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CANADIAN

PHARMACEUTICAL JOURNAL

VOL. V, No. 4. TORONTO, NOVEMBER, 1871. WHOLE No. XLIII.

Original and Selected Papers.

ON THE QUANTITATIVE ANALYSIS OF WHITE LEAD GROUND IN LINSEED OIL.*

BY VICTOR BIART.

Text books on chemistry tell us very little about adulterations of paints. Take, for instance, white lead; how shall we proceed? If the druggist bought it in the state of powder, it would be relatively easy; but as it is generally sold ground in linseed oil, the case appears to be more complicated. If we refer to books, it will generally be with disappointment.

As an instance, I give what I found in a good book on chemistry, in the part of the work relating to chemical analysis, speaking of the analysis of white lead in oil, the author says: "When the white lead is mixed with oil, it becomes more difficult to ascertain the exact nature of the adulterations, since the methods which must be adopted in order to destroy the oil, (viz.: incineration; or boiling with hydrochloric acid, and gradually adding chlorate of potassa), will alter to a greater extent the forms of combination in which the substances exist, and the analyst must content himself with merely identifying the different acids and bases; the quantities of these will, however, guide him in his conclusions as to the really important adulteration. Probably by powerful pressure in blotting

* From the Leavenworth Journal of Pharmacy.

paper, between hot iron plates, the oil might be so far extracted as to allow of the application of the ordinary method of testing."

But such a process would be altogether too tedious, and I would suggest the following plan: If you have a sample of white lead ground in oil, and you wish to test it, it is not necessary to make a thoroughly accurate chemical analysis of it, all you want is the detection of one or more probable impurities, and these generally are sulphate of baryta, sulphate of lead, sulphate of lime (plaster paris), and carbonate of lime (chalk). The sulphate of baryta is almost universally employed in adulterating white lead; in fact, that is what it seems to be created for, and the manufacturer of white lead readily takes the advantage of the whiteness, the firmness, the weight, and, above all, the cheapness of sulphate of baryta; all it lacks is the opacity, commonly termed the body, for it does not cover well.

The way to proceed then, is as follows: Take a small precipitating bottle, weigh it, and introduce in it, a certain quantity of the white lead ground in oil. Then add about four times the quantity of ether, shake frequently till all oil is dissolved, decant and add another small quantity of ether, shake again, decant and repeat the operation till a few drops of the ether used will not stain a sheet of white paper on evaporating. Collect all the ether used, evaporate, and the oil is left as residue; weigh it and calculate the per centage of oil in the white lead. Now warm the bottle with the dry white lead in it, so as to eliminate all the ether, then weigh it, and the difference of weight before and after digestion with ether must be equivalent to the amount of oil extracted.

To the powder obtained, add a little nitric acid diluted with three times its volume of pure water. White lead being a basic carbonate of lead, its carbonic acid will be expelled, and nitrate of lead will be the compound in solution.

If no sediment remains, then only test for lime as follows:—Add ammonia in excess, which precipitates the oxide of lead, then decant and add a solution of carbonate of potassa, which precipitates the lime if present. This is dried and weighed, and the amount of carbonate of lime it represents is calculated as follows:

28 : 50 :: weight of precipitate : x

x = weight of chalk.

Or the solution may be treated with oxalate of ammonia, which precipitates the lime as oxalate of lime; this may be converted into a carbonate by ignition, and then weighed.

If, on the addition of diluted nitric acid, an insoluble residue is left, then this residue must be tested for the sulphates of baryta, of lead or of lime. Boil the residue with dilute hydrochloric acid; the sulphates of lead and of lime will be dissolved and the baryta left; this may then be dried and weighed. Precipitate the lead by adding ammonia and sulphide of ammonium, the sulphide of lead formed is treated with concentrated nitric acid, which converts it entirely into sulphate,

and as such it may be weighed and directly determined. Lastly, the lime may be precipitated by oxalate of ammonia, ignited and converted into carbonate of lime, this is dried and weighed, and the amount of sulphate of lime it represents is calculated as follows :

50 : 68 :: weight of ignited oxalate of lime : x

x = weight of sulphate of lime.

THE MODERN ASPECTS OF THERAPEUTICS.

BY WALTER G. SMITH, M.D.

(*Continued from page* 63.)

It has lately become the fashion to decry the study of materia medica, and it is asserted that the possession of such knowledge is a useless burden on the memory. I am persuaded that this is a mistake, and a serious one, and I am sure that many will from repeated experience bear me out in the belief that an accurate knowledge of the characters and properties of drugs is of every-day utility to the prescriber, in enabling him to formulate correctly, to detect imposture, to avoid improper combinations, and to explain any phenomena that may unexpectedly arise.

Since our ignorance of the curative resources of the organism, and of the healing powers of drugs have been, and still are, the chief sources of error in therapeutics, and the chief obstacles to its improvement, it follows that the foundation-stone for positive knowledge must be laid in more accurate investigations into the real properties of drugs, and this leads me to consider how we may best set about such improvement, and in what directions we can look for assistance in such a course. I shall pass over without further reference the direct gains to therapeutics, and the lessening of the chances of confusion which flow from improved methods of diagnosis, from the more strict localization and classification of disease, and from the prosecution of physiological and pathological studies, and will direct attention, in the first place, to the influence which organic chemistry and physics are now extending over practical medicine.

The outcome of all recent developments in science, and, in especial, the doctrine of the correlation of force, *i. e.* the indestructibility or conservation of energy, the corner-stone of science, has been to render it in the highest degree probable that plants and animals are under the operation of the same laws as inorganic nature, and that all the changes and processes which are unceasingly at work within us are mainly the result of the action of physical and chemical forces upon the material constituents of our frame. The human body has often been compared to a machine, and though the comparison be-

tween a living body and an inanimate machine should not be pushed too far, still the forces operating on each can reasonably be compared, and the more closely we know the limits of health, and the deviations that may occur from it consistent with life, the more surely can we propose to rectify the errors in function. Hence it is plain that a truly expressed science of medicine cannot be evolved except by endeavoring to refer the processes going on in the animal body, and therefore also the influence of remedies on these, to the ultimate laws of physics, chemistry and physiology. "Chemical enquiry is now finding its way into many of the remoter secrets of function, and is likely before long to establish some laws of molecular constitution which will enable us to classify unknown remedies, and to explain and calculate their actions." (Dr. Allbutt.)

The observations of Bence Jones and Dupré, who were the pioneers of this work in this country, have disclosed a rich mine of discovery, and they have demonstrated the existence of a chemical circulation within the body, which rivals in importance that of the older mechanical circulation of the blood. By the application of spectrum analysis they have shown the wonderful rapidity with which crystalloids diffuse from the blood into the colloid tissues, and from the tissues into the absorbents, and so the passage of all substances through the human body is determined by the laws of diffusion, modified by pressure. For example, if 20 grs. of carbonate of lithium are taken into the stomach, it will, in two and a half hours, have passed into every particle of the textures, and beyond the blood circulation even into the most distant parts, and in three and a half hours it will be distinctly present in each particle of the lens. In about seven days the lithium will be entirely eliminated from the body. When 7 grs. of carbonate of lithium were given eight hours before delivery, the lithium was subsequently detected in each particle of the umbilical cord.

Again, they have determined the existence, in animals, of a widely diffused substance which closely resembles quinine, and which has been named animal quinoidine. This leads to a plausible supposition, the only one yet offered, as to the mode of action of quinine in curing ague, and the hypothesis, though not proven, opens up a hopeful prospect of possible discovery.

The history of organic synthesis dates only from the year 1828, and remained comparatively barren for some years, but since the year 1845, its progress has been truly marvellous. The most complex substances are being formed at will, while the last barriers between organic and inorganic bodies are disappearing, and as the advances in this branch of science are, if I may say so, in the highest degree cumulative, the time is probably not far distant when, by the artificial formation of morphia and quinia, we shall be able to dispense with the production of opium, and the cultivation of cinchona in our colonies.

Every schoolboy is now familiar with the derivation of the most diverse colors from coal tar, and it is but the other day that alizarine, the coloring principle of madder, has been built up from another component of coal tar—the first instance of the artificial production of a vegetable coloring matter. We have just learned that artificial indigo has been isolated, and we may confidently hope soon to see the alkaloids brought into the market, derived not from their natural sources, and dependent on precarious supplies, but furnished to us by the laboratory of the chemist—the true magician of our age. [Even since these lines have been written, Schiff has announced the first attainment of this result in the artificial formation of conia.] The insight which we shall thus gain into the constitution and intimate nature of complex organic molecules must prove of inestimable value as a stepping-stone to a true classification of remedies. So comprehensive is the aim of modern chemistry, and so wide the means of research, that "we can foresee a state of chemistry in which, without studying the properties of different bodies in detail, and knowing only the number, atomicity, and electric polarity of the elements, it will be possible to determine by simple calculation the formulæ, properties, and mode of preparation of all compounds possible." (Naquet.)

In a philosophic and suggestive paper, Dr. Broadbent has made a bold attempt to apply chemical principles in explanation of the action of remedies and poisons, in which are contained, I believe, the elementary principles of scientific therapeutics. Starting from the two postulates—1st. That there must be some relation between the substance administered and the human organism on which the effects produced depend. 2nd. That, so far as the substance is concerned, the basis of the relation can only be its *chemical* properties, using this term in its widest sense, certain corollaries flow from these:—1. That the physiological and therapeutical actions of the same substance must be similar in kind. 2. That the action of foods, medicaments, and poisons in the system, must be capable of explanation on the same principle. 3. That substances closely allied chemically, must have an analogous action on the system, or the diversity in their operations should be capable of explanation on chemical principles; in other words, chemical groups ought to form therapeutical groups. This is an outline of the path to be pursued, and some steps of importance have been already gained by individual workers. In England and Scotland the names of Bence Jones, Richardson, Crum Brown and Fraser, stand out in honourable relief; in France, among a number of observers, Mialhe, Rabuteau and MM. Pélissard, Jolyet and Cahours; and in Germany, Liebreich, Binz and many others, have pursued the investigation of the physical and chemical action of drugs with results most encouraging, though as yet imperfect and incomplete.

In determining the action of any substance from a chemical

point of view, Dr. Richardson has shown that we have to consider five points, viz.:—1. The elementary basis or radical composition of the substance to be tested, and the change of constitution to which it may be subjected; 2. The physical qualities of the substance; 3. The chemical stability of the substance; 4. The physical peculiarities of the animal body subjected to the substance; and 5. The special action of the substance on special centres of the animal organism.

Some scattered attempts to express the relation which, no doubt exists between the physiological action of a substance and its chemical composition and constitution (*i.e.* the mutual relation of the atoms in the compound) have, from time to time, been made, but until lately with trifling success. For example, it has long been observed that, as a rule, the salts of the same base and of the same acid have respectively a common physiological action, and Mr. Blake, of California, pointed out many years ago, and has lately extended his experiments, that, in general, isomorphous substances have analogous actions.

(*To be continued.*)

OBSERVATIONS ON THE COLOR OF FLUORESCENT SOLUTIONS.*

BY HENRY MORTON, PH. D.

President of the Stevens Institute of Technology.

As the result of a series of experiments to be presently described, I have come to the curious conclusion that all the familiar fluorescent solutions, such as the tincture of turmeric, of agaric, of chlorophyl, and the solution of nitrate of uranium, emit light of the same colour by fluorescence, namely, blue identical with that developed by acid salts of quinine. This blue, however, as is well known in the case of quinine, is not of a single tint or refrangibility, but yields a continuous spectrum, in which the more refrangible rays predominate.

My attention was first drawn to the subject by observing that a specimen of mixed asphalt, which is here largely used in the preparation of pavements, yielded a light yellow solution with alcohol which fluoresced blue, and an orange solution with turpentine, which fluoresced green. It at once occurred to me that the green color was simply due to the absorptive action of the colored solution, and not to the development of green rays. Examined with the spectroscope

*From the American Journal of Science and Arts.

The seemingly green fluorescence showed no increase in the green or yellow part of the spectrum, as compared with the blue fluorescence, but only an absorption of the red and violet ends. When, however, a piece of fluorescing canary glass or solid nitrate of uranium was examined, the green light was (as as is well known) largely augmented. I also found that when, by filtration through animal charcoal, the solution in turpentine was reduced in color, the green tint in the fluorescence disappeared in a corresponding degree. This alone would, however, have proved nothing, as a green fluorescing matter might have been absorbed by the charcoal, but in connection with the spectroscopic result it was of interest.

I next took up for examination the tincture of turmeric. This is set down in standard works, such as those of Du Moncel and Becquerel, as fluorescing red. This solution, when concentrated, has a rich orange-red color, and the jacket of a Geissler tube being filled with it, all the light preaching the eye from the electric discharge within, is of a dee orange or red color. If, however, the solution is simply diluted until its color is reduced to a rich yellow, the fluorescence appears green. The same result follows from filtration through bone black, with a marked increase in the amount of fluorescence visible, as the light-absorbing coloring matter is removed. By continuing the decoloration until the liquid is colorless or of a very light tint, its fluorescence is distinctly blue.

The results with the spectroscope when it was applied to this substance, were the same as with the solution of asphalt. Such also is the case with tinctures of chlorophyl, which, when fresh and green, gives apparently a green light, and, when old and brown, a gray color.

Finally, I took up the nitrate of uranium, about which such contradictory statements have been published. This salt in its solid state gives a brilliant fluorescence, whose spectrum is figured by Becquerel, and abounds in green rays; but in solution it gives a very feeble fluorescence, far inferior to that of turmeric, and of no more green tint than would be due to its yellow color. So, in fact, says also the spectroscope.

From these results it would seem that the molecules of fluorescent bodies *in solution* are not capable of restricting their vibrations to limited ranges, but move at rates corresponding with all refrangibilities, having simply an excess of the higher ones, though the same substance in the solid state may act quite differently, as in the case of nitrate of uranium, and possibly the fluorescent material of asphalt, which may be related to the solid hydrocarbon fluorescing green, which Becquerel mentions (*La Lumière*, tome i, p. [illegible]).

In this general connection let me mention that I have observed while the acid salts of quinine generally are fluorescent, the

chloride is not, and that hydrochloric acid will decompose the ac sulphate so as to destroy its fluorescence.

There are several other points in connection with this and the for going subject, which I must leave for a subsequent discussion.

July, 1871.

P. S.—August 1st. I have just obtained results with turmeri which seem to indicate that its fluorescence is due to the presen of a substance not yet observed, soluble in water, and without a color.

SYRUP OF SANTONATE OF SODA.*

BY J. DONDE.

A good vermifuge syrup is prepared by the following formul

Santonate of Soda	30 grains.
Distilled water	1 ounce.
Syrup	18 fluidounce

Boil the syrup till it is concentrated to 32° Bme. Rem from the fire, let it cool a few minutes, then add the salt disso in the water.

You obtain 18 fluidounces of a transparent syrup, witho bitter taste, of 35° when cold. Each fluidounce contains one g of santonine. I have been preparing this syrup for nine years the drug store of Mr. Font.

Santonate of Soda.

Santoninic Acid, in fine powder	2 ounces.
Caustic Soda Lye, pure	4 fluidounces.
Distilled Water	12 fluidounces.

Put all in a flask, and heat in a sand-bath, or over a stove 70° or 80°, until the solution of the santonine is complete, w usually requires about half an hour, then remove from the and when cold it is conveniently evaporated. In cooling, prism crystals with an oblique base are obtained, containing 54 per c santonine.

When the solution is evaporated until a strong pellic formed, on cooling it is converted into a mass of acicular cry of a pearly aspect, which contains 60 per cent of santonine.

The santonate of soda is soluble in 1¾ its weight of water (2 and has a slightly bitter taste.

Merida, August 14, 1871.

*From the American Journal of Pharmacy

ANNUAL MEETING OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

From our own Correspondent.

(Continued from page 111, No. 3.)

EVENING SESSION, WEDNESDAY, SEPTEMBER 13TH.

Prof. Maisch read a report on Legislation, detailing the provisions of the various acts which have been passed during the year, affecting pharmacists, including our Canadian Pharmacy Act. He remarked that in nearly all the States attempts had been made to regulate and restrict the practice of pharmacy by legal enactments, but in many of them, thus far, without success.

A Committee appointed last year to report on the advisability of inviting the International Pharmaceutical Congress to meet in America, recommended that that congress be invited to meet in Philadelphia, in 1876, the 100th anniversary of independence, at the time of the July celebration, and in case the congress cannot then meet there as a body, that an invitation be extended to the pharmacists of all nations to meet as individuals at that time and place.

An interesting volunteer paper from Daniel Hanbury, F.R.S., London, England, was read by Mr. Brady, on the exports of "Druggs and other things," from Virginia A.D. 1610. The substance of this paper was compiled from the old records relating to intercourse with the colonies, preserved in England, and referred chiefly to those portions which were of interest to the pharmacist. The instructions given sent to the colonists regarding the manner and time of collecting the various articles mentioned, and the best way to pack and forward them, were somewhat unique. The prices, too, which some of the substances brought in the European markets were highly interesting and instructive, as showing the estimation in which they were then held. Among the things mentioned as specially desirable for shipment, were small Sassafras, Bayberry, Yellow Puccoon, Sarsaparilla, Walnut Oil, Chestnut Oil, Turpentine Gum, Pitch, Tar, and the Sounds of Sturgeons, for Isinglass.

A vote of thanks was unanimously passed to Mr. Hanbury for his valuable and interesting paper.

The replies to queries given last year by the Association being now in order, the following were responded to:

1st. Are the preparations of Rennet identical with those of Pepsin, and can the former be prepared only from the fourth stomach of the calf. A short reply was read from Clemens Parrish, of Philadelphia.

Query No. 2 on Camphor, how it may best be reduced to fine powder, and retained in that state; replied to by John C. Lowd,

of Boston. He remarked that the present method of powdering Camphor was very unsatisfactory, and suggested as an improvement that it be powdered by vaporizing it from a copper retort, and passing the vapor into a chamber made with paper, three feet square, where, if the vaporizing was not conducted too rapidly, it would condense in a very fine powder which would remain unaltered for a considerable length of time. With a chamber of this size a pound of camphor might be sublimed in half an hour. Samples of the powder prepared in this manner were submitted for inspection and were highly commended.

The next query was on the various extracts of meat in commerce, and their relative value as nutritives, responded to by A. B. Ebert, of Chicago. From the experiments made by Mr. Ebert, he concludes that all the leading preparations in the market are nearly uniform in character, and all are of value, presenting as they do so much nutritive matter in a small compass.

Some valuable remarks were made by Mr. Brady on extracts of meat, in which he referred to the process of dialysis, and subsequent examination under the microscope as a ready method of determining the relative value of these preparations.

THURSDAY—MORNING SESSION.

A volunteer paper of Dr. Squibb's was read, in the author's absence, by Prof. Proctor, on a Fluid Extract of Cantharides, in which he suggested the use of Liquor Potassæ, in connection with alcohol and water, as a menstruum to exhaust them of their active matter. A very satisfactory preparation was thus produced, which was more active than any other blistering material in use, vesicating in from four to six hours. Referred for publication in the proceedings.

Query No. 10, on suppositories, the best way of preparing them extemporaneously, was replied to by R. B. Ferguson, of Washington, D. C. He recommended that the ingredients (cacao butter finely shaved, as a base) be well mixed on a suitable board by means of a stout spatula, and then rolled and cut of proper size, and worked into shape with the fingers, which should be kept dry with a little arrowroot.

Mr. Brady offered some valuable remarks in reference to this subject. Suppositories were first introduced into the Pharmacopœia in Great Britain in 1863, and were then ordered to be made of lard and wax. But it was not long before a more suitable substance was found in theobroma oil, and the change to the use of this material so nicely adapted for the purpose, soon resulted in a greatly extended use of this form of administering medicines. The oil was not often found sufficiently pure in the market for use, but it might be purified by heating for several hours at a temperature of about 180, and

tering while hot through paper. A fine sample of the oil thus purified was presented to the meeting in the form of a bar, the color of which was nearly white. Having been requested to devise some formula for suppositories, which would be quite free from grease of any sort—this having been objected to on account of its soiling the clothes—he had succeeded in obtaining a substance suitable in most cases by combining gelatine with glycerine, after the following formula :—

Glycerine	7 parts.
Nelson's Opaque Gelatine	3 "
Water	11 "
Alcohol	1 "

After soaking the gelatine in the cold water for several hours, apply heat until the solution is complete, then add the glycerine and alcohol with the drug to be administered, and pour into suitable moulds. This gelatine compound is not intended to be used with astringents, or Tannic or Gallic acids. Some very beautiful suppository moulds were exhibited by Mr. Brady, made by Maw & Son, from his own original designs, and known as "Brady's Suppository Moulds." They were made of gun metal, electroplated, and opened by means of a spring, in a manner most convenient for the removal of the suppository, the weight of the metal being such as to secure their cooling almost as fast as they could be made.

An excellent paper on Glycerine was next presented by J. H. Remmington, of Philadelphia. Bower's glycerine he regards as the best and most reliable in the market, although Gordon's, of recent make, was almost equally good. Of all the German glycerine offered in the U. S. he preferred that made by Sarg. The tests suggested to indicate pure glycerine were, proper specific gravity, freedom from odor when cold and when heated, and not acted on by nitrate of silver. The sense of burning arising from the use of glycerine when applied to excoriated surfaces, he attributed to the increase of temperature resulting from the sudden absorption of moisture from the surface by the Glycerine, this substance having a strong affinity for water. If diluted, this source of objection to its use is removed; dilution with at least one-fourth of its bulk of water should always be practiced before external application or internal use.

Prof. Parrish thought that Glycerine was irritating, even if thoroughly diluted, and instanced some cases which had come under his own notice of irritation arising from its use in eye lotions even when largely diluted.

A volunteer paper on Hydrate of Chloral, by Dr. Squibb, was then read, also a reply to query No. 11, as to whether a liquid preparation of chloral was desirable, by Prof. Markoe, of Boston. Prof. Markoe did not think a liquid preparation desirable, but preferred dispensing it as required.

Dr. Squibb's paper went to show that the Chloral at present in the market is purer and more reliable, on the whole, than it was a year ago. He regarded the small crystals or crystalline powder as preferable to that in lumps.

Prof. Maisch stated that he seldom finds Hydrate of Chloral entirely free from Hydrochloric acid, and regarded the usual crystalline form as most objectionable, from its deliquescing so rapidly. He much preferred Chloral, which had been recrystallized from a solution of Bisulphide of Carbon, as it is then comparatively permanent; it sometimes retained a trace of odor of the bisulphide, but this was easily got rid of by a few minutes trituration in a mortar before dispensing.

A. E. Ebert, of Chicago, had dispensed a very large quantity of Dr. Squibb's Chloral in the crystalline form referred to, and had not found it open to the objections urged by Prof. Maisch. He had experienced no inconvenience from its absorbing moisture, and had found it free from impurities.

Prof. Parrish thought it quite safe to keep a standard solution of Chloral for dispensing, and always did so in his store.

Mr. Brady commented on the undesirability of using syrup in connection with Chloral and also urged objections to the addition of alcohol, but believed that a solution in distilled water might be kept a long time without decomposition; in his own establishment he usually keeps it in that way for dispensing.

Prof. Markoe also finds that alcohol leads to decomposition.

In reply to query No. 13 on *Cotton Seed, Mustard Seed and* Peanut Oils, as to how far they were sold for Olive Oil, an excellent paper was offered by H. N. Rittenhouse, of Philadelphia. He stated that Cotton Seed Oil is largely sold for Olive Oil, either in toto or mixed with Olive Oil and sold as pure. Ten per cent. of Olive Oil will give a decided Olive Oil smell and taste to Cotton Seed Oil so that it is very difficult to detect the fraud. The price of Cotton Seed Oil, refined so as to be suitable for use as a Salad Oil, pale yellow, or colorless and odorless, varies from 50c. to 75c. per gallon while Olive Oil is fully double that price. Cotton Seed Oil is exported largely to Europe. The seed is also sent there and expressed. 20,000 tons had been shipped during the past year for that purpose. The oil is used there as a Salad Oil, also in the manufacture of soap and for burning. No ready test is known for cotton seed oil when mixed with Olive Oil.

On Peanut Oil but little was said, since it has not found its way into the market to any extent.

Mustard Seed Oil is a by-product of the mustard factories, and is sold as it is expressed; about 40,000 lbs. of this oil is annually produced in the United States.

P. W. Bedford, of New York, offered some remarks on a heavy Petroleum Oil which has been extensively used by dealers in Ne

York for the adulteration of Olive Oil, It was quite odorless and bland to the taste, the odor being dissipated by passing steam through it. As far as he could learn, upwards of a *million gallons* of this oil has been used for that purpose. Olive Oil could thus be adulterated one half or more with little fear of detection, unless the suspected oil is treated with an alkali, when, as the Petroleum Oil does not saponify, the sophistication is easily seen.

After the discussion on this subject had ended, Mr. J. McKesson, Jr., of New York, showed a sample of Cardamom Seeds of handsome appearance which had been whitened artificially with some inert substance, with the view of adding to their value.

The next paper read was by S. M. Colcord, of Boston, on Apprenticeship, from which it appeared that regular apprenticeship to the Drug business for three or four years, as formerly practiced, is now almost absolete in the United States. This was a matter of regret: he advocated a return to the old and time-honored custom, and expressed himself as in favor of a four years apprenticeship or engagement.

W. Saunders, of London, Ontario, read a volunteer paper on "Pharmacy in Canada," giving the history and tracing the progress of Pharmacy both in Quebec and Ontario, detailing the causes which gave origin to the various societies, and their persevering efforts to bring about suitable legislation with the view of improving the position of the Pharmacist. The success which has attended their endeavors was noted, the establishment and prosperity of "the Journal" referred to, and the Ontario Pharmacy Act commented on with its present and probable resnlts. This paper was received with applause and referred for publication.

AFTERNOON SESSION.

The Convention was called to order by the President at 4 p. m.

Mr. Meyer moved that this association send greetings to the "North German Apothecaries Association," which meets in Dresden, Germany, to-day. The motion was carried, and a telegram ordered to be sent immediately.

Louis Diehl, of Louisville, made some interesting remarks on the manufacture of Aqua Ammonia Fort from Sulphate of Ammonia, as conducted by himself, the form of apparatus used being shown by diagrams on a black board.

A long and warm discussion then took place, regarding the operation of the Revenue Stamp Tax in the U. S., which we omit as lacking in interest to our Canadian readers.

Query No. 20, on commercial Subcarbonate of Iron, was responded to by P. W. Bedford, of New York. He had analyzed samples from all the leading makers, and found that they contained no true carbonate of iron at all, and that when effervescence occurred

with acids it was due to traces of carbonate of soda present from imperfect washing. The iron was in the form of oxide.

L. M. Rice, of New York, replied to query No. 22, on the morphia strength of the Tincture of Opium of commerce, as obtained from reputable sources. He had examined twenty samples in all, thirteen from New York, six from Chicago and one from Connecticut, all from Pharmacists of reputable character. He found the morphia strength to vary from $\frac{3}{10}$th grains to $\frac{5}{10}$th grains in the fluid ounce with an average of $\frac{6}{10}$th grains, which is somewhat above the average standard required by the Pharmacopœia.

In reply to query No. 23, W. C. Bakes, of Philadelphia, offered some useful practical hints, and suggested precautionary measures in reference to containers for poisonous drugs. He advocated the use of bright red labels for poisonous substances, as more striking than any other color, and the keeping of the more dangerous poisons in a locked closet, accessible only to the proprietor or a competent assistant.

A volunteer paper by Dr. Squibb on Litmus Paper was next read, accompanied by specimens put up in a very neat manner in paper and also in corked test tubes, the latter an original idea with Dr. Squibb. The test tube, after it is emptied, is always useful to the Physician, and its cost is not very much more than an ordinary phial. Minute directions were given for preparing a solution of Litmus in water and alcohol of suitable strength for coloring the paper to be dipped in it.

Prof. G. F. H. Markoe replied to query No. 30, on the proportion of Magnesia present in samples of commercial "Solution of Citrate of Magnesia." He gave the results of the analysis of twelve samples obtained from the larger cities in the Republic, showing that none of them contained the full quantity of Citrate of Magnesia ordered; that much of the solution sold contained nothing more than tartrate of soda, while in some instances epsom salts was the active ingredient. By the use of these latter substances, the makers were enabled to turn out a clearer and brighter, as well as less costly preparation than the officinal.

E. H. Sargent, of Chicago, also read a paper on Liquid Citrate of Magnesia, in which he showed that this preparation made after the formula given in the U. S. Pharmacopœia, although very good nd palatable when fresh made, is not permanent, but deposits an soluble citrate after a few days. It should either be made fresh ery time it is dispensed or be prepared every two or three days e suggested the use of a solution of Citrate of Magnesia and Soda in which a portion of the Magnesia ordered is replaced by carbonate of Soda, as an improvement on the officinal formula, it being a permanent solution, and equally efficient with that now in use.

W. J. M. Gordon, of Cincinnati, offered a reply to query No. 41, on the substitution of Glycerine for Sugar in the preparation

Fluid Extracts. He approves of such substitution and has practiced it for some time past, and claims that where Glycerine is used the extracts seldom precipitate. He uses sufficient Glycerine to make up from one fourth to one half of the bulk of the fluid extracts when finished. Samples of his extracts were presented and examined by the members. Notwithstanding the advantages claimed, the general opinion seemed adverse to the use of Glycerine in this way, some claiming that any advantages it possessed were more than counterbalanced by the sickly, sweetish taste it gave to all the preparations into which it entered.

T. Doliber, of Boston, replied to query No. 29, on Aromatic Sulphuric Acid, and suggested a modification of the officinal process by substituting a proper proportion of Oil of Cinnamon for the bark ordered, and to percolate the ginger with the mixed Acid and Alchohol in which the oil has been previously dissolved. In this way the difficulty of precipitation of the coloring matter when mixed with water, so characteristic of the officinal preparation, is almost entirely obviated, nothing further than a very slight milkiness being produced.

FRIDAY—MORNING SESSION.

Mr. J. L. Lemberger, of Lebanon, Penn., read a paper on Wild Cherry Bark, after which Prof. Proctor read one from Dr. Squibb, on the Root of Pareira Brava, in which he claimed that the root was more efficacious than the stems in common use, and should be employed in preference.

Prof. A. B Prescott, of Ann Harbor, Michigan, read a volunteer paper on Sulpho-phenic Acid and its Salts.

Papers on Fluid Extracts of Senega were presented from Dr. Squibb and H. M. Rittenhouse, in which Mr. Rittenhouse, with a view to preventing this extract from gelatinizing, recommended the addition of a little Carbonate of Soda. Dr. Squibb suggested the use of a minute quantity of Aqua Ammonia for the attainment of the same object.

An exhaustive paper on the solid alcoholic extracts of the U. S. Pharmacopœia was presented by W. Saunders, of London, Ontario, showing the quantity of Alcohol used and the yield of Extracts in each case where the directions of the Pharmacopœia were followed and indicating where Alcohol might be economized without damage to the product. The cost per oz. of preparing each of the alcoholic extracts was given, and their preparation by the retail Pharmacist for his own dispensing strongly urged. Referred for publication.

Querry No. 24, on the Tartar Emetic of commerce, was replied to by J. P. Remmington. After examining a number of samples he had been led to conclude that it was but little subject to adulteration.

S. S. Garrigues, of Saginaw, Mich., replied to query No. 38, on Insect Powder.

After the reading of the paper, Mr. Brady remarked that Pyrethrum Roseum, and Artemisia Maritima, growing in Europe on the sea coasts, are the plants chiefly used in the manufacture of this powder.

Prof. Markoe stated that Pyrethrum Roseum matures its fruit and stands the winter well without protection, in Cambridge, Mass.

A paper by Dr. Squibb, on the Extract of Jalap, was next presented, in which he proposed a modification of the officinal process by rejecting the watery portion of the extract entirely, on the grounds that it was quite inert, and from its liability to absorb moisture from the atmosphere, prevented the use of the extract in powder, a form which he considered very desirable for administering it. Two additional papers of Dr. Squibb's were read by title and referred for publication, one on Rhubarb, the other on Bicarbonate of Soda.

An interesting paper on the preservation of Herbs was read by J. Harrop, of Leavenworth, Kansas, illustrated by samples. He showed that the greater portion of the pressed herbs in the market are almost worthless, being chiefly composed of stalks and stems.

W. Saunders remarked that this subject was a very important one; that large quantities of herbs were bought and sold every year, the greater portion of them in small packages; and that in the majority of cases the Druggist bought and sold these without ever opening them, and hence could not know whether he was selling the article he professed to sell or not. He thought that in most cases preference was given to this form of dealing in them, merely for convenience sake in storing, and to save trouble in handling, considerations quite unworthy to be held where the interest of the customer is at stake. He believed that all herbs should be bought in bulk, as their quality could then be more readily judged of, and there was less likelihood of inferior stock being offered.

Prof. Proctor, of Philadelphia, also advocated this method of dealing, and gave as another reason for its adoption that the sight of the herbs from time to time, even in a dry state, led the hands employed to acquire some knowledge of Botany.

Prof. Maisch was very glad that this matter had been brought up, and strongly approved of the sale of herbs in bulk, and suggested empty castor oil tins as very suitable vessels for their storage. He finds that most of the young men who come before him for examination know very little about the appearance of medicinal plants, and attributes it in large measure to the sale of herbs in packages. He always buys them in bulk if possible, but if obliged to buy in packages he has them opened and pulled to pieces before offering them for sale.

Mr. Sargent mentioned a case which occurred in Chicago, where a Druggist was sued for $5000 damages for selling a package of herbs which was different from the label.

The general opinion of the Association seemed decidedly adverse to the sale of herbs in packages.

After various votes of thanks to the citizens and Pharmacists of St. Louis for their kindness and attention, the Association adjourned to meet in Cleveland, Ohio, on the first Tuesday in September, 1872.

We should be wanting in courtesy were we to close these notes without reference in some detail to the provisions made by the St. Louis Pharmacists to render the stay of the members as pleasant as possible. On Tuesday evening the large and handsome parlors of the Southern Hotel were enlivened by the presence of some of the principal residents of St. Louis, who met there for the purpose of being introduced to the members; this opportunity was also improved by introducing those members who were strangers to each other, and a very pleasant time was spent. On Wednesday afternoon the ladies of the party were driven out in carriages to visit the principal places of interest about St. Louis. On Thursday evening a grand banquet was given by the St. Louis Pharmacists at the Southern Hotel, when a large number of ladies and gentlemen from the city were invited to meet the members of the Association. In addition to a most sumptuous bill of fare, an excellent band was in attendance to enliven the proceedings with music; while the banquet hall was beautifully and artistically decorated with flags and various devices. A very agreeable time was thus spent, the proceedings being brought to a termination at a seasonable hour.

At the close of the sessions on Friday, an unlimited number of carriages were placed at the disposal of the members and friends, in which they were first driven to the vaults of the American Wine Company, where the superintendent showed the visitors every attention, and abundant opportunities were offered of testing the various wines in the sample rooms. The parties were then conveyed to Shaw's Botanical Gardens, a place of world wide celebrity, where they were welcomed by Mr. Shaw and partook of his hospitality. Mr. Shaw went with us over the extensive flower and fruit gardens, and green houses, each of which abounded in objects of interest. In the green houses which contained a profuse collection of exotic plants and trees we noticed some objects of special interest to the Pharmacist. The beautiful Sago Palm, which yields the sago of commerce, was there, also the arrowroot plant, and the cardamom. In the gardens we were entertained with luscious ripe figs from the trees, and saw almost every tree and shrub and flower, which will grow in the climate of St. Louis. The only regret felt was that the time at our disposal was too short to allow of that thorough inspection of this interesting place which we should like to have made.

Before leaving St. Louis, a party of seventeen was made up to visit Mammoth Cave in Kentucky, among which was Mr. Brady and Prof. Proctor and wife. Our route took us first to Louisville, Ky., a very handsome place, and from thence along the Louisville and

Nashville road to Cave City. We passed over one of the smaller battle grounds where the earthworks and rifle pits remained almost the same as on the day of the engagement. At Cave City we took vehicles for the cave, which was nine miles distant. The ride was a very interesting one, over a wild looking country where nature's operations have been but little disturbed. The roadsides were adorned with flowers and weeds, many of which were quite strange in appearance to our northern eyes, but as we had several botanists in our party, the journey was an instructive one. We observed immense quantities of Pennyroyal *Hedeoma pulegioides* growing everywhere; Sassafras too was very luxuriant and abundant, and the same may be said of the Spice bush *Laurus benzoin*, Wahoo *Euonymus atropurpureus*, *Eupatorium aromaticum*, and many other medicinal plants. After having travelled many a mile through the caverns and strange subterraneous passages which undermine the country here, and feasted our eyes on the gorgeous sights presented by the stalactites and other ornamentations in the huge underground chambers through which our guides led us, we left, carrying with us pleasant recollections of our visit.

Returning by way of Cincinatti, we visited the Exposition of Arts and Manufactures then being held, where, among many other objects of interest, we found some collections of Chemicals and Pharmaceutical products. We noticed among the rarer articles a very large collection of Ethers, Pepsin in various forms, Sulphate of Sanguinarina, Celastrin, a handsome white crystalline substance recently isolated from *Celastrus scandens*, and Gelseminic Acid from *Gelsemium sempervirens*. On returning to our hotel, we met the President of the United States, who was visiting the Exposition, and were all introduced and had the pleasure of shaking hands with this agreeable dignitary, after which the various members of our party wended their way homewards. W. S.

SOLVENT FOR INDIGO.—The extensive employment of Indigo makes it important to notice some new solvents which V. Warth has recently found for it. In the first place, Venetian turpentine, heated to the point of ebullition, dissolves indigo with the same blue colour as does sulphuric acid or aniline. After cooling, magnificent copper-red crystals separate. The crystals can easily be freed from the solvent by ether or alcohol. Boiling paraffine is an equally good solvent. A somewhat dilute solution of indigo in paraffine can with difficulty be distinguished from alcoholic solution of fuchsine. After cooling, the separated needles can be cleaned with benzole, etc. Petroleum dissolves indigo to a carmine red solution; so also spermaceti and stearic acid, the first with carmine violet, the last with blue color.—*Journal of the Franklin Institute, in Chemical Repertory.*

Transactions of the College.

COUNCIL ELECTION.

The returning officer begs to report the following as the result of the election held in accordance with Section IX. of the Pharmacy Act, and By-law XII. of the Ontario College of Pharmacy :—

	Name.	*Votes received.*
1.	Wm. Saunders	259
2.	Benj. Lyman	252
3.	E. B. Shuttleworth	201
4.	Hugh Miller	193
5.	J. C. Holden	173
6.	H. J. Rose	172
7.	J. W. Bickle	168
8.	E. H. Parker	159
9.	Wm. Elliott	151
10.	J. Roberts	145
11.	Geo. Hodgetts	134
12.	F. Brendon	130
13.	W. H. Dunspaugh	130
	C. Brent	127
	Jas. Hawkes	126
	R. W. Elliot	111
	T. J. Geary	98
	N. C. Love	94
	G. Rutherford	87
	E. Gregory	87
	C. Stork	86
	Jas. Mills, Jr	79
	H. Paffard	74
	S. J. Parker	58
	F. Jordan	56
	T. Bickle	52
	C. W. Kempt	50
	G. J. Waugh	40
	T. Matchett	36
	C. G. Rich	27
	W. Bray	14
	J. R. Grant	8
	W. T. Bray	5

and to declare the first thirteen names on the above list duly elected as the Council of the Ontario College of Pharmacy.

HENRY J. ROSE, Registrar,
Returning Officer.

LIST OF MEMBERS OF THE ONTARIO COLLEGE OF PHARMACY.—OCTOBER 1ST, 1871.

Aylsworth, Jas., Tamworth
Appleton, R. H., Toronto
Appleton, F. D., Clinton
Adams, Alex., Rockwood
Archer, Geo. H., Leamington
Aldridge, Geo., Caledonia
Allison, S. E., Port Perry
Adamson, Mrs. E., Oilsprings
Austin, Jonathan, Simcoe
Ault, Ed., Iroquois
Anderson, Hedly L., M.D., Ayr
Atkinson, W. T., Oshawa
Allison, C. R., Picton
Butterfield, Jno. A., Norwood
Browne, Jas., Ottawa
Brent, Charles, Port Hope
Bray, Wm., Bothwell
Burgar, J. H., Welland
Britton, Chas., Lindsay
Barr, John Alex., Hamilton
Bosworth, N. A., Stratford
Bache, J. H., Brantford
Bickle, J. W., Hamilton
Bickle, T., Hamilton
Bond, Jno., Aurora
Bowman, W. H. Berlin
Banks, John H., Weston
Breakenridge, D. A., Morrisburg
Barclay, M. F. Wardsville
Bell, Joseph Jr., Meaford
Baxter, Frank J., Buffalo, U.S.
Borland, E. B., Orono.
Brendon, F., Brantford
Bray, Wm. T, Dingle
Bruce, Robert C., Cobourg
Berry, James G., Belleville
Blackader, D. R., Brantford
Bain, Thos. B., Tilsonburg
Boulton, Hy. C., Exeter
Buck, A. C., Caledonia
Barker, W. T. Trenton
Browne, Jno. E., Thorold
Blaicher, A. C., Hamilton
Baines, J. Prescott

Birks, Geo., Prescott
Burnell, Chas. R., Belleville
Bauld, E. H., Watford
Bower, Anson P., Lakefield
Beeton, W. B., St. Catharines
Bell, A. W., Newboro
Bowden, Hugh K., Prescott
Bell, Wm., Peterboro'
Beaton, D. J., Stayner
Bogart, W. B., Carleton Place
Bond, J. R., Schomberg
Brydon, Wm., Toronto
Berry, G. W., Lucknow
Beeton, J. E., St. Catharines
Bower, Joshua, Napanee
Brierley, Richd., Hamilton
Boswell, E. J., Prescott
Byrne, Jas., Whitby
Buck, C. A., Caledonia
Boyle, Arthur, St. Catharines
Bywater, R. E., Colborne
Bywater, R., Klineburg
Bright, J. C., Chatham
Bannister, Ed., Brampton
Blume, Michael, Toronto
Brett, R. G., Watford
Browne, Wm., Owen Sound
Breden, Robt., Toronto
Casselman, C. T., Winchester
Colcleugh, Jas., Mount Forest
Charters, James A., Belleville
Chandler, Edmund, Belleville
Chandler, Edmund, Jr., Belleville
Cottrell, G. W., London
Coombs, John S., Perth
Coad, Jas., Woodstock
Card, W. A., Orono
Combe, James H., Clinton
Callard, Jno., Sparta
Connor, H. E., Aurora
Corbet, R., Rosemount
Clarke, Jas., Belleville
Cattle, Geo., Goderich
Chapman, Jno., Chatham

Craig, Joseph W., Brantford
Chamberlain, S, G., Strathroy
Cull, J. Walker, Mitchell
Cruickshank, P., Parkhill
Cox, Wm. H., Barrie
Coombs, R. McL., Perth
Cameron, D., Cayuga
Carpenter, E. R., Collingwood
Coulson, Wm., Buffalo.
Chidley, Geo., Clinton
Carroll, Francis, Wroxeter
Cullingford, Jno., Cobourg
Cumines, Thos., Welland
Canniff, Byron W. Belleville
Caldwell, O. B., Ingersoll.
Crampton, R., Carleton Place
Coulter, Wm., Peterboro'
Chapman, C. A., Picton
Cumming, Geo., Rosemont
Carr, Thos., Thornhill
Covey, E. J., Stayner.
Cooke, Fred., Woodville
Chapman, N., Baltimore
Cadman, Arth. W., Belleville
Clarke, W. H. Pakenham
Colcleugh, Geo., Hamilton
Chase, Jno. A., Paris
Carre, Thos., Meaford
Carters, Henry, Bond Head
Cherry, Jas. L. Woodstock
Caton, Allen, Newburg
Coombe, Jno. Toronto
Conklin, Wm. P. Tilsonburg
Calder, A. D. Dundas
Crooker, W. H. Hamilton
Cornell, Alb. Elmira
Crouter, Geo. W. Wallaceburg
Coombs, Jos. Smiths Falls
Chapman, J. M. Ingersoll
Cormack, J. G, Pembroke
Copland, Thos. Hamilton
Clemesha, Jno., Baillieboro'
Dumbrille, J., Maitland
Davidson, Hugh, Walkerton
Dilworth, Jos., Toronto
Denham, Geo., Petrolia
Doan, D. W., Aurora

Dyas, Jno. Jos., Strathroy
Davidson, Frank R., Ottawa
Daniel, R. T., Ottawa
Deans, Jas., Colborne
Deans, R. T., Colborne
Dawson, C., Warkworth
Deans, J. G., Belleville
Davids, Jos., Toronto
Dyas, W. J., Strathroy
Davey, N. W., Pakenham
Dale, Jno. B., Wyoming
Dale, W. H., Petrolia
Dawes, Jno., Brooklin
Deans, W. C., Oshawa
Dutton, Jno. Walter, Stratford
Dalley, Edwin A., Hamilton
Dunn, Dr. A. T., North Augusta
Deacon, Jos., Bradford
Donelly, B. W., Ancaster
Dunspaugh. W. H., Toronto
Deyell, Robt., Port Hope
Everest, Geo. M., Arkona
Evans, Wm. J., London
Eby, M. F. Normanton
Eastman, D. W. Smithville
Engels, E. A. Mitchell
Eastwood, Alf, Lloydtown
Ellis, Francis, Brantford
Elwell, G. T. O. Orillia
Eastman, T. F. Arkona
Everest, Wm, Fenelon Falls
Elliot, W., Toronto
Elliot, R. W., Toronto
Elliott, J. W. Seaforth
Egar, W. G. St. Mary's
Eccles, Dan. Parkhill
Elliott, Henry, Hampton
Fraleigh, Sidney, St. Mary's
Fleming, Wm. F., Ottawa
Fitzmaurice, W. G., Oshawa
Fenwick, E. J., Kingston
Farrell, Patrick, Lucan
Farrell, John, Lucan
Frood, Thos., Clifford
Fowler, J. M., Burford
Ferguson, D, C., Belleville
Foster, R. A. Picton

Featherston, J. P., Ottawa
Fullarton, Wm. B., Newburgh
Foster, W. O., Simcoe
Fead, S. G. M., Orangeville
Fead, Wm., Stouffville
Fothergill, R., Newcastle
Fitch, J. D., Grimsby
Findlay, Robt., Durham
Fewson, Thos. B., Duluth, U.S.
Greenwood, W. W, St. Catharines
Gamsby, L. A. Orono
Gerrie, Jas. H. Whitby
Gissing, A. W. Princeton
Griffis, Wm. C. Colborne
Grant, J. R. Dingle
Gayfer, Jno. Ingersoll
Greaves, Jos. Collingwood
Gibbard, J., Toronto
Gunn, Wm. Alex. Kingston
Geen, Alb. L. Belleville
Grier, G. A. Montreal
Gundry, Lewis J. Aylmer
Gundry, Chas. J. Aylmer
Green, W. A. Walkerton
Gregory, E. Lindsay
Gemmel, Frank A. Sarnia
Gilbert, Wm. Mansfield
Grange, John T. Napanee
Grange, Alex. W. Napanee
Georgen, T. W. Barrie
Georgen, P. V. Barrie
Georgen, Wm. T. Barrie.
Gordon, Miss M. Port Colborne
Gamsby, G. A. Perth
Garlick, J. A. Mitchell
Graham, R. Enterprise
Geary, T. J. Strathroy
Gordon, W. D. Kingston
Goodeve, Wm. H. Guelph
Garvey, Jas M. Delhi
Gray, R. B. Montreal
Hunter, W., Toronto
Hunter, D., Toronto
Henderson, J., Toronto
Howard, S. W., Orangeville
Howarth, J. L., Toronto
Huffman, J. C., Napanee
Huffman, T. A., Napanee
Hacking, J. O., Listowel
Hacking, W. F., Listowel
Hildreth, A. R. Paisley
Holbrook, R. C., Hamilton
Harper Henry, Cookstown
Hodgson, R. H., Brampton
Holden, J. C., Belleville
Hilborn, W. R. Hawksville
Hawkes, James, Brockville
Harvard, A.. Toronto
Hurden, W. H., Kincardine
Hurdon, F., Kincardine
Harvey, Thos. P., Niagara
Holden, Sinclair, Markham
Halson, Robt., Wellington Sq
Harkness, G. W., Mono Mills
Heathfield, M. W., London
Hopkins, D. W., Dundas
Hopkins, Jno. F., Dundas
Harding, Alf. O., Prescott
Henderson, Dr. D., Ailsa Craig
Hicks, Robt. F., Rondeau
Hoag, A. N., Thamesville
Harding, J. B., Brockville
Hele, Jno. W., Elora
Hodgetts, Geo., Toronto
Harvey, E., Guelph
Hewitt, Wm., Vittoria
Higginbotham, J. Bowmanville
Hewson, J. H., Smithville
Hall, R. H., Rondeau
Hearn, Wm., Ottawa
Hooper, Chas. E., Toronto
Hamilton, A., Hamilton
Hey, Thos., Ailsa Craig
Hallamore, Jno., Toronto
Hayward, Wm., Guelph
Hambly, Jas. H., Belleville
Hobart, G. S., Kingston
Holden, Jno. F., Ingersoll
Higman, Rich., Ottawa
Holliday, David, Carleton Place
Haldenby, Wm., St. Catharines
Hildreth, Dr. T. R. F., Grafton
Heakes, Jas. R., Toronto
Hutton, Dr. J., Forest

Hall, J. J., Woodstock
Hickson, Ed., Seaforth
Harte, J. A., Montreal
Howard, T. A., Cobourg
Heyward, Andrew, Morpeth
Inglis, Wm., M., Brockville
Jordan, F., Goderich
Jordan, Wm., Goderich
Jones, Chas. Russell, Montreal
Jackson, Geo., Edmondville
Jamieson, W. A., Ottawa
Jennings, Jno., Manotick
Jackes, Baldwin, Galt
Joseph, Robt. F., Toronto
Jaques, Henry W., Merrickville
Jeffry, Andrew, Toronto
Jackson, T. G., Wingham
Jefferis, B. G., Beaverton
Jukes, Dr. A., St. Catherines
Johnston, W., Smith Falls
Jenkin, J. W., Toronto
Jackes, Price, Toronto
Kemp, Dr. Jas., Leamington
Knowles, H. A., Toronto
King, J. G., Kingston
Kelley, Alex. A., Sarnia
Kempt, Alex. W., Peterboro
Kempt, C. W., Peterboro
Kelman, Jas., Newmarket
Kellock, Jas. F., Perth
Kilborn, Horace, Newboro
Kidd, J. P., Widder
Lane, Mary Anne, Amhertsburg
Kirkland, Hy., Elora
Kellock, D., Perth
Kennedy, J. A., London
Kermott, C. H., Bell Ewart
Kenley, D., Ottawa
Kitching, J., Lonon
Kelly, P. D., Alliston
Lumsden, Rob. Seaforth
Lutz, Wm. H. Woodstock
Lewis, Robt. L. Ottawa
Livingston, Jno., jr. Listowel
Long, Geo. J. B. Owen Sound
Lamb, Jas. P. Farmersville
Lewis, J[illegible]., Dundas

Leach, Alf. Millbrook
Law, Robt. E. Richmond Hill
Lowe, Jno. Amherstburg
Lewis, Isaac T. Toronto
Lyman, B., Toronto
Lyman, B. H., Toronto
Lyman, Hy. Montreal
Lally, Thos. P. Smithville
Lugsdin, C. Hamilton
Livingstone, Wm. W. Simcoe
Lander, John C. Yorkville
Love, N. C. Toronto
Lund, A. Drummondville
Lee, Jos. R. Toronto
LeRiche, Geo. Hamilton
Lea, Jas. Walter, Port Rowan.
Love, Chas., Toronto
Lang, Arch. B., Owen Sound
Love, Jno. A., Stanton
Lloyd, W. A., Pembroke
Leadbeater, Jas., Otterville
Lawrence, Thos., Hamilton
Lawrence, J. A. R., Hamilton
Lyon, W. M., Springfield
Lambert, Preston, Hamilton
Lane, F., Perth
Lushington, Jas., Toronto
Magurn, J. B., Guelph
Maney, G., Toronto
Maney, W., New York
Massie, Jas., Kingston
Morrow, G, E., Acton
Maxon, G. C., Leamington
Matthews, Geo., Paris
Macartney, W. J., Thorold
Morton, H. H., Ottawa
Mortimer, Geo., Ottawa
Millar, David, Toronto
Miller, Hugh, Toronto
Middleton, J. T., Smithville
Mundy, Mark, Hamilton
Meacham, J. B., Dundas
Monkman, Geo., Barrie
Miller, Henry, Galt
Matchett, Thos., Omemee
Mills, Jas., jr., St. Catharines
Mitchell, Geo., Port Hope

Mitchell, Jno., Port Hope
Matthews, Ed., Waterford
Millburn, Thos., Acton
Mason, Chas. S., Brantford
Moore, Jno. H., Guelph
Martin, Alf. J., Bowmanville
Mussen, H., Allanburg
Minthorn, M. W., Fenelon Falls
Melville, Thos. R., Prescott
Mylne, Jno., Bothwell
Mitchell, W. J., Toronto
Mitchell Thos., Paris
Meade, Henry, Brighton
Manley, Henry, Meaford
Margach, J. L., Toronto
Mole, C., Strathroy
Morse, E. W., Barrie
Moore, Lyman, Hamilton
Magann, Geo. B., Hamilton
Morton, Thos., Smith Falls
Meldrum, H., Hillsburg
Mann, Thos. F., Aylmer
Moffat, D. J., Kingston
Mills, Jas., Jarvis
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Munro, Lawrence C. Fergus
Merrick, A. A., Merrickville
Mitchell, B. A., London
Mitchell, Jno. A., London
Moore, Henry P., Warsdville
Morris, Edwin P., Bowmanville
McTavish, D. Waldemar
McCammon, S. Gananoque
McKnight, R. Meaford
McCamon, Henry, Warkworth
McLaren, W. P. Watford
McCarthy, H. F. Ottawa
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McNeillie, J. R. Omemee
McBride, J. Port Dover
McCallum, C. St. Marys
McLean, G. S. Sarnia
McKenny, Thos. Thornbury
McCallum, F. H. New Hamburg
McDonald, J. L. Picton
McLean, Dr. D. Port Stanley

McLeod, Angus, Woodville
McKinnon, Lauchlin, St. Williams
McPhail, Hugh, Cartwright
McCullough, Geo. B. Guelph
McMahon, Isaiah, Clarksburg
McKay, Jas. Belleville
McDonell, D. Vankleek Hill
McBain, J. R., Almonte
McLean, Jno., St. Mary's
McMillan, Peter K., Brockville
McKenzie, Jas., Drumbo
McCollom, W. A., Port Burwell
McIntosh, Ed. D. S., Strathroy
McKinlay, T., Summerside, PEI
McMullen, G. H., Sarnia
McIntyre, P. J., Arnprior
McDowall, R. J., Demorestville
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Nuthall, Wm. Toronto
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Nasmyth, J. H. Stratford
Newman, R. C. Toronto
Oliver, W. H., Galt
Ockenden, Jos. K., Manilla
O'Connor, T. J., Toronto
Orchard, Geo., Strathroy
Ormond, Chas., Peterboro
Ough, Dr. R. J., Beaverton
Oliver, Jas. W., Clifton
Owen, Richard, Toronto
Oliphant, D., Toronto
Perry, R. H., Fergus
Plummer, E. London
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Polson, Neil C., Tamworth
Pickering, Peter P., Toronto
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Rock, Thos., Hamilton
Robinson, Robt., Yorkville
Rich, C. G,, St. Thomas
Robinson, W. H., London
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Rolls, Dr. James F., Brighton
Revell, Robert, Woostock
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Reynolds, Ed., Brockville
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Stickney, L. P., Uxbridge
Scott, Geo. L., Paris
Stratford, W. H., Brantford
Strong, Wm T., London
Stark, W. G., Hamilton
Scott, Thos, Woodstock
Stork, Christ., Brampton
Stork, Edwin T., Brampton
Stork, Jas., Bolton
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Sanderson, J. H., Richmond Hill
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Stark, Robt., Woodstock
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Sanders, W. B. Stayner
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Taylor, R. W. Hamilton
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Turner, Allan, Brockville
Turner, Robert Wm. Peterboro'
Thompson, D. Toronto
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Tripp, Dr. M. Ingersoll
Thornton, J. M. Dundas
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Zoellner, Chas., Tavistock
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MAGNIFICENT FLOURESCENCE OF PEPPERMINT OIL.—Professor Fluckiger, in the *Pharmaceutical Journal and Transactions*, says, fifty to seventy drops of peppermint oil shaken with one drop of nitric acid (1.2 sp. gr.) turn faintly yellowish brown, and after an hour or two exhibit a most beautiful blue, violet, or greenish blue color, when examined in (transmitted) light. When observed in reflected light the liquid is of a copper color, and not transparent. The coloration may be made immediate by warming or using a larger quantity of nitric acid (gtt. 10-19). All specimens of the oil which the professor has tried responded perfectly to the reaction, except a very old sample of English manufacture. The color is very persistent, lasting a week or two in the cold. Five per cent. of turpentine in the oil does not interfere with the reaction. The only other oil which behaves at all similarly is carbol, the lighter portion of the oil of caraway, but its coloration is very much less pure and intense.

Editorial.

THE NEW COUNCIL.

The official report of the Registrar, in which the result of the recent election is stated, will be found in another part of this Journal. There is every reason to believe that the selection is a good one, and that under the new Council, the career of the College will be as prosperous as its auspicious commencement would lead us to hope for.

There is no lack of work to be done, and it is highly necessary that it be entered upon at once. Although fully recognizing the value and extent of the labors which have been performed by the old Society and the Provisional Council, it will be necessary to remember that a foundation, only, has been laid, and that the development of the plan and the erection of a worthy superstructure claim immediate attention; otherwise, the elements of decay will not be slow in manifesting themselves, and, of all ruins, that of a foundation whereon building never stood is certainly the most deplorable.

We had intended offering a few suggestions as to a plan of work, but the limited space at our diposal in the present issue necessitates the laying over of the subject until next number. We think it would be well for members of the society to express their views on the best course to be pursued, and by thus learning the general opinion, the Council will be the better able to proceed in a manner satisfactory to all.

No. 1. New Series.—We are sorry that we are unable to furnish any more copies of the August number of this journal, as the supply is completely exhausted. In view of the demand for this issue by parties who have become connected with the College during the past few months, we have determined to reprint it if a sufficient number of names are sent in to justify the outlay. The price will be twenty-five cents; members wanting copies will please apprise us at once.

THE BRITISH PHARMACEUTICAL CONFERENCE.

We learn from the *Pharmaceutical Journal* of London, that this meeting, which took place in Edinburgh, was, in every respect, a success. After the delivery of the address, by the President, Mr. W. W. Stoddart, F.C.S., F.G.S., a large number of papers were read, some of which, we hope, in due course, to present to our readers; at present we merely give an enumeration of the titles—On some oxidation products of essential Oil of Orange Peel, by Profs. Wright & Piesse; reports on the Chloral of Commerce, by Mr. Mason and Mr. Muir; Pharmaceutical Notes on *Rhamnus Frangula*, by H. C. Baildon; the Compound Iron mixture of the B. P., by C. A. Staples; on the purity of Permanganate of Potash, by Prof. Allen, F.C.S.; on the use of Blistering Flies in Hydrophobia, by H. Groves; on Solutions, by T. B. Groves, F.C.S.; the crystalline principles of Aloes; and on Wild Rue, *Semen Harmalæ*, by Dr. Fluckiger; on Linseed and Linseed Meal, by Mr. Greenish; two papers by Mr. Staples—the Tincture Press, and on a mode of obtaining Distilled Water; a second paper on the Crystalline Principles of Aloes, by Messrs. T. & H. Smith; on Pharmaceutical Ethics, by Mr. Atkins; the Preparation of Liquor Bismuthi, by C. H. Wood; and on Pharmacopœial Nomenclature, by C. R. C. Tichborne.

The annual Conversazione was held in the rooms of the Museum of Science and Art. It is estimated that over fourteen hundred ladies and gentlemen were present, and, amongst other distinguished visitors may be noted his Majesty, the Emperor of Brazil.

The following gentlemen were elected office bearers for the present year: *President*—Mr. H. B. Brady; *Vice-Presidents*—Messrs Deane, Hanbury, Stoddart, Bentley, Ince, Williams, Reynolds and Savage; *General-Secretary*—Mr. F. B. Benger.

The proceedings were appropriately brought to a close by the annual dinner, which was provided at the Royal Hotel. Amongst the toasts of the evening was that proposed by Mr. Hanbury, "The Pharmaceutical Associations of America and Canada," which was replied to by Dr. Edwards. We are glad to see that the parent Society has not forgotten her colonial children, and on behalf of the Ontario College we would gratefully acknowledge the compliment.

The Pharmaceutical Society of Great Britain numbers 1,878 members.

Editorial Summary.

LIN. SAPO, U. S. P.—I. C. Wharton *(Am. Jour. Pharm.)* recommends the following as being more expeditious than the official process, besides avoiding the application of heat and consequent loss of spirit, and also danger from fire:

Soap, in pieces	Four troyounces.
Camphor	Two troyounces.
Oil of Rosemary	Half a fluidounce.
Water	Four fluidounces.
Alcohol	Two pints.

Beat the soap in a dry mortar until the lumps have disappeared; then add by degrees the water and triturate; when well mixed add the alcohol gradually, afterwards the camphor and oil of rosemary, rubbing with the pestle till all are dissolved, and filter through paper.

ESSENTIAL OIL OF ORANGE PEEL.—In the report of the meeting of the British Pharmaceutical Conference, we notice a short paper by Messrs. Wright and Piesse, "On the oxidation products of essential oil of Orange Peel." The sample examined was furnished by Messrs. Piesse and Lubin, and was of undoubted purity, but whether obtained from the bitter, or sweet orange, does not appear. It was found to consist, principally, of a hydrocarbon, hesperidine, having the formula C_{10} H_{16}. When subjected to the action of heat it commenced to boil at 175°, and 97·2 per cent. came over below 175. The remaining 2·8 per cent. was a yellow, resinous substance, not volatile without decomposition; sparingly soluble in hot alcohol but dissolving readily in ether. In water it was almost insoluble but communicated to it the bitter taste of the peel. After being entirely freed from hesperidine, by continued heating to 100°, it gave the formula $C_{20}H_{30}O_3$. When hesperidine was treated with undiluted nitric acid a violent action ensued, a viscid, tarry substance being formed; a more dilute acid acted more slowly. By prolonged boiling, carbonic acid was for some time evolved, at length ceasing altogether, when the hydrocarbon was converted into a brown resin containing a large quantity of nitrogen, and apparently formed from

the original body by addition of oxygen and replacement of hydrogen by NO_2. Further experiments were made which showed the oil to be readily acted on by oxidizing agents, which fact will account for the difficulty experienced in preserving the oil unchanged for any length of time.

Answers to Correspondents.

H. P. S.—CANTHARIDES.—The little mite which has attacked your flies is, most probably, the *Acarus domesticus*. A few drops of acetic acid added to the bottle containing the cantharides will be found the best preservative.

Student.—The price of Pareira's *Prescription Book* is $1.25. The *Pharmaceutical Latin Grammar* is not to be had in this city, at present, nor can we tell you the exact price at which it would be sold here; the price in England is five shillings sterling.

Binder, Chatham.—The bookbinders say that the advertisement pages being connected with the body of this journal, will occasion no inconvenience in binding the volume.

R. H. J.—LIQ. FERRI PERNITRATIS.—We have never experienced any difficulty in making an article that will remain free from sediment, and think that your trouble arises from want of proper attention to the strength of the acid employed. That indicated by the B. P. is, of course, of specific gravity, 1.42, which contains 70 per cent. of real acid HNO_3. It is obvious that if commercial acid of sp. gr. 1.22, containing 35 per cent. of real acid be employed, without due allowance being made for the difference in strength, the resulting preparation will not correspond with that intended, and if unlikely, the blame must rest on the right shoulders. The hydrometer and specific gravity bottle are too much neglected in this country, and from this cause great disappointment and loss frequently result. Your plan of adding a quantity of hydrochloric acid to the liquor is altogether inadmissible and needless. Of the two processes—the United States and British—we think the former gives the most satis-

factory results. In this, the iron and part of the acid are placed in contact, and the action moderated by attention to temperature; the solution is filtered, heated to 130°, and the remainder of the acid added, the gas being driven off by the application of heat.

Dispenser.—NATIVE AND IMPORTED WINE.—It would certainly be quite improper to dispense native grape wine, of your own or any other manufacture, in a case where *Vinum rubrum* was ordered. With the prescriber's consent, it would, of course, be correct enough. Canadian wines, at least, as far as our experience goes, are mainly deficient in alcohol. This arises from the want of sufficient sugar in the grape employed, which is, generally of that variety known as the Clinton. The addition of sugar to the unfermented juice would remedy this defect; or it may be that the choice of a sweeter grape as the Delaware—would be equally advantageous. Native wines rarely contain more than 10 per cent. of spirit, while imported Port is stated to contain from 20 to 25 per cent. of alcohol of sp. gr. ·825 at 60° F., which is equivalent to 32 to 40 per cent. of proof spirit. As any good effects which a patient might realize from the use of wine depend mainly on the stimulating effect of the spirit, the great difference in this respect between the native and foreign varieties preclude any attempt at substitution; at all events in equal doses.

Books and Pamphlets.

CHEMISTRY, GENERAL, MEDICAL, AND PHARMACEUTICAL, *including the Chemistry of the U. S. Pharmacopœia.*—A manual on the General Principles of the Science, and their Applications to Medicine and Pharmacy, by JOHN ATTFIELD, Ph. D., F.C.S., etc. From the second and enlarged English edition, pp. 552. Philadelphia: Henry C. Lea, 1871. Toronto: Copp, Clark & Co.

When the original English edition of this work was published we had occasion to express our high appreciation of its worth, and also to review, in considerable detail, the main features of the book. As the arrangement of subjects, and the main part of the text of the present edition are similar to the former publication, it will be unnecessary

less for us to go over the ground a second time; we may, however, call attention to a marked advantage possessed by the American work—we allude to the introduction of the chemistry of the preparations of the United States Pharmacopœia, as well as that relating to the British authority. To Canadian students this addition is of particular importance as, in this country, we have to do with preparations belonging to both standards, and a knowledge of the chemistry of each is absolutely necessary to those who would render themselves thoroughly proficient in their calling.

We would simply recommend this work as the best with which we are acquainted; either as accompanying a course of lectures on pharmacopœial chemistry, or as a guide to the self-taught student. To the pharmacist it will prove a very useful counter companion, indeed, we may say that the shop library is incomplete without it.

A TREATISE ON PHARMACY, BY EDWARD PARRISH. *Third Edition.*—Philadelphia, Henry C. Lea; Toronto, Copp, Clark & Co.

Parrish's *Pharmacy* is so well known that it is needless for us to specialize. As a thoroughly practical work relating to the every day duties of the shop it has certainly no equal. The apprentice, the assistant, as well as the accomplished pharmacist, can each find instruction and pleasure from a perusal of its pages. It is, without doubt, the most *useful* book which the druggist can possess.

The present edition embraces the latest additions to pharmaceutical science, and is in all respects up to the times. An idea of its scope may be conceived from the fact that the index contains over 7000 references, and the text extends over 850 pages.

Practical Formulæ.

SILVER SOAP:—

Hard Soap	8	oz.
Turpentine	1½	"
Water	4	"

Boil until perfect solution, and add

Liq. Ammonia	3	oz.

Liquid for the Preservation of Wet Anatomical Preparations.

Dr. B. Titcomb, of Maryland (*Trans. Am. Med. Association*), advocates the subjoined method for keeping objects of pathological anatomy and for the purpose of dissection: First place the object in a vessel containing pure water; let it remain a few hours, or over night, then transfer it to another containing a solution of creasote, ʒij. to f ʒxij. of water; let it remain over night, then place it in a jar or vessel containing a liquid of the following proportions:

℞ Chloride of sodium,..... ℥ iss.;
Sulphate of alumina,..... ℥ iss.;
Nitrate of potassa,..... ʒ vj.;
Aqua,.....f ʒvij.;

—*Chicago Medical Times.*

Method of Rendering Wooden Taps Impervious to Liquids, and Preventing their Cracking.

Dr. E. Kopp.—The taps are placed in molten paraffin heated to from 110° to 120°; by this means the water is eliminated from the wood, and the wood becomes thoroughly impregnated with paraffin. The taps are not removed from this bath until all the aqueous vapour has been expelled and left, after the removal of the vessel from the fire, in the molten liquid up to the very moment the paraffin begins to solidify. Wooden taps thus prepared are very durable, do not become soaked with liquids, keep very tight, and are not liable to become mouldy. The excess of paraffin is wiped off with care, and the taps are next rubbed clean with a piece of flannel. —*Chemical News.*

Selections.

Antidote to Cannabis Indicus.—Prof. Polli, of Milan, states "Experience has proved that infusion of coffee, of tea, and of coco always increase the action of hashish; so that if it is wished to accelerate or to augment its effect, it should be taken or administered in an aqueous infusion of one or other of these vegetable substances.

"Lemon-juice and vinegar, and, consequently, citric, malic, acetic, and tartaric acids, in aqueous solution, more or less dilute, arrest the effects of hashish in a person who has taken it, and they are competent to serve as real antidotes.

"It will then be useful in making a trial of hashish, and especially in the treatment of certain nervous maladies by hashish, in cases where one does not as yet know the susceptibility of the sub-

ject, to know that one has, in the lemonades of these acids, more or less concentrated, powerful, and at the same time innocent moderators of the nervine action of hashish.

"I confess that it is not from my own personal experience that I have confidence in the preservative action of the vegetable acids against the injurious effects of hashish; but solely from the experience of the Egyptians, who have assured me that it always succeeds with them, and from the testimony of Dr. Castelnuovo, who lived for a long time at Tunis, where he convinced himself of the antidotic value of lemon-juice and strong lemonades against hashish."—*Med. Press and Circular*, Dec. 22, 1869.

THE NATURE OF DIFFERENT GUMS.—Dr. Sacc, of Neuenberg, Switzerland, has made an extensive inquiry into the nature of the different resins. We condense from it thefollowing results:—The resins spoken of are copal, amber, dammar, common resin, shellac, elemi, sandarach, mastic, and Caramba wax. All these resins can be reduced to powder.

The following will become pasty before melting:—Amber, shellac, elemi, sandarach, and mastic; the others will become liquid at once.

In boiling water, Caramba wax will melt; common resin will form a semi-fluid mass; dammar, shellac, elemi, and mastic will become sticky; while copal, amber, sandarach will remain unchanged.

Dammar and amber do not dissolve in alcohol; copal becomes pasty; elemi and Caramba wax dissolve with difficulty; while resin, shellac, sandarach, and mastic dissolve easily.

Acetic acid makes common resin swell; on all others it has no effect.

Caustic soda dissolves shellac readily, resin partly; but has no influence on the others.

Amber and shellac do not dissolve in sulphide of carbon; copal becomes soft and expands; elemi, sandarach, mastic and Caramba wax dissolve slowly; while resin and dammar dissolve easily.

Oil of turpentine dissolves neither amber nor shellac, but swells copal; dissolves dammar, resin, elemi, sandarach, and Caramba wax easily, and mastic very easily.

Boiling linseed oil has no effect on copal, amber, and Caramba wax; shellac, elemi, and sandarach dissolve in it slowly, while dammar, resin and mastic dissolve easily.

Benzol does not dissolve copal, amber, and shellac, but does elemi, and sandarach to a limited extent, and Caramba wax more easily; while dammar, resin, and mastic offer no difficulty.

Petroleum ether has no effect on copal, amber, and shellac; it is a poor solvent for resin, elemi, sandarach, and Caramba wax, and a good one for dammar and mastic.

Concentrated sulphuric acid is indifferent to Caramba wax; it dissolves all resins, imparting to them a dark brown color, excepting dammar, which takes a brilliant red tint.

Nitric acid imparts to Caramba wax a straw color; to elemi, a dirty yellow; to mastic and sandarach, a light brown; it does not affect the others.

Ammonia is indifferent to amber, dammar, shellac, elemi, and Caramba wax; copal, sandarach, and mastic become soft, and finally dissolve; while resin will dissolve at once.

It is not difficult, by means of these reactions, to test the different resins for their purity. *Dingler. Polytech. Journal.*

CARBOLIC ACID IN PLANTS.—Carbolic acid, it is reported, has been extracted from the *Andromeda Leschenaultii*, a common plant growing abundantly on the Neilgherry hills, in the East Indies. The acid which has been extracted from this plant by Mr. Broughton, the Government chemist, differs in some respects from that obtained from coal tar, being less deliquescent and far more pure. It is therefore believed that this new product would be an excellent substitute for ordinary carbolic acid for administering as a medicine. Although the plant is inexhaustible the process of extraction of the acid is costly, and this fact will interfere with its use. The East India Government, however, considers the discovery as important, since in case of war the supply of carbolic acid would not depend on America.—*Ibid.*

MARKET REPORT.

During the latter part of the month, business has improved considerably, having previously been very quiet. Fall stocks are rapidly coming to hand. Changes are numerous, and generally tend upwards; this is especially true in regard to chemicals, which are very firm at higher rates.

Tartaric Acid has not been quoted higher in our list, but will probably advance very much. Ammon Carb. and Liq. Ammon are greatly advanced at place of manufacture, and must sympathize here. Cantharides are much higher, and still rising; Scammony is also higher; Iodine and all Iodides are still going up; Solazzi Licorice, Mercurials, Oil Lemon, Oil Orange, Oil Sassafras, Chlorate Potash are all higher.

We quote lower Bals, Tolu, Bismuth, Gum Myrrh, Morphia, Oil Citronella, Cod Liver Oil, and Rhubarb.

In Spices, Nutmegs, and Black and White Pepper are advancing; the latter article to nearly double ordinary rates.

Spirits Turpentine has continued its vagaries, and our readers may make up their minds to pay very high prices for that for winter and spring use.

DRUGS, MEDICINES, &c.	$ c.	$ c.
Acid, Acetic, fort	0 12 @	0 14
" Benzoic, pure	0 25	0 35
" Citric	0 90	0 90
" Muriatic	0 04	0 06
" Nitric	0 11½	0 15
" Oxalic	0 26	0 30
" Sulphuric	0 03½	0 07
" Tartaric, pulv	0 40	0 42
Ammon, carb. casks	0 19	0 20
" " jars	0 19	0 20
" Liquor, 880	0 19	0 25
" Muriate	0 12½	0 15
" Nitrate	0 45	0 60
Æther, Acetic	0 45	0 50
" Nitfous	0 27	0 30
" Sulphuric	0 45	0 50
Antim. Crude, pulv	0 13	0 17
" Tart "	0 50	0 55
Alcohol, 95 per ct.....Cash	1 62	1 72
Arrowroot, Jamaica	0 19	0 22
" Bermuda	0 45	0 65
Alum	0 02½	0 03½
Balsam, Canada	0 24	0 35
" Copaiba	0 68	0 75
" Peru	4 00	4 20
" Tolu	0 90	1 00
Bark, Bayberry, pulv	0 18	0 20
" Canella	0 17	0 20
" Peruvian, yel. pulv	0 45	0 50
" " red "	1 40	1 80
" Slippery Elm, g. b	0 15	0 20
" " flour, packets	0 28	0 32
" Sassafras	0 12	0 15
Berries, Cubebs, ground	0 20	0 25
" Juniper	0 06	0 10
Beans, Tonquin	0 62	1 10
" Vanilla	16 00	17 00
Bismuth, Alb	4 20	5 00
" Carb.	4 20	5 00
Camphor, Crude	0 38	0 40
" Refined	0 50	0 55
Cantharides	2 20	2 30
" Powdered	2 30	2 20
Charcoal, Animal	0 04	0 06
" Wood, powdered	0 10	0 15
Chiretta	0 25	0 30
Chloroform	1 00	1 50
Cochineal, S. G	0 80	0 90
" Black	1 00	1 20
Colocynth, pulv	0 50	0 60
Collodion	0 67	0 70
Elaterium.....oz	4 50	5 00
Ergot	0 65	0 75
Extract Belladonna	2 2	2 50
" Colocynth, Co	1 25	1 75
" Gentian	0 50	0 60
" Hemlock, Ang	1 12	1 25
" Henbane, "	1 70	2 00
" Jalap	5 00	5 50
" Mandrake	1 75	2 00
" Nux Vomic	0 60	0 70
" Opium	Variable.	
" Rhubarb	7 50	—
" Sarsap. Hon. Co	1 00	1 20
" " Jam. Co	3 25	3 70
" Taraxicum, Ang	0 70	0 80
Flowers, Arnica	0 25	0 35
" Chamomile	0 30	0 40
Gum, Aloes, Barb. extra	0 70	0 80
" " " good	0 42	0 50
" " Cape	0 12	0 20
" " " powdered	0 20	0 30
" " Socot	0 76	0 80
" " " pulv	0 90	1 00
" Arabic, White	0 60	0 65
" " " powdered	0 50	0 55
" " sorts	0 28	0 30
" " " powdered	0 42	0 50
" " com. Gedda	0 13	0 16
" Assafœtida	0 31	0 35
" British or Dextrine	0 13	0 15
" Benzoin	0 48	0 55
" Catechu	0 12	0 15
" " powdered	0 25	0 30
" Euphorb, pulv	0 32	0 40
Gamboge	1 05	1 20
Guaiacum	0 38	0 87
Myrrh	0 42	0 60

DRUGS, MEDICINES, &c.—*Contd.*	$ c.	$ c.
" Sang Dracon	0 60	0 70
" Scammony, powdered	6 50	6 75
" " Virg. "	14 50	—
" Shellac, Orange	0 43	0 45
Gum, Shellac, liver	0 38	0 40
" Storax	0 65	0 75
" Tragacanth, flake	1 10	1 40
" " common	0 35	0 40
Galls	0 27	0 32
Gelatine, Cox's 6d	1 10	1 20
Glycerine, common	0 25	0 30
" Vienna	0 30	0 40
" 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
" " Saccbar	0 40	0 55
" Citrate Ammon	1 10	1 20
" " & Quinine, oz	0 50	0 60
" " & Strychine "	0 17	0 25
" Sulphate, pure	0 08	0 10
Iodine, good	9 50	—
" Resublimed	10 00	—
Jalapin	1 40	1 60
Kreosote	1 60	1 70
Leaves, Buchu	0 25	0 30
" Foxglove	0 25	0 30
" Henbane	0 35	0 40
" Senna, Alex	0 30	0 60
" " E. I.	0 12½	0 20
" " Tinnevilly	0 20	0 30
" Uva Ursi	0 15	0 15
Lime, Carbolate.....brl	5 50	—
" Chloride	0 05	0 06
" Sulphate	0 08	0 12½
Lead, Acetate	0 13	0 15
Leptandrin.....oz.	0 60	—
Liq. Bismuth	0 50	0 75
Lye, Concentrated	1 50	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 40	0 50
Mercury	1 00	0 15
" Bichlor	1 00	—
" Chloride	1 30	—
" C. Chalk	0 60	—
" Nit. Oxyd	1 30	—
Morphia Acet	3 90	4 00
" Mur.	3 70	4 00
" Sulph	4 20	4 40
Musk, pure grain.....oz	21 00	—
" Canton	0 90	1 20
Oil, Amonds, sweet	0 50	0 52
" " bitter	14 00	15 00
" Aniseed	3 80	4 00
" Bergamot, super	5 00	5 25
" Carraway	4 00	4 20
" Cassia	2 00	2 20
" Castor, E. I	0 13	0 14
" Crystal	0 22	0 25
" Italian	0 26	0 28
" Citronella	1 10	1 50
" Cloves, Ang	1 00	1 00
" Cod Liver	1 20	1 50
" Croton	2 00	2 10
" Juniper Wood	0 80	1 00
" " Berries	6 00	7 00
" Lavand, Ang	16 00	17 60
" " Exotic	1 40	1 60
" Lemon, super	5 00	5 20
" " ord	2 80	3 00
" Orange	3 20	3 50
" Origanum	0 65	0 75
" Peppermint Ang	13 00	14 40
" " Amer	3 00	3 25
" Rose, Virgin	7 75	8 00
" " good	5 50	6 00
" Sassafras	1 00	1 10
" Wintergreen	6 50	7 00
" Wormwood, pure	5 80	6 50
Ointment, blue	0 76	0 80
Opium, Turkey	6 00	6 25
" " pulv	8 00	10 00

Drugs, Medicines, &c.—*Cont'd*	$ c.	$ c
Orange Peel, opt.	0 30	0 36
" good	0 12½	0 20
Pill, Blue, Mass	0 80	0 85
Potash, Bichrom	0 25	0 27
" Bi-tart	0 27	0 28
" Carbonate	0 14	0 20
" Chlorate	0 55	0 55
" Nitrate	10 50	11 00
Potassium, Bromide	1 15	1 50
" Cyanide	0 75	0 80
" Iodide	9 00	9 25
" Sulphuret	0 25	0 35
Pepsin, Boudault's oz	1 50	—
" Houghton's doz.	8 00	9 00
" Morson's oz.	0 85	1 10
Phosphorus	0 75	0 85
Podophyllin	0 50	0 60
Quinine, Pelletier's	—	2 25
" Howard's	2 20	—
" " 100 oz. case.	2 15	—
" " 25 oz. tin..	2 15	—
Root, Colombo	0 13	0 20
" Curcuma, grd	0 12½	0 17
" Dandelion	0 25	0 35
" Elecampane	0 14	0 17
" Gentian	0 10	0 12½
" " pulv	0 15	0 20
" Hellebore, pulv	0 17	0 20
" Ipecac, "	2 20	2 30
" Jalap, Vera Cruz	1 35	1 60
" " Tampico	0 90	1 00
" Liquorice, select	0 11	0 13
" " powdered	0 15	0 20
" Mandrake "	0 20	0 25
" Orris, "	0 20	0 25
" Rhubarb, Turkey	3 50	—
" " E. I	1 10	2 00
" " " pulv	1 40	2 50
" " " 2nd	1 30	1 50
" " French	0 75	—
" Sarsap., Hond	0 40	0 45
" " Jam	0 88	0 90
" Squills	0 10	0 15½
" Senega	1 70	1 80
" Spigelia	0 48	0 50
Sal., Epsom	2 25	3 00
" Rochelle	0 26	0 35
" Soda	0 01¾	0 03
Seed, Anise	0 13	0 16
" Canary	0 05	0 06
Cardamon	3 50	3 75
" Fenugreek, g'd	0 08	0 10
" Hemp	0 06½	—
" Mustard, white	0 14	0 16
Saffron, American	2 00	2 50
" Spanish	17 00	18 00
Santonine	9 50	10 00
Sago	0 07½	0 09
Silver, Nitrate Cash	14 85	16 50
Soap, Castile, mottled	0 10	0 14
Soda Ash	0 03	0 04
" Bicarb. Newcastle	4 50	4 50
" " Howard's	0 14	0 16
" Caustic	0 04	0 05
Spirits Ammon., arom	0 25	0 35
Strychnine, Crystals	2 20	2 50
Sulphur, Precip	0 10	0 12½
" Sublimed	0 03½	0 05
" Roll	0 03	0 03½
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
Analine, Magenta, cryst	3 25	4 00
" " liquid	2 00	—
Argols, ground	0 15	0 25
Blue Vitrol, pure	0 08	0 10
Camwood	0 06	0 09
Copperas, Green	0 01½	0 02½
Cudbear	0 16	0 25
Fustic, Cuban	0 02	0 04
Indigo, Bengal	2 40	2 50
" Madras	0 95	1 10
Extract	0 28	0 35

Dyestuffs—*Continued.*		
Japonica	0 05½	0 06¼
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 14	—
" " ½ lb. "	0 15	—
Madder, best Dutch	0 16	0 17
" 2nd quality	0 15	0 16
Quercitron	0 03	0 05
Sumac	0 06	0 08
Tin, Muriate	0 10½	0 12½
Redwood	0 05	0 06
Spices.		
Allspice	0 8½@	0 10
Cassia	0 38	0 40
Cloves	0 12½	0 15
Cayenne	0 18	0 25
Ginger, E. I	0 12	0 14
" Jam	0 20	0 50
Mace	1 45	1 50
Mustard, com	0 20	0 25
Nutmegs	1 05	1 10
Pepper, Black	0 19	0 20
" White	0 26	0 28
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 25	0 35
" Magnesia	0 20	0 25
Litharge	0 06½	0 09
Pink, Rose	0 12½	0 15
Red Lead	0 06½	0 08
" Venetian	0 02½	0 03½
Sienna, B. & G	0 10	0 15
Umber	0 07	0 10
Vermillion, English	1 15	1 25
" American	0 25	0 35
Whiting	0 85	0 90
White Le , gen	0 08	0 09
" No. 1	0 07	0 08
" " No. 2	0 05	0 07
ow 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 [illegible]	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 03½	0 04½
Yellow Ochre	0 08	0 12
White Lead, gen. 25 lb. tins	2 30	—
" " No. 1	2 10	—
" " No. 2	1 90	—
" " No. 3	1 65	—
" " com	1 30	—
White Zinc, Snow	2 75	3 25
Naval Stores.		
Black Pitch	4 00 @	4 50
Resin, Strained	4 80	5 00
" Clear, pale	9 00	10 00
Spirits Turpentine	0 82	0 84
Tar Wood	4 50	4 75
Oils.		
Cod	0 58 @	0 60
Lard, extra	1 00	—
" No. 1	0 95	1 00
" No. 2	0 85	0 90
Linseed, Raw	0 75	0 80
" Boiled	0 80	0 85
Olive, Common	1 15	1 35
" Salad	1 80	2 30
" " Pints, cases	4 20	4 40
" " Quarts	3 60	3 90
Seal Oil, Pale	0 68	0 75
" " Straw	0 60	0 65
Sesame Salad	1 30	1 35
Sperm, genuine	1 90	2 00
Whale, refined	0 75	0 80

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TORONTO CHEMICAL WORKS,

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Acid Phosphoric dilut	lb
" Sulphuric. aromat	"
" Sulphurosum	"
Ether Aretic	"
" Nitros, (Spts Nitre)	"
" " Case of 6 bots. 24 lb	"
" " (by carboy) 80 lb	"
" Sulphuric s.g. 725	"
" " s.g. 756	"
Ammon nitras	"
Argenti nitras	oz.
" " (1 lb. bots.)	lb
" " 5 lb. bots	"
" " Fusa	oz.
Arsenici Iodidi	"
Bromoform	lb
" (by case of 24 lb)	"
Bromium cum Cantharid	oz.
Select Sennæ	lb
Caramel (Brandy coloring)	gal
Chineal coloring	pt.

EXTRACTS, SOLID.

Aloes Barb	"
Aloes Socot	"
Colocynth. co	"
Colocynth, co. pulv	"
Fel bovini	oz.
Jalapæ	lb
Podophylli	"
Nucis Vomicæ	oz.
Opii	"
Sarzæ Hond. co	lb
" Jam. co	"

EXTRACTS, FLUID.

Arctii Lappæ	lb
Belladonnæ	"
Buchu	"
Calumbæ	"
Cinchon, flavæ	"
Conii	"
Cimicifugæ	"
Chimaphilæ	"
Ergotæ	"
Gelsemini	"
Gentianæ	"
Glycyrrhizæ	"
Hydrastis	"
Hyoscyami	"
Ipecacuanhæ	"
Lobeliæ	"
Leptandræ	"
Nucis Vomicæ	"
Papaveris	"
Podophylli	"
Pruni Virg	"
Quassiæ	"
Rubi Villosi	"
Rhei	"
Rumicis	"
Scillæ	"
Sciillæ co	"
Sennæ	"
Sarzæ	"
Sarzæ co	"
Senegæ	"
Stillingiæ	"
Taraxaci	"
Valerianæ	"
Veratri Viridis	"

EXTRACTS, LIQUID.

Opii sedativ, (Elixir of Opium)	lb
Sarzæ co	"
Senna	"

EXTRACTS, FLAVORING.

Pear	"
Pineapple	"
Raspberry	"
Strawberry	"
Vanilla	"

Ferri Carb. precip	"
" Carb. sacch	"
" et Quiniæ cit	"
" Peroxid	"
" Phosphas	"
" Sulphas	"
" Sulphuret	"
Gold Chloride (15 gr. bots)	doz
Hydrarg. iodid rubrum	"
" " viride	oz.
Jalapin	"
Leptandrin	"
Lupulin	"
Lin Saponis	"

LIQUORS.

Ammoniæ cet	"
Antimonii Chlor. (Butter Antimony)	"
Arsenicalis	"
Arsenic et Hydrarg. iodid	"
Bismuthi	"
Ferri Perchlor	"
" " fort	"
" Pernitrat	"
" Persulph	"
Plumbi Subacet	"
Potassæ	"
Soda Chlorinatæ	"
Madder Compound	"
" " (carboy)	"
Magnesia Citras Efferves	"
" " " (25 lb. tins.)	"
Ol. Ergotæ	oz.
" Sulphurat. (Balsam Sulphur)	"

PLASTERS.

Belladonna	½lb
Calefaciens	"
Cantharidis	"
Ferri	"
Galbani	"
Hydrargyri	"
Opii	"
Picis	"
Plumbi	"
Resinæ	"
Saponis	"

Plumbi Iodid	oz.
" Nitras	lb
Podophyllin	oz.
Potass Carbonas	lb
" " (50 lb tins)	"
" Sulphas	"
" Sulphuret	"
Q. ulv. Creta arom	"
" Ipecac. co	"
" Jalap co	"
" Rhei co	"

Spirit Ætheris	lb
" " Nitrosi	"
" " " case of 24 lbs	"
Spirit Ætheris Nitrosi (carboy.)	"
" Ammoniæ Aromat	"
" Camphora	pt.
" Chloroformi	lb
Stoughton Bitters	gal
Syrup Simplex	lb
" Ferri Iodidi	"
" " Phosphatis	"
" Hypophosphites	"

TINCTURES.

Aconiti	pt
" (Fleming's)	"
Aloes	"
Aloes et Myrrh	"
Arnicæ, U. S. P	"
Assafœtidæ	"
Aurantii	"
Belladonnæ	"
Benzoini co	"
Buchu	"
Calumbæ	"
Camphor. co	"
Cannabis Indic	"
Cantharidis	"
Capsici	"
Cardamomi co	"
Cascarillæ	"
Castorei	"
Catechu	"
Chiratæ	"
Cinchona co	"
" flava	"
Cimicifugæ U. S. P	"
Cinnamomi	"
Cocci	"
Colchici seminis	"
Conii	"
Croci	"
Cubebæ	"
Digitalis	"
Ergotæ	"
Ferri perchloridi	"
Gallæ	"
Gentian. co	"
Guaiaci, ammon	"
Hyoscyami	"
Iodi	"
Jalapæ	"
Kino	"
Krameriæ	"
Lavandulæ co	"
Limonis	"
Lobeliæ	"
Lupuli	"
Myrrh	"
Nucis Vomic	"
Opii	"
Opii Ammon	"
Quassia	"
Rhei	"
Sabin	"
Scillæ	"
Senega	"
Senna	"
Serpentaria	"
Stramonii	"
Tolu	"
Valerian	"
Valerian. ammon	"
Veratri Viridis	"
Zingiberis	"
" fort	"