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On Excipients for Pills.*

BY T. H. HUSTWICK.

After reading Mr. Savage's paper on this subject, I must say I was rather astonished at his novel suggestion for making creasote pills, and it occurred to me, that a patient taking these wax pills might find it necessary to take a dose of turpentine as well, to ensure their solution in the stomach,—neither a very pleasant nor practicable idea. It has fallen to my lot to have had considerable experience in the making of creasote pills, and I have no hesitation in saying, that Mr. Savage's plan is not the best; which assertion, I think, will be fully borne out by my statements.

I have carefully prepared the formulae marked A. C. E. F. M. Nos. 4 and 5, they being the principal ones and dissimilar. I will now start with the fact before me that crumb of bread is the best excipient for these pills, excepting in such cases as the formula F, they requiring a different treatment. Liquorice powder is about the last thing I should have thought of using as an absorbent of creasote or moisture generally, there being several others very superior,—about the best of all being lycopodium.

- A.—Creasoti..... gtt. i.
- Pil. Sapon. Co..... gr. iiss.
- Miccæ Panis..... gr. iss.
- Lycopod..... gr. i.
- Ft. Pil. i..... m vj.

Instead of being 6 to 7 grains, and no doubt difficult to roll, I have here six very nice pills of the ordinary 5-grain size, rolled out beautifully, and retaining every particle of creasote.

- C.—Creasoti..... gtt. iij.
- Miccæ Panis..... gr. iij.
- Lycopod..... gr. i.
- Pastæ Tragac..... q. s.
- Ft. Pil. i..... m vj.

Make up very nicely: 3 grains of bread quite sufficient, and tragacanth paste enough to make the oil and bread thoroughly homogeneous; this being too soft to roll, lycopodium was added, they then rolled out tolerably well, and are very little larger than the ordinary 5-grain size, with all the creasote retained.

- E.—Creasoti..... gtt. ij.
- Saponis..... gr. i.
- Miccæ Panis..... gr. iij.
- P. Tragac. Co..... gr. iss.
- Ft. Pil. i..... m vj.

Being much too soft after mixing the three first, pulv. tragac. co. was added with the best effect; they rolled out well, are a very clean pill, but larger than any of the others, being the size of a large 5-grain pill. Creasote completely retained.

- F.—Creasoti..... gtt. iij.
- Pil. Sapon. Co..... gr. v.
- Lycopod..... gr. i.
- Pulv. Tragac. Co..... gr. i.
- Ft. Pil. ij..... m vj.

The two first making a semi-fluid mass, and lycopodium being not absorbent enough, I added pulv. tragac. co. again with good effect, as it made a good mass, rolled out well, and the two pills are of the usual 4½ grain size, against those of Mr. S. 7½ grains each. Creasote completely retained.

- M.—Ferri Sulph..... gr. i.
- Pil. Gall. Co..... gr. iiss.
- Ol. Menthe..... gtt. i.
- Lycopod..... gr. i.
- Ft. Pil. i..... m vj.

The first three made a mass too soft to roll; the lycopodium being added, it was then in a fit state to roll; makes ordinary-sized pills.

- No. 4.—Ol. Croton..... gtt. i.
- Pil. Sapon. Co..... gr. ij.
- Miccæ Panis..... gr. i.
- Ft. Pil. i..... m vj.

Made up very easily into small-sized pills.

- No. 5.—Ol. Croton..... gtt. i.
- Pulv. Opii..... gr. ʒ.
- Miccæ Panis..... gr. iss.
- Pastæ Tragac..... q. s.
- Ft. Pil. i..... m vj.

Made rather soft pills, but as they have kept their shape there is no reason to alter the formula.

"If it is necessary to give creasote in pills at all," why use liquorice powder, which is objectionable on account of its bulk, and wax, which is equally so because of its insolubility, when such simple aids as bread, tragacanth paste, and lycopodium, are to be found in every druggist's shop? The rationale of the process is as follows:—The bread gives stamina and bulk to the pills, while the paste gives adhesiveness, but as this is sometimes gained at the expense of consistency, it is then necessary to add an absorbent, as lycopodium, and this is a better absorbent than tragacanth powder, by reason of its not causing the pill to get very hard as the latter does. In my opinion, the compound tragacanth powder is to be preferred before the simple.

A word now as to tragacanth paste, which is the ordinary gum paste used for sticking on labels in druggist's shops. As an excipient for pills it is really A 1, the most refractory masses, whether resinous, oleaginous or otherwise being rendered quite docile,—that is, of course, if not too soft in the first instance. Dr. Redwood, in his 'Practical Pharmacy,' says, "the effect in some cases of a judiciously selected excipient is quite surprising." So it appears from some of the examples I have given.

While on this subject there is one form of pill which frequently proves a puzzler. It is useless in trying to make 5 grains of powdered camphor into a pill by means of conf. roses, treacle, gum paste, etc., so as to be of a swallowable size; but a dozen of such may be made quickly and admirably by the aid of three or four drops of castor oil, and a drop of sp. v. r. if disposed to crumble. It is but a step from pills to pill pounce, and in the work of Dr. Redwood, before-quoted, it is stated that lycopodium is but little used in this country; it ought to be better known, as it deserves all the praise there awarded to it, and even more; and in my opinion, a box of pills nicely finished and rolled in lycopodium, looks much handsomer than when silvered,—the pills look like what they are, and not like silver bullets.

I may add, that creasote pills, made as here directed, take the silver leaf, and that I have frequently silvered them. I would also mention, that in the formulae here given, I have used drops instead of minims, believing that in such very small quantities the drop represents the minimum near enough for all practical purposes, especially when we consider the amount that is unavoidably lost by adhering to the side of the measure.

9, West Derby Street, Liverpool.

On a New Liquor Ergotæ.

BY EDWARD LONG, M. R. C. S.*

In some correspondence with Dr. Waring Curran, on therapeutics, principally in connection with pharmacy, he mentioned to me that he had been for a long time studying the actions and uses of ergot of rye, and had in practice experienced much inconvenience from being compelled to rely solely on the fresh powder made into infusion extemporaneously in the ordinary way, for want of any other reliable preparation of it. The same idea must have frequently occurred to every man in midwifery practice, as it must be unpleasant and undesirable for a physician to have to turn pharmacist at the patient's house, perhaps in the sick room, not to mention the delay, the more so as the female portion of the community have become quite familiar with the whole process, with the result that instead of ergot becoming thereby a popular remedy, it is quite the reverse. They don't like it any sense; it is disagreeable and nauseous to the taste, and they have a prejudice against it, from hearing that it is a very active, and it may be dangerous, drug in unskilful hands, no doubt exaggerating, after the manner of the sex, all they have heard.

It would, therefore, obviously be a great desideratum if a medical man could carry with him a condensed preparation of it, which would be neither objectionable in taste or appearance, and at the same time be perfectly reliable and keep well.

Being anxious to advance the cause of therapeutics ever so little, and at the same time gratify my friend, Dr. Waring Curran, I turned my attention to the subject, and trust the result will be satisfactory to the profession.

I believe the general feeling and experience is, that the only known reliable preparation of this substance, when its most characteristic effect on the uterus is required quickly and surely, is the extemporaneous infusion alluded to, which proves one thing, that water or an aqueous fluid is the best menstruum to extract its active principles. A spirituous tincture, also, is believed to have some virtue, and of the extract got by evaporating it the same may be said. The official Extract, (Ergotæ Liquidum,) of which much was expected, has disappointed many. The ethereal tincture and oil may be dismissed entirely—at least I infer so—as they have fallen out of use in Dublin.

This is about all that is known of it, in point of fact; the published analyses do not throw any light on its active principle, and merely show that its efficacy depends on the mode of arrangement and combination of its elements, without defining what the resultant is, as we so frequently see in the analysis of organic substances. As these analyses have been made by very able chemists, it is not likely that any further efforts in that direction will add to our stock of knowledge.

I accordingly decided to act on the information supplied by medical observation and experience, taking the infusion as the best of all. Glycerine, I thought, would extract all that is soluble in water, and from its well-known preservative properties, retain it in an active state. I therefore digested ergot, freshly powdered, in glycerine for ten days, frequently shaking it. On straining this off, it

* From the Chemist and Druggist.

* From the Pharmaceutical Journal, London.

was found to be of deep purplish colour, as thick as treacle nearly, and the marc quite soft and pulpy. This marc was then digested in spirit for ten days more, pressed off and filtered, the resulting tincture distilled off till it became of the consistence of syrup, and then added to the previous solution.

I intended weighing the residuum after each process of digestion, but through an oversight the spirit was added before I could test the solvent properties of each menstruum. I shall, however, do so carefully in future experiments.

The "liquid extract" formed of these combined solutions I find to be exactly equal to the volume of glycerine employed, and each drachm represents half a drachm of powdered ergot, and may be considered a dose.

By this process I believe all the active properties of ergot should be obtained in a very desirable form; the liquid is sweet, concentrated, and should be permanent. I would suggest that it be kept in graduated or drachm (3) bottles, to avoid measuring under unfavorable circumstances.

My object in writing this paper is, to place a preparation of an indispensable medicine in the hands of medical practitioners, with some confidence that it will not disappoint their reasonable expectations. Should it realise these expectations there will be little difficulty in making it quite palatable if there be not some objection to doing so, lest from its resemblance to treacle, accidents might happen.

Several medical friends to whom I communicated my idea, have tried and are trying it but it is obvious that a more extended trial than any obtainable by such means is necessary to establish its therapeutic value.

As I don't practice I have nothing to add that would be of value. I have omitted to enter into any chemical details, as they would be wearisome and little edifying to the majority of your readers, who have little time for them; but I have thought it right to let them know what they were invited to adopt, instead of appealing to them by a livery advertisement, as is the fashion now-a-days.

The Atomic Controversy.*

It is one of the most remarkable circumstances in the history of men, that they should in all times have sought the solution of human problems in the heavens rather than upon the earth. Sixty years ago, a memorable instance of this truth occurred, when Dalton borrowed from the stars an explanation of the fundamental phenomena of chemical combination. Carbon and oxygen unite in a certain proportion to form "carbonic acid," and this proportion is found to be invariable, no matter from what source the compound may have been prepared. But carbon and oxygen form one other combination, namely, "carbonic oxide"—the gas whose delicate blue flame we often see in our fires. Carbonic oxide may be obtained from many sources; but, like carbonic acid, its composition is always exactly the same. These two bodies, then, illustrate the law of Definite Proportions. But Dalton went a step further. He found that, for the same weight of carbon, the amount of oxygen in "carbonic acid" was double that which exists in carbonic oxide. Several similar instances

were found of two elements forming compounds in which, while the weight of the one remained constant, the other doubled, trebled or quadrupled itself. Hence the law of Multiple Proportions. The question was—in fact, the question is—how to account for these laws. Dalton soon persuaded himself that matter was made up of very small particles or minima materia, not by any possibility to be reduced to a smaller magnitude. Matter could not be divisible without limit; there must be a barrier somewhere. No doubt, as a chemist, he would have rejected the famous couplet—

"Big ideas have little fleas, upon their backs, to bite 'em;
And little fleas have smaller fleas, and so of larger 'em."

"Let the divisions be ever so minute," he said, "the number of particles must be finite; just as in a given space of the universe, the number of stars and planets cannot be infinite. We might as well attempt to introduce a new planet into the solar system, or to annihilate one already in existence, as to create or destroy a particle of hydrogen." All substances, then, are composed of atoms; and these attract each other, but at the same time keep their distance, just as is the case with the heavenly bodies. The atoms of one compound do not resemble those of another in weight, or size, or mutually gravitating power. But as they are indivisible, it is between them that we must conceive all chemical action to take place; and an atom of any particular kind must always have the same weight. The atom of carbon weighs 5; the atom of oxygen weighs 7. Carbonic acid, containing one of each, must therefore be invariably constituted of 5 carbon, and 7 oxygen: carbonic acid must in like manner contain 5 carbon and 14 oxygen. Here, then, Dalton not only states that he has accounted for the two laws we have mentioned by making a single assumption; but he evidently intends his theory to be used as a criterion, or control in all future analytical results, and already views it as the birth-place of chemical enterprise.

Such, and so great, was the atomic theory of Dalton; founded, certainly, on erroneous numbers, but containing in itself the germ of their correction; aspiring in the command in innumerable conquests, and setting itself for the rise or fall of the chemical spirit.

It is hardly necessary to make any detailed review of the history of the atomic theory. Berzelius made it a starting-point for researches which, on the whole, have been unsurpassed in their practical importance, and engrafted upon it his celebrated electrical doctrine. Davy and Faraday refused to admit it; Laurent and Gerhardt accepted it doubtfully, or in a much modified form. Henry declared that it did not rest on an inductive basis. There can be no doubt, however, that the atomic theory has been accepted by the majority of chemists, as may be seen on even a cursory inspection of the current literature of their science. Our present intention is to give such a summary of the atomic question as may be serviceable to those who take an interest in the discussion at the Chemical Society on Thursday last.

The modern supporters of the atomic theory agree with Dalton in the fundamental suppositions we have given above; but assert that they have a much stronger case. The phenomena of gaseous combination and specific heat have indeed changed the numerical aspect of the theory, but not its substance. The simplicity of all the results we have ac-

cumulated with respect to combining proportions is itself a great argument for the existence of atoms. They all, for example, have the same capacity for heat; they all, when in the gaseous state, have a volume which is an even multiple of that of one part by weight of hydrogen. But bodies in the free or uncombined state—such, in fact, as we see them—more commonly consist of many clusters of atoms (molecules) than of simple atoms. These molecules are determined by the fact that when in the gaseous state they all have the same volume. Again, select a series of chemical equations, in which water is formed, and eliminate between them so as to obtain the smallest proportion of water, taking part in the transformation they represent. It will be found that the number is 18; which necessarily involves the supposition that the oxygen (16) in water (18) is an indivisible quantity. To put this last point another way: hydrochloric acid, if treated with soda, no matter in what amount only forms one compound (common salt). Now we know that the action in this case consists in the exchange of hydrogen for sodium. But if hydrogen were infinitely divisible, we ought to be able to effect an inexhaustible number of such exchanges, and produce an interminable variety of compounds of hydrogen, sodium, and chlorine; hydrochloric acid being the limit on the one side, and common salt (sodic chloride) terminating the other. No such phenomenon occurs; and, since matter must be infinitely or finitely divisible, and has been thus proved not to be the former, it must be the latter. Atoms, therefore, really exist; and chemical combinations is inconsistent with any other supposition. Those who hold the contrary opinion are bound to produce an alternative theory, which shall explain the facts in some better way.

Now let us hear the plaintiff in reply.

The atomic theory has undoubtedly been of great service to science, since the laws of definite and multiple proportions would probably not have received the attention they deserve, but for being stated in terms of that theory. Yet we must discriminate between these laws, which are the simple expression of experimental facts, and the assumption of atoms, which preceded them historically, and therefore has no necessary connection with them. For it was the Greek atomic theory which Dalton revived. Nor has any substance yet been produced by the atomists, which we cannot find means to divide. If, moreover, we have no alternative but to admit the infinite divisibility of matter, even that is consistent with the simple ratios in which bodies combine; for two or more infinities may have a finite ratio. Therefore, the observed simplicity, if used as an argument, cuts both ways. Possibly we are mistaken in connecting the ideas of matter and division at all; at any rate, the connection has never been justified by the opposite side. Again, admitting the argument based on the formation of common salt, the atomic theory does not tell us why only one-third of the hydrogen in tartaric acid can be exchanged for sodium; why, indeed, only a fraction of the hydrogen in most organic substances can be so exchanged. Yet, the explanation of the one fact, when discovered, will evidently include that of the other. On the whole, it appears that the atomic theory demands from us a belief in the existence of a limit to division. No such limit has been

exhibited to our senses; and the facts themselves do not raise the idea of a limit, which Dalton really borrowed from philosophy. The apparent simplicity of chemical union we do not profess to explain, but to be waiting for any experimental interpretation that may arise. The atomists, in bringing forward their theory, are bound to establish it, and with them lies the *onus probandi*.

The above are a few broad outlines of the existing aspect of atomic controversy, and may somewhat assist in forming an estimate of it. The general theoretical tone of the discussion last Thursday must have surprised most who were present. Our own position is necessarily an impartial one; but it will probably be agreed that between the contending parties there is a gulf, deeper and wider than at first appears, and perhaps unprovided with a bridge.

Preparation and Constitution of Hyoscyamine.*

The author, M. Thorey, divides this paper into three sections, respectively headed—On the preparation of hyoscyamine; the constitution of that substance; and its relation to the quantity of nitre the plant which yields it contains. The preparation of this alkaloid is described by the author with full details, as given by the very large number of chemists and pharmacutists who have worked on this subject. Among the various methods of preparation of this alkaloid devised by the author, we notice the following:—50 grms. of *Semina hyoscyami nigri* (common henbane) are ground to powder, exhausted with 150 grms. of alcohol (85 per cent. strength), and the alcoholic tincture concentrated by distillation, one-half of the bulk of the alcohol being distilled off. The residue left in the retort is next mixed with water, filtered, reduced, by evaporation, to about 30 grms., and then again filtered. The filtrate is mixed with a solution of caustic potassa, after having been previously heated to 40°, next treated with chloroform, the chloroformic solution washed with water, until that fluid runs off quite clear, and the solution thus obtained evaporated to dryness, leaving 0.835 gm. of yellowish mass smelling like tobacco. This mass is re-dissolved in weak hydro-chloric acid, filtered, carefully saturated with caustic potassa, again treated with chloroform, this solution again washed with water, and, at last, left to spontaneous evaporation over sulphuric acid, yields well-crystallized hyoscyamine. The alkaloid thus obtained is a quite pure, colorless substance, of bitter taste, readily soluble in dilute alcohol, in ether and chloroform, in benzene and amylic alcohol, and dilute acids. Among its characteristic chemical reactions, belongs a red amorphous precipitate, with the double iodide of bismuth and potassium; a yellow precipitate, gradually verging on blue, when left standing with phospho-molybdate of soda; a flocculent yellow precipitate with chloride of gold, which, after a time, becomes crystalline; a deep kermes red coloration with aqueous solution of iodine; and an amorphous yellowish gray precipitate with tannic acid. During his researches on this subject, the author has discovered that henbane contains, in addition to hyoscyamine and salt-petre, a peculiar resinous substance, and an

acid. The resinous material is remarkable, since it contains nitrogen, its per centual composition being C, 67.67; H, 8.772; N, 3.508; O, 20.05. As regards the constitution of hyoscyamine, the author says it is, at present, not easily possible to control the statement made by M. Kletzinsky, that this alkaloid should be the nitrile of santonate of ammonia. The question, What relation the hyoscyamine bears to the quantity of salt-petre contained in the plant which yields it? is treated at great length; but it is difficult to give any brief *résumé* of these researches, which are recorded in several tabulated forms full of figures. All parts of the henbane contain a considerable quantity of nitrate of potassa; and it appears, that, while that quantity varies at various periods of the growth of the plant, so, also, varies the quantity of hyoscyamine contained in the various parts of the plant. The quantity of hyoscyamine contained in the leaves of the plant dried at 110°, and taken before the blooming period, varies from 0.023 to 0.208 per cent. The seeds contain from 0.048 to 0.160 per cent. of hyoscyamine.—*Pharm. Zeitsch. f. Russ.*, in *Chem. News*.

How to Make a Cheap Microscope.

The *Scientific American*, in describing a newly-invented simple microscope, gives the following directions for the manufacture of globule magnifiers:—

Globules of high power were first made and used by Robert Hooke, an English microscopist of the seventeenth century. These when well made show objects remarkably well. They may be made to give enormous powers, and that, too, at a cost of only a few cents. It is not a difficult matter to obtain with those a power of 1,000 diameters, or even more. The field of view is rather small and its extent is the same for all powers. This is because it is limited by the pupil of the eye, as may be readily proved by a simple experiment. Looking through a globule lens, arrange the mirror so that just sufficient light is given to make the field visible. Then suddenly turn the mirror so as to illuminate the field with a strong light, when it will be seen to contract. With the larger globules the light given by the flat mirror is sufficient, but when globules having a focus less than 1-40th or 1-50th of an inch are used a concave mirror will be necessary. Any person may, after a little practice, be able to make and mount his own globules.

The globules should be made of French plate or other very pure and clear glass. The glass must be cut into a narrow strip, carefully cleaned, and then drawn out into threads in the flame of a spirit lamp. The threads should be made of different thicknesses and carefully kept on a clean plate. The wick of the lamp should then be pushed down until the flame is not more than half an inch long. One end of a thread is now to be held in the flame, when it will melt and run up into a globule. When the globule is seen to be perfectly spherical it must be withdrawn, held a little while to cool, broken from the thread, and put aside until wanted for mounting. The larger globules are the most difficult to make, the fine threads melt and run up into perfect globules almost as soon as thrust in the flame. The hole in the disk for the globules must be burnt in and then

cleaned by rubbing it with a piece of wood. Care must be taken that the inside of the hole is made dark in order to prevent all reflection of light. A needle will be convenient for burning in the smaller holes. The globule is then to be carefully placed in a hole with the broken end of the thread to one side, and may then be fastened securely by pressing it in a little. If desired, other forms of magnifiers, such as ordinary double convex lenses, Wollaston doublets, triplets, and Coddington lenses may be used.

For the examination of infusoria and vegetable tissues, and such other objects as are or can be made transparent, these globules have been found to answer very well indeed. It is for the use of globules in such examinations that the microscope here described was devised. It was not intended for, and cannot conveniently be used as a dissecting microscope. By means of a globule magnifying over 500 diameters the writer has been able to perceive clearly the hexagonal markings on the most common diatoms found in the "Richmond earth." He has examined live diatoms and animalcules whose movements he has been able to follow, though not without difficulty when they were rapid. The reader will thus get some idea of what may be accomplished by such simple things as globules of glass.

Preparation of Court Plaster.

Bruise a sufficient quantity of isinglass, and let it soak in a little warm water for four-and-twenty hours; expose it to heat over the fire till the greater part of the water is dissipated, and supply its place by proof spirits of wine, which will combine with the isinglass. Strain the whole through a piece of open linen, taking care that the consistency of the mixture shall be such that, when cool, it may form a trembling jelly.

Extend the piece of black silk, of which you propose making your plaster, on a wooden frame, and fix it in that position by means of tacks or pack-thread. Then apply the isinglass (after it has been rendered liquid by a gentle heat) to the silk with a brush of fine hair (badger's is the best). As soon as this first coating is dried, which will not be long, apply a second; and afterwards, if you wish the article to be very superior, a third. When the whole is dry, cover it with two or three coatings of the balsam of Peru.

This is the genuine court plaster. It is pliable, and never breaks, which is far from being the case with many of the spurious articles which are sold under the name. Indeed, this commodity is very frequently adulterated. A kind of plaster, with a very thick and brittle covering, is often sold for it. The manufacturers of this, instead of isinglass, use common glue which is much cheaper; and cover the whole with spirit varnish, instead of balsam of Peru. This plaster cracks, and has none of the balsamic smell by which the genuine court plaster is distinguished. Another method of detecting the adulteration is to moisten it with your tongue on the side opposite to that which is varnished; and, if the plaster be genuine, it will adhere exceedingly well. The adulterated plaster is too hard for this; it will not stick, unless you moisten it on the varnished side.

* *Pharm. Zeitsch. f. Russ.* in *Chemical News*.

CANADIAN PHARMACEUTICAL SOCIETY.

PRESIDENT, - - - - - WM. ELLIOT, Esq.

The regular meetings of the Society take place on the FIRST FRIDAY evening of each month, at the Mechanics' Institute, when, after the transaction of business, there is a paper read, or discussion engaged in, upon subjects of interest and value to the members.

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HENRY J. ROSE, Secretary.

**THE CANADIAN
 Pharmaceutical Journal.**

E. B. SHUTTLEWORTH, EDITOR.

TORONTO, ONT., JANUARY, 1870

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

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

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

"EDITOR CANADIAN PHARMACEUTICAL JOURNAL,
 TORONTO."

THE PHARMACY BILL.

We must confess to considerable disappointment in announcing the failure of the Pharmacy Act in obtaining a third reading during the late session of the Legislature. Despite the most strenuous efforts on the part of the promoters of the measure, it was found utterly impossible to introduce it, on account of the great pressure of more important and necessitous business, so that, in common with a large number of other bills, it has been laid over until the next meeting of parliament. The Select Committee appointed by the House to consider the Act, met on several occasions, and a number of alterations and additions were made. These have been embodied in an amended bill, which, we may say, was printed and distributed before the close of the session.

As some of our readers may not be familiar with the original form of the bill, we shall not allude specially to the amendments, but

append a brief synopsis of the measure as it now stands.

The Act commences by declaring it unlawful for any except registered chemists, to keep open shop for retailing, dispensing or compounding poisons; or to sell any of the articles enumerated in a schedule attached to the Act; or to assume the title "Chemist and Druggist," "Apothecary," "Pharmacist," &c.

Substances named in the schedule (A) referred to are deemed to be poisons within the meaning of the Act, and the Lieut.-Governor may at any time add to their number by giving one month's notice in the *Ontario Gazette*. The first part of the list comprises the most important poisonous substances, as atropine, morphine, strychnine, and the like. These can only be sold by registered chemists, to those with whom they are personally acquainted, or to whom they may have been introduced by an acquaintance: and the date of the sale, the name and address of the purchaser, the name and quantity of the article sold, the purpose for which it is required, must be entered in a book, and attested by the signature of the purchaser.

Sections four to seven relate to the formation of "The Ontario College of Pharmacy." Persons in business at the time of the passing of the Act, or those who have served an apprenticeship of three years, and served in the capacity of assistant for one year, at the time of the passing of the Act, may, upon payment of a fee of four dollars, be enrolled as members. Apprentices may become associates of the College on the payment of a fee of two dollars; and, on examination, may be enrolled as members.

A Provisional Council, consisting of thirteen members, are appointed to act as directors of the College, until the first election, which is to take place in the July next succeeding the passing of the Act; afterwards, elections are to take place every two years. The Council are to have power to grant certificates of competency, and for this purpose are to hold at least two sittings a year. Examinations may be conducted by the Council, or persons appointed by them.

The Council, at their first meeting, are to elect from their own number, a president, vice-president, and such other officers as may be deemed necessary; and shall appoint a registrar, whose duty it shall be to make and keep a correct register of those persons entitled to keep open shop. This list is to be published annually, on or before the fifteenth day of June.

All persons in business, as principals, at the time of the passing of the Act, and also those who have served an apprenticeship of three years, and who have acted in the capa-

city of assistant for at least one year, are entitled to be registered, without examination, under the Act. Subsequently, registration can only be secured by passing an examination on such subjects as the Council may prescribe, when, in case the candidate is successful, a certificate of competency shall be granted under the corporate seal of the College of Pharmacy; and it shall be the duty of every chemist carrying on business on his own account to display his certificate in a conspicuous position in his place of business. But any registered chemist who may be in default of any fees due under the Act, shall not be entitled to any of the privileges which he would otherwise enjoy.

Registered chemists, or those in their employ, and no others, shall be allowed to dispense the prescriptions of regular medical practitioners; and any registered chemist may, on prescription, furnish to any patient any wine, spirit, or cordial for the use of such patient.

Any person selling any damaged or adulterated medicine shall affix to the package or bottle containing it a label, stating the fact.

All compounds named in the British Pharmacopoeia shall be prepared according to that authority, unless the College of Physicians and Surgeons of Ontario select another standard, or unless the label distinctly shows that the compound is not prepared according to the authorized formula.

The formula by which any proprietary or patent medicine is prepared must first be deposited with the Registrar of the College, and his license obtained, before the sale of such compound can be rendered legal.

Any person transgressing any of the provisions of the Act shall, for the first offence, incur a penalty of twenty dollars, and for every subsequent offence, fifty dollars; one moiety to go to the prosecutor, and the other to the public uses of the province.

The rights of Physicians and Surgeons, and Veterinary Surgeons, are reserved; nor does the Act interfere with the members of such professions supplying to their patients such medicines as they may require; nor does it prevent the supplying of poisons, or other articles, by wholesale dealers, to their customers.

The last clause provides that upon a resolution of the Council of the College being passed, declaring any person unfit to be on the register, by reason of an offence, or offences, committed against any of the provisions of the Act, the Lieutenant-Governor may direct that the name of the offender be erased from the register, and it shall be the duty of the Registrar to erase the same accordingly.

A GOOD SUGGESTION.

A late number of the *Pharmaceutical Journal* of London contains a paper by Mr. Schacht, of Bristol, on "Pharmaceutical Education in the Provinces," which, but for its decidedly local bearing, we should certainly transfer, entire, to our columns. We should like, however, to draw attention to an experiment in pharmaceutical education, made by the author of the paper, as it conveys a most useful lesson, which, if improved upon, would prove of incalculable benefit to our apprentices in Canada. The experiment is thus described by Mr. Schacht:—

"On the first Tuesday of last October I commenced a series of "Readings in Chemistry," and invited the attendance of the Assistants and Apprentices of my neighbourhood. Ten individuals, with more or less regularity, responded to my invitation. The book selected was Mr. Roscoe's 'Elementary Chemistry,' and the plan adopted was the following:—A portion, usually one of Mr. Roscoe's own chapters or lessons, was read by myself; the author's questions at the end of the book were then looked over, and each student was invited to prepare the answers in writing and bring them to the next reading. Our first business, then, at each meeting, was to go over these answers. I made that the opportunity to introduce any explanations of my own, unless specially questioned during the reading. By this method every point of importance was gone over three times,—first, at the original reading, then at home in writing out the answer, and again at the next meeting when the answer was reported. This was continued for the first three months twice a week and subsequently once a week, until the 1st of June, and so in eight months from the date of commencing we finished our book, with the following satisfactory result. An examination was held under the usual conditions. The candidates were ignorant of the questions intended to be proposed, and they answered them in writing without any reference to book, note, or individual."

The answers were forwarded to Prof. Attfield, Director of the Laboratory of the Pharmaceutical Society, who reported, in the most complimentary terms, on the ability displayed by some of the students; and in his letter to Mr. Schacht says: "I hope you will give publicity to your scheme, for I am convinced that, short of direct professorial instruction, and the actual performance of experiments, no method of learning is likely to be so successful; certainly, no method whatever is so practicable for men engaged in the practice of pharmacy during the greater part of the day. Not the least advantage of the system is the occasion it affords of free interchange of thought and feeling between the followers of a common calling."

From the above will be seen what may be accomplished by "a commonplace man"—as Mr. S. modestly expresses it—"under

commonplace circumstances;" and we would earnestly commend the plan to the consideration and imitation of principals in Canada. The facilities in this country for acquiring a proper training in the branches of science, involved in a pharmaceutical education, are of the most limited character; and even did such opportunities exist in our chief towns, not one in ten of our apprentices would be in a position to take advantage of them, by reason of the necessary expenditure of time and money. Here, however, we have a scheme which, by the exercise of a little enthusiasm and self-denial on the part of master chemists, might be carried into execution throughout the length and breadth of the land, with incalculable advantage.

The present time is an excellent one for commencing the "Readings;" and other subjects besides chemistry—as botany and materia medica—might be taken up; although, in the case of botany, it might be better to wait until the season is further advanced, when the collection of indigenous plants can be commenced, and thus additional pleasure and interest will be conferred upon this most delightful branch of study.

We trust that this suggestion will merit the notice it deserves, and that friends of the cause of education will take the matter in hand at once. We shall be glad to hear of and report progress, and by publishing any notices which may be required, will do all in our power to aid the enterprise.

WHAT TO STUDY:—IN ANSWER TO INQUIRING STUDENTS.

We have received numerous inquiries, from apprentices connected with the Society, as to what course of study they ought to pursue, in order to qualify themselves for the position which they expect, in future, to occupy, as chemists and druggists. Some of these inquiries are made on the supposition that certain qualifications will shortly be required by law, and that, in order to commence business, an examination will have to be passed, of a nature sufficiently rigorous to exclude those unfitted for their calling. We are well assured that such will be the case, and we hope and believe that the period is not far distant when a legal barrier will be erected, beyond which the uninitiated may not pass. In the meantime, however, our advice to our young friends is: Lose sight of all compulsory requirements; give honor and ambition a chance, by cherishing a love for the calling in which you are engaged, and resolving that you will earn the title of "Pharmaceutical Chemist" before you assume it; lose no opportunity for study; don't waste your evenings; keep a sharp eye on the manipulations of the day, and let nothing pass which you do not understand.

Thus will your daily work become a round of pleasure; and when, after the lapse of a few years, the time for examination comes round, you can step boldly forward and claim its honors as your right.

We feel we should be doing an injustice to a number of our young friends, if we allowed our readers to conclude that all the inquiries we have received were actuated by the dread of an examination. Such is, by no means, the case; the greater number belong to the right stamp, and were evidently prompted by right and laudable motives.

We purpose offering a few suggestions as to the course of study students ought to pursue; and though we are well aware that exterior helps, in the way of lectures and practical instruction, are of great advantage, yet, after all, by diligence and application, the self-taught student may render himself independent of such assistance. Let none feel discouraged because he may not happen to enjoy privileges of this nature. Many of our most eminent men have been self-taught men, and have attained a position amidst circumstances of the most adverse character.

A great deal of the success of the student will depend on the adoption and carrying out of a systematic method of study. A great fault is the attempting of too much at once. The result must be judged by the amount learned, and not the extent of the reading. Let no statement pass without thoroughly understanding it. By this means a habit of concentrating the mind will be acquired, which will render each succeeding difficulty of easier accomplishment. Impatience must be curbed, and a steady, plodding step maintained throughout. Let there be no skipping of disagreeable or dry subjects; no turning over of pages to see what is to come next. It is a much better plan to review than to anticipate; and the student will derive great benefit by making a retrospective examination of the previous day's lesson. The attempting of more than one branch of study at once will depend on the time at the disposal of the student. If the evening only can be employed in reading, one subject will be quite sufficient; if a portion of the day is allowed, another branch may be taken up. Chemistry and botany, or any other branches of somewhat diverse character, may be taken, with advantage, together, and in this way the mind will be relieved and refreshed.

If the student has not had the advantage of a classical education, it will be found necessary to devote some time to acquiring a knowledge of Latin. A thorough knowledge, although desirable, is not absolutely indispensable, as the terms employed in prescriptions are limited in number, and physicians seldom wander from the beaten track. Pareira's *Selecta e-Præscriptis*, which con-

tains all the terms and abbreviations used in prescriptions, with rules for the pronunciation of pharmaceutical terms, and a large amount of useful information of a similar character, will be found a most desirable aid. If the assistance of a friend, acquainted with the rudiments of the language, can be procured—and this is by no means difficult, even in the most remote districts—the student will be enabled to make much more rapid progress than when unaided. A few evenings with a friend of this kind, supplemented by home study, will familiarize the mind with the greater number of terms used, and the proper pronunciation can be acquired with more confidence and correctness than from written rules.

The study of Chemistry next claims attention. This science is, in fact, the chief corner stone of pharmaceutical knowledge. A druggist without a knowledge of chemistry is like a mariner unacquainted with the art of navigation, who, by dint of a multiplicity of directions, and under fortuitous circumstances, may be able to keep the required course; but let adverse winds drive him off the beaten track, and his voyage must only end in failure and misfortune. Just so is it with the ignorant druggist: he may indeed manage to bungle through the official directions, but should anything go wrong, or any departure from the usual course be required, his incapacity becomes at once apparent, and mortification and loss result.

The selection of an elementary work on chemistry is a matter of considerable importance. Some are much better adapted for a course of self-instruction than others; and it must also be borne in mind, that, during the last ten years, the principles of the science have undergone very material changes. Of the nature or merit of these alterations it does not, at present, become us to speak; but suffice it to say that the more modern views are almost universally adopted by chemists in the present day, and that the scientific literature of the times is all based on such views. It will be necessary, then, for the student to select a publication of the most recent date. Those which we would recommend are Roscoe's *Lessons in Elementary Chemistry*, Attfield's *Chemistry*, and Fowne's *Manual of Chemistry*. Editions of all these have been issued during the last two years, and students should see that they get the latest. Any one of the works will be sufficient, although it is often advantageous to compare the statements of different authors on the same subjects.

A course of Practical Chemistry may be taken at the same time with the study of any of the works above mentioned, but that of Dr. Attfield will be found by far the best adapted to the plan. The apparatus required

is of the simplest possible description; a few ounces of glass tubing, half-a-dozen test tubes, two or three flasks, with such articles as an ordinary druggist's shop can supply, being all that are necessary to perform the greater part of the experiments. It is a mistaken notion to suppose that costly and complicated apparatus is indispensable; a few simple appliances and a fair stock of ingenuity will go a long way. The most celebrated discoveries of Dr. Black are said to have been made with a stock of apparatus which was usually arranged on a tea-tray, and the total cost of which would not exceed five shillings.

Next in order comes the study of Botany, and on this subject we cannot do better than quote from an article similar to the present, which appeared some time since in the *Pharmaceutical Journal of London*.

"So large a number of the substances used in medicine are of vegetable origin, that it is expected and required of the qualified Pharmaceutical Chemist, that he should be acquainted with the general structure of plants, and with those characters which serve to distinguish the different orders, genera, and species from each other. In the study of this subject, the appeal for the illustration must be made to nature, and contiguity to green fields, sunny banks, and shady lanes, is therefore an advantage, which, in country towns, ought not to be neglected. With Bentley's *Manual of Botany* and Lindley's *School Botany*, the student who is situated in the most remote country district, may lay the foundation of a good botanical education. The study of this subject has its advantages beyond that which relates to the identification of medicinal plants. It necessitates a close and discriminating observation of nature, which, being once acquired as a habit, will be found greatly to facilitate the study of other branches of natural science. The botanist, in his country rambles, sees something more than broad meadows, and hedgerows and trees. The unbotanical observer, indeed, would admit, that grasses are not all alike, that a hawthorn is different from a filbert, and an oak from a weeping willow; but the botanist, not satisfied with this general notion of differences, traces them to their several sources in the organs and members of each individual plant. In the study and application of botany, it is necessary to define the form, and structure, and function of the different parts of a plant, and minute examinations and precise definitions are essential for this purpose. The student, in the course of his ramble, collects as many flowers, and leaves, and stems, as appear to differ from each other, and returning to his book he will be able to give each of these its appropriate description. This accomplished, his future

excursions will be enlivened by the recognition of old acquaintances, and his searching eye will not fail to discover new forms which stimulate him to further study."

The student, having thoroughly grounded himself in chemistry and botany, must now begin to turn his knowledge of these sciences to account, and, to this end, other and more special branches of study must be entered upon. These are mainly comprised in the departments of *Materia Medica* and *Pharmacy*.

A knowledge of *Materia Medica* may be held to imply a familiarity with the history and properties of all those substances used in medicine which are furnished immediately by nature, or are thrown into commerce by the manufacturer. Of course the knowledge of chemistry and botany already possessed by the student, furnishes a considerable part of this information, but there yet remains much unexplained by either of these sciences. The qualities of drugs, the means of estimating these qualities, and of distinguishing the genuine from the spurious, the localities from which they are brought, the parts of the plants which yield them, their medicinal properties, &c. These must be sought for in works on the subject, and any of the manuals, as those of Pereira, Royle, or Garrod, will furnish the requisite information. The *U. S. Dispensatory*, of Wood and Bache, may be consulted with advantage in the absence of any of the above works. Specimens of drugs selected from the stock should be examined and compared with the description given, and their qualities estimated thereby.

A good suggestion is made by the writer of the article to which we have referred—that is, that the student make a list of all the drugs enumerated in the *Pharmacopœia*, and such others as he may be able to find in the shop, arranging them into the groups "Animal," "Vegetable," and "Mineral," as their origin may indicate, and placing the members of each group in alphabetical succession, according to their Latin names. Let him now collect all the principal facts connected with the properties and history of each drug, and arrange them in a tabular form. By this means a great amount of useful information will be gained, which will be impressed upon the memory in a manner otherwise unattainable, without a much greater expenditure of time. The following plan will illustrate our meaning. The requisite space for the tables is readily afforded by paper of foolscap size—the whole width of the sheet being employed and the descriptions may be given, if desired, in greater detail.

A list of this kind will be found very useful for reference, and if for this end alone will repay any trouble bestowed upon it.

SUBSTANCES OF ANIMAL ORIGIN.			
Name.	Source.	Part used.	Locality.
Castoreum.	Castor fiber.	The prepuccial follicles and secretion.	Northern parts of Russia & North America.
SUBSTANCES OF VEGETABLE ORIGIN.			
Name.	Source.	Natural order.	Part used.
Jalapa.	Eschscholium lutea.	Convolvulaceae.	The tubers.
SUBSTANCES OF MINERAL ORIGIN.			
Name.	Source.	Localities.	Physical Characters.
Hydrargyrum.	Native Sulphide of Cinnabar.	Spain, North and South America, Hungary and China.	Fluid at ordinary temperatures, solid at -40° F., boils at 682° F., sp. gr. 13.54.

The study of Practical Pharmacy, relates to the preparation, dispensing and sale of medicines, and the various manipulations included in the every day life of the shop. Habits of cleanliness, neatness and despatch, must be cultivated, and the slightest tendency

to slovenliness guarded against. It has been said that there is a right and a wrong way of doing everything, and this holds good in regard to the slightest details in pharmacy—the laying down of a dirty spatula, the proper direction of a pestle, the holding of a graduate—have each their appropriate methods of performance. Parrish's *Pharmacy*, which is, truly, an invaluable book to the young chemist, will afford all the necessary information. Much benefit may also be derived from a perusal of the *Practical Pharmacy* of Möhr and Redwood. In regard to the details of the preparation of the greater number of official compounds, and the rationale of the various processes involved, Wittstein's *Pharmaceutical Chemistry*, will be found a most valuable companion, not only to the student, but the accomplished pharmacist.

That branch of medicine termed *Posology* treats of the right administration of doses, and with this the student must be thoroughly familiar. It is not only necessary for the druggist to know how to put up prescriptions, he should also be able to detect anything unusual in the quantity of ingredients which the patients may be ordered to take, in such case it becomes his duty to apprise the physician of the error, and have it explained, or rectified. The dose of each official medicine should be committed to memory from the *Pharmacopœia*.

A familiarity with the nature and properties of poisons will have been acquired from a study of Dr. Atfield's *Chemistry*, and some of the other works we have recommended; and the student should always hold himself in readiness to supply an efficient antidote, with precision and promptness, to any of the ordinary poisonous substances, in case he is called upon so to do.

We append a list of the books to which we have alluded, as most suited to the requirements of pharmaceutical students; and we may say, that we shall be most happy to procure any of the works for those who are unable to get them through their bookseller; or to render our young friends any other assistance in our power.

CHEMISTRY.

- Roscoe's Lessons in Elementary Chemistry. 1869.
- Atfield's Chemistry, General, Medical and Pharmaceutical. 1869.
- Fowne's Manual of Chemistry. Tenth edition.

BOTANY.

- Bentley's Manual of Botany.
- Lindley's School Botany.

MATERIA MEDICA.

- Pareira's Manual of Materia Medica. By Farre, Bentley, and Warrington.
- Garrod's Essentials of Materia Medica.

Royle's Manual of Materia Medica. Fifth edition.

PHARMACY, ETC.

- Parrish's Practical Pharmacy. 1867.
- Möhr and Redwood's Practical Pharmacy.
- Wittstein's Practical Pharmaceutical Chemistry.
- British Pharmacopœia. 1867.
- Selecta e Prescriptis. Tenth edition.

THE CHEMISTS' AND DRUGGISTS' ALMANAC, 1870.

We have made arrangements with the publishers of this most interesting Annual, to supply it direct from this office, on receipt of the price—thirty-seven and a half cents—which may be enclosed to our address, PHARMACEUTICAL JOURNAL, Toronto.

THE CHEMISTRY CLASS.

This class will be commenced on Monday evening, the 17th inst., at 8 o'clock, and will be continued every Monday and Thursday evening, throughout the season. Apprentices and assistants connected with the Society are invited to attend; from such no fees will be required. The class will meet at our residence, No. 73 Sherbourne Street.

That good old lady who, after an experience of thirty years, succeeded in making a panacea for the ills of infants, more especially for those incidental to the period of dentition, has lately met with an unfortunate reverse, which cannot fail to be productive of much pain to that tender-hearted and disinterested matron. A correspondent of the *California Medical Gazette* reports a case of poisoning from the administration of two doses of the soothing syrup, which were given, in the amount of about one teaspoonful each, to a child six months old. The remainder of the syrup was analyzed, and found to contain morphia in the quantity of one grain to the ounce. The amount of Mrs. Winslow's syrup sold annually in San Francisco is estimated at 100,000 two-ounce bottles, containing in all about 180,000 grains of morphia. It is no wonder that one-third of the infants in San Francisco die under the age of two years.

BOOK NOTICES.

ANNUAL REPORT OF THE BOARD OF REGENTS OF THE SMITHSONIAN INSTITUTION, Washington.

We have received the above report from the U. S. House of Representatives. Besides embracing an account of the operations, expenditure and condition of the institution for the year, it contains a memoir of Cuvier, and a history of his works, by M. Flourens; memoirs of Oersted, Schonbein, Encke and

Hodgkinson, besides valuable papers on the Mechanical Theory of Heat; the Rede lecture by Prof. Tyndall, "On Heat;" and a large amount of other interesting matter.

CHEMISTRY, GENERAL, MEDICAL, AND PHARMACEUTICAL; INCLUDING THE CHEMISTRY OF THE BRITISH PHARMACOPOEIA. By JOHN ATTFIELD, Ph. D., F. C. S., Professor of Chemistry to the Pharmaceutical Society, of Great Britain, etc. Van Voorst, London, 1869.

The position occupied by Professor Attfield, as Director of the Laboratory of the Pharmaceutical Society, preeminently fits him for the authorship of a work like that before us, which, as we are informed by the preface, is especially designed to meet the requirements of medical and pharmaceutical students. Indeed, for those engaged in the study of pharmacy, we have seldom or never seen a better work. The outlines of general chemistry are given in sufficient detail to give the learner a knowledge of the principles of the science; but all matter relating to compounds which are, at present, only of interest to the scientific chemist, is excluded, and in its place are to be found details not usually noticed in works on chemistry; for instance, the chemistry of every substance mentioned in the British Pharmacopoeia, or in general practice, as a remedial agent, is entered upon and explained.

Another advantage connected with the work is that it may be used as a guide in a course of experimental chemistry. The apparatus required is of the simplest description; the manipulations being mainly performed by the most simple appliances.

We cannot help noticing a feature which is not common in works of this class, but which is particularly prominent in that under review—we allude to the foot notes explanatory of the technical and scientific terms employed throughout the book; in some cases, not only is the meaning and derivation given, but the pronunciation also. This is calculated to be of great use to the self-taught student, for whom no doubt it was intended.

It is needless to say that the system of chemistry taught is according to the modern views, and that the new notation and nomenclature are adopted. The thermometric scale of Fahrenheit is used throughout, as also the old system of weights and measures, but two chapters are devoted to the "measurement of temperature" and "weights and measures," in which the decimal system is thoroughly discussed and very warmly advocated.

The subject of Volumetric Analysis as relating to the preparations of the British Pharmacopoeia is fully treated, a considerable space is also given to gravimetric analysis, Chapters are devoted to toxicology, and the estimation of morbid urine and calculi; the

latter being illustrated by two engravings, showing the various urinary deposits, as seen under the microscope. The appendix contains a number of useful tables, including one of "the official tests for impurities in preparations of the Pharmacopoeia"; saturation tables for showing the amount of citric or tartaric acid capable of neutralizing a given weight of the carbonates of the alkalies; per centage tables showing the strength of the various acids, and alkalies. Most of these tables are now, and, therefore, more valuable; as that stating the percentage of sulphuric acid (H_2SO_4), the sulphuric radical (SO_4), and sulphuric anhydride (SO_3), in dilute acid of different specific gravities. The book closes with a copious index, embracing upwards of five thousand references.

THE CHEMISTS' AND DRUGGISTS' ALMANAC, 1870. London.

This well known and popular Annual again makes its appearance, replete, if possible, with more than an ordinary share of interest and usefulness. The present volume contains more than a hundred pages, and embraces, in addition to the Calendar, a number of most interesting papers, which have been prepared expressly for the occasion. Amongst the contributors we notice the names of Daniel Hanbury, F.R.S.; Professor Attfield, Ph. D., F.C.S.; G. F. Schacht; Joseph Ince, F.L.S., F.C.S., and other eminent writers on pharmaceutical subjects.

Not the least valuable feature is the "Record of Pharmacy," which contains abstracts of the most important papers, relating to pharmacy, which have been published during the year.

To the druggist the Calendar is particularly interesting; instead of the usual references to historical personages and events, we find useful trade memoranda; notices of the deaths of eminent pharmacologists, chemists, and botanists, &c. In addition, we have the "Botanical Notes," which give information on the times for collecting plants, their seasons of flowering, &c., and many other useful items.

CANADIAN PHARMACEUTICAL SOCIETY.

The regular monthly meeting was held in the usual place, on Friday evening, 7th inst., the treasurer taking the chair.

Minutes of last meeting were read and approved, and the following new members elected:—

PRINCIPALS.

J. Hamilton Burgar.....Welland.
E. Harvey.....Guelph.
Thos. Scott.....Woodstock.
Jas. White....."
G. S. McLean.....Sarnia.

E. Chandler, Jr.....Delloville.
C. Van Felson.....Chatsworth.
S. G. M. Fead.....Stouffville.

ASSISTANT.

Gilbert McIntyre.....St. Mary's.

An application for membership was referred back for further enquiry.

The legislative committee reported that by a very considerable effort they had succeeded in getting the Pharmacy Act through the select committee, appointed by the House, with one or two trifling alterations; but owing to the press of railway matters, it did not reach its third reading. This was to be regretted, as the opinion of those of the members of the Legislature who had been spoken to, was strongly in its favour. There was no remedy, however, but to wait for the next session.

Mr. Elliot gave notice "That at the July meeting such alterations be made in the Constitution as to make it conform to the Pharmacy Act, as amended by the select committee of the Ontario Legislature.

Mr. R. W. Elliot said that he regretted his absence from the last meeting of the Society; but would now move, seconded by the secretary,

That the cordial thanks of the Society be presented to Mr. David Brown, of Edinburgh, for his very complete collection of opium products, as a welcome addition to our museum.

[The specimens comprise morphia, crystallized, and commercial; muriate of morphia, in crystals and powder; sulphate, citrate, bitartrate, acetate, and nitrate of morphia. Narcotine; normal methyl narcotine and chloride; normal dimethyl narcotine and chloride; codeine crystals, with the sulphate and acetate of that alkaloid. Papaverine, and muriate of papaverine; meconine from opium, and from opianic acid; narcaine, thebaine, porphyroxine, cotarnine, opiammon, meconic, opianic, and hemipinic acids; apomorphia, and hydrochloride of apomorphia. Specimens of poppy capsule and seeds from Bogaditch. Also, samples of the alkaloids nectandria and bebeerine, and specimens of the bark and nut of the greenheart tree (*Nectandra Rodiaii*).]

The motion received the hearty approval of the members present; and, on motion, Mr. Brown was elected an honorary member of the Society.

Meeting adjourned.

HENRY J. ROSE,
Secretary.

Montreal Chemists' Association.

A special meeting of the members of this society was held on Monday evening, Dec. 27th, to receive the report of the delegates to Quebec in reference to the Pharmacy Bill now before the Legislature.

MUSTARD OIL LINIMENT.

R Crude Mustard Seed Oil...f ʒ xvj.
 Etheral Oil of Mustard...gtt. xxx.
 Water of Ammonia.....f ʒ iv., or q. s.
 To form into a soap.
 Mix and bottle in broad-mouthed vials containing about two ounces.

MILBURN'S MIXTURE.

R Precipitate Prep. Chalk, Loaf
 Sugar, and Gum Arabic, of
 each.....ʒ ij.
 Green Mint Water.....ʒ ivss.
 Laudanum.....ʒ ss.
 Spirits of Lavender.....ʒ ij.
 Simple Syrup.....ʒ iss.
 Tr. Kino.....ʒ i. Mix.
 Useful in loose bowels in children, and can be given to them after each alvine evacuation, regardless of number. Dose, from half to a teaspoonful. Shake the mixture well each time before using it.

WOOD'S HAIR RESTORATIVE—AFTER TWIGGS.

R Washed Sulphur.....ʒ j.
 Sugar of Lead Crystals & Pow'd ʒ ss.
 Rose Water.....f ʒ xxxii.
 Mix.

Apply faithfully night and morning with friction. Useful in every disease of the scalp, and will darken the hair.

Permanent Lamp Wick.

The *Scientific American* figures a novel substitute for the ordinary cotton wick. A short piece of glass tube is closed at one end by a piece of wire gauze, the other end being drawn out to a circular or oval form. This constitutes the wick holder and burner. The tube is filled with powdered gypsum, or any like mineral, and the end with the gauze immersed in ordinary coal oil, which is carried by capillary attraction to the top of the wick. It may be used with or without chimney, and, with good oil, is said to be perfectly safe.

Notes and Queries.

J. B. W. Milton.—A clause exempting Veterinary Surgeons has been inserted in the Pharmacy Act.

J. P. W., Kincaidine.—The subject is treated, at length, in another column.

Electrician.—“The flame of a lamp, or candle, when uninsulated, prevents the excitement of a prime conductor, at a considerable distance.”—*Faraday's Chemical Manipulations*, 1831—Note by J. K. Mitchell, p. 452.

S. P. R.—SILVERING POWDER FOR METALS.—Mix one part of chloride of silver with three parts of carbonate of potash, one and a half parts of common salt, and one part of whiting. Apply to the metal to be silvered with a cork moistened with water and dipped in the powder; or with a dabber made of chamois. The chloride of silver may be made by adding a solution of common salt to a solution of nitrate of silver as long as a precipitate is formed. This must be washed with water, and dried, and will then be ready for use.

Constant Reader.—In a case of unavoidable hurry, it might be allowable to depart from the official directions in regard to tincture of opium. The opium must be well worked with the hands, in warm water, until a uniform pulp is obtained. The requisite amount of spirit must then be added, and at least twenty-four hours' maceration allowed.

An obliging correspondent sends the following formula:

Glycerinae c. Ferri Iodidi.

As an interest appeared to exist lately, respecting this preparation, perhaps the following formula will be acceptable for its simplicity, quickness and perfectness. Put into a four oz. phial two and three fourth ounces of pure colourless and anhydrous glycerine, Sp. Gr. 1.267, and then insert a small glass funnel, so that the point may be immersed in the glycerine; place a 2drachm filter into the funnel; into another one ounce phial put one eighth of an ounce of clean iron wire, cut into small lengths; one fourth of an ounce of distilled water, and one hundred grains of pure iodine. Shake the whole until the froth is white, and then at once decant the liquid into the filter. When it has all passed through the filter put ten drops of distilled water into the one ounce phial, and shake it about, to wash the iron wire, then drop it round the upper part of the filter, to wash it also. The contents of the phial require now only to be shaken together and the process is complete. The whole may be done in less than half an hour, and if the glycerine be of the character above mentioned, and the operator expert, the preparation will be colourless and quite thick, and of a similar strength to the syrupus ferri iodidi. To make the preparation similar in strength to Ph. L. and Ph. D., ninety-eight grains of iron and one hundred and twelve grains of iodine, respectively, are required.

Colloidium c. Iodini.—(Indian Paint.)

It is well known that iodine has been long employed topically in the form of tincture, or ointment, as a local stimulant in many forms of chronic cutaneous diseases, as in glandular swellings, chronic swelling of the joints, inflamed bursa, erysipelas, tumours, etc., in all of which it has been accounted a most valuable remedial agent. Yet from its tendency to excite severe local inflammation, and abrasion of the skin, it could not be satisfactorily applied for any length of time. The following preparation, known as “Indian Paint,” has to a great extent replaced the tincture and ointment, in many hospitals, as also in private practice, as with it the physician can persevere daily in the application of this remedy, for any length of time he thinks proper, without adding to the suffering of the patient.

R.—Colloidium,..... 8 oz.
 Iodine, pure..... ½ oz. dis.

Changes.

Brent & Woolhouse, Port Hope, have dissolved partnership. J. B. Woolhouse, in connection with Robert Deyell, have bought out T. W. Morse & Co., and intend carrying on the business under the style of Woolhouse & Deyell.

Enoch Thomas is opening a new drug store in Forrest.

R. C. Newman is about commencing business in Yonge Street, Toronto.

Annual Trade Report.

Inasmuch as the Drug trade offers very little subject for remark, we may conclude that it is in a satisfactory condition, with prices neither unduly inflated nor depressed; with stocks, neither too full, nor with short assortments; with payments met with reasonable regularity; and no accumulations of capital to tempt doubtful speculation.

Sales have been fairly maintained throughout the year; connections have been improved and extended; and our houses have maintained their credit and position. At this point the silver nuisance, which was a considerable source of loss, has been very much abated, and no greater quantity remains than suffices for making change.

There was considerable difficulty during the summer months, in making collections, but greater ease ensued as the crop was realized.

A strong effort was made to procure the passage of an Act to confine the business to those acquainted with the nature of the substances they sell, but, owing to the pressure of railway business before the House, it was impossible to get a meeting of the special committee, to whom the matter was referred until too late for the measure to pass through the remaining stages.

The Act in its amended form is now printed, and as it embodies nothing more than what has been found necessary in Great Britain and every civilized country in Europe, there is a good prospect that it will become law if introduced next session. The history of the agitation in this matter is another proof that no desirable object can be attained without the exercise of patience and perseverance. What will tend more than any other fact to secure the wishes of the trade, is their all-but unanimous and voluntary support of the society of which this journal is the organ.

Without claiming the gift of prophecy, there are elements of danger that threaten serious disturbance to business in the future, which call for increased vigilance and prudence on the part of those buying goods on time. Investments in American Bonds, by European capitalists, has diverted large

amounts of money from commerce, and is one of the chief causes of that stagnation and dullness which overhang all the European markets, threatening collapse and panic by withdrawal of the usual facilities for carrying on trade. This has caused great depreciation in the price of breadstuffs, on which we depend largely for our foreign exchanges. Another of our great sources of revenue, is the lumber interest, and it is seriously threatened by the effort now being made in the United States to return to specie payment. So long as this operation is gradual our lumber will probably bring as much when converted into gold, as formerly; but should either congressional action, or popular impatience of the squeezing to which prices in the United States are now subject, precipitate matters, there would, undoubtedly, ensue a period during which building speculation would be entirely stopped, and our lumber producers forced either to hold large stocks that would lock up the capital invested, or sell at ruinous rates.

We must remember, too, that although our crop was good in quantity, it has brought very low rates, and that a much less proportion than usual was marketed before the close of navigation.

It is very common to judge of the general prosperity of the country by the bank circulation, and as that is now of a comparatively high amount, it might be assumed that trade is in a more than usually good state; but if the exports of silver coin are taken into account, it will be found that the sum representing current transactions is not so large as last year.

The proverb says that, "a foreseen famine never occurred," the moral of which is, that if we see dangers clearly, we can so shape our course as to obviate their worst effects; and, sometimes, completely neutralize their consequences.

The first step is to know exactly how you stand. To do this it is necessary to take stock and balance accounts regularly once a year. There is some time and labour involved in this, but it is amply repaid, by getting a knowledge of dead stock, which might be made available, by seeing the accounts which should be encouraged, and what limited or stopped. But, above all, it is necessary to know your own affairs, to justify you in making purchases, for the man that buys, not knowing that he can pay, is not honest.

In purchasing, be careful to buy no greater quantity than can be sold in a reasonable time; study your market, and suit it, but rather buy a better than a worse article than is demanded. In drugs, especially, a reputation for good quality is worth infinitely more than one for "cheapness." If you are

prosperous, avoid outside speculations, that presuppose a continuance of prosperity, for you may thereby become involved in difficulty without means of extrication. As long as you are in business, consider this the main point, and endeavour to arrange your affairs, so that, if necessary, all your means may be concentrated in its support.

This has turned out rather a homily than a review, but we hope it may not be considered unseasonable, and we so present it with a hearty wish that all our readers may have "a happy New-Year."

Below are notes of variations in prices during the year:

DRUGS.—Vanilla Beans have become gradually scarcer, and dearer. Camphor steady, but slightly lower at the close. Cantharides are collected from the peasants by peddlars, principally Jews, who travel through the districts of Poland, lower Austria, and Hungary, in which the insects abound. The peddlars forward their stock in quantities varying from a few pounds, tied up in an old cotton handkerchief, to several cases of 200 lbs each, to the large drug markets of Dresden, Hamburg and Bremen, and it is by the supplies arriving at these points that the price is governed. In December of last year, 1869, it was discovered that the quantity was very far short of the year's consumption, and the price has doubled in consequence. Being a yearly crop, there is very little chance of change until next December.

Cochineal has maintained full rates throughout. Ergot lower at the close. Extracts and leaves of Digitalis, Hyoscyamus, Conium, &c, are dearer owing to short crop. Flowers Arnica are steady. Aloes have slightly advanced. Gum Arabic opened very dear, receded, and again advanced to full rate, closing with very small supplies; substitutes are being used. Gamboge, although lower, still maintains a high rate. Shellac higher than in '68. Honey has been scarce and dear throughout; the season being unfavorable. Iodine has sold freely at full rates. Leptandrin double price and scarce. Liquorice has ruled low throughout. Musk advanced. Oil Almonds, lower. Bergamot declined. Castor Oil receded to a very low rate. Oil Peppermint, scarce, in good quality. Opium opened at a very high rate, declined till about September, and has lately taken another sharp upward turn. The trade has been so accustomed to fluctuations in this article that a change of a dollar or two excites little remark. Roots, generally speaking, have not been a good crop, and are firmer at the close. Seeds are dearer from the same cause. Castile Soap, sold very low at the commencement, but the rise in raw material must increase the price. White Wax has been pretty steady.

CHEMICALS.—Acid Acetic steady. Sulphuric, opened dear, receded to a low rate in summer, but, since the burning of the factories, has been held for higher rates. Acid Citric, opened high, but is now slightly lower. Acid Tartaric, has been remarkably steady, throughout. Antimonials are scarce, and dear, at the close. Glycerine has been in large demand, at low rates. Mercurials, without change. Bichromate Potash, has sold very freely under the stimulus of low rates, which have, however, gone up at the close. Bromide Potassium is now in considerable demand at increased prices. Quinine has been slightly advanced three times during the year; the makers assert that the price must still advance—that it is only the effect of contracts for bark, made two years ago, that kept the price down, and that present contracts are much higher. Sodas were a little higher at the shipping season, in March, but have since gone down.

DRESSINGS.—All the staples have been in large demand, at full prices. Anilines are slightly lower at the close; and the price of Logwood and Extract at length gives signs of breaking down. Madder has maintained full rates. Indigo advanced at the spring sales, and fully keeps its place.

SPICES.—Pimento is steady. Pepper has advanced. Cayenne still low. Cassia extremely high. Nutmegs and mace extremely dear at the close.

OILS.—Cod in fair supply. Lard scarce and dear. Linseed, raw and boiled, very low; but advanced later in the season. Olive, common, declined until June, and then became firmer, closing decidedly higher. Salad oil has followed the same course.

We append a few changes which have occurred during the month.

Carb. Ammonia, is in very large demand, and has consequently advanced in price. Alcohol remains firm at advanced rates. Bals. Peru, has almost doubled in price. Cantharides are reported very scarce and have advanced very much, they are also likely to be still dearer. White Wax is also held at an advanced figure. The demand for Mace still continues, which, combined with scarcity, enhances its value very considerably. Spirits Turpentine are also held for higher price.

Canada Balsam, Chloroform, Socorine, Aloes, Oil Sassafras, Boudalt's Pepsin and Ext. Logwood, are all quoted lower.

DRUG BUSINESS WANTED.

WANTED to buy, a good paying Drug Business, in a flourishing Town in Ontario.

Address, stating particulars,
"DRUGGIST,"

Care of Box 229,
Cobourg, Ont.

WHOLESALE PRICES CURRENT.—JAN., 1870.

DRUGS, MEDICINES, &c.		DRUGS, MEDICINES, &c.		DRUGS, MEDICINES, &c.		DRUGS, MEDICINES, &c.		DYE-STUFFS—Continued	
\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.
Acid, Acetic, fort	0 12 @ 0 15	Gum, Shellac, liver	0 24 @ 0 28	Potash, Bi-chrom.	0 16 @ 0 20	Logwood, Camp.	0 02 1/2 @ 0 03 1/2		
" Benzoic, pure	0 23 0 35	" Storax	0 65 0 75	" Bi-tert.	0 25 0 28	" Extract	0 12 1/2 0 14		
" Citric	0 83 0 90	" Tragacanth, flake.	1 05 1 40	" Carbonate	0 16 0 20	" " 1lb bxs	0 14		
" Muriatic	0 05 0 07	" common	0 34 0 00	" Chlorate	0 40 0 45	" " 3lb	0 15		
" Nitric	0 11 1/2 0 15	Galls	0 32 0 37	" Nitrate	8 50 9 00	Madder, best Dutch	0 16 0 18		
" Oxalic do	0 26 0 32	Gelatine, Cox's, fld.	1 10 1 20	Potassium, Bromide	1 80 2 00	" 2nd quality	0 14 0 15		
" Sulphuric	0 04 1/2 0 07	Glycerine, com.	0 25 0 30	" Cyanide	0 70 0 75	Quercitron	0 03 0 05		
" Tartaric, pulv.	0 36 0 45	" Vienna	0 35 0 40	" Iodide	3 80 4 50	Sumac	0 06 1/2 0 08		
Ammon., carb. casks	0 15 0 19	" Price's	0 45 0 75	" Sulphuret	0 25 0 35	Tin, Muriate	0 10 1/2 0 12 1/2		
" jars	0 18 0 20	Honey, Canada, best	0 1 0 20	Pepsin, Boudault's, oz.	1 25 1 50	Redwood	0 05 0 06		
" Liqueur, S80	0 18 0 25	" Lower Canada	0 12 0 13	" Houghton's, doz	3 00 9 00				
" Muriate	0 12 1/2 0 15	Iron, Carb. Precip.	0 20 0 25	" Morson's, oz.	0 82 1 10				
" Nitrate	0 45 0 60	" Sacchar.	0 40 0 45	Phosphorus	0 75 0 85				
Ether, Acetic	0 45 0 50	" Citrate Ammon.	0 90 1 00	Podophyllin	0 50 0 60				
" Nitrous	0 22 1/2 0 25	" & Quinine oz.	0 43 0 48	Quinine, Pelletier's	1 67 1/2				
" Sulphuric	0 48 0 55	" & Strychnine	0 17 0 25	" Howard's	1 72 1/2 1 80				
Antim. Crude, pulv.	0 10 0 12	" Sulphate, pure	0 08 0 10	" " 100oz. case	1 67 1/2				
" Tart.	0 50 0 60	Iodine, good	1 50 2 00	" " 25 oz. tin	1 62 1/2				
Alcohol, 95%	1 85 2 00	" Resublimed	5 60 6 00	Root, Colomba	0 14 0 20				
Arrowroot, Jamaica	0 21 0 22	Jalapin	1 50 2 00	" Curcuma, grd.	0 12 1/2 0 17				
" Bermuda	0 05 0 05	Kreosote	1 60 2 50	" Dandelion	0 25 0 35				
Alum	0 02 1/2 0 03 1/2	Leaves, Buchu	0 30 0 50	" Elecampane	0 11 0 17				
Balsam, Canada	0 32 0 37	" Foxglove	0 25 0 30	" Gentian	0 08 0 12 1/2				
" Copaiba	0 75 0 80	" Henbane	0 35 0 40	" " pulv.	0 15 0 20				
" Peru	4 50 4 80	" Senna, Alex.	6 30 6 60	" Hellebore, pulv.	0 18 0 25				
" Tolu	1 20 1 40	" " E. I.	0 12 1/2 0 20	" Ipecaac	2 40 2 60				
Bark, Bayberry, pulv.	0 20 0 25	" " Tuncivilly	0 20 0 30	" Jalap, Vera Cruz	1 55 2 1				
" Canella	0 17 0 20	" Uva Ursi	0 15 0 20	" " Tampico	0 90 1 1				
" Peruvian, yel. pulv	0 42 0 45	" " Chloride	0 04 1/2 0 06	" Liqueurice, select.	0 13 0 17				
" " red "	1 50 1 60	" Sulphate	0 08 0 12 1/2	" " pow'd	0 12 1/2 0 16				
" Slippery Elm, g. b.	0 18 0 20	Lant, Taylor's best	1 24 1 25	" Mandrake	0 20 0 25				
" " flour, pkt's	0 28 0 32	Lead, Acetate	0 14 0 17	" " Orris	0 20 0 25				
" Sassafras	0 15 0 18	Leptandrin oz.	0 60 0 75	" " Rhubarb, Turkey	4 40 5 50				
Berries, Cubebs, ground	0 30 0 40	" Bismuth	7 60 9 00	" " " E. I., China	1 25 1 75				
" Juniper	0 06 0 10	" " Opil, Battley	1 50 2 00	" " " pulv.	1 40 1 75				
Beans, Tonguin	0 60 1 10	" Lye, Concentrated	0 37 0 45	" " " 2nd	1 30 1 50				
" Vanilla	9 40 9 60	" Liqueurice, Solaz	0 23 0 40	" " French	0 75 1				
Bismuth, Alb.	5 60 6 40	" " Cassia	0 14 0 25	" Sarsap., Hond.	0 45 0 50				
" Carb.	5 60 6 40	" " Other brands	0 14 0 25	" " Jam.	0 75 0 80				
Camphor, Crude	0 43 0 45	" Liqueurice, Refined	0 35 @ 0 45	" Squills	0 10 0 15 1/2				
" Refined	0 55 0 65	" " Hessin's doz	2 00	" Senega	0 40 0 50				
Cantharides	1 36 1 40	" Magnesia, Carb. 1 oz.	0 20 0 25	" Spigelia	0 35 0 40				
" Powdered	1 38 1 50	" " " 4 "	0 17 0 20	Sal., Epsom	3 09 4 00				
Charcoal, Animal	0 04 0 06	" " Calcined	0 65 0 75	" Rochelle	0 28 0 35				
" Wood, pow'd.	0 12 0 15	" " Citrate gran.	0 40 0 50	" Soda	0 02 0 03				
Chlorella	0 55 0 65	Mercury	0 65 0 75	Seed, Anise	0 16 0 30				
Chloroform	1 25 1 50	" Bichlor	0 70 0 80	" Canary	0 05 1/2 0 07				
Cochineal, S. G.	0 90 1 15	" Biniodid. oz.	0 25 0 35	" Cardamon	3 00 4 00				
" Black	1 30 1 75	" Chloride	0 90 1 00	" " Fenugreek, gr'd.	0 10 0 15				
Colocynth, Pulv.	0 50 0 80	" C. Chalk	0 45 0 60	" Hemp	0 06 0 07				
Collodion	0 55 0 60	" Nit. Oxyd	0 90 1 00	" Mustard, white	0 14 0 16				
Elaterium	4 50 5 00	Morphia, Acet.	6 00	" Saffron, Amer.	1 25 1 50				
Ergot	0 75 0 90	" Mur.	about 6 00	" Spanish	14 00 16 00				
Extract, Belladonna	2 00 2 20	" Sulph.	—	Santonine	10 50 12 00				
" Colocynth, Co.	1 25 1 75	Musk, Pure grain. oz.	21 00	" Sago	0 07 1/2 0 09				
" Gentian	0 50 0 60	" Canton	1 00 1 20	Silver, Nitrate, cash.	14 90 16 50				
" Hemlock, Ang.	1 12 1 25	" " bitter	14 00 15 00	" Soap, Castile, mottled	0 11 1/2 0 14				
" Henbane	2 90 3 00	" Aniseed	4 00 4 50	" Soda Ash	0 03 0 04				
" Jalap	5 00 5 50	" Bergamot, super.	6 00 7 00	" " Bi-carb. Newcastle	4 00 5 00				
" Mandrake	1 75 2 00	" Carraway	4 00 4 20	" " Howard's	0 14 0 16				
" Nux Vomica, oz.	0 60 0 70	" Cassia	3 00 3 20	" Caustic	0 04 0 05				
" Opium	Variable	" Castor, E. I.	0 16 0 20	Spirits Ammon., arom.	0 25 0 35				
" Rhubarb	7 50	" " Crystal	0 22 0 25	" Strychnine, Crystals	2 30 2 75				
" Sarsap. Hon. Co	1 00 1 20	" " Italian	0 26 0 28	" Sulphur, Precip.	0 10 0 12 1/2				
" " Jam. Co	3 25 3 70	" Citronella	1 50 1 75	" Sublimed	0 4 0 05				
" Taraxicum, Ang	0 70 0 80	" Cloves, Ang.	1 00 1 10	" Roll	0 03 0 04 1/2				
Flowers, Arnica	0 26 0 35	" Cod Liver	1 40 1 50	Tamarinds	0 15 0 20				
" Chamomile	0 36 0 45	" Croton	2 50 3 00	Tapioca	0 20 0 23				
Gum, Aloes, Barb. extra	1 00 1 10	" Geranium, pure, oz.	2 00 2 20	Veratria	0 25 0 30				
" " good	0 50 0 55	" Juniper Wood	0 90 1 00	Vinegar, Wine, pure	0 55 0 60				
" " Cape	0 15 0 20	" " Berries	6 00 7 00	Verdigris	0 35 0 40				
" " pow'd	0 25 0 30	" Lavand, Ang.	17 60 19 20	" " Pow'd	0 45 0 50				
" " Socot.	0 60 0 75	" " Exot.	1 40 1 60	Wax, White, pure	0 92 0 95				
" " pulv.	0 90 1 00	" Lemon, super.	3 30 3 60	Zinc, Chloride oz.	0 20 0 25				
" Arabic, white	0 60 0 65	" " ord.	2 70 2 80	" Sulphate, pure.	0 10 0 15				
" " pow'd	0 57 0 65	" Orange	3 00 3 20	" com.	0 06 0 10				
" " sorts	0 34 0 37	" Origanum	0 65 0 75	DYE-STUFFS.					
" " com. Gedda	0 12 0 16	" Peppermint, Ang.	15 09 17 00	Annatto	0 40 @ 0 60				
" Assafetida	0 35 0 40	" " Amer.	4 60 5 06	Aniline, Magenta, cryst	5 20				
" British or Dextrine	0 13 0 15	" " Rose, virgin	7 75 8 00	" liquid	2 00				
" Benzoin	0 48 0 55	" " good	4 40 5 50	Argols, ground	0 15 0 25				
" Catechu	0 15 0 20	" Sassafras	1 10 1 25	Blue Vitriol, pure	0 08 0 10				
" " pow'd	0 25 0 30	" Wintergreen	4 90 5 50	Camwood, pure	0 06 1/2 0 09				
" Euphorb, pulv	0 32 0 40	" Opium, Turkey, about	10 50	Copperas, green	0 01 1/2 0 02 1/2				
" Gamboge	1 40 1 60	" " pulv.	12 50	Cudbear	0 16 0 25				
" Guaiacum	0 32 0 50	" Orange Peel, opt.	0 65 0 75	Fustic, Cuban	0 03 0 04				
" Myrrh	0 48 0 60	" " good	0 12 1/2 0 20	Indigo, Bengal	2 40 2 50				
" Sang Dracon	0 60 0 70	Fill, Blue, Mass.	0 70 0 75	" Madras	1 15 1 20				
" Scammony, pow'd	5 60			" Extract	0 28 0 35				
" " Virg.	14 50			Japonica	0 05 1/2 0 06 1/2				
" Shellac, Orange	29 0 32			Lacdye, pow'd	0 35 0 40				
				Logwood	0 02 1/2 0 03				