 grains,
Mix.

LIQUID PEPSIN.

Powdered Pepsin.....256 grains.
Muriatic Acid..... 1 dram.
Glycerin..... 6 ounces.
Water..... 10 ounces.
Mix.

ELIXIR PEPSIN, IRON, QUININE BISMUTH AND STRYCHNIA.

Elixir of Pepsin, Iron, Quinine and Bismuth ..... 16 ounces.
Sulphate of Strychnia. 1 grain.
Mix.

AROMATIC LIQUID PEPSIN.

Powdered Pepsin.....256 grains.
Muriatic Acid ..... 1 dram.
Glycerin ..... 6 ounces.
Orange flower water.... 8 ounces.
Bitter Almond water.... 2 ounces.
Mix.

ELIXIR OF PEPSIN AND BISMUTH.

Elixir of Pepsin ..... 16 ounces.
Amm. citrate of bismuth 64 grains.
Mix.

ELIXIR OF PEPSIN AND QUININE.

Elixir of Pepsin..... 16 ounces.
Sulphate of Quinine..... 32 ounces.
Mix.

ELIXIR OF PEPSIN, IRON AND BISMUTH.

Elixir of Pepsin..... 16 ounces.
Citrate of Iron, soluble..128 grains.
Am.-citrate of bismuth 64 grains.
Mix.

ELIXIR PEPSIN IRON AND QUININE.

Elixir of Pepsin..... 16 ounces.
Citrate of Iron, soluble..128 grains.
Sulphate of Quinine..... 32 grains.
Mix.

ELIXIR PEPSIN, IRON, QUININE AND BISMUTH.

Elixir Pepsin..... 16 ounces.
Citrate of Iron, soluble 128 grains.
Ammonio citrate bismuth 64 grains.
Quinæ Sulphate.....32 grains.
Mix.

Remarks.—To obtain a good preparation, Pepsin has to be treated with water, and acid, allowing it to swell and dissolve; then filter, and add the other ingredients, alcohol last. The salts of Iron and Bismuth should be perfectly soluble, otherwise a few grains of carbonate of ammonia are to be added when rubbed together.

PURIFICATION OF CRAB ORCHARD SALT.*

BY RICHARD V. MATTISON.

Among the purgative medicines used in various sections of this country, none are more rapidly finding favor among physicians and the general public than the salt obtained by evaporating the waters of the springs at Crab Orchard, Lincoln county, Kentucky.

As the salt appears in our market it is of various degrees of color and purity. It is usually prepared by concentrating the water in iron kettles and then allowing the concentrated water to stand at rest until the largest portion of the organic matter is precipitated. The supernatant liquid in then decanted, more or less care being used, and evaporated. The yield is about 1 to 1.25 per cent., ten gallons of the water yielding about a pound of the commercial salt. Much more care was formerly used in the preparation of this salt than now, and of late years the salt has gradually grown more and more impure, owing to the ready sale found for it, which fact was noticed in a letter from the proprietors a short time ago, in which they remarked "that the supply was not equal to the demand."

When dissolved in water the solution of the commercial salt presents a very unsatisfactory appearance, and is certainly very far from being inviting as a medicine. This should be remedied; in fact, Crab Orchard salt should never be dispensed without first being *purified*, which is easily done by the following process (which I think should be performed at the spring, before the salt is ever offered to the market.) Dissolve the salt in boiling water and filter through paper, or, on a large scale, flannel bags are best. The filtrate is then evaporated carefully to dryness, stirring meanwhile to favor granulation and prevent caking. If the directions are carefully followed, the product will be a beautiful snow-white salt, perfectly soluble in water; one which the pharmacist can recommend and dispense with satisfaction; more active than the ordinary salt, as it is free from the insoluble earthy admixtures of alumina, calcium sulphate, etc. The purified salt usually contains much less water than the commercial, which varies very much, the amount ranging from 35 to 50 per cent., the mean being usually about 40 per cent. The active ingredients seem to be principally magnesium and sodium sulphates, also a considerable proportion of potassium sulphate, with sodic and lithic chlorides. A small amount of ferric oxide is left in the filter, but the amount is so small that I think it of little consequence that the purified salt does not contain it.

Large quantities of a spurious salt are prepared by a house on one of the principal streets of Louisville, but with such secresy that stores only a few squares distant sell the salt without a doubt of its

* Read at a meeting of the Philadelphia College of Pharmacy, and published in the Am. Jour. Pharm. Jan. 1874.

genuineness. It seems to be principally magnesium sulphate, with a small proportion of ferric sulphate.

After considerable experience in purifiying Crab Orchard salt, I may state that the usual amount of organic matter in the salt is from 8 to 12 per cent. From 20 to 35 per cent. of loss is sustained in the purification, the greater portion of the loss being water. This loss need not be met with by pharmacists generally, a partially anhydrous salt being desired by myself for the production of an *active* granular effervescent salt. I would commend to all the advantage of preparing the purified salt themselves, the preparation of a few pounds being a matter of little trouble, and yielding a fair remuneration by the satisfaction accorded and increase of sale.

Philadelphia, 12th mo. 13, 1873.

PREPARATION AND COATING OF IODIDE OF IRON PILLS. *

In an article in the *Journ. de Pharm. et de Chimie*, (vol. xviii., p. 328) M. Magnes Lahens discusses the conditions most favourable for the preparation of iodide of iron pills. Some of the variations from the Codex recommended are already adopted in the B. P. The operation, he thinks, should be conducted at a temperature of 50° to 60° C. (122° to 140° F.) slight excess of iron should be present, and an iron dish should be used in preference to glass or porcelain vessels. His formula is as follows :—

Pure iodine.	4·10 grams.
Powdered iron	1·90 "
Powdered sugar	2·50 "
Powdered gum arabic . . .	2·50 "
Distilled water	2·50 "

Put the water and the powdered iron into an iron dish, add the iodine gradually, and assist the reaction by stirring with an iron spatula and gentle heat; when the reaction is complete, add the gum and the sugar, then heat to about 50° C., stirring continually, until the mass ceases to drop when a little is taken up with the end of the spatula. The mass may then be readily converted into pills or dragées.

To obtain the pills, incorporate into the mass 5 grams of powdered liquorice root, and if the consistence require it, heat it for some minutes; divide into one hundred pills, roll them in powdered gum, and, if desired, coat with mastic and tolu.

For sugar-coated pills (dragées), incorporate with the mass 7·50 grams of powdered gum arabic, then heat very slightly to soften

* Pharm. Jour. & Trans.

it. The hundred pills obtained are rolled in powdered gum arabic, heated, and agitated with a circular motion in a suitable vessel, until of the proper hardness, after which they may be sugar-coated.

Each pill and each dragée contains about 5 centigrams of iodide of iron and one centigram of powdered iron.

The pills contain iodide of iron in a state of perfect purity. Put into cold water some months after their preparation, they will dissolve, save the excess of iron, without colouring it.

The following is the mode of coating proposed by M. Magnes-Lahens: Roll the pills quickly, about fifty at a time, with the hand in a clear mucilage of gum arabic spread thinly in a saucer; when they are completely moistened throw them into a basin containing a mixture of sugar, 9 parts, with gum arabic one part; agitate them until they are covered with a layer of the powder, heat them for about eight or ten minutes, at first very slightly, and afterwards increase the heat, rotating the pills continually. After cooling, coat them a second and then a third time, following the process just described. These pills may thus be prepared in small or large quantities; in the latter case they should be put in the drying closet after each coating. Made with this precaution they will keep a long time in a good condition.

THE DILUTION OF ALCOHOL,*

The following table, showing the proportion of distilled water required to reduce alcohol of certain degrees of strength to those of greater dilution, has been compiled by M. Berquier, and is published in the *Repertoire de Pharmacie* (vol. i., p. 628). Opposite to the figure representing the degree of strength of the alcohol which is to be diluted will be found the proportion of alcohol and water to be used to reduce it to the strength at the top of the respective columns. Thus if it be desired to prepare alcohol of 80° from that of 94°, the figure 94 is sought for under the heading, "Strength of Alcohol employed," then to the right under the head, "Strength required, 80°," will be found the figures 808 and 192, indicating that 808 parts of the said 94° alcohol and 192 parts of distilled water are required to prepare 1000 parts of alcohol of 80°. For the convenience of English pharmacists the specific gravities corresponding to the different percentages of alcohol have been added.

Phar. Jour. and Trans.

Table indicating the Proportions by Weight of Alcohol of different Strengths, and of Distilled Water required to produce 1000 *parts of Alcohol of Lower Strength:*

Strength of Alcohol employed.		*Strength Required.*										*Strength of Alcohol employed.*	*Specific Gravity.*	*Strength Required.*			
		90° = sp. g. 8228.		85° = sp. g. 8357.		80° = sp. g. 8483.		60° = sp. g. 8936.		56° = sp. g. 9047.				60° = sp. g. 8936.		56° = sp. g. 9047.	
In degrees corresponding with percentage of Alcohol.	Specific Gravity	Alcohol.	Water.	Alcohol.	Water.	Alcohol.	Water.	Alcohol.	Water.	Alcohol.	Water.	Strength of Alcohol employed.	Specific Gravity.	Alcohol.	Water.	Alcohol.	Water.
100°	7938	857	143	795	205	735	265	522	478	482	518	78°	8533	732	268	677	323
99	7969	871	129	807	193	747	253	530	470	490	510	77	8557	744	256	688	312
98	8001	885	115	820	180	759	241	539	461	498	502	76	8581	756	244	699	301
97	8031	899	101	833	167	771	229	547	453	506	494	75	8603	768	232	710	290
96	8061	913	87	846	154	783	217	555	445	514	486	74	8625	781	219	722	278
95	8089	927	73	859	141	796	204	564	436	522	478	73	8649	794	206	734	266
94	8118	942	58	873	127	808	192	573	427	530	470	72	8672	807	193	747	253
93	8145	956	44	886	114	820	180	582	418	538	462	71	8696	821	179	759	241
92	8172	970	30	899	101	832	168	590	410	546	454	70	8721	835	165	772	228
91	8199	885	15	913	87	845	155	599	401	554	446	69	8745	849	151	785	215
90	8228	"	"	927	73	858	142	609	391	563	437	68	8769	864	136	799	201
89	8254	"	"	941	59	871	129	618	382	571	429	67	8793	880	120	813	187
88	8279	"	"	955	45	884	116	627	373	580	420	66	8816	896	104	828	172
87	8305	"	"	970	30	898	102	637	363	589	411	65	8840	911	89	843	157
86	8331	"	"	985	15	912	88	646	354	598	402	64	8863	928	72	858	142
85	8357	"	"	"	"	926	74	656	344	607	393	63	8886	946	54	874	126
84	8382	"	"	"	"	940	60	667	333	616	384	62	8908	963	37	891	109
83	8408	"	"	"	"	955	45	677	323	626	374	61	8932	981	19	907	93
82	8434	"	"	"	"	969	31	687	313	636	364	60	8956	"	"	925	75
81	8459	"	"	"	"	984	16	698	302	646	354	59	8979	"	"	943	57
80	8483	"	"	"	"	"	"	709	291	656	345	58	9001	"	"	961	39
79	8508	"	"	"	"	"	"	720	280	666	334	57	9025	"	"	980	20

Editorial.

THE EXAMINATIONS.

In another part of the JOURNAL will be found the official report of the Examiners, from which it will be seen that in regard to the number of candidates examined, and the generall proficiency attained, the late examinations were amongst the most successful yet held under the auspices of the College. Of the twenty-four candidates who presented themselves, seventeen succeeded in passing the ordeal, and several of those whose names appear at the head of the list, obtained marks indicating a very high degree of proficiency. Prominent amongst these is Mr. Eadie, of Brantford, who obtained 96 marks; and Mr. Watters, of Ottawa, who took 90 out of a possible 100.

The examination may be thus tabulated with those which preceded it:—

Date.	No. of Candidates.	No passed.	Highest No. of Marks.	Average.
Aug. 1871	5	4	74.00	72 00
Feb. 1872	10	7	91.00	79.00
Aug. 1872	16	12	99.50	79.00
Feb. 1873	13	10	90.25	78.90
Aug. 1873	12	9	81.50	68.52
Feb. 1874	24	17	96.00	72.29
	80	59		

The questions in the various subjects were as follows:—

PHARMACY.

Examiner—MR. SHUTTLEWORTH.

1. State the number of grains (1) in a pound, avoirdupois and troy; (2) in an eighth of an ounce, avoir. and troy; (3) in a gramme; (4) the number of minims in a pint, imperial and wine; (5) the weight of a minim, imperial and wine; (6) the measure, imperial, nearest corresponding to a litre; (7) the approximate measurement of a tablespoon; (8) the average number of drops in a drachm of water; (9) in a drachm of chloroform; (10) in a drachm of tincture of opium.
2. What quantities of commercial alcohol, 65 over proof, sp. gr. ·819, will be required to make one imperial pint of *Spiritus Rectificatus*; and one imperial pint of *Spiritus Tenuior*; and what are the specific gravities of these preparations?
3. What is the usual temperature for taking specific gravities? Reduce this degree from the Fahrenheit to the Centigrade scale.

4. State the conditions favorable to solution, evaporation and crystallization.
5. What menstrua are required in preparing *Tincturæ Aconiti, Cardam. co, Lobeliæ Ætheria, Myrrhæ, Opii, and Valerianæ Ammon.?* Note the cases in which maceration or percolation are respectively employed?
6. Give the proportion of opium in each of the following preparations:—Confection, extract, tincture, ammoniated tincture, wine, and compound powder of ipecac.
7. Describe the mode of preparation, name the ingredients, give the tests and characteristics, and state the dose of *Liquor Potassæ.*
8. How would you estimate the strength of the mineral acids?
9. Describe the manner of preparing *Ferri Carb. Sacch.; Liq. Ferri Perchlor. fort.*, and *Syr. Ferri Iodidi.* Note the precautions to be taken, and give the characteristies of the products.
10. Name samples of pharmaceutical preparations presented for recognition, and answer verbal questions regarding them.

MATERIA MEDICA.

Examiner.—MR. YEOMANS.

1.—What is an anæsthetic? Give those most commonly used.
2.—Give six of the leading preparations of mercury, with their doses and uses.
3.—Fowler's Solution: give officinal name, dose, and quantity of arsenic in each fluid drachm.
4.—Is there any similarity in operation of *Tinct. Hyosciam* and *Tinct. Opii?* If so mention it, and give any difference which may exist.
5.—Give dose, operation, and use, of following Tinctures: *Rhei Co., Belladonnæ, Cannab. Indicæ, Digitalis, Aconiti and Ferri Perchloridi.*
6.—Opium: Give the botanical name of the plant from which it is derived; describe the manner of collection; name the common adulterations; enumerate the alkaloids contained, and state the per centage of morphia which opium should contain.
7.—Atropia; from whence derived? Give its operation and use.
8.—What are the best emetics in treatment of poisoning with opium.
9.—Give the active principles derived from Peruvian Bark, with their doses and use.
10.—Distinguish, and give doses of samples.

CHEMISTRY.

Examiner.—MR. SHUTTLEWORTH.

1.—State the laws of Constant, Multiple, and Reciprocal Proportions.
2.—Give the formula and combining weights of Sulphuric, Nitric and Hydrochloric Acids.
3.—What re-agents would you employ for detecting the presence of each of the above acids?
4.—Give the mode of preparing the green and red iodides of mercury; and describe by equations, the chemical changes which occur.
5.—Describe by diagrams, or equations, the action of dilute sulphuric acid, and dilute muriatic acid, on iron.
6.—How would you estimate the quantity of silver in a sample of the nitrate? What proportion is present in the pure salt?
7.—What is meant by water of crystallization? Give examples of salts containing it, and state the quantity of *Sodæ Carb. exsiccata* which

can be obtained from 100 grains of the crystallized carbonate—$Na_2CO_3.10H_2O$.

8.—By what tests would you distinguish between citric and tartaric acids, in powder, or solution.

9.—Describe a convenient form of apparatus; state the ingredients required; and give the mode of preparation of an aqueous solution of sulphurous acid gas.

10.—Name samples of chemical products presented for recognition, and answer verbal questions regarding them.

BOTANY.

Examiner—MR. YEOMANS.

1. Give order of classification in botany, proceeding from highest to lowest.
2. What is a phanogamous plant?
3. What is the radicle of a seed?
4. Does any difference exist in manner of growth of stems and roots of plants?
5. Name some of the different forms of leaves, giving examples.
6. How do you distinguish monocotyledonous, dicotyledonous, and polycotyledonous plants? Give examples of each.
7. Red pepper; *(Capsicum Annuum)*—give class, order, and description of plant.
8. Describe structure of stems in exogenous plants.
9. Give botanical name for Solomon's Seal, and description of plant.
10. To what series do mosses and ferns belong.

PRACTICAL DISPENSING.

Examiner—MR. MILLER.

Dispense the following prescriptions, correcting any errors which may be found:

I. R.—Pulv. Rhei., grs. xxiv.
Ext. Aloes., grs. xviii.
Pulv. Myrrh, grs. xii.
Ol. Carui, m. x.
Misce. et fiat massa. in pilulas xii. dividenda.

II. R.—Bals. Copaib, ʒvi.
Tinct. Buchu, ʒss.
Spt. Æther Nit., ʒvi
Spt. Lavand. Co., ʒi.
Liq. Potassæ, ʒi.
M. ft. mist.; sig. cujus sumat coch. min. ter in die.

III. R.—Syr. Scillæ Co., ʒiss.
Antim. Tart., ʒii.
Tinct. Camph. Co., ʒss.
Vin. Ipecac., ʒvj.
Syr. Simp. ad., ʒvj.
M. ft mist. sig. cujus. sumat. coch. mag. bis vel ter in die.

IV. R.—Tr. Hyoscyam, ʒss.
Ext. Belladon. fl., ʒij.
Tr. Camph. Co., ʒj.
Spt. Æther, Nit., ʒvj.
Aqua, ad., ʒviij.
M. ft. mist.; sig. cujus sumat coch. mag. om hora.

V. R.—Emp. Cantharidis,
Ft. emp. 4×6 inches.

VI.—Translate fully into English the five foregoing prescriptions.

VII.—Write a prescription in Latin for a six ounce mixture, each dose to contain ½ grain quinine, fifteen minims tincture of iron, twenty minims tincture of columbo, and sufficient water to make up the quantity required.

VIII.—Write a prescription in Latin for the following: one ounce compound syrup of squills, six drachms paregoric, and two drachms

antimonial wine, with sufficient simple syrup to make a four ounce mixture; dose, one tablespoonful.

IX.—Give approximate measurement of a teacup, a wineglass, a tablespoon, and a teaspoon; with full Latin names; and also give abbreviations for the two latter.

X.—Translate into English, and give full Latin names for the following abbreviations: coch.—cong.—haust.—ft.—p. r. n.—sig.

THE SYMPTOMS OF COLCHICUM POISONING.

Our readers will remember the fearful cases of poisoning which occurred at Montreal, some details of which were given in the JOURNAL for December. At that time we had not learned the entire particulars, nor yet the full extent of the disaster. These have, however, been fully supplied by the publication of a pamphlet—noticed in another column—in which Dr. G. W. Major, the physician in attendance, details, at considerable length, the particulars of the occurrence, and especially points out those facts of medical interest:

It appears that seventeen persons were, in all, affected; seven of these died within nineteen and twenty-eight hours from the time of taking the poison; the remainder recovered, the period of convalescence extending from one to twenty-six days.

Opportunities for studying the action of colchicum, in poisonous doses, have not been frequent. Dr. Major's experience extends over a number of instances almost equal to that of all previous observers, as only about eight fatal cases are reported by toxicologists. It is well that the details of the Montreal cases have been so accurately noted and preserved, but it is much to be regretted that these observations are confined to the effects of the drug as noticed during the life of the patient, and that *post mortem* examinations were not more strongly insisted on.

The wine of colchicum taken was not that of the root, as ordered in the *British Pharmacopœia*, but was made from the seed, according to the directions of the *U. S. Pharmacopœia*. Dr. Major states the quantity of seed in this preparation to be four ounces to the pint, but this is an error, as only half that quantity is ordered (two troy ounces to one wine pint). The smallest quantity of the wine which produced a fatal result was three ounces—this was in the case of an adult female; the largest quantity producing death

was ten ounces. Eleven ounces were, however, taken by one of the men who ultimately recovered. In this instance the symptoms were very marked, and a period of twenty-six days elapsed before recovery.

The general symptoms are thus described:

"In from forty-five minutes to one hour and a half after taking the wine, vomiting ensued. The contents of the stomach were first rejected, then bile or mucus; afterwards a fluid similar to 'rice water' of cholera.

"When the amount of poison taken was very great, the purging came on simultaneously with the vomiting—but if only a small quantity, comparatively speaking, had been swallowed, the evacuation of the bowels was delayed for several hours. The passages were first the natural fœces, then bilious stools, next 'rice water'—a very large amount of a frothy, slimy secretion, compared by one of the patients to clean soap suds. In no case were there any traces of blood to be found. The vomiting continued until the last moment in the fatal cases, and the bowels were emptied involuntarily. Cramps were severe in the stomach, bowels, and legs. Severe pains were felt in the knee joints in some. And in two cases very markedly in the left shoulder, so much so, indeed, as to be a continual cause of complaint, and avoidance of lying on the left side. Rubbing was frequently demanded for relief. In the majority there was numbness from the elbow to the wrist; cramps of the fingers, especially the second finger, and in one case extreme numbness of the thumbs under the nails. This latter peculiarity was present even for twenty-six days after. In the case of the boy Thayer, there was great pain between the shoulders. The features (twenty hours after the accident) were pinched and drawn, lips and nose blue, as also the lobes of the ears. The eyes were congested, pupils dilated slightly; voice hoarse and husky, and pain was experienced in speaking.

"Feet and lower extremities icy cold, as also were the hands and arms. The rest of the body had a warmish, clammy feel, but was below the normal temperature. The pulse was rapid, 125 to 145 or more in the minute, small, compressible, intermitting, and at times imperceptible at the wrist, though it could be found at the elbow with some trouble, The temporal arteries were difficult of detection, even the carotids required patience to distinguish. For several hours before death they were almost pulseless, the heart's impulse was not to be felt over the chest, and even with difficulty heard on applying the ear to the chest wall. The sound might be likened to a blowing sound, or a murmur, or to a heart heard at a very great distance, or through a stone wall, both sounds lapsing into one.

"Respiration was full and easy, and was well maintained throughout. The pulse respiration ratio was borne out throughout.

"The sufferers were sensible to the last and throughout. One case terminated with a slight convulsive effort. All sat up before dying, falling back in less than an instant. No headache was complained of. Muscular strength was retained. They were all able to sit up,—lift a cup to their lips, or even walk.

"They were perfectly sleepless. In two recoveries there appeared a pustular eruption on the face and lower extremities, resembling in its character poisoned wounds.

In the case of the boy Thayer, while sawing wood, an hour after drinking the wine, he was seized with violent retching and vomiting, succeeded by a 'fit,' which, from the description, resembled a convulsive attack. Thumbs were turned in, with the fingers closed over them.

"The amount of wine taken varied from one mouthful to 15 or more ounces.

"The symptoms in every case were proportionate to the amount of wine taken.

"All the fatal cases terminated in from 19 to 28 hours.

"After death the features assumed a placid, quiet expression; dependent parts of the body were tinged blue."

DEATH OF PROF. PROCTER.—The death is announced of Wm. Procter, jr., Vice-President of the Philadelphia College of Pharmacy, and Professor of Practical Pharmacy in the same institution. This unfortunate event took place at an early hour on Tuesday morning, February 10th, and is attributed to heart disease. The Professor had lectured as usual at the College, on Monday evening, and appeared to be in excellent health up to shortly after midnight, when he was suddenly taken ill, and almost immediately afterwards expired. Prof. Procter was a native of Baltimore, and at the time of his death was about fifty-nine years of age. He was associated for twenty years—from 1847 to 1867—with the Faculty of the Philadelphia College of Pharmacy, and also held the position of editor of the *American Journal of Pharmacy* from 1850 until 1871, when he resigned. American pharmacy owes much to Professor Procter, and his loss will be severely felt. In our next issue we hope to give a more extended notice of the life of our respected confrere.

Editorial Summary.

Adulteration of Powdered Ipecac.—Mr. J. Mercer, (*Pharm. Jour. & Trans.*) found almond meal in two samples of powdered ipecac, obtained from respectable wholesale dealers in England. He was first led to respect the adulteration from the fact that a tincture made from one of the samples evolved the odor of oil of bitter almonds. Subsequently, sufficient hydrocyanic acid was obtained to be quite sensetive to the reagents applied. The dealers from whom the powders were obtained were apparently ignorant of the adulteration, and could only account for it by assuming that part of the root sent to the mill for powdering had been abstracted by some of the workmen, and that almond meal has been substituted in order to cover up the theft. In order to detect the adulteration the writer recommends that some of the suspected powder be made into a paste with water, and the mixture be allowed to stand in a warm place for half-an-hour. If, at the expiration of that time, there be no trace of a hydrocyanic odor, the sample may be considered free from almond meal.

Abortive Treatment of Boils.—A writer in the Cincinnati *Lancet* recommends the following local application for stopping the progress of incipient boils, and for relieving the intense pain attendant on a more advanced stage. The lotion should be applied every fifteen minutes, or as fast as it becomes dry, so that by a few applications there may be produced a firm coating around the affected part:

℞ Tinct. Arnicæ, U. S. P.
Acid. Tannic
Pulv. Acaciæ, · *a. a.* ℥i

The mixture should be used as soon as prepared.

New Antiseptic Dressing for Wounds.—Mr. Magnes-Lahens proposes the use of a powder produced by triturating one part of coal tar with two or three of powdered charcoal. This dressing is easily removed by cold water, and is not at all irritating.

Transactions of Pharmaceutical Colleges and Societies.

MINUTES OF THE SEMI-ANNUAL MEETING OF THE COUNCIL OF THE ONTARIO COLLEGE OF PHARMACY.

The regular semi-annual meeting of the Council was held on Wednesday, the 4th February, 1874; the following members being present:

Mr. B. Lyman, President, Messrs. Hugh Miller, N. C. Love, J. T. Shapter, J. W. Bickle, F. Jordan, Chas. Brent, L. W. Yeomans, E. Harvey, E. H. Parker. The minutes of the meeting held 6th August, 1873, were read, and on motion of Mr. Harvey, seconded by Mr. Jordan, were adopted.

Business arising out of the minutes was then taken up, the first being the report of the Committee on Amendments.

The Committee on Amendments to the Pharmacy Act beg to report as follows:—

The subject which first engaged the attention of your Committee related to the registration of unqualified partners. 1st, Whether each individual member of a firm should be compelled to register; 2nd, Whether a qualified person might take a partner who was not qualified, and thus entitle the latter to registration. After mature consideration, your Committee have arrived at the conclusion that it would not be at all advisable or expedient to change the present law, which requires that each member of a firm must be registered, and that each must show evidence of qualification ere registration can be effected.

For the safety of the public, as well as the interests of Pharmacy generally, it appears necessary that some steps should be taken to ensure the better education and qualification of apprentices and assistants. In regard to this matter we have not been able to arrive at a definite conclusion, but would beg to submit for your consideration the following possible solutions of the difficulty:—

The first plan consists in the compulsory examination and registration of those intending to become apprentices, and may be rendered as follows:—"On and after the day of in the year of our Lord , it shall be unlawful for any person to become apprenticed to any Pharmaceutical Chemist, or any Pharmaceutical Chemist to receive such apprentice, unless such intending apprentice shall have first been examined by the Board of Examiners, and shall have received from them a certificate of having

paid the registration fee of one dollar, which said fee must be continued annually until the term of apprenticeship expires; when, before entering upon the duties of an assistant, he must present himself before the Board of Examiners and pass the examination as at present regulated for Pharmaceutical Chemists; and also pay into the hands of the Registrar the sum of two dollars, which fee must be continued annually, so long as such person occupies the position of an assistant."

Your Committee is scarcely of the opinion that this measure could be introduced at the present time, but would merely suggest it for your consideration.

It might be arranged that a clause could be inserted in the present Act, allowing assistants and apprentices the privilege of examination and registration; but it is very questionable whether such a provision would be taken advantage of to any great extent. We may remark that by the 19th section of the Act, it is competent for the Council to make rules and orders for the admission of apprentices and associates, provided such rules receive the sanction of the Lieutenant-Governor. It is not, therefore, absolutely necessary that the Act be altered in this respect.

In reference to the mode of election of Council, we would suggest the following addition to section 11: "But, until such first meeting of the new Council, the retiring Council shall continue to hold office."

To section 14 should be appended, "and should there be a vacancy in the Board of Examiners, the remaining examiners may appoint a person to act in the place of the absentee."

To section 15, which relates to the duties of the Registrar, may be added: "In case any member of the College is in default of any fees due under this Act, it shall also be the duty of the Registrar to commence legal proceedings for the punishment of such defaulter, as provided in section 25, within one calendar month from the date at which said fees should have been paid.

In section 25, after the words "Police Magistrate," insert, "on the deposition of the Registrar that such person is so offending.

All of which is respectfully submitted.

BENJAMIN LYMAN,
Chairman of Committee.

Mr. Lyman objected to the law preventing young men who had the necessary qualification, and were registered, from entering into partnership with those who were willing to find the means. He considered it would be unfair to deprive any one properly qualified from availing themselves of such an opportunity.

Mr. Bickle took a similar view of the case, and, after expressing himself on the subject, moved the following resolution, seconded by Mr. Miller:—

Resolved, That the Report on Legislation be received, except that portion relating to Partnership, which shall be amended as follows:—That provision be made in an amendment to the Act providing that a regularly qualified druggist shall take into partnership one who is not a druggist, and carry on the business as a druggist, provided that the qualified party have the active management and oversight of the business.

The resolution was put to the meeting and declared lost.

Mr. Harvey then addressed the meeting in strong terms against the idea of admitting unqualified persons to the privilege of entering the drug business with qualified persons.

Mr. Jordan also spoke on the subject and took the same view of the matter.

Mr. Bickle rose to explain more fully that the intention of his resolution was not that of allowing indiscriminate use of qualified assistants to carry on business.

Mr. Shapter spoke in favour of the present Act as it relates to partnership, and considered it not desirable there should be any change.

Mr. Yeomans thought that for the safety of the public, and also for the protection of the members of the profession, it was not necessary to make any change in the present Act, as to the admission of members. He contended that it would not be beneficial to the interests of either to admit such as were incompetent.

Mr. Love moved the reception of the report, seconded by Mr. Harvey. Carried.

Mr. Shapter considered it expedient in the interest of the profession that apprentices should have a qualification and undergo a preliminary examination before being registered as such.

The Council then formed itself into a Committee of the Whole, and, after considerable discussion of the several clauses of the report, it was moved by Mr. Bickle, seconded by Mr. Yeomans, and resolved, "That the Committee on Legislation be empowered to bring before the House, and take such steps as may be necessary to secure the amendments proposed in the Act of Incorporation." Carried.

According to notice of motion for amendment to By-Law No. III. given at last meeting, it was moved by Mr. Yeomans, and seconded by Mr. Parker, That after the word "registrar," in the seventh line, the following words be inserted: "It shall also be his duty to place before the College at each meeting the papers upon which he may have issued any certificate of registration during the interval since last meeting of College. Carried.

The report of the Board of Examiners was read as follows:—

REPORT OF THE BOARD OF EXAMINERS.

Your Committee would beg to report that the sixth semi-annual

examination, held in conformity to the Act, took place on Tuesday, February 3rd. Twenty-four candidates entered their names, but some of them had been unsuccessful at former examination, and were desirous of further trial. Twenty-three candidates were, in all, examined—one of those entering having declined the ordeal. The seventeen gentlemen named below we have found sufficiently proficient to be entitled to claim the diploma of the College :—

		No. of Marks.
1	A. B. Eadie, Brantford	95
2	H. Watters, Ottawa	86
3	R. W. Boyle, Barrie	85
4	G. B. Smith, St. Catherines	85
5	J. Nicolle, London	81
6	T. A. Baxter, London	80
7	W. J. Falkner, St. Catherines	80
8	J. T. Langrell, Ottawa	72
9	A. H. Hogg, London	71
10	A. M. Glass, London	70
11	G. W. McIntyre, St. Mary's	69
12	J. Y. Graham, Galt	66
13	W. J. Langford, Ottawa	63
14	T. C. Ingram, London	62
15	F. W. Meek, Strathroy	61
16	J. M. McKendrick, Hamilton	60
17	C. J. Ellison, Sarnia	60

The degree of proficiency shown by the seven unsuccessful candidates was very fair—the lowest number of marks obtained being 42.

Of the qualifications of Mr. Eadie and Mr. Watters, the first and second prizemen, we are pleased to speak very highly. We believe the first named gentleman has shown a proficiency only excelled in one instance by any candidate examined since the College has been in existence. We are also gratified to mention Messrs. Boyle and Smith, who have each obtained 85 marks, and are only one mark under the gentleman who is entitled to the second prize.

Owing to the indisposition of one of the members of the Board, as constituted at the last Council meeting, we have been compelled to choose another examiner, and have unanimously elected Mr. Miller to act during the present examination.

All of which is respectfully submitted.

E. B. Shuttleworth,
L. W. Yeomans,
Hugh Miller.

Moved by Mr. Bickle, seconded by Mr. Miller, that the report of the Board of Examiners be received and adopted. Carried.

The first prize was then presented by the President to Mr. Eadie, with expressions of the good wishes of the Council for his future career.

Mr. Watters being present was presented with the second prize in like manner.

The Treasurers report was then read as follows :—

ONTARIO COLLEGE OF PHARMACY.

TREASURERS REPORT.

Kenneth Miller, Treasurer, in account with Ontario College of Pharmacy.

RECEIPTS.

1873.				
Aug	1.	To balance in Canadian Bank of Commerce		$2,323 86
"		" Cash from Registrar—account Journal		120 00
"		" " " Registration, Exam'rs fees &c.		88 00
"	30.	" " " Registration and Renewals...		32 31
Sept	27.	" " " " " "		118 00
Oct	3.	" " " " " "		82 00
"	18.	" " " " " "		58 13
Nov	8.	" " " " " "		50 00
Dec	13.	" " " " " "		48 00
"		" Interest on account in Canadian Bank of Commerce		44 00
1874.				
Jan	31.	" Cash from Registrar (Col. $122.00 Journal 204.75.)		326 75
				$3291 05

DISBURSEMENTS.

1873.				
Aug	1.	By Cash paid postage College account		$ 4 00
"		" " postage Journal account		6 00
"	5.	" " Monetary Times, Printing Journal		57 75
"		" " Monetary Times, Printing list of Chemists		6 50
"		" " Brown Bros., Binding Prizes		19 75
"	7.	" " Geo. Hodgetts ½ year salary as Treasurer		50 00
"		" " J. Roberts, mileage and expenses		24 00
"		" " W. Saunders, " " " "		23 60
"		" " F. Jordon, " " " "		12 64
"		" " E. Harvey, " " " "		6 80
"		" " L. W. Yeomans, " " "		11 60
"		" " Chas. Brent, " " " "		7 20
"		" " B. Lyman, " " " "		2 00
"		" " Hugh Miller, " " " "		2 00
"		" " Neil C. Love, " " " "		2 00
"		" " J. T. Shapter, " " " "		2 00
"		" " H. J. Rose, " " " "		12 00
"		" " R. W. Elliot, " " " "		12 00
"		" " Postage, College account		4 00
"	30.	" " Carriage of Journals from Mr. Rose to Mr. Hodgetts store		25
Sept	1.	" " Postage		9 00
"	9.	" " Monetary Times, Examination Papers 3.50 Journal $57.00		60 50
"	18	" " W. Ellingsworth, services rendered		25 00
"	25	" " E. B. Shuttleworth, 3 mos. sal. & postage		131 00
"	25	" " Commission on Mr. Wood's cheque		25

Oct.	1	By Cash Paid		Postage—Journal, $3.50; College, $3.00...	6 50
"	1	"	"	Monetary Times, printing Journal	57 00
"	16	"	"	Lyman Bros. & Co.....	17 89
"	18	"	"	London Improvement Society	19 00
"	20	"	"	Mail Printing Co.....	10 00
Nov.	8	"	"	Postage	6 50
"	8	"	"	Commission on Picton Cheque	25
"	20	"	"	Monetary Times, printing Journal	59 25
Dec.	1	"	"	H. J. Rose account	110 48
"	9	"	"	Monetary Times	57 00
"	12	"	"	Hastings & Peterkin, wood roller.....	50
"	12	"	"	Postage	7 00
1874.					
Jan.	1	"	"	Monetary Times, printing Journal	57 00
"	1	"	"	Hunter, Rose & Co.....	2 50
"	17	"	"	Copp, Clark & Co.....	67 00
"	31	"	"	Globe Printing Co	22 50
"	31	"	"	Postage	8 00
					2,291 84
				Balance on hand	1,000 21

We, the undersigned, appointed by the Ontario College of Pharmacy, have examined the above report, and compared it with vouchers, and find them all correct.

NEIL C. LOVE,
JOHN T. SHAPTER, } Auditors.

Moved by Mr. Jordan, seconded by Mr. Parker, That the report of the Treasurer be received and adopted.—Carried.

The Registrar's report was then read:

REGISTRAR'S REPORT.

To the Council of the Ontario College of Pharmacy:

GENTLEMEN,—Your Register begs to report, that when he came into office in August last he found on looking over the Register, a large number of members in arrear for fees for the year 1872, and also for the current year. At the request of the President I prepared a list of the defaulters to the number of one hundred and seventy-seven, and submitted the same to him. A circular was prepared and sent to each one, setting forth their obligation in the matter, which resulted in 13 paying the fee for 1872 and 1873, and 52 for the current year; 35 were erased as being out of business, qualified physician, or being assistants, and in several cases the parties had left the country, which, with one or two deaths, leaves at present 76 on the list of defaulters; 24 of whom are registered as qualified assistants, and may have removed to some other locality. The remaining 52 are registered in business, of whom I have a corrected list to present to the Council, which may result in finding others out of business, &c; those found to be still in default may then be proceeded against according to law.

I would call special attention to the fact that many of the mem-

bers, when sending their fees, complain of parties in the same place who are carrying on business and selling poisons in open violation of the Pharmacy Act, thus rendering themselves liable to prosecution, should the Council see fit to take legal proceedings against them.

During the last six months 22 new registrations have been made, the qualification papers being in each case satisfactory to the members of the Council resident in the city. Two applications have been refused, the applicants not having served the time required by the Act.

The number of renewals for the current year was 491; the total number of members in good standing, including of those who have passed the examination, is 532.

The discontinuance of the JOURNAL to the members who had not paid the registration fee for 1872, as my predecessor reported a year ago, has been a source of trouble, some of the JOURNALS being out of print, so that complete fyles could not be supplied to those who paid up their back fees. I make bold to suggest the advisability of reprinting some of the numbers out of print, or of which only some five or six copies may be on hand, as many members are wishing to get their volumes bound.

Referring to the financial management of the JOURNAL, I have to report with regret that I have made no more progress than did Mr. Rose, in fact no new advertisements of any account have been added.

If the subscription to the JOURNAL were reduced from $3 per annum to $2 I have no doubt many medical men and others might be induced to subscribe for it. At present 700 copies per month are printed at a cost of $57; if more were struck off they might be got for about $3 per 100 for the excess.

Your Registrar has adopted a new plan of mailing the JOURNAL to the members, instead of sending each one separately at a cost of one cent, they are sent in parcels to each town, in accordance with the Post Office Act, at the rate of 1 cent per 4 oz., thereby effecting a saving in postage of from $25 to $30 per annum.

The receipts for the JOURNAL account for the past six months have been as follows:

DR.

For advertising	$190 00
Subscriptions and Back Numbers	14 75
	$204 75

CR.

By Treasurer	$204 75

Outstanding account, $674.34, about some of which there seems to be some misunderstanding.

Respectfully submitted,

GEO. HODGETTS, *Registrar.*

Moved by Mr. Love, seconded by Mr. Brent, that the report of the Registrar be received and adopted. Carried.

The list of names of defaulters was read, and it was found that some of them had retired from business, thus reducing the list considerably.

The following letter from Mr. Saunders, Vice-President, was read :—

B. Lyman, Esq.

My Dear Sir,—I very much regret that I shall be unable to attend the meeting of the Council on Wednesday; other engagements will oblige me to stay at home. This will be the first time I have failed to put in an appearance, and I hope I shall be more favorably situated in future.

I was present at the last meeting of the American Pharmaceutical Association at Richmond. In consequence of your absence in Montreal at that time, I did not write for credentials, but on arrival at Richmond the Committee on Credentials accepted the explanation I gave, and recognized me as a representative from the Ontario College of Pharmacy. So our College was represented at that annual gathering. Being the first meeting the Association had ever held south of Washington, it attracted much interest, and an unusually large number of members were present. The druggists of Richmond, and the inhabitants generally, did their best to make our stay as pleasant as possible, so that all the members enjoyed themselves thoroughly. A large number of papers were read at the meetings, and during the intervals every facility was afforded the members for visiting every place of interest in the neighbourhood. For this purpose a large number of carriages were in waiting at all hours of the day to take the visitors free of all charge wherever they might feel disposed to go. Your representative was honored by being elected first Vice-President of the Association—an honour never before conferred on any one resident outside of the United States. While thanking the Association personally, your representative did not fail to recognize in this a kindly acknowledgement of their esteem towards our Ontario College of Pharmacy.

With kindest regards to my fellow members of the Council,

Yours very truly,

Wm. Saunders.

Office, Dundas Street, London, Feb. 3, 1874.

Moved by Mr. Bickle, seconded by Mr. Shapter,

Resolved, That the letter of W. Saunders, of London, Vice-President, be received, and we regret his absence. His report of his visit to Richmond, at the late meeting of the American Pharmaceutical Association, is received with pleasure; and, while thankful for his able representation of our College, we are gratified

with the recognition of Mr. Saunders' worth, and the good feeling shown to him and this College, in the honour conferred on him by his election to the position of 1st Vice-President. Carried.

A petition of appeal was read from Mr. A. W. Bleasdell, of Trenton, against the decision of the Registrar, in refusing to register the appellant, on the ground that he had not served the necessary time as required by the Pharmacy Act. After reading the certificates and correspondence on the subject, it was moved by Mr. Harvey, seconded by Mr. Love, That the application be refused, Mr. Bleasdell not having served four years, as required by sections 4 and 17 of the Act. Carried.

Mr. Parker, of Owen Sound, tendered, through Mr. Yeomans, his resignation as member of the Council, on account of other business requiring his time and attention. He named Mr. Paffard, of Niagara, as his successor. After some conversation on the subject it was moved by Mr. Yeomans, seconded by Mr. Shapter, That Mr. Paffard be elected to the Council in the place of Mr. Parker. Carried.

Mr. Shapter also resigned his position at the Council Board, in consequence of indisposition, and moved, seconded by Mr. Miller, That Mr. Gregory of Lindsay be elected as his successor. Carried.

Mr. Yeomans gave notice of motion for the following new By-law:

That in view of the existence of certain conflicting resolutions regarding the constitution and conduct of the Board of Examiners, and the manner of conducting the examination, and of estimating ratings thereof, it is necessary that a by-law be introduced reconciling, consolidating and permanently settling the matter. It is therefore resolved that

"The Board of Examiners shall consist of three persons appointed by the Council. In the event of any vacancy occuring, the remaining members of the Board shall have the power of electing a suitable person to fill such vacancy. Each examiner shall examine in one or more subjects, and shall be responsible for the estimation of the value of the answers given on such subjects. The subjects for examination shall be *Chemistry*, on which ten questions shall be given, each question having the value of 2·0; *Pharmacy*, ten questions of like value; *Materia Medica*, ten questions of like value; *Prescriptions*, ten questions of like value; *Botany*, ten questions having a value of 1·5 each; *Practical Dispensing*, a practical and verbal examination, having a total value of 5·0, making in all the total number of marks 100·0.

There being no other business, it was moved by Mr. Harvey, seconded by Mr. Miller that the Council adjourn.

The Council adjourned.

GEO. HODGETTS.
Secretary.

Books and Pamphlets.

NOTES ON PHARMACOPŒIAL PREPARATIONS, B. P., 1867. Specially arranged for the use of Students preparing for examination. By W. HANDSELL GRIFFITHS, Ph. D., L.R.C.P.E., Librarian Royal College of Surgeons in Ireland, etc., etc. London: Bailliere, Tindall, and Cox, 1873, p. 110.

The object of this little work is sufficiently set forth in the title; it is especially designed to *facilitate* the study of Pharmacy. The concise and systematic arrangement of the subjects embraced, and the clear, short definitions and details will go far to accomplish this end. All the preparations of the *Pharmacopœia* are, as far as possible, classified and tabulated; a short description of the manner of preparation, the proportions or percentage of the active ingredients, and the test for each product being given.

The "Appendix" contains an abstract of the method of preparing the officinal test solutions for volumetric analysis, and gives, in outline, an explanation of their use, together with the characteristics of the test solutions which are employed for qualitative examinations.

We are not acquainted with any method by which a student can more easily obtain and be enabled to retain a knowledge of the contents of the Pharmacopœia, than by a careful study of Dr. Griffiths' Notes; and we have great pleasure in recommending the work to our Canadian students.

TABLES FOR SIMPLE QUALITATIVE ANALYSIS, by H. H. CROFT. Toronto: Copp, Clark & Co., 1874.

These tables are comprised in a pamphlet of about twenty pages, and are intended as a guide for laboratory practice in elementary chemical analysis. They are made to apply exclusively to simple salts, consisting of one base and one acid; or of the acids and bases uncombined. The arrangement of the tables is such as to afford the greatest facility for reference; while the entire set of tables, taken in the order in which they are given, form as good a system of practice as can be devised. In arranging these details, and putting them together in their present handy form, Professor Croft has performed a labor from which his own pupils, as well as students generally, cannot fail to derive much benefit.

FORMULAS FOR ELIXIRS, adopted by the American Pharmaceutical Association, at its twenty-first annual meeting, held at Richmond, Virginia, September, 1873, and recommended to be used by Physicians and Pharmacists.

This pamphlet is issued in accordance with a resolution of the American Pharmaceutical Association, which decided that if physicians must prescribe elixirs, or druggists dispense them, it is necessary that they should be prepared according to some authorized standard, such as that now furnished. The report is, therefore, given with the expressed hope that Medical and Pharmaceutical Societies throughout the United States, and perhaps Canada, "may deem it expedient to take such action in this matter as may tend to secure this much-desired uniformity."

It must not be supposed that the Committee to whom the getting up of this report was entrusted had any strong predilections towards the elixir business. We judge that the task was one of duty rather than of love; but nevertheless, the work has not been less faithfully or scrupulously performed, and if the little pamphlet before us is instrumental in mitigating to any extent the elixir nuisance, or of reducing to any degree of uniformity the heterogeneous preparations with which the market has been flooded, we are sure the Committee will have good grounds for congratulation.

The various formulas given will be found in another part of the Journal, and, while giving them publicity, we may say that the source from which they emanate justifies their being received with confidence.

NEW EDITION OF THE BRITISH PHARMACOPŒIA.

From our English exchanges we learn that a new edition of this work is so far advanced as to be in type, and will shortly be issued. Our readers have been apprised of the reasons which led to this undertaking. The "Addendum" or appendix, which is to embrace the list of new remedies, will be comprised in about twenty-four pages, and will render officinal the following preparations:—Tinct. aurantii recentis; tinct. ipecac; succus belladonna and hyoscyami; several new suppositories; a compound powder of elaterium; a new pill of jalap; pepsin; phosphorated oil; mustard paper; a solution of morphia for hypodermic injection; solution of citrate of magnesia; fluid extract of liquorice; oxide of bismuth; hypophosphite of soda; and nitrate of amyl. We are not aware that this new edition of the Pharmacopœia will differ from that now

in use, except in regard to the appendix, although it may be possible that errors in the body of the work may be corrected. A number of these errors relate to stated specific gravities, and have been pointed out by British writers as well as by ourselves.

CLINICAL REPORTS OF SEVENTEEN CASES OF ACCIDENTAL POISONING BY WINE OF COLCHICUM. By George W. Major, B.A., M.D., etc. Read before the Medico-Chirurgical Society of Montreal.

THE TENNESSEE PHARMACAL GAZETTE, *an Eclectic Monthly of Practical Pharmacy.*

This is the title of a new journal published under the auspices of the Tennessee College of Pharmacy, and the Tennessee Pharmaceutical Association. It is edited by Benj. Lillard, Phar. D., and Thos. Black, M.D., both gentlemen being connected with the staff of the college above named. The number before us contains a number of interesting papers, and considerable space is also devoted to matters relating to the association of which this journal is the organ. The *Gazette* has our best wishes.

SIXTH ANNUAL REPORT OF THE TORONTO EYE AND EAR DISPENSARY; containing constitution and of Act of Incorporation.

Varieties.

IMPROVED TEST FOR SACCHARINE URINE.—Dr. Seegen's modification of Trommer's test consists in the preliminary filtration of urine through animal charcoal. This removes the uric acid and other matters which interfere with the action of Trommer's test, and leaves a colorless fluid, which is highly sensitive to the test. It is a delicate qualitative, but not a quantitative method.—*British Medical Journal.*

SUGAR IN LEAVES.—M. A. Petit has, on a former occasion, stated that the leaves of the grape vine contain from 20 to 30 grams of glucose and, 13 to 16 grams of tartaric acid per kilogram. The author now states that the greatest portion of the acid is in the state of cream of tartar, about one-third only being uncombined, and that the sugar consists of cane and invert sugar. On treating the liquid repeatedly with animal charcoal, it is readily obtained colorless and free from tannin; for one kilogram of leaves the author obtained then 9·20 grm. cane sugar and 26·55 grm. glucose; by another experiment 15·80 grm. cane sugar and 17·49 grm. glucose. The leaves of the cherry and peach likewise contain a mixture of the two sugars; from one kilogram of the latter 33 grams of cane sugar and 12 grams of glucose were obtained.—*Journ. de Pharm. et de Chim.*, 1874, *Jan.*, 41. *in Am. Journ. Pharm.*