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Original and Selected Papers.

EFFERVESCING SOLUTION OF TARTRATE OF SODIUM.*

BY ADOLPH W. MILLER, M.D., PH.D.

This preparation is offered as an improvement on the popular solution of citrate of magnesium. The formula for its manufacture was devised by Mr. Joseph Landschutz, a veteran pharmacist of this city, who has been for some time dispensing it, and who states that his customers express a decided preference for it.

The U. S. Dispensatory says of tartrate of sodium, that it is recommended by M. Delioux as an agreeable purgative, almost without taste, and equal to sulphate of magnesium in its medicinal effects. The merits claimed for the solution of tartrate of sodium are, that it is more pleasant to the taste than even citrate of magnesium, while it is more reliable and efficient in its action as a purgative, with less tendency to produce tenesmus. Another decided advantage is the fact of its forming a permanent solution, from which no precipitate settles down, and last, though not least, its much greater cheapness, costing only about one-fourth as much

* From the American Journal of Pharmacy.

as the magnesium citrate. The present high price of citric acid seems to offer peculiar temptations to cheaper sophistications, such as sulphate of magnesium, as pointed out by Mr. Wm. R. Warner in his essay on page 397, vol. 39 (1867), of this journal. The retail price of 25 cents per bottle, which has been adopted in many pharmacies, of this city, in reality yields an entirely inadequate profit to the vender, while competition in many localities makes it difficult to obtain a higher rate. It would therefore seem to be in the interest of both druggists and physicians to make a trial of the new aperient under consideration, which promises to eclipse the now renowned citrate of magnesium.

Mr. Landschutz's formula for filling 14 of the ordinary 12-ounce citrate bottles is as follows:—

Dissolve 9 oz. crystallized tartaric acid, and 17 oz. crystallized carbonate of sodium, in about one quart of cold water.

Provided the acid is not moist, and the carbonate not effloresced, the above solution will be nearly neutral. In general, it is best to test it, and to neutralize it if necessary. Then dissolve it in 28 scruples bicarbonate of sodium. Filter, and add sufficient water to make the entire quantity measure 147 fluid ounces.

Make a syrup from

21 oz. best crushed sugar,

14 drachms crystallized tartaric acid,

10 oz. water. After cooling, add

1 drachm spirits of lemon, and mix thoroughly.

Measure 1½ fluid ounces of this syrup into each of the 14 bottles. Then pour in slowly the first solution, carefully avoiding an admixture with the syrup; cork and tie each bottle as soon as filled. When this is carefully managed, but very little carbonic acid will escape.

Each bottle so prepared will contain about seven drachms of dry tartrate of sodium, which is a fair adult dose.

At present market rates the above ingredients will cost about five cents for the contents of each bottle, yielding a handsome and remunerative profit. The price, in fact is so low that it leaves no incentive towards substitutions or alteration of the formula.

THE USE OF NUT OIL IN PHARMACY, AND ESPECIALLY IN THE PREPARATION OF UNGUENTUM HYDRARGYRI NITRATIS.*

BY M. FALIERES.

In a brief review of former formulæ for the preparation of citrine ointment, the author calls attention to the large increase which has taken place in the relative proportion of the nitric acid to the mercury. The proportions indicated by Baume, in 1785, were nitric acid 128 parts, mercury 96 parts, lard 1000 parts. The mercury has been gradually increased until, in the Codex for 1866, where equal parts (500) of olive oil and lard are ordered, the nitric acid is 100 parts, and the mercury 50. Thus the proportions which originally were 4 of nitric acid (sp. gr. 1·28) and mercury 3, have become nitric acid (sp. gr. 1·42) 2, and mercury 1.† Without blaming the progressive diminution of the metal, since even with this reduction the medicament still remains very powerful, the author objects to the great excess of acid. Suggestions have been made to remove the excess of acid by washing the ointment with a large quantity of water, and then adding an equal weight of almond oil, but have been rejected in consequence of the length and difficulty of the operation, and it being far from certain that the whole of the acid excess would be thus removed.

The author having had occasion to make a comparative investigation of pure olive oil and the oil of the ground nut (*Arachis hypogœa*), found that the arachis oil possesses a great apititude for the nitric solidification. Hence he conceived the idea of suppressing entirely the lard in the preparation of nitrate of mercury ointment. The product so obtained seemed to present such marked advantages as to induce him to make known the process :

Mercury	5 parts.
Nitric Acid (sp. gr. 1·42)	10 "
Nut Oil	100 "

Dissolve without heat the mercury in the acid; pour the mercurial solution into the oil, agitating from time to time with a glass or earthenware spatula. After two or three hours, according to the quantity operated upon, and at a temperature of about 20° C., the mixture begins to take a milky consistence, which lasts for about an hour, then thickens to that of a soft butter. This latter stage lasts

* "Bull. des Travaux de la Societe de Pharmacie de Bordeaux," vol. xiii. 165. Reproduced in Pharm. Journ. & Trans.

† In the B. P., where more olive oil is used, the proportions are, nitric acid 3, mercury 1.

at least two hours, during any portion of which time the ointment may be poured out. The mass spread with perfect regularity in a paper mould; the thickness of the layer is uniform, and there is no separation between the oily and mercurial elements, showing that the combination is complete. The product does not set so rapidly as the official one; at the end of ten or twelve hours it is easily divided by a wooden knife, but this is more conveniently done after it has stood for twenty-four hours; its consistence is then similar to that of cacoa butter in the summer. Two or three days afterwards it appears to attain its maximum of firmness, and some has been kept upwards of two months without showing any appreciable difference in its consistence. Compared with the Codex preparation, the author considers that the ointment made with nut oil has greater cohesion, is not friable, and appears much better adapted for friction, as it melts and spreads upon the skin with greater facility.

M. Falieres is of opinion that no serious exception could be taken to the change of fat excipient which he proposes. The progress attained in the manufacture of arachis oil has provided a white, bland, tasteless article, which is, commercially speaking, neutral. Perfumers, who are not, like pharmacists, bound by a formal code, make large use of the ground nut oil in the manufacture of pomades, cold cream, etc. A perfect type of a non-drying oil, it absorbs relatively small quantities of perfume; it requires the least wax, spermaceti, or stearine for its solidification, and finally may be kept almost indefinitely without turning rancid. The author promises at some future time to show in detail the advantages that may be obtained from the use of nut oil in a large number of pharmaceutical preparations.

URINARY EXAMINATIONS IN GENERAL, AND THE TESTS FOR ALBUMEN AND SUGAR IN PARTICULAR.*

BY LOUIS SIEBOLD.

As pharmacists are now fast advancing from the position of mere traders to the rank of scientific men, the testing of urine will be more frequently entrusted to them by the medical practitioners, who themselves—as a rule—have not the necessary practical experience for conducting such examinations. Pharmacists, I think, cannot be too strongly recommended to devote some of their time

* Read before the British Pharmaceutical Conference, and published in the Pharmaceutical Journal & Transactions, Sept. 27th, 1873.

and energy to the acquisition of an intimate knowledge of urinary analysis, especially as we find that our professional analysts in general are but imperfectly acquainted with this branch of analytical chemistry. In bringing this subject before you, gentlemen, I shall, of course, not attempt to treat it in its entirety, for this would be impossible to do, even in a very superficial manner, in the short time at my disposal. I merely wish to draw your attention to the commonest and most important tests, and to point out some great errors in connection with urine-testing which are very generally committed by medical practitioners—errors which in many cases render the examination quite worthless. Let us at once pass on to instances of this kind. A medical man requests his patient to send him a sample of his urine, and a quantity varying from two to eight fluid ounces is supplied and in due course examined. Now if the question to be decided is simply the presence or absence of an abnormal substance, such as sugar, bile, or albumen, the sample of urine thus supplied will answer the purpose. But if the specific gravity be required, or if the percentage of urea, phosphates, chlorides, sulphates, or of any other constitutent is to be ascertained, then this mode of examining a sample of urine which does not represent the chemical composition of the entire renal discharge of twenty-four hours is highly objectionable. If I say that portions of urine passed by the same man at different hours of the day or night vary very considerably in their composition, and that the quantitative analyses of any such single portion, whether passed in the morning, afternoon, or evening, affords no satisfactory insight into the patient's condition, I am merely uttering a truth which is known, or ought to be known, to every medical practitioner. Nevertheless, this truth is very generally ignored. Small samples of urine, which in no way represent the daily discharge, pass day after day from the medical man, or, by his orders, direct from the patient, into the hands of the analysts, and however correct the analyses may be, they will be useless in very many cases, and lead to erroneous conclusions. Instead of so doing the whole quantity of urine passed within twenty-four hours should be collected, mixed and measured, and a portion of this mixture submitted to an analysis. If medical men forget this fact, let chemists who are called upon to undertake urinary analyses remind them of it, and let them do so persistently as long as their efforts are not successful. Let us look at a few practical instances The specific gravity of healthy urine collected during twenty-four hours usually ranges between 1·016 and 1·024, the normal quantity discharged within that time being from 1200 to 1600 cubic centimetres, or from 40 to 56 fluid ounces. The density of the various samples collected during that time, if estimated separately, may however vary far more considerably, so that the density of one portion may be below 1·016, and that of another portion may be above 1·030, although the whole mixture shows the

average normal density of 1·020. If by copious water drinking the daily quantity of urine from a healthy person be increased to 2000 c.c. or beyond, or if it be decreased in another case by a scanty consumption of liquids to 800 c.c , or below, the specific gravity of the urines would be lower or higher accordingly, and although the percentage of solid constituents in such urines might appear abnormal, yet the total quantity of solid matter discharged within twenty-four hours would be about equal in both cases, and would indicate a healthy condition in either of the two persons. Thus it will be seen that if the precaution of collecting and measuring the entire quantity of twenty-four hours be neglected the density may vary enormously. It may be as low as 1·005 in one case, and it may be 1·035 in another case, and yet a medical man might commit a serious error were he to assume a hydraemic state in the former or a diabetic state in the latter case. No reliable conclusion of any kind can be drawn from the specific gravity in either instance, and it might therefore just as well be left undetermined. The only exceptional instance in which the mere density, regardless of the above precautions, affords a valuable diagnostic expedient is that of a pale-coloured urine of very high specific gravity. In many cases it is of great importance to ascertain the exact quantity of urea or that of phosphates or chlorides, but here again it is almost equally necessary, if not more so, to take the total daily volume of urine into account as the mere percentage of those substances contained in a small sample of the urine proves nothing whatever. Yet we are constantly called upon to carry out such examinations and the most unwarrantable inferences are often drawn from our results by members of the medical profession. Contrary to my clearly expressed desire as to the form in which the urine should be supplied to me for the purpose of a quantitative analysis, I have had to undertake many such analysis of samples of urine not representing the composition of the whole day's discharge, which have never been collected or measured ; and whatever the value of the qualitative and the miscroscopic examinations may have been in such cases, the quantities per cent. of urea, phosphoric acid, etc., might as well have been left out from the report. On one occasion a large percentage of phosphates was found, and the medical gentleman, a physician of high repute, looked upon this as indicating an increased waste of nerve substance. A careful examination however showed that the phosphates discharged with the urine within twenty-four hours fell considerably short of their normal amount. A gentleman suffering from saccharine diabetes had his urine examined by a chemist on the continent who found 5·5 per cent. of sugar. Shortly afterwards he requested me to make an analysis of his urine and supplied me with the entire quantity collected in twenty-four hours, amounting to 2600 cubic centimetres. I found 5·3 per cent. of sugar, which represents a discharge of 138 grammes of sugar per

day. He went again on a tour to the continent, and improved much in general health and strength. When he returned to England four months afterwards he seemed much alarmed by the result of an analysis of his urine made by a French chemist who had found six per cent. of sugar I also examined his urine with the same result, but far from there being any cause for alarm, the patient was undoubtedly much better, for though the sugar amounted to six per cent. the quantity of urine passed within twenty-four hours was only 1550 cubic centimetres, showing that the daily discharge of sugar had fallen from 138 to 93 grammes. The percentage alone seemed to indicate a worse condition, but in combination with the measurement of the urine it showed a vast improvement. I may here mention that the percentage of sugar in the urine of a diabetic patient also varies exceedingly at different hours of the day and night and under the influence of diet.

Of course, there is not always a necessity for mixing the urines passed during the whole day and night, in order to make a useful quantitave analysis. In cases of acute inflammatory diseases and the like, where a careful and uniform diet is observed day and night, there is not much variation in the composition of the urines passed at different hours, so that any sample may be looked upon as fairly representative, and fit for the determination of specific gravity, urea, phosphates, etc. But even then the quantity of urine passed in twenty-four hours should be at least approximately known and taken into consideration. In these cases a quantitative analysis will have more of a prognostic than a diagnostic importance, whilst my remarks refer chiefly to the numerous instances of chronic disorders in which a quantitative analysis is desired for the diagnosis.

From these general remarks on quantitative analysis of urine, I will now turn to the qualitative tests for albumen and sugar, the two abnormal substances most commonly sought for in urine.

The means generally employed for the detection of albumen are —1. The application of heat; and 2. The addition of nitric acid. The manner in which these tests are performed and the precautions which must be observed to avoid mistakes, are so generally known to chemists, that I will not trouble you with a description of them. Whichever of the two tests is used, the detection of an appreciable amount of albumen is always an easy matter. But when we have to search for exceedingly small traces of that substance, which no doubt occur in the urine of patients long before the chronic state of Bright's disease is suspected or recognized, then the question which of the tests should be preferred becomes undoubtedly one of great importance. Our modern authors have decided this question unhesitatingly in favor of the nitric acid test, which is to be so applied that the acid is poured very carefully into the urine, so that it does not mix with it, but forms a distinct layer at the bottom, above which the hazy zone of coagulated albumen shows with great pre-

cision. This is no doubt a delicate test, but, on the strength of very numerous experiments which I have made on the subject, I am justified in asserting that it is far surpassed in delicacy by a simple modification of the heat test, which I shall presently describe. You all know that albumen is not coagulated by heat in alkaline urines, and that it is not completely coagulated if the reaction of the urine be neutral, for which reasons alkaline or neutral urines are slightly acidified by acetic acid before the heat test is applied. It is also well known that an excess of acetic acid will greatly interfere with the test, and completely prevent the coagulation of traces of albumen. Analysts who have devoted much attention to the tests for albumen will agree with me that even as little as a few drops of acetic acid, the quantity generally recommended to be added to about half a test-tubeful of neutral urine, may be sufficient to prevent the detection of very minute traces of albumen. If the urine be acid, there is, of course, no acetic acid added before heating, but in this case also small traces of albumen are often overlooked, as Bence Jones has pointed out to be the case, where large doses of nitric or hydrochloric acid are taken medicinally. In such cases it is recommended to neutralize the urine, or almost to neutralize it by ammonia. There are, however, acid states of the urine in patients who have not taken any mineral acids, which also prevent the coagulation of very small traces of albumen, and numerous experiments which I have made have convinced me that in every instance in which a trace of albumen could be detected by the nitric acid test and not by heat, the failure in the latter test was attritutable to the acid state of the urine. I therefore propose the following modification of the heat test which I have found to answer remarkably well. Add solution of ammonia to the urine until just perceptibly alkaline, filter and add diluted acetic acid very cautiously until the urine acquires a faint acid reaction, avoiding the use of a single drop more than required. Now place equal quantities of this mixture into two test tubes of equal size, heat one of them to ebullition and compare it with the cold sample contained in the other test tube. The least turbidity is thus distinctly observed, and gives absolute proof of the presence of albumen, the error of confounding phosphates with albumen being out of the question, as they are precipitated by the ammonia, and removed by filtration. Proceeding in this way we can find even such faint traces of albumen as will escape detection by the nitric acid test. This test can of course be used in every instance, whilst the nitric acid test is not suitable for urines containing deposits of urates. It surpasses the nitric acid test in general applicability and in delicacy.

How greatly the internal use of mineral acids may interfere with the detection of albumen by the ordinary mode of heating may be seen from the following case. A physician delivered to me a

sample of blood-red colored urine from a patient suffering from hæmatinuria, and requested me to estimate the quantity of urea. To do this it was of course necessary first to remove the albumen, which, as a matter of course, was present. The urine was strongly acid and remained perfectly clear upon boiling, and also upon boiling with a drop of acetic acid, not a trace of albumen being coagulated. After treating it with solution of ammonia, and then with dilute acetic acid in the manner described, a very considerable quantity of coagulum separated upon boiling, and the pale yellow filtrate was now perfectly fit for the determination of urea. I concluded that mineral acids had been administered, and the physician confirmed my supposition.

Permit me now to offer a few remarks on the detection of sugar in urine, or rather on the copper test, which is generally acknowledged to be the best and most reliable. This test is certainly a delicate and reliable one in the hands of an experienced manipulator, but it is altogether unsafe in the hands of medical men or of analytical chemists who have not made a close and special study of urinary examinations. Thus we find that in applying the copper test in the ordinary and well known way, sugar is very frequently found where there is none, and is not detected where it is present, and such mistakes are made, too, by analysts of scientific eminence. Not that there is any difficulty in detecting sugar in a decidedly diabetic urine, for such urine may be looked upon as almost a pure solution of grape sugar, containing the ordinary normal constituents of urine in such small quantities that they do not interfere with the test, but the detection of traces of sugar in non-diabetic urine is a very different and much more difficult task, yet it is one of very great importance indeed, as it may enable the physician to discover and perhaps to remove a tendency to diabetes before it develops into the actual disease. As a rule, diabetes is not recognized or suspected until one or more of the peculiar symptoms manifest themselves, and the urine is then found, on examination, to be of a decidedly diabetic character. But it can hardly be supposed that this disease comes on suddenly, or that a man is quite healthy to-day, and discharges urine containing 5 per cent. of sugar to-morrow. There is most probably a time, long before the actual disease shows itself by outward symptoms, when the urine still contains the ordinary constituents in normal quantities, and in addition to them a minute trace of sugar, which may gradually increase until its quantity is such that the disease is confirmed and perhaps incurable. If this be so, it must appear important that we should be able to discover even very small traces of sugar in otherwise healthy urine. Numerous modifications of the copper test have been recommended, most of which still require experienced hands, and yet will fail to detect sugar in mere traces. There is one, however, which appears perfectly satisfactory, and which is so strikingly superior to all the

others, that I think it ought to be universally adopted. I mean the modification of the copper test proposed by Dr. William Roberts, in his work on 'Urinary and Renal Diseases.' It enables an analyst, inexperienced in urine testing, to find one-twentieth of a per cent of sugar, whilst with a little practice he will soon learn to detect as little as a one-fortieth of a per cent. without fear of an error. The test is best performed in the following way:—Heat in a test tube two fluid drachms of Fehling's standard solution of copper, and, when boiling, add five to ten drops of the urine to be tested; if sugar be abundant, as in a decidedly diabetic urine, a yellowish or brick-red opacity and deposit will be produced. If no such reaction ensue, test for traces of sugar by adding one and a-half fluid drachms of the urine to the hot liquid, heat again to ebullition, and set aside for some time. If no milkiness is produced as the mixture cools, the urine is either quite free from sugar, or at any rate contains less than one-fortieth of a per cent. If the quantity of sugar is very small, viz., from $\frac{1}{2}$ of a per cent. to one-fortieth of a per cent. the precipitation of the yellow or red cuprous oxide does not take place immediately, but ocours after some time as the liquid cools, and the manner of the change is peculiar. First, the mixture loses its transparency, and passes from a clear bluish green to a light greenish opacity, looking just as if some drops of milk had fallen into the tube. This green milky appearance is quite characteristic of sugar. In performing this test for the first time, a difficulty may be experienced on account of the phosphates of the urine being precipitated by the alkali of the test solution. These phosphates however, are thrown down in large flakes, which are seen, floating in a clear bluish-green medium by holding the tube between the eye and the light. The presence of sugar does away with all transparency, which gives place to a milky greenish or yellowish opacity. This mode of applying the copper test is simple, very delicate, and thoroughly reliable. It is based upon the fact that urine which is free from sugar never discharges the colour from more than an equal bulk of Fehling's solution. For this reason, a little more of test solution is used than of the urine. Fehling's solution is apt to deteriorate by keeping, so that without any addition it may cause a precipitation of cuprous oxide upon boiling; and for this reason, Lehmann and others have condemned it as a test for sugar. Proceeding, however, in the manner described, the test solution is boiled first, and if it remains clear there is a proof that it is in good condition. If instead, it forms a deposit on boiling, it must be rejected and a fresh supply of it made.

I have dwelt at such length on this modification of Trommer's copper test, because I believe it is not generally known amongst chemists, and because I am so thoroughly convinced of its practical utility and its superiority over all other sugar tests that I feel sure it need only be tried to be at once adopted. The other tests for sugar

in urine, viz., fermentation, boiling with solution of potash, boiling with carbonate of sodium and subnitrate of bismuth, etc., are far less delicate, and very apt to lead to errors, whenever traces of sugar are sought for.

EFFECT OF ABSOLUTE ALCOHOL UPON SOME CHEMICAL REACTIONS.*

There are certain chemical reactions for which moisture is necessary, and these will not of course take place in strong alcohol. Aug. Vogel calls attention to the fact that dry litmus paper will not be reddened by absolute alcohol, sulphuric ether, and other ethers, even when they contain a considerable quantity of acid. They will, on the contrary, immediately impart a deep red to a tincture of litmus.

There are two other reactions which depend upon the strength of the alcohol, namely, the iodide of starch reaction, and the spontaneous ignition of potassium thrown upon alcohol. If a piece of dry starch paper be dipped into a solution of iodine in absolute alcohol, no blue color will be produced. The paper is turned more or less yellow or brown, according to the strength of the tincture of iodine, and on being exposed for some time to the moisture of the atmosphere it turns blue. On moistening the paper, it turns blue immediately. If the tincture of iodine contains a certain quantity of water, the starch paper is blued as soon as it is immersed. This affords a convenient test for the strength or specific gravity of the alcohol. Prof. Vogel's experiments show that alcohol of 0.88 sp. gr., or 66.83 per cent., is the weakest alcohol that can be employed without causing the starch to turn blue. If a tincture prepared with this alcohol is but slightly diluted, the starch paper will be blued the instant it is immersed in it. This reaction might be employed practically for determining the strength of alcohol when an alcoholometer was not at hand. If the alcohol were above this test, water might be added from a graduated vessel or pipette, until the reaction set in. If the alcohol were below this test, a measured quantity of absolute alcohol could be added until the starch was no longer blued. This test could be employed with advantage in alcoholic liquors containing large quantities of sugar, and where it is necessary to distil off the alcohol before it can be measured with the hydrometer.

An instructive lecture experiment consists in preparing starch paper, immersing it when dry in an alcoholic solution of iodine, and drying in vacuo over sulphuric acid. If carefully protected from moisture and light it will not turn blue, but, when written upon with a pen dipped in water, the writing appears of a deep blue. Griesmair

*From the Journal of Applied Chemistry.

gives the following formula for preparing the starch paste: 3.5 grams of wheat starch is triturated with 50 c. c. of boiling water; after a few minutes it is filtered through a double thickness of Swedish filter paper. This filtrate contains one part of starch to 2,500 parts of water.

When potassium is thrown upon alcohol of 0.823 sp. gr. it will not take fire, but in contact with alcohol of 0.830 sp. gr. it takes fire instantly at ordinary temperatures. This furnishes a convenient test for alcohol of this strength.

A hygrometer and barometer has been patented in England recently by W. B. Woodbury, which depends upon the change of color, produced in chloride of cobalt by moisture. A strip of paper is soaked in a strong solution of a cobalt salt, containing also some common salt and gum arabic. This prepared paper is blue in a dry atmosphere, but passes through various tints from blue to rose-red in an atmosphere more or less most. Vogel tried to use this paper for determining the water in alcohol and glycerin, but found the gradual change of tint rendered it much less suitable for this purpose than the starch and iodine paper.

COCOA.*

Consequent upon the passing of the recent Adulteration Act, the sale and manufacture of cocoa have received considerable attention of late, and have much puzzled certain metropolitan magistrates and analysts, who seem to be very uncertain in their opinion as to the best form in which cocoa should be sold to the public. On the one hand, it is asserted that, scientifically speaking, cocoa is at present sold and manufactured in a not altogether commendable manner. As our readers are aware, "admixture" is a great element in the manufacture, and the many soluble cocoas offered to the public all contain a greater or less amount of sugar and farina in their composition. There are certain scientific men who contend that this is unquestionably an adulteration of cocoa, that the article does not require these admixtures, that they debase it, and that the public ought to get the benefit of the cocoa-nib in its pure form. On the other hand, the manufacturers of the cheap, loose cocoa assert that these admixtures do not in any way depreciate the cocoa, that, in fact, they improve it, and render it saleable as a cheap commodity amongst consumers, and that, generally speaking, they repudiate the idea of adulteration in connection with these goods. Prosecutions have arisen with regard to cocoa under the Adulteration Act, and one of the most important (that heard before Mr. D'Eyncourt, the

*From the Pharmaceutical Journal and Transactions.

magistrate at Marylebone) was reported in the Pharmaceutical Journal at the time. In this case the cocoa manufacturers got the best of it. They showed conclusively that there was nothing deleterious in the article as they made it, and that, as a practical fact, the admixture of sugar and farina was necessary, in order to popularize that article with the public, and make it a general and cheap article of sale. Mr. D'Eyncourt, after hearing lengthened arguments on each side, dismissed the summons, declaring his opinion that the soluble cocoa could not be regarded as an adulterated article.

It will not be uninteresting if we shortly point out how materially this branch of our commerce has developed. Going as far back as thirty years, or say to 1840, we find that the imports of cocoa into the United Kingdom then amounted to 3,499,746 lbs. ; in 1850 this amount had increased to 4,478,252 ; in 1860 it was 9,009,860 lbs. ; and in 1870 the total reached the vast amount of 14,793,950 lbs. This augmentation is a remarkable fact, and speaks volumes as to the increasing popularity of the article with the public. Most of this cocoa, as thus imported, is manufactured in the loose soluble cocoas which we see in the shops, and here we have convincing proof that the method of manufacture adopted of late years has been a great success, or our imports of cocoa would not have increased with such startling rapidity. It may be mentioned, too, as an interesting fact that the imports of cocoa for the first eight months of the present year amounted to no less than 15,372,502 lbs. against 13,284,369 lbs. in the same period of 1872, and 13,688,749 lbs. in the corresponding period of 1871.

The importance of the cocoa trade, as a distinct branch of the industry of the country, will be readily perceived from the statistics which we have just quoted. We thus see the amount which is imported, and which is manufactured into the various forms in which the article is generally sold to the British public. The greater portion—in fact, nearly all—finds its way into consumption in the shape of cocoa-powder, commonly and popularly known as soluble cocoa, and we are quite right in saying that very little of the pure nib is sold. The public much prefer the article as it is ordinarly sold, and do not seem to be partial to the theory that the pure nib is better for them. Considering the matter quite impartially, it is certain that as a beverage we get cocoa very good now-a-days, and we cannot conscientiously complain of our cocoa manufacturers. With regard to the prosecutions which have already resulted, it is satisfactory that they have nearly always ended in favour of the manufacturers, and corroborate the position they assume—viz., that they sell a perfectly pure and wholesome article of consumption, most useful and acceptable to the community at large.

LOSS OF DRUGS BY POWDERING.

The following table was lately issued by the Philadelphia Drug Exchange and is reproduced in the *American Journal of Pharmacy*. It exhibits the results from a number of trials of each article, covering a period of several years, and was prepared at one of the drug mills of Philadelphia. These losses, as will readily be understood, vary as the dryness of the article varies:

	Per cent.
Acid, Tartaric	¾ to 1
Aconite Root	2 to 5
Allspice	1½
Aloes, Cape	6 to 7½
Socotrine	8 to 10
Alum	½ to 1
Argols, Red	2 to 3
White	½ to ¾ of 1
Assafœtida	9 to 11
Barberry Bark	3
Bayberry Bark	4
Bean of St. Ignatius	1 to 3
Benzoin	1
Black Lead	½ to ¾ of 1
Bloodroot	3 to 4
Blue Vitriol	2
Bole, Armenian	1
Borax	¾ of 1
Buchu	3 to 4
Butternut Bark	3½
Calisaya Bark	3 to 5
Canella Alba Bark	3
Cantharides, powdered	2 to 3
Capsicum	7 to 9
Cassia	3
Castile Soap	23 to 25
Cloves	3
Cochineal	½ to 1
Colocynth Apple, powdered	4 to 5½
Copperas, when dried	7
Corrosive Sublimate	1½
Cream of Tartar	½ to ¾ of 1
Cubebs	1½
Elm Bark	3 to 4
Ergot	2 to 3
Euphorbium	½ to 1
Fenugreek	3 to 3½
Flaxseed	1 to 2
Gamboge	3 to 4
Gentian Root	6 to 13
Ginger, African	3
Jamaica	3
Gum Arabic	4
Indigo	2
Ipecacuanha	3 to 4
Jalap	9 to 10
Lac Dye	2
Liquorice Root chipped and bruised	3 to 4
powdered	10 to 12
Liquorice, stick	10
Mace	1
Mandrake	4 to 5
Manganese, Black Oxide	1½
Mustard	6 to 7
Myrrh	8 to 10
Nut Galls	4
Nux Vomica	4 to 5
Opium	18
Orange Peel	3 to 5
Orris Root, powdered	6 to 8
Pepper, Black	2½
Poplar Bark	1
Potassa Prussiate	1½
Prickly Ash Bark	1 to 2
Pumice Stone	2½
Rhubarb, powdered	3 to 4
Sal Ammoniac	1
Sarsaparilla, chipped and bruised	4 to 5
finely ground	10 to 13
Scammony	4 to 5
Senna	3 to 4
Shellac	2 to 3
Snakeroot, Black	3 to 4
Squills	3 to 5
Sulphur	1½
Valerian	3 to 5
Vanilla Beans	4 to 5
Wild Cherry Bark	3 to 5

THE LAVENDER FIELDS OF HERTFORDSHIRE.

The following interesting sketch was published in *Chambers' Journal* for August, from which it was reprinted in the *Pharmaceutical Journal & Transactions :*

Comparatively few persons are aware to how large an extent the culture of lavender for commercial purposes is carried on within a radius of thirty miles from London. In the county of Surrey alone, there are nearly three hundred and fifty acres of land devoted to its growth; and the total extent of the lavender fields in the London district cannot fall short of five hundred acres. Although it is only of recent years that the culture of the plant in England has been sufficiently extensive to raise it to the dignity of a recognized industry, the dried flowers have been used from time immemorial as a perfume; indeed, it acquired the name given to it by the Romans, *lavandula*, from the use to which it was applied in scenting the water of the bath.

The lavender plant grows wild in some part of Italy and the island of Sicily, but it is uncertain at what period it was introduced into England. Shakespeare, in the "Winter's Tale," puts these words into the mouth of Perdita :

> " Here's flowers for you ;
> Hot lavender, mint, savory, marjoram ;
> The marigold, that goes to bed with the sun,
> And with him rises weeping : these are flowers
> Of middle summer."

True, the scene is laid in Bohemia; but it is evident by the context that the plants named were such as were usually to be found in an English shepherd's garden as early as the time of Elizabeth.

Passing over the intervening three centuries, let us come at once to the subject of our sketch, the lavender fields of Hertfordshire. A hour's journey by the Great Northern Railway, through a charming tract of country, past the historic houses of Hatfield and Knebworth, which lie hidden by trees on the traveller's right hand ; over that grand engineering mistake, the Welwyn Viaduct, beneath which trickles the tiny river Mimram, through Stevenage, where Lucas the hermit, wrapped in his dirty blanket, still remains as when he served Charles Dickens as a model for Tom Tiddler—passing all these, we at length find ourselves, as the train slackens its speed, at the bottom of what seems to be an extensive chalk pit. This is the northern outcrop of the London basin ; and the station at which we alight as soon as the deep white cutting is passed, is Hitchin.

At this place, some fifty years ago the experiment was first made by a Mr. Perks of growing lavender as a source of profit, so well did it succeed, that there are now about thirty-five acres of land

in Hitchin devoted to its culture, yielding sufficient essential oil to produce upwards of two thousand gallons of lavender-water annually. A visit to the fields and laboratory, during the latter part of July or the beginning of August, when the flowers are in full bloom, is in itself worth the trouble of a journey to Hitchin; to say nothing of the special attractions which the neighborhood offers to the botanist, geologist, and antiquary.

The largest field is situated at the western side of the quaint old town, near the house in which George Chapman, the friend of Shakespeare and Ben Johnson, completed his translation of Homer. The young plants are bedded out in November, at a uniform distance of one yard apart. Formerly, they were placed at only half that distance; but it is found that a heavier yield is produced from plants set a yard apart, than from double the number at only eighteen inches. When three years old, the plant is at its best; and when it reaches the age of seven years, it has made so much wood that it is more profitable to uproot it, and set a fresh plant. The harvest time depends much on the state of the weather, but it usually commences about the first week in August. The flowers are cut with a sickle, bound up in small sheaves, and immediately carried to the distillery. There the stalks are cut off, leaving but little more than the flowers, by which the bouquet of the oil afterwards extracted is much improved, though the quantity of the oil is sensibly diminished. Much care is needed on the part of those who handle the sheaves in the distilling house to guard against being stung by the bees which remain attached to the flowers. The temperance, industry, and providence of these insects are proverbial; yet their behavior in lavender fields, especially towards the end of the season, when the flowers are fully developed, cannot be to severely reprobated. So careless are they of the good reputation they have earned, that they refuse to leave their luscious feast even when it is laid on the trimming bench; and hundreds are thrown into the still, notwithstanding the efforts to dislodge them, in a state of helpless intoxication.

After the flowers are separated from the stalks, they are put in the still, which is a copper vessel holding about two hundred gallons, beneath which is a furnace. The flowers are pressed down tight, after which the still is filled with boiling water, and the head carefully fitted on and luted with clay or linseed meal, so as to prevent the escape of steam. The head somewhat resembles an enormous tobacco pipe, the bowl being placed over the still. The stem of the pipe, called the worm, is coiled round and round in a vessel of cold water known as the worm-tub. As the steam is driven off through the head of the still, it is condensed in passing through the worm-tub, and runs into a vessel beneath. The essential oil is brought away with the condensed steam, and floats on the top. A siphon sucks out the water beneath; and as, in its passage through the worm, it has become impregnated with the oil, it is utilized by being

made hot, and again put into the still, to boil the next batch. As the water in the worm-tub becomes heated by the steam-tube passing through it, cold water is injected from beneath, which forces off the upper portion of the water, which has become too hot to perform its task of condensation. In about four hours the still has given off all its steam, and the result is about a pint of essential oil, of a light yellow color. In some seasons, it will fall far short of that quantity, while at other times it will greatly exceed it. When the condensed steam and oil have ceased to flow, the head of the still is hoisted off, the sodden mass of flowers is taken out with long forks, and the still is refilled. The refuse is taken back to the fields, and there allowed to remain, until it is used as manure for the next year's crop.

When the oil is first distilled, it has a peculiar empyreumatic odour; but by being kept in bottles for twelve months it loses much of its harshness. It is still, however, unfit to be used as a perfume in its natural state. In order to convert the essential oil into what is known as lavender-water, it is mixed with from twenty to forty times its bulk of spirit, and with just a trace of neroli, or other essential oil, according to the taste of the compounder.

Some idea of the enormous consumption of lavender-oil may be gained from the fact, that there is annually produced in England sufficient oil to produce nearly thirty thousand gallons of spirit of lavender. A large quantity is used in the production of other perfumes of more pretentious names. Soaps and toilet washes are chiefly scented with French and Italian oil, which is worth but from eight to ten shillings a pound, while the English oil is valued at four times that price. The difference in the value is chiefly due to the fact, that in the foreign distilleries the whole of the stalks, and even the leaves, are put in the still, whereas in England, particularly at Hitchin, where even more care is taken than in the Surrey fields, nothing but the choicest blossoms is used.

CORK PRODUCTION AND MANUFACTURE IN SPAIN.*

The cork tree is found in its wild state in the south of Portugal, Africa, and Spain, In the latter country the preparation of the bark for foreign markets is one of the staple industries, furnishing labor and subsistance to a large proportion of the population.

The tree is a peculiar kind of oak, aud the cork is the soft cellular interior bark, lying just inside the exterior woody covering. It is removed by making several longitudinal clefts up and down the

* From the Chemist & Druggist.

trunk, and then girdling the latter with horizontal incisions. The operation is not performed, however, until the tree has attained a certain age, generally fifteen years, and the first crop is employed only for inferior purposes. Seven years afterwards the tree will have another coating of bark, which is stripped and used for making corks, and so on every five to seven years, according to the quality of the ground. The tree does not suffer from the process of scraping, and it is said generally lives from one to two hundred years.

Between the cork and the tree there is another bark that is used for tanning; but this is only removed when the tree is cut down. It is a curious fact that if any portion of this inner coating be destroyed, further formation of the cork on the injured spot ceases. After the layers of the cork are stripped, they are inspected and assorted, according to their sizes and quality, those of the finest texture being of the greatest value. The inferior portions are generally sorted out, their crust burnt off, and sold mostly for floats, thus receiving the name of fishing cork. The better qualities are first boiled and scraped, and then blackened over a coal fire, the object being to make the surface smooth, and at the same time to conceal flaws. Some varieties, generally the best, are faced in order to exhibit the fineness of their texture. After being forwarded to the warehouse, the largest slabs are cut into pieces of about three and a-half feet in length, eighteen inches in width, and ranging from one half-inch to three inches in thickness. Drying and packing in bales weighing one hundred and fifty pounds each follows, and the cork is ready for exportation.

From five to twenty-five cents per pound are the usual prices paid by the cork cutter in America for the rough material as it arrives in the bale. It then undergoes another assorting, and a thorough steaming, in a chest designed for the purpose, the latter process softening the cork and rendering in easy to cut. To divide the substance special machinery is employed. Rapidly revolving circular knives are used, which cut by a drawing motion, as crushing strokes break the cork or cause it to crumble. The workman sitting in front of the machine places a piece of cork of suitable size in a revolving spindle, by which it is firmly held. The spindle is raised a measured distance, and the edges of the cork come in contact with the rotating knife, which smooths them off and leaves its work in a perfectly cylindrical form. Another method is to place the rough bits of cork in grooves on the circumference of a wheel which, working automically, carries each piece to a point where its ends are received by a small lathe. The cork is then revolved slowly while a large circular knife removes a thin shaving, thus giving it the necessary taper, and a surface as true and smooth as if sand-papered. As fast as a cork is finished by the automatic lathe it is released and another substituted in its place.

Every portion of the material is utilized, either as stuffing for cushions or life preservers, or as a non-conducting substance for placing between walls or floors of buildings to deaden sound.

THE EDUCATION OF PHARMACISTS IN GERMANY.*

On the 18th of July of this year, the following official regulations affecting the education of German pharmacists were proclaimed, and will come into force on the 1st of January, 1874. A young man who wishes to become an apprentice to an apothecary must, first of all, produce his certificate of having studied for one year in the second-class of a "Gymnasium," or the first-class of a "Realschule," and of having satisfactorily passed the usual examination. This is the same certificate which entitles all the German youth to serve one year in lieu of the regulation three years in the army.

The apprenticeship is to last three years, and during that time the pupil's earliest duty is to work in the shop, and thus make himself familiar with the usual drugs and chemicals which are to be his future companions. Then he goes to the laboratory, and learns to make the various chemical and pharmaceutical preparations; and besides, is expected to study works relating to the science of his profession. An apprentice in Germany very seldom now pays a premium; he is provided with board and lodging, and has every other Sunday free. But, especially in the summer, he is expected to employ some portion of this holiday in a botanical excursion.

He must have so employed these three years as to understand the preparation of chemical and pharmaceutic compounds, and the nature and properties, both chemical and physical, of the *Materia Medica*. In this he is tested by a district commission, which is composed of one physician (the *Kreisphysicus*, a State-appointed medical chief of the district), one apotheker, and the apotheker with whom the pupil has been apprenticed. Besides his scientific examination, he is required to translate the Pharmacopœia readily and accurately from Latin into German, to prepare a prescription, and to price it according to the Government tax.

In the large towns the apprentices enjoy more freedom, and better opportunities for study. In Berlin there are lectures provided two evenings a week, as it is generally the case that the pupils are too busy during the day to have time to acquire the necessary theoretical education. In Berlin too, as the distance from the rural districts prohibits the opportunity of botanical excursions, most of them visit the small botanical gardens behind the university, once or twice a week, where for a nominal payment, they can find an ex-

* Berlin Correspondent of the Chemist and Druggist.

cellently arranged and very complete set of specimens of medicinal plants.

The apprenticeship completed and the examination passed, the tyro must now spend three years as an assistant. He generally employs this period in several situations. It is required, however, that at least half the time should be spent in his own country. He takes partly *receptur stelle* (situations in the dispensing department), or *defectur stelle* (in the preparation department), that is to say he works alternately in the apotheke and the laboratory, as except in quite small businesses the same assistant very seldom fulfils both functions. For this he receives about £30 a year with board and lodging. In the large towns the board is sometimes compounded for at the rate of about 50s. per month. Every assistant has every other Sunday free, and also one afternoon each week, leaving business, too, every alternate evening at six or seven p.m. The night service is of course divided among the assistants, and neither the assistants, nor the proprietors get any extra payment for night dispensing.

The proprietor of the apotheke is required to see that during his time of service, the assistant continues to study, makes botanic excursions, and especially that the "laborant" keeps a journal and duly enters short memoranda of all his work.

This second stage over, the university career commences. The pharmaceutical candidate must attend lectures during two semestres on organic and inorganic chemistry, systematic and practical botany, and physic, and also practice qualitative and quantitative analysis in the university laboratory. He has also to attend lectures on the history of chemistry, microscopy, and pharmacy. Also sometimes on mineralogy and chemical technology. Each of these courses of lectures cost about £1 per semestre, and attendance in the laboratory for £2 to £3 for the like period. Generally the pharmaceutical students form an association amongst themselves, at each of the universities, partly for recreation and soci.ty, and partly for reading papers, discussions, etc. Each of the twenty German universities possesses a chemical laboratory, in most cases well furnished with all requisities, apparatus, etc., separate stands for each student, each provided with a gas and water supply, etc.; furnaces, a special room for operations with stinking gas, a balance room, * a library, and several other departments. Each student is visited and instructed once or twice a day, by the professor or in the larger laboratories by his assistants.

After two semestres of study, the candidate may present himself for examination. The examination is in three parts. The first is a written one, "unter clausur," under lock and key as we may say, and comprises a theme on analytical and one on organic or in-

* In the balance room of the chemical laboratory of the Berlin University, we have counted eighteen valuable balances provided for the students.—[Ed. C. & D.]

organic chemistry to be finished in a certain time, a few hours. Next the candidate is required to make a qualitative and quantitative analysis in the laboratory of the university also "unter clausur;" then in an apotheke of the town, he must make up two prescriptions, and one pharmaceutical preparation. Finally, he is examined for a quarter of an hour each by the professor of chemistry, the professor of botany, and the professor of physics, then by an apothecary in the laws governing the profession, and in his general knowledge of shop duties. The examination passed, he receives a diploma endorsed "extremely good," "very good," or "good" as the case may be, and he must next serve his year in the army, after which he is qualified to become the proprietor of an apotheke if he can get one.

I shall give details of German military pharmacy in my next letter.

HASCHISCH.

The natives of the Turkish Empire, and in the north of Africa, are far more addicted to the use of the haschisch (*Cannabis Indica*) than to that of opium. They have a similar effect, yet the former is decidedly preferred. They use either the dry leaves for smoking, or they drink the pressed juice, or use it in the form of cakes soaked with that essence. Much uncertainty prevails among botanists regarding the plant or plants which produce these narcotics—whether they are different species or mere varieties of the common hemp. Probably *C. sativa* and *Indica* are identical, yielding the Gunja and Bhang of the East. Both the above drugs are sold separate in the Indian bazaars, and in external appearance are considerably different. Gunja has a strong aromatic and heavy odour, abounds in resin, and is sold in the form of flowering stalks for smoking with tobacco. It is made up in bundles about two feet long and three inches in diameter, containing about twenty-four plants. Bhang is in the form of dried leaves, without stock, of a dull green colour, not much odour, and only slightly resinous, and its intoxicating properties are considerably less. Bhang is not smoked, but pounded up with water into a pulp so as to make a drink highly conducive to health, and people accustomed to it seldom get sick. Bhang grows in abundance in Tirhoot and Bhagulpoor in the wild state. In Scinde a stimulating infusion made from the plant is much drunk among the upper classes, who imagine that it is an improver of the appetite. Gunja is frequently mixed with tobacco to make it more intoxicating. This is especially done by the Hottentots, who chop the hemp leaves very fine, and smoke them together in this manner. Sometimes the leaves powdered are mixed with aromatics, and thus taken as a beverage, producing much the same effects as opium, only more agreeable.

Editorial.

SIGN TO BE USED TO MARK UNUSUAL DOSES IN PRESCRIPTIONS.

At the meeting of the British Pharmaceutical Conference, held last month, a paper was read on the advisability of adopting a sign, to be used by medical men, in order to denote the unusually large dose of any remedy ordered by prescription. The author alluded to the necessity of a sign of this kind, aud to the anxiety, delay, and inconvenience which was so often experienced by the pharmacist and patient when a prescription requiring an unusual dose was presented. In such cases the prescriber has to be sought for, thereby entailing loss of time to the dispenser, and perhaps worse to the patient; or the prescription has to be declined; or again, the prescription may be dispensed, and the pharmacist is saddled with a grave sense of responsibility, by no means easy to be borne. In Germany and Austria, where the strong hand of the state interposes, a clearly defined rule has, for some time, been employed, and this fact was held as presumptive evidence—if any be required—that a rule or sign is necessary in England. The proposing of a sign, by pharmacists, might be thought a trespass upon medical ground, but the author was of opinion that as the interests of pharmacists are, in a great measure, so identical, and so intimately bound up with the physician's interest in his patients welfare, that the suggestion, if recommended by the Conference, would be received by the medical profession with proper consideration and respect.

It was thought that the best sign that could be employed would be the prescribers initials, thus:

Tincturæ Digitalis.... ..... ʒiv [J.B.L.]

These initials might be compared with the actual signature, in case of any dispute concerning a prescription to which they were attached; thus following the custom respecting legal documents, in which, in case of corrections, or as a special mark of authenticity initials have a recognized legal value.

The views advanced by the author of the paper received the un-

animous concurrence of members of the conference, many of whom took the opportunity of stating the necessity of some step being taken, and their entire approval of that proposed. It was therefore resolved that a committee be appointed to confer with the medical profession with a view to obtaining a settlement of the matter.

We have specially called attention to this subject, as the inconvenience, or evil, of which our British friends complain, is felt to a proportionate extent in Canada. We feel assured that our readers will, at once, coincide with what has been said, and would welcome the introduction of a plan similar to that proposed. We think also that the medical profession would gladly fall in with any suggestion which would afford additional security, certainty and despatch, in the prescribing of medicine, and would thereby tend to the mutual benefit of all concerned.

We commend this suggestion to our medical journals and should be glad to hear their opinion on the subject.

AMENDMENTS TO THE MEDICAL ACT.

As intimated in a previous issue, the Medical Council of Ontario intend, during the coming session of the local legislature, to make another attempt to amend the existing Medical Act. A draft of the proposed bill is now before us, and, in many respects, appears to be an improvement on its predecessor. It is not, however, for us to discuss details which affect the medical profession only, nor, at present, to do more than call attention to the clause which affects pharmaceutical interests. We have already given our opinion in regard to the question involved in this clause, and prefer deferring, until another opportunity, any further remarks.

The Section alluded to is that numbered seventeen. It provides for the repeal of section forty-one of the present Act, and the substitution of the following:

"It shall not be lawful for any person not registered to practise Physic, Surgery, or Midwifery in the Province of Ontario for hire, gain, or hope of reward; and if any person not registered under this Act, or the Act hereby amended, shall, for hire, gain or hope of reward, practise, or profess to practise, Physic, Surgery or Midwifery,

or advertise to give advice in Physic, Surgery or Midwifery, or advertise to give advice in Physic, Surgery or Midwifery, he shall upon a summary conviction thereof before any Justice of the Peace, for any and every such offence pay a penalty not exceeding one hundred dollars, nor less than twenty-five dollars: provided always that nothing contained in this clause shall prevent any person licensed under the Pharmacy Act from compounding medicines, when prescribed by a registered practitioner, nor from selling any medicine in the ordinary course of trade."

A sub-section defines the course in case of non-payment of the fine:

5. "All prosecutions under this Act may be brought or heard before any one or more of Her Majesty's Justices of the Peace having jurisdiction where any such offence has been committed; and such Justices shall have power to award payment of costs in addition to the penalty; and in case the penalty and costs awarded by him or them be not upon conviction forthwith paid, to commit the offender to the common jail, there to be imprisoned for any term not exceeding three months, unless the penalty and costs be sooner paid."

MONTREAL COLLEGE OF PHARMACY.

We are pleased to learn that this institution is in a prosperous condition, and that its efforts in the cause of education are being renewed with increased energy. The lecture season is announced to commence on Monday, November 3rd, when courses on Materia Medica and Toxicology, Botany, and Chemistry, will be delivered. In addition to these a summer session of Field Botany will be held at the proper season. This will be of a thoroughly practical character, and will consist principally of a series of excursions into the surrounding country, for the purpose of collecting specimens, determining their names, and their proper situation in the scheme of vegetation. Students will thus be familiarized with many of our indigenous plants, and will be enabled to classify and name, without difficulty, plants which may subsequently come under their notice. The lectures on chemistry will have an especial direction to pharmaceutical pursuits, and the necessary portions of the science of

physics will also be embraced. All the classes will be under the direction of Dr. Kollmyer.

Meetings for the discussion of subjects connected with pharmacy, and for the reading of papers, will be held on the first Thursday in each month. We hope, in future, to reproduce these papers, either in abstract or entire; and also to detail the regular progress of the college.

The relation of the Montreal College to the Pharmaceutical Association may not be generally understood by our readers. The former organization had an existence for several years prior to the creation of the Provincial Association, and was then known as the Montreal Chemists' Association. Latterly, it has taken the name it now bears, and it has also affiliated itself with the Quebec Association, of which it may be considered as a local branch. The Act under which the Quebec Association was created is exceedingly limited in extent, confining the powers of the association to matters purely educational. The licensing power still remains with the medical college, but we understand that our Quebec friends are likely soon to free themselves from the thraldom to which they have so long and with such severity been subjected; and that even now they feel sufficiently strong to take the initiatory step, by refusing to go up to the Medical board for examination. It is probable that the local legislature will, during the coming session, break this bar to pharmaceutical progress which the medical men can now barely sustain, and grant to the pharmacists, with every confidence, the right to paddle their own canoe. They have, indeed, had a hard battle to fight; what with apathy and ignorance on one side, and jealousy on the other, they will certainly well earn all they may get.

CORRECTION.—A legal friend informs us that we should have shown a nicer regard for the technicalities of the law, if, in an editorial in last number, in which reference was made to the advantages derived from registration under the Pharmacy Act, we had said that, by registration, druggists were exempted from the conditions and restrictions of the recently passed Act respecting Tavern Licenses, rather than that this Act conferred the right to deal in liquors to be used for medicinal purposes. The matter is, probably, as broad as it is long, but it may be better to make the correction.

Editorial Summary.

Substitute for the Hypodermic Syringe —In the *British Medical Journal*, Dr. J. M. Crombie suggests a new method of hypodermy, applicable in those cases where a syringe is not procurable, or in those cases where the circumstances of the patient will not allow of the purchase and continued use of such an instrument. The method consists in coating fine silk thread with the required quantity of morphia, this when introduced in the manner of a seton, by means of a fine needle, with the eye close to the point, enables us to deposit the morphia beneath the skin, by slowly drawing the thread through the opening. This suppository has to be dipped in water immediately before application, and as it is passed through, which must be done slowly, a drop or two let fall on the end still to be passed, so as to moisten the morphia. The process does not cause more pain than injection by the syringe, even when the point of the latter is in condition, as only one-eighth of an inch of skin is traversed, and, as it simply requires a needle, does not entail expense, either for purchase or repairs ; and so may be the means of extending the benefit of subcutaneous morphia among the poor, for whom the syringe is too dear and too delicate an instrument.

New Formula for Vallett's Mass.—In order to obviate the tendency of this mass to become hard, by age, J. Donde, (*Am. Jour. Phar.*) proposes the substitution of sugar and glycerine for honey. The proportions recommended are 500 parts sulphate of iron, 600 carbonate of sodium, 280 white sugar, and 150 glycerine. The usual method of precipitation is followed: the carbonate of iron being pressed as dry as possible. The sugar and glycerine are then added, and the whole is evaporated to a pilular consistence. The preparation is said to be sufficiently permanent.

Useful Addition to Mucilage.—The use of gum arabic as a paste or cement is attended with certain well known disadvantages. It renders unsized paper transparent, does not adhere well to wood, or common pasteboard, or to metallic surfaces, glass or earthenware. It is said by the *Journal of Applied Chemistry* that the addition of a solution of 2 parts of sulphate of aluminium to 250 parts

of mucilage entirely obviates these disadvantages, and also prevents fermentation, acidity and mould.

Furtherance of Original Research.—We learn that, in aid of this object, Professor Tyndall has placed in the hands of a committee, the net profits derived from his lectures delivered recently in the United States. Thirty-five lectures were given realizing $23,100, of this $10,100 were deducted for expenses, leaving the handsome sum of $13,000 to be devoted to the object named.

Extract of Vanilla.—A correspondent of the *Druggists' Circular* proposes a method of preparation which promises some advantages. The beans are cut up fine and macerated for five days in one half the quantity of alcohol to be used. The beans are then separated, by straining, and, it is said, may then be powdered without difficulty. Percolation, in the usual manner, is then resorted to.

Administration of Castor Oil.—The writer alluded to in the preceding paragraph also suggests an original method for making a castor oil mixture which is said to be quite palatable. We give the form for what it is worth: In the bottom of a tumbler pour about six drachms of syrup of sarsaparilla, add a small quantity (about 10 grains) of bicarbonate of soda, stir with a spatula, add about a teaspoonful of a saturated solution of tartaric acid (always kept ready), stir well; this makes a heavy viscid froth. Then pour down the side of the tumbler, so as to sink to the bottom and not mix with the froth, about an ounce of water; then add the oil. The whole is to be drank without agitation.

Composition of Oil of Chamomile.—E. Demarcay, (*Pharm. Jour. & Trans. from Comptes Rendus,*) arrives at the conclusion that oil of chamomile is a mixture of several ethers, among which the angelates and valerianates of butyl and ethyl predominate. The ultimate composition of the oil, its boiling point, and manner of decomposition all confirm this view.

Formula for a new Elixir.—A correspondent of the *Druggists' Circular* is inclined to be facetious in the matter of elixirs—

more especially those of the beef, iron and strychnine type. He would add a new preparation, to be known as *Elixir of Benzine, Assafœtida and Smart-weed.*

It is made thus:

℞. Smart-weed, benzine and assafœtida, in fine powder, of each..... A handful.
Sweetened water,
Sour cider, of each..... 2 cupfuls.
Mix, and season to suit the taste.

The writer also adds that he has also a valuable formula for an Elixir of Wahoo, Watermelon and Sorghum, with Phosphate of Pumpkin Seeds, which he would part with for a consideration.

Transactions of Pharmaceutical Colleges and Societies.

ONTARIO COLLEGE OF PHARMACY.

A meeting of the Committee on Legislature, appointed at the last meeting of the Council, was held on Monday, October 27th. The following gentlemen were present: Messrs. Lyman, Shapter, Miller, Love and Hodgetts.

The chair was taken by Mr. Lyman, who explained that the special object in view in convening the meeting was the consideration of amendments to the Pharmacy Act. The working of the Act, during the time it had been in force, had revealed certain defects, and it was advisable that these be remedied, and that additions to the Act, embodying several new features, should also be made. He would first call attention to the section relating to the election of officers. Under the existing law, the college was, during the period which intervened between the election of a new council and their taking office, not only without a president, and other officers, but had virtually, no existence. He had conferred with the Attorney General and the decision of this official was to that effect. This point was discussed by the meeting and it was resolved that the necessary alteration be made in the section in question.

The subject of registration of partners was then discussed, and the conclusion arrived at, that no alteration of the Act could be made, or was desirable.

The registration of apprentices and assistants was next considered, and it was thought advisable, that apprentices and assist-

ants should be registered, and pay an annual fee. In the case of apprentices, the fee be one dollar, and that of assistants two dollars, the former to pass a preliminary examination, the latter the major examination, and each receive the *Pharmaceutical Journal.*

Before holding another meeting, the Secretary was instructed to issue a circular to the members, inviting their co-operation in revising the Act.

GEO. HODGETTS,
Secretary.

MONTREAL COLLEGE OF PHARMACY.

A meeting of the Board of this college, for the election of officers and the transaction of other business, was held on Thursday evening, October 9th. The following gentlemen were appointed officers for the current year :

President, Henry R. Gray.
Vice-President, A. Manson.
Treasurer, John Kerry.
Secretary, J. Mattinson.

The remaining members of the Council are Messrs. H. Lyman, Bolton, Harper, Jackson, Mercer, Muir, McGale and Patton.

Messrs. Mercer and Harper were empowered to fit up a library and museum, and Messrs. McGale, Harper, Patton and Mattinson were appointed as a Lecture Committee.

BRITISH PHARMACEUTICAL CONFERENCE.

The tenth annual meeting of this association was commenced on Tuesday, Sept. 16th, at Bradford, England; Mr. H. B. Brady, F.L.S., F.C.S., of Newcastle-on-Tyne, presided.

The first business of the Conference was the reception of delegates; twelve different associations were represented, and the number of delegates present exceeded that of any former occasion.

An album, containg photographs of officers and prominent members of the American Pharmaceutical Association, was presented by that body, and the thanks of the Conference returned. A telegraphic message, "Our members send to your members hearty fraternal greetings," was also sent to the American Association, which was at that time in session at Richmond. To this, a a suitable reply was received.

After the election of new members, the report of the Executive Committee was read, and the financial statement presented. From

this it appeared that the expenses were in excess of the receipts. To meet this emergency, and also to provide for the future, the yearly subscription of members was proportionately increased.

The president's address came next in order, but we are sorry that the space at our disposal will not permit our even attempting a summary. A great variety of topics were introduced and treated at length. More especially may be noted the admirable resume of the progress of cinchona cultivation in India, and the complete sketch of pharmaceutical progress during the last few years. The subject of pharmaceutical education was also handled in a very thorough manner; increased facilities for education, dissociation of the educational and examining functions of the Pharmaceutical Society, and greater stringency in the examinations, were strongly advocated.

Of the papers read at the meeting, we cannot give an abstract, as a full report has not yet come to hand. In due course we hope to lay before our readers all such as are of importance. We may note that one of the first papers read will be found in another part of this journal.

Mr. T. B. Groves, of Weymouth, was appointed president for the current year, and it was resolved that the next meeting of the Conference should take place at London.

AMERICAN PHARMACEUTICAL ASSOCIATION.

The twenty-first annual meeting of this Association was held at Richmond, Virginia, on Tuesday, Oct. 16th, and continued during the four succeeding days. The attendance was good, about one hundred and fifty members being present; and, from all accounts, the meeting appears to have been in every respect a success. We have usually been fortunate in procuring a report of the proceedings from the delegate sent by the Ontario College, but, on this occasion the college was not represented, and consequently we have had to take advantage of the reports given in the American journals. We would especially acknowledge our indebtedness to the *Druggist's Circular*, as the following particulars are, in great part, either condensed or taken in full from the excellent summary of proceedings published in that periodical.

As last year, a cable telegram, offering fraternal greetings, was received from the British Pharmaceutical Conference, whose time of meeting is coincident with that of the American Association. To this a suitable reply was sent. The President, Mr. A. E. Ebert, then introduced to the meeting the Mayor of Richmond, who, in a very appropriate address, extended a hearty welcome to those pres-

ent. The remaining portion of the first day, and part of the next, were taken up by the election of members, appointment of committees, and other business of an official character. The annual election of officers was also held, and the following gentlemen were appointed for the current year: President, Mr. J. F. Hancock; Vice-Presidents, Messrs. Saunders, Buck and Balluff; Treasurer, Mr. C. A. Tufts; Permanent Secretary. Mr. J. M. Maisch.

A communication was read from the late president, Mr. Ebert, offering as an inducement to the furtherance of original investigation, the sum of five hundred dollars, and suggesting the investment of the money so that the interest might be available as a prize to be presented, annually, for the best essay, based on original research, which might be presented for competition. The present was received, the thanks of the Association tendered to the donor, and a committee, for carrying out the necessary arrangements in connection with the gift, was appointed.

A volunteer paper on the purchase and sale of Alcohol was read by Dr. E. R. Squibb; as embodying the experience of the writer, the paper contains much practical information, which at some future time, we hope to lay before our readers.

The third day was devoted to reading answers to the queries of last year.

In response to Query 1, Can a permanently flexible Gelatine Plaster be prepared by some addition to the isinglass used, which will prevent the tendency of the plaster to curl and irritate the skin mechanically?

Mr. H. N. Rittenhouse stated that the experiments he had made proved that an addition of glycerine equal to one-tenth of the isinglass employed was a decided advantage, and would remove the tendency to curl and irritate the skin. The paper detailed the appropriate formula, the proportions of which were—

Russian isinglass...	10 ounces.
Water.....	3 pints.
Glycerine..	1 ounce.

These proportions being sufficient for four square yards of silk.

Query 7. "Sapo Viridis" *vel* "Sapo Mollis" is sometimes prescribed. What is the easiest plan of making it from olive oil and liq. potassæ?

In reply to this, Mr. P. Fred. Lehlback forwarded a paper, which was read, stating his experience in preparing it. After alluding to the various oleaginous bodies used in its preparation, he said that the liq. potassæ of the U. S. P. was too dilute to properly prepare it. In order to properly saponify it it required six ounces of caustic potassa to saponify sixteen ounces of olive oil. The paper gave all the minute details to properly accomplish the desired result. With it was submitted two samples, one in accordance with the

formula, the other colored with indigo, to meet the demand of those who want an article with a green color.

Query 10. Can Balsam of Tolu be rendered emulsionizable like Copaiba?

To this Mr. Bedford responded that he had made many trials, using every method he thought likely to accomplish such a result, but failed to produce a permanent emulsion in any way. He did not think it worth while to prepare any paper simply recording negative results, and would therefore reply verbally that balsam of tolu *cannot* be rendered emulsionizable.

Dr. Squibb read a volunteer paper on the Supply and Quality of Rhubarb as found in the market during the past year, which was accompanied by four samples. The supply of the year was ample in quantity, but not as fine in quality as that of the preceding year. The chests would run more uniform in shape and size, but seemed to be devoid of the agreeable aromatic odor which was formerly noticed. Small chests were scarcely to be found imported now, the large or picul being the size now seen. The loss in odor was doubtless attributable to some artifical method of drying, but in the imperfect knowledge we are able to obtain, it was more conjecture than a proven fact. One sample submitted had all the visible appearance of the Russian rhubarb, which was formerly so popular, and was forwarded to him as a sample of a chest held in the London market at a price far above that asked for any other. As the writer had not seen it broken, nor had any piece as yet been given by Dr. Squibb, it was impossible to say positively that it was the same variety as that formerly known as Russian (or Turkey) rhubarb. If it be not, then the producers have taken unusual pains to imitate the favorite article. At any rate, it is the handsomest sample in market, has a good odor, and will undoubtedly command a ready sale at a higher price than other rhubarb.

Dr. Squibb then read a paper on a new style of Physicians' Pocket-cases, in which the vials are much longer than those usually supplied in this way, and specially adapted to contain fluid preparations which can be dispensed with a graduated pipette that accompanies them, or for pills; these two methods alone insuring accuracy for dispensing at the bedside.

Prof. Markoe read an individual report upon the U. S. Pharmacopœia, prefacing it with the remark that as the Committee had not been organized, and the other members had not been communicated with, he had preferred to present this as a separate paper. He then read it at length, criticising many of the preparations, suggesting alterations, improvements, and amendments. They are, however, too numerous to mention in this account of the meeting.

In reply to Query 12, "What merit has Petroleum Benzine as a solvent for the extraction of oleo-resinous drugs like Buchu, Chenopodium," etc., Mr. J. P. Remington detailed some experiments

which proved that it was not an effectual solvent for buchu, as the eleo-resin obtained from it would not produce diuresis, while the buchu thus exhausted would yield to ether a product which, when evaporated to the consistence of an oleo-resin, would produce free diuresis. In order to complete other experiments, he asked for the continuance of the paper, which was granted.

Query 15. "Can the proportion of Sugar and Honey be improved in the officinal process for Pil. Ferri Carbonatis?

Mr. E. D. Chipman of Philadelphia responded by a paper in which he advocates the change of the proportions of these ingredients, making the weight of strained honey two troy ounces, and sugar three troy ounces, the rest of the process remaining as at present.

Prof. William Procter read a paper in reply to Query No. 18, as to the "Actual value of Orange-colored Glass, as a means of preventing the chemical action of light on Volatile Oils," but added that as his experience was too limited, he would ask the continuance of the subject.

Query 20. "Cannot an improvement be effected in the material and workmanship of cheap Ointment-Boxes?" This query was for general acceptance, but there being no reply, Messrs. Markoe and Remington each recommended the new style of cheap boxes made by the Mount Washington Box Co. of Boston, not so much for cheapness as for lightness, utility, and neatness.

Query 21. Prof. Maisch read a reply to this query, which related to the proper time of collecting the leaves of certain biennial plants.

Query 24. "Is there no better method of preparing Cucumber Ointment than that now in use by heating the juice with Fats?" In reply, Prof. Procter said that he had originally suggested the formula that had been in use for many years past, but that he had now improved the formula by substituting an oil for a solid fat, and now the proposed plan was to shake the juice with almond oil until the oil has taken up the odor and color of the juice, then removing the juice by decantation, adding a fresh portion of juice, and when this was fully absorbed, removing the juice and filtering the oil through a filter which had been previously imbued with a portion of almond oil, in order to retard the watery portion. The oil thus prepared was set aside as Cucumber Oil, and could be made, as occasion demanded, into ointment, cerate, cold cream, or other unctuous body, the several formulas of which were given.

Query 26. Can any improvement be suggested in Graduated Measures by which greater uniformity can be obtained? was answered by Dr. W. H. Pile. After detailing the examination of a large number of graduated measures, he added that there was no method that could be devised which would not be spoiled in practice by the workmen employed, who do not, or will not, take proper

pains to insure accuracy. A correct graduated tube or a correct set of weights will always enable the dispenser to make his own graduated measures, or so correct those he purchases as to insure accuracy in them.

A volunteer paper was then read by Mr. Geo. W. Kennedy, of Pottsville, Pa., on Frasera Walteri, which he said might be accepted as a reply to Query No. 2, Does the root of Frasera Walteri contain Berberina? After detailing the experiments for this principle, and failing to find it, he sought for other bitter principles, and found both Gentisic Acid and Gentio-picrin. It doubtless belonged to the Gentian family, and thought the name should be "Frasera Gentiana."

Query 28. An Essay on Labelling Shop Furniture, Stock Bottles and Vials, in view of permanency, regularity, and safety; also a Label Case to facilitate the finding of the same. This was partially answered by Mr. Geo. H. Schaffer, Fort Madison, Iowa, who gave an interesting account of his efforts to remodel his own store on such a plan, and the partial success he had met with. The paper had too many details applying to the painter's duties, but gives some practical suggestions which are worthy of trial.

A considerable portion of the fourth day was taken up by the reading of reports from the various committees appointed at this and the previous meeting. The details of these are of no particular interest to our readers.

Prof. B. Laillard read an article on Homœpathic Pharmacy, which was referred for publication.

Mr. S. S. Garrigues, of East Saginaw, Mich., read a paper in answer to Query 11—"The statistics of American Bromine production." He said that about 130,000 pounds were annually manufactured, and still more could be thrown on the market if necessary. The yield of bromine is about one pound from thirteen bushels of salt. It is obtained almost exclusively in the Ohio and Kanawha Valleys, the mines at East Saginaw not being sufficiently impregnated with bromine compounds to work them profitably.

Prof. Wm. Proctor, jr., then read a reply to Querry 30—What shall I read, and where shall I begin? It is impossible to reproduce all the excellent hints in this valuable paper, but for the benefit of our young friends we shall endeavor to reproduce the paper in full, as soon as it is published.

Query 31. An essay on what are Poisons in Pharmacy, and what plan is most efficient in guarding them from improper use *in the shop*. To this query C. L. Eberle responded, giving his views upon poisonous articles, and added that there was no safeguard equal to *intelligent brains*. "Let the dispenser educate himself to

practice a cool deportment, and let each detail in his manipulation be governed by close thought and scrupulous care." This advice covers the whole ground of properly guarding against *accidents* which ought *not* to occur.

William Saunders, of London, Ontario, then read a paper on the "Insect Enemies of Drugs," in reply to a query; and afterward a volunteer paper on the habits of the Mexican Honey Ant. This ant produces in its abdomen an excellent article of honey which is used both for food and medicine. Both papers were accompanied with specimens of the animals alluded to.

Dr. E. R. Squibb then read a paper on a Universal Laboratory Stand, adapted to many of the wants of the Pharmacist, and presented to the Association all the necessary wood-blocks to illustrate the papers he should present at this meeting. In connection with the apparatus alluded to, he also had an upright condenser used in distilation, it being a very ingenious modification of the old style of Liebig's condenser, occupying much less room, and having much greater condensing capacity.

Ergot and its preparations was the subject of still another volunteer paper by Dr. E. R. Squibb. In this the writer reviewed first the character of the ergot now found in market, stating that it was largely composed of other ergotized substances, such as grasses, barley, wheat, etc. He alluded to the Fluid Extract of the present U. S. P. as being a very great mistake, as it would not produce such a reliable preparation as that made by the formula of the U. S. P. of 1860. Dr. Squibb spoke of its recent administration hypodermically, and stated that he has prepared for that purpose a Solid Extract of such strength that one grain represents six minims of Fluid Extract, and that it has met with great success.

Mr. H. J. Rose of Toronto forwarded a reply to Query 42—"What is the purity of commercial Tartaric Acid, and what is the normal per centage of moisture?" He stated that he had tried the acid of all the various manufacturers here, as also procured through London brokers, and found it free from impurities to any appreciable degree. In one sample a trace of lead was found. It would appear that the crystals were about 2 per cent. stronger than the powder. The total amount of water present varies from 11 to 12 per cent., but when the acid is dried over sulphuric acid it only loses about 1 per cent. of water. Mr. Remington spoke of having on some occasions found traces of sulphuric acid present.

Mr. J. L. Lemberger presented a reply to Query 37—"Should not Aromatic Powder (U. S. P.) be made by powdering the crude ingredients all together, to facilitate pulverization?" which reply was that it should, as the cinnamon and ginger greatly hastened the labor by absorbing the oleaginous matter of the cardamon and nutmeg.

Dr. E. P. Nichols took the chair while Mr. J. F. Hancock read

the report of the committee upon Elixirs and unofficinal formula. This report, which was quite lengthy and of great interest, gave formulæ for all the really valuable Elixirs, and was accompanied by samples of each.

The Report was accepted and the Committee discharged, and the following Resolution adopted:—*Resolved*, that this report be adopted with the recommendation that these formulas be used by the members of the Association, and that the Secretary be instructed to send a printed copy to the Medical Societies of the Union, with the suggestion that physicians in prescribing elixirs prescribe only those of which formulas have been adopted by this Association.

On Friday, the fifth day a number of volunteer papers were read, some of them only by title, as the time for adjournment was at hand.

The Committee on Queries then read a list of the Queries accepted for the coming year, and their report was accepted and adopted.

The following resolution, offered by the Business Committee, was unanimously adopted:

"*Resolved*, That the hearty thanks of this Association be and are hereby tendered to the pharmaceutists and citizens of Richmond, for the cordiality of our reception at this our first visit to the 'Sunny South.'"

At 12.30 P. M. the Association adjourned, to meet at Louisville, Kentucky, on the second Tuesday in September, 1874.

Practical Formulæ

Superior Whitewash.—Take a clean, water-tight barrel, or other suitable cask, and put in it half a bushel of lime. Slake it by pouring water over it, boiling hot, and in sufficient quantity to cover it five inches deep, and stir it briskly till thoroughly slaked. When the slaking has been effected, dissolve it in water, and add a solution of two pounds of sulphate of zinc, and one of common salt. As it is often desirable to vary the monotony by introducing a variety of colors upon the premises, it may be important to know that a beautiful cream color may be communicated to the above wash by adding to it three pounds of yellow ochre; or a good pearl or lead color by the addition of lamp, vine, or ivory black. For fawn color, add four pounds umber—Turkish or American (the latter is the cheapest), one pound Indian red, and one pound lamp-black. For common stone color, add four pounds raw umber, and two pounds

lamp-black. The value of the sulphate of zinc is that it makes the wash harden better after it is put on. Some also put in a half pound of common alum; others substitute the alum for the zinc. There is no mode of making farm buildings attractive so cheaply as with whitewash, and, at the same time, of adding greatly to the preservation of the wood. The above wash cannot cost over fifty cents, and if liberally used it will add five hundred dollars to the market value of a farm. We can conceive of but few things more beautiful than clean, white farm buildings and fences, in contrast with the rich green of budding spring.

Indelible Ink.—The *Chemist and Druggist* gives the following recipe, which is said to afford a marking ink which flows freely from the pen, without running or blotting, becoming perfectly black on the application of a very moderate heat, and not injuring the finest fabric:—

Argenti nitras.....one ounce.
Soda carb. cryst.....one and a-half ounces.
Acid, tartaric .....two drachms, two scruples
Liq. ammon. fort ... .two fluid ounces or q.s.
Archil .....half an ounce.
Sacchar. alb .....half an ounce.
Pulv. acacia .....one and a-quarter ounces.
Aqua destil .....a sufficient quantity.

Dissolve the nitrate of silver and carbonate of soda separately in distilled water; mix the solutions; collect and wash the precipitate on a filter; introduce the precipitate, still moist, into a Wedgwood mortar, and add to it the tartaric acid, rubbing them together until effervescence has ceased; add liquor ammoniæ in sufficient quantity to dissolve the tartrate of silver; then mix in the archil, white sugar, and powdered gum arabic, and add as much distilled water, if required, as will make six fluid ounces of the mixture.

Elixir Stoughtonii (Stoughton's Bitters).—
Take of Wormwood,
Orange Peel,
Gentian; of each, 5 parts.
Rhubarb, 2 parts.
Cascarilla,
Aloes; of each one part.
Alcohol diluted, 200 parts.

Make either by maceration or percolation. This is one of the numerous stomach bitters of the 16th century, and a Professor Stoughton, of Leyden, is said to have been the originator of this elixir of life? The compound tincture of gentian is a good substitute, and generally dispensed when the Stoughton elixir is not kept in stock.—*Ibid.*

Liquid Furniture Polish :—

Shellac	4 ounces.
Alcohol, 95 p. c	2 pints.
Linseed oil	2 pints.
Spirits of turpentine	1 pint.
Sulphuric ether	4 ounces.
Ammonia	4 ounces.

Dissolve the shellac in the alcohol, add the oil and the turpentine, mix well, and add the ether and the ammonia. Shake when used, and apply lightly with a sponge.—*Druggists' Circular.*

How to Deodorize Cocoanut Oil.—The unpleasant smell often found in cocoanut oil is simply due to the extreme facility with which the oil becomes rancid. This may be corrected by any of the processes used for treating other oils similarly affected. The following, originally recommended for castor oil, seems to be as good as any other method: To one pound of the oil add half an ounce of boneblack and two drachms of calcined magnesia; mix well and let stand in a warm place, with occasional agitation, for three days. Allow to settle down or filter through a funnel provided with a double jacket holding hot water. During the maceration, the oil must be kept warm enough to remain in the liquid state.—*Ibid.*

Registrar's Notices.

LIST OF CHEMISTS WHO HAVE RENEWED THEIR REGISTRATION DURING THE PAST MONTH.

Caulfield, Chas., St. Thomas.
Chapman, N., Warkworth.
Featherston, J., Ottawa.
Foster, R. A., Picton.
Grange, A. W., Napanee.
Grange, J. T., Napanee.
Gray, R. B., Pembroke.
Hurden, W. H., Kincardine.
Hoag, H. N., Thamesville.
Leadbeater, J., Springfield.
Lewis, R. L., Hull, Q.
McCartney, W. J., Thorold.
McCollum, W. A., Tilsonburg.
McIntyre, P. J., Arnprior.
McKnight, Robt., Meaford.
Oliver, W. H., London.
Parish, T. A., Bridgetown.
Priest, T. H., Bath.
Radley, S. D., Chatham.
Smith, R. J., Bridgetown.
Stark, W. G., Hamilton.
Templeton, Robt., Perth.

The name of W. J. Johnson, Farmersville, was entered by mistake last month.

NEW REGISTRATIONS,

Rounds, Cicero D., Drumbo.
Shuff, J. G., London.

ASSOCIATES.

Smith, W. G., Toronto.
Smith, J. T., Dunnville.

DRUGS, MEDICINES, &c.	$ c.	$ c.
Acid, Acetic, fort	0 14 @	0 15
Benzoic, pure	0 23	0 30
Citric	1 50	1 60
Muriatic	0 05	0 06
Nitric	0 11½	0 15
Oxalic	0 23	0 27
Sulphuric	0 03¾	0 07
Tartaric, pulv	0 50	0 50
Ammon, carb. casks	0 23	0 24
" jars	0 23	0 24
Liquor, 880	0 25	0 28
Muriate	0 14	0 15
Nitrate	0 45	0 60
Æther, Acetic	0 45	0 50
Nitrous	0 35	0 37
Sulphuric	0 50	0 50
Antim. Crude, pulv	0 13	0 17
Tart "	0 65	0 70
Alcohol, 95 per ct.....Cash	1 60	1 72
Arrowroot, Jamaica	0 16	0 22
Bermuda	0 50	0 65
Alum	0 02¾	0 03¼
Balsam, Canada	0 50	0 50
Copaiba	0 90	0 95
Peru	3 80	4 00
Tolu	0 90	1 00
Bark, Bayberry, pulv	0 20	0 22
Canella	0 17	0 20
Peruvian, yel. pulv	0 42	0 50
" red "	2 10	2 20
Slippery Elm, g. b	0 15	0 20
" flour, packets	0 28	0 32
Sassafras	0 15	0 20
Berries, Cubebs, ground	0 20	0 25
Juniper	0 06	0 10
Beans, Tonquin	0 62	1 10
Vanilla	28 00	28 00
Bismuth, Alb	3 40	4 00
Carb.	3 65	4 00
Camphor, Crude	0 38	0 40
Refined	0 45	0 50
Cantharides	2 80	3 00
Powdered	2 85	3 10
Charcoal, Animal	0 04	0 06
Wood, powdered	0 10	0 15
Chiretta	0 20	0 30
Chloroform	1 10	1 65
Cochineal, S. G	0 80	0 95
Black	1 10	1 20
Colocynth, pulv	0 50	0 60
Collodion	0 90	1 00
Elaterium	5 80	5 90
Ergot	0 50	0 60
Extract Belladonna	2 00	2 25
Colocynth, Co	1 25	1 75
Gentian	0 50	0 60
Hemlock, Ang	0 85	0 95
Henbane, "	2 10	2 40
Jalap	5 00	5 50
Mandrake	1 75	2 00
Nux Vomic	0 40	0 50
Opium	1 50	
Rhubarb	5 00	5 50
Sarsap. Hon. Co	1 00	1 20
" Jam. Co	4 00	4 50
Taraxacum, Ang	0 70	0 80
Flowers, Arnica	0 17	0 25
Chamomile	0 32	0 40
Gum, Aloes, Barb. extra	0 70	0 80
" " good	0 40	0 50
" Cape	0 16	0 20
" powdered	0 20	0 30
" Socot	0 50	1 35
" pulv	1 00	0 00
Arabic, White	0 70	0 75
" powdered	0 60	0 75
" sorts	0 28	0 30
" powdered	0 42	0 50
" com. Gedda	0 13	0 16
Assafœtida	0 40	0 42
British or Dextrine	0 13	0 15
Benzoin	0 35	0 75
Catechu	0 12	0 15
" powdered	0 25	0 30
Euphorb, pulv	0 35	0 40
Gamboge	1 40	1 50
Guaiacum	0 90	1 00
Myrrh	0 50	0 70

DRUGS, MEDICINES, &c.—*Contd.*	$ c.	$ c.
Sang Dracon	0 60	0 70
Scammony, powdered	6 00	6 50
" Virg. "	14 50	—
Shellac, Orange	0 65	0 70
Gum, Shellac, liver	0 60	0 65
Storax	0 40	0 45
Tragacanth, flake	1 10	1 40
" common	0 53	0 65
Galls	0 28	0 32
Gelatine, Cox's 6d	1 15	1 20
Glycerine, common	0 25	0 30
Vienna	0 25	0 30
Prices	0 60	0 75
Honey, Canada, best	0 15	0 17
Lower Canada	0 14	0 16
Iron, Carb. Precip	0 20	0 25
" Sacchar	0 40	0 55
Citrate Ammon	1 50	1 50
" & Quinine, oz	0 53	0 58
" & Strychine	0 17	0 25
Sulphate, pure	0 08	0 10
Iodine, good	7 50	8 00
Resubiimed	8 50	9 00
Jalapin	1 25	1 50
Kreosote	2 40	2 50
Leaves, Buchu	0 22	0 30
Foxglove	0 25	0 30
Henbane	0 35	0 40
Senna, Alex	0 27	0 60
" E. I.	0 14	0 20
" Tinnevilly	0 20	0 30
Uva Ursi	0 15	0 17
Lime, Carbolate.....brl	5 50	—
Chloride	0 06	0 07
Sulphate	0 08	0 12½
Lead, Acetate	0 15	0 16
Leptandrin.....oz.	0 60	—
Liq. Bismuth	0 50	0 75
Lye, Concentrated	1 75	2 00
Liquorice, Solazzi	0 50	0 55
Cassano	0 23	0 40
Other brands	0 14	0 25
Liquorice, Refined	0 35	0 45
Magnesia, Carb..... 1 oz.	0 20	0 25
" ..... 4 oz.	0 17	0 20
Calcined	0 65	0 75
Citrate.....gran.	0 63	0 75
Mercury	1 60	1 65
Bichlor	1 40	1 45
Chloride	1 55	1 60
C. Chalk	0 70	—
Nit. Oxyd	1 70	1 75
Morphia Acet	4 45	4 60
Mur.	4 45	4 60
Sulph	4 60	4 75
Musk, pure grain.....oz	23 00	—
Canton	0 90	1 20
Oil, Amonds, sweet	0 42	0 50
" bitter	14 00	15 00
Aniseed	4 00	4 25
Bergamot, super	6 25	6 50
Caraway	3 20	3 50
Cassia	2 80	2 90
Castor, E. I	0 14	0 15
Crystal	0 22	0 25
Italian	0 26	0 28
Citronella	1 25	1 35
Cloves, Ang	2 20	2 40
Cod Liver	1 45	1 50
Croton	1 75	2 00
Juniper Wood	0 80	1 00
Berries	6 00	7 00
Lavand, Ang.....oz.	0 90	1 00
Exotic	1 40	1 60
Lemon, super	5 00	5 50
ord	3 20	3 40
Orange	4 00	4 25
Origanum	0 65	0 75
Peppermint Ang	13 00	14 40
" Amer.	3 80	4 00
Rose, Virgin	8 50	8 75
" good	6 80	7 00
Sassafras	0 90	1 00
Wintergreen	6 00	6 50
Wormwood, pure	4 00	6 50
Ointment, blue	0 90	1 00
Opium, Turkey	8 50	8 75
pulv	10 50	10 75

DRUGS, MEDICINES, &c.—*Cont'd*	$ c.	$ c
Orange Peel, opt.	0 30	0 36
" good	0 12½	0 20
Pill, Blue, Mass	1 00	1 00
Potash, Bi.chrom	0 23	0 27
Bi-tart	0 33	0 35
Carbonate	0 14	0 20
Chlorate	0 55	0 60
Nitrate	10 50	11 00
Potassium, Bromide	1 10	1 25
Cyanide	0 75	0 80
Iodide	6 75	7 00
Sulphuret	0 25	0 35
Pepsin, Boudault's.....oz	1 40	—
Houghton's..... doz.	8 00	9 00
Morson's.....oz.	0 85	1 10
Phosphorus	0 95	1 00
Podophyllin	0 50	0 60
Quinine, Pelletier's	—	2 45
Howard's	2 50	—
" 100 oz. case.	2 45	—
" 25 oz. tin..	2 45	—
Root, Colombo	0 13	0 20
Curcuma, grd	0 12½	0 17
Dandelion	0 17	0 20
Elecampane	0 16	0 17
Gentian	0 08	0 10
" pulv	0 15	0 20
Hellebore, pulv	0 17	0 20
Ipecac, "	1 50	1 60
Jalap, Vera Cruz	1 00	1 25
" Tampico	0 70	1 00
Liquorice, select	0 12	0 13
" powdered	0 15	0 20
Mandrake "	0 20	0 25
Orris, "	0 20	0 25
Rhubarb, Turkey	2 50	2 75
" E. I	1 10	1 20
" " pulv	1 20	1 30
" " 2nd	0 90	1 00
" French	0 75	—
Sarsap., Hond	0 40	0 45
" Jam	0 88	0 90
Squills	0 10	0 15½
Senega	1 00	1 10
Spigelia	0 25	0 30
Salts, Epsom	2 25	3 00
Rochelle	0 32	0 35
Soda	0 02½	0 03
Seed, Anise	0 13	0 16
Canary	0 05	0 06
Cardamon	2 25	2 50
Fe ugreek, g'd	0 09	0 10
Hemp	0 06½	—
Mustard, white	0 14	0 16
Saffron, American	1 15	1 50
Spanish	12 00	13 00
Santonine	8 25	9 00
Sago	0 08	0 09
Silver, Nitrate.....Cash	14 85	16 50
Soap Castile, mottled	0 11	0 14
Soda Ash	0 04	0 05
Bicarb. Newcastle	—	6 50
" Howard's	0 14	0 16
Caustic.	0 06½	0 06½
Spirits Ammon., arom	0 35	0 35
Strychnine, Crystals	2 60	2 70
Sulphur. Precip	0 10	0 12½
Sublimed	0 03½	0 05
Roll	0 03	0 04½
Vinegar, Wine, pure	0 55	0 60
Verdigris	0 35	0 40
Wax, White, pure	0 75	0 80
Zinc. Chloride.....oz	0 10	0 15
Sulphate, pure	0 10	0 15
" common	0 06	0 10
DYESTUFFS.		
Annatto	0 35 @	0 60
Aniline, Magenta, cryst	2 50	2 80
" liquid	2 00	—
Argols, ground	0 15	0 25
Blue Vitrol, pure	0 10	0 10
Camwood	0 06	0 09
Copperas, Green	0 01½	0 02½
Cudbear	0 16	0 25
Fustic, Cuban	0 02½	0 04
Indigo, Bengal	2 40	2 50
Madras	0 90	0 95
Extract	0 30	0 35

DYESTUFFS—*Continued.*		
Japonica	0 07¼	0 07½
Lacdye, powdered	0 33	0 38
Logwood	0 02	0 03
Logwood, Camp	0 02	0 3½
Extract	0 10	0 14
" 1 lb. bxs	0 13	—
" ½ lb. "	0 14	—
Madder, best Dutch	0 13	0 15
2nd quality	0 12	0 14
Quercitron	0 03	0 05
Sumac	0 06	0 08
Tin, Muriate	0 10½	0 12½
Redwood	0 05	0 06
SPICES.		
Allspice	0 11½ @	0 12
Cassia	0 39	0 40
Cloves	0 30	0 32
Cayenne	0 30	0 35
Ginger, E. I	0 19	0 20
Jam	0 20	0 30
Mace	1 65	1 75
Mustard, com	0 20	0 25
Nutmegs	1 15	1 20
Pepper, Black	0 22½	0 23
White	0 48	0 50
PAINTS, DRY.		
Black, Lamp, com	0 07 @	0 08
" refined	0 25	0 30
Blue, Celestial	0 08	0 12
Prussian	0 65	0 75
Brown, Vandyke	0 10	0 12½
Chalk, White	0 01	0 01½
Green, Brunswick	0 07	0 10
Chrome	0 16	0 25
Paris	0 30	0 35
Magnesia	0 20	0 25
Litharge	0 07	0 09
Pink, Rose	0 12½	0 15
Red Lead	0 07¼	0 08
Venetian	0 02½	0 03½
Sienna, B. & G	0 07	0 08
Umber	0 07	0 10
Vermillion, English	1 50	1 60
American	0 25	0 35
Whiting	0 85	0 90
White Lead, dry, gen	0 08½	0 09
" " No. 1	0 07	0 08
" " No. 2	0 05	0 07
Yellow Chrome	0 12½	0 35
" Ochre	0 02½	0 03½
Zinc White, Star	0 10	0 12
COLORS, IN OIL.		
Blue Paint	0 12 @	0 15
Fire Proof Paint	0 06	0 08
Green, Paris	0 30	0 37½
Red, Venetian	0 07	0 10
Patent Dryers, 1 lb tins	0 11	0 12
Putty	0 03¾	0 04½
Yellow Ochre	0 08	0 12
White Lead, gen. 25 lb. tins	2 50	—
" No. 1	2 25	—
" No, 2	2 00	—
" No. 3	1 75	—
" com	1 30	—
White Zinc, Snow	2 75	3 25
NAVAL STORES.		
Black Pitch	5 00 @	5 25
Rosin, Strained	4 50	—
Clear, pale	7 80	—
Spirits Turpentine	0 58	0 60
Tar Wood	5 50	5 75
OILS.		
Cod	0 63 @	0 70
Lard, extra	0 90	—
No. 1	0 80	0 85
No. 2	0 75	0 90
Linseed, Raw	0 76	0 80
Boiled	0 81	0 85
Olive, Common	1 10	1 20
Salad	1 80	2 30
" Pints, cases	4 20	4 40
" Quarts	3 25	3 50
Seal Oil, Pale	0 75	0 80
Straw	0 68	0 75
Sesame Salad	1 30	1 35
Sperm, genuine	2 20	2 40
Whale refined	0 90	0 95