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Original and Selected Papers.

ON TINCTURE OF COLUMBO, WITH REMARKS UPON THE INJURIOUS INFLUENCE OF LIGHT ON SOME PREPARATIONS, ETC.*

BY J. B. MOORE.

All who have made tincture of columbo by the officinal process, are aware of the difficulties attending it, and the unsatisfactory results. In the first place, the menstruum is too weak, and in the second place, the powder directed is too fine.

Columbo, as is well known, contains among its constituents a large proportion of albuminous matter, which is very soluble in so aqueous a menstruum as diluted alcohol, and which, consequently, causes the tincture to become loaded with inert matter, rendering it very prone to change and deposit, and also to become cloudy, &c.

Sensible of the importance of keeping the alcoholic strength of all tonic tinctures down to the minimum consistent with their highest therapeutic qualities, and pharmaceutic integrity and perfection, I endeavored to overcome the objectionable features in the officinal formula, without increasing the alcoholic strength of the preparation; but in this was not successful. To obtain a preparation that would be stable, not deposit, but remain bright and clear (qualities so desirable), and to devise a process that would be practically unobjectionable, I found that it would be necessary to slightly increase the alcoholic strength, and change somewhat the character of the menstruum. I therefore turned my attention to that expedient, and after a number of experiments have adopted the following formula, which seems to afford an excellent preparation.

*Druggist's Circular.

Take:

Pulv. columbo, No. 20... ..... 4 oz. troy.
Alcohol .....22 fl. oz.
Glycerin.....
Water.....aa 5½ fl. oz.
Alcohol, dil. q. s.

Mix the alcohol, glycerin, and water, moisten the powdered columbo with the mixture, pack in a close vessel, and set aside to macerate for six hours; then pack it in a glass funnel prepared for percolation, and gradually pour upon it the remainder of the menstruum, and when this has passed from the surface, continue the percolation with diluted alcohol, until thirty-two fluid ounces of tincture are obtained.

The slight excess of the menstruum proper, directed in the formula, is intended to form a stratum which will, in a measure, prevent the intermixture of the auxiliary menstruum (dilute alcohol) with the percolate.

The short preliminary marceration allows the powder time to become thoroughly saturated and to swell, and it is, therefore, less likely to cause trouble in percolation, besides insuring a more thorough exhaustion of the drug. The powder, after being moistened to the proper degree, is often found, at the expiration of the preliminary marceration, too dry, and it is necessary to remoisten it slightly before packing it for percolation.

When the powder is packed with proper care (not too tightly), percolation proceeds nicely, and the tincture obtained is bright and clear and, I believe, will remain permanently so.

I have three samples of this tincture, two of which were made by the above formula, and the other was made by a slight modification of it. They have stood since last October, and remain perfectly transparent; two of them are without any deposit, but the other contains a slight one, not sufficient, however, to be of any consequence.

But why this one should deposit at all, and the others remain perfectly unchanged, I cannot tell, unless, it is because it has been kept exposed in a white glass (ordinary shop bottle), while the others had been incidentally placed in what are known as "government" quart bottles, of colored glass. I am, therefore, inclined to the belief that light has been the principal cause of deposit in this case, as it so frequently is in the case of many other tinctures.

The alcoholic strength of the tincture of columbo, as prepared by the above formula, is somewhat greater than that of the official formula; yet, this increase of strength is of but little, if any consequence. In the maximum dose (a tablespoonful) there are but forty minims; while in the minimum dose (a teaspoonful) there are only about ten minims more of spirit than the same dose of the officinal tincture contains. Besides, it is seldom that the tincture of columbo

is ever prescribed alone; I cannot recall an instance in my experience. It is generally asssociated in tonic mixtures, diluted with syrups or aqueous liquids, so that the dose of the tincture itself rarely ever exceeds a teaspoonful. It was, I think, an oversight in our Pharmacopœia to direct so fine a powder as No. 50 for this tincture.

When a weak spirit is used in the percolation of any drug, as for example, columbo, rhubarb, gentian, senega, &c., which contain a large proportion of albuminous, mucilaginous or gummy matter, a too fine powder should be avoided. When a coarse powder is used, the menstruum has better play. and the active principles are more thoroughly exhausted, while the inert and objectionable matters are left behind. I was forcibly impressed with this fact, several years ago, during a series of experiments in devising an improved formula for syrup of senega, which was published, with some practical hints upon the subject, in the *American Journal of Pharmacy*, pages 229 and 302, 1870.

In such cases, when a too fine powder is used, the menstruum soon becomes surcharged with soluble inert matter, which prevents the ready and thorough permeation of the drug particles, and at the same time blunts, as it were, its solvent action, in consequence of which the residue in the percolator is often left rich in the active principles of the drug. Every observing pharmaceutist, I presume, who has had much experience in percolation, has witnessed this conditicn of things.

I always have been, and am still, an advocate of fine powders for percolation whenever they are admissable, and especially when a highly concentrated solution of the active principle of the drug is required, as in fluid extracts, &c.

It should be our aim to endeavor not only to increase the stability, and improve the flavor and appearance of a number of our officinal tinctures, syrups, &c., which are yet needing amendment, but we should also endeavor to simplify and render the mode of their manufacture more easy to manage, so that even the young and inexperienced pharmaceutist may make his own preparations with ease and certainty.

No one will attempt to deny that the officinal formula for tincture of columbo is open to criticism and needs improvement, and if the formula proposed in this paper should be found, after a fair trial, to be faulty and is not satisfactory, I hope that some brother pharmaceutist may offer a better one.

I would here remark that many of our officinal tinctures might be very much improved in flavor, and thus rendered more palatable, by the addition of some aromatic substance or substances, without in the least interfering with their therapeutic value. In fact, I believe that in many instances their medicinal properties and usefulness would be greatly enhanced by their improved flavor. There are several of our officinal tinctures so insupportably bitter and dis-

agreeable as to forbid their employment alone; the subject of this paper being one of that number. Why the tincture of columbo, cinchona, jalap, serpentaria, quassia, hops, lupuline, &c., should be made without the least addition of anything to conceal their taste, I cannot see.

This subject, I think, is worthy the attention of the next Commitee of Revision of our Pharmacopœia.

There is nothing in my experience so potent, and at the same time so wholly unobjectionable for the purpose of covering the taste of bitter tonics and many other unpalatable medicines, as the orange flavor, but it must not be in the form of the dried peel, and the fresh peel is often difficult to procure at the moment needed, and is expensive, as the entire fruit has to be paid for; besides the bitter principle of the peel counteracts, in a measure, its flavoring power.

I have found the oil of orange the most delicious, convenient, and eligible form of orange flavor for all purposes of this kind. It imparts a rich and strong impression.

In making tinctures, the oil should be thoroughly mixed, in the proper proportion, directly with the powdered drug before the latter is moistened for percolation, and the whole percolated in the usual manner. In this way the percolate will become more thoroughly saturated, and a weak spirit can thus be made to take up and hold in solution a larger proportion of the oil than it can by simple solution. After the tincture has been completed, if it is found that an excess of oil has been used, the tincture should be filtered. I have adopted this plan for the last fifteen years in making elixirs and other preparations in which I have employed essential oils, and am perfectly satisfied of its advantages.

Oil of orange can always be kept fresh and sweet by mixing it immediately with an equal volume of stronger alcohol, and keeping it in small well stopped bottles in a cool place, *in the cellar, secluded from the light.*

The great mistake with many in the use of oil of orange for flavoring, has been either in using an oil of inferior quality, or in combining it with other flavoring ingredients. There are of course, some instances in which such addition may be of advantage, but in the great majority of cases the oil should be used alone.

Above I have referred to the injurious influence of light upon some medicinal preparations. I will here continue my remarks upon that subject.

I have observed for years the impaired flavor of certain essences and medicinal spirits, induced by long exposure to light, and especially have found the change rapid in summer weather, or in a heated atmosphere.

All our essences and solutions of volatile oils, such, for instance, as essence of lemon, peppermint, comp. spirit of juniper, &c., imperatively demand, for the perfect preservation of their virgin excel-

lence of flavor, their colour as well as medicinal qualities, perfect seclusion from light. Many of our tinctures, chemical solutions, syrups, &c., claim the same protection.

Cologne water, bay rum, and many other articles in the perfumery line are also often not only liable to become bleached, and their delicacy of odor to be very much impaired by long exposure to light, but I have even had cologne and bay rum become so completely changed by exposure to *strong light* in my windows as to lose entirely their identity, and become exceedingly disagreeable and repulsive.

All such preparations should be kept in bottles of colored glass, if it were practicable to insure their perfect preservation under the variable conditions to which they may be subjected.

The artificial coloring matter in all such preparations seems to conduce to these changes, under the influence of light and heat.

If pharmaceutists would take the trouble to provide themselves with suitable bottles of colored glass, in which to keep all preparations which are known to be injuriously affected by exposure to light, I believe that much might be done towards increasing their stability and preserving their medicinal qualities, as well as preserving a more normal and uniform color of many preparations.

All new stores could be fitted with all necessary colored bottles without scarcely any additional expense.

Philadelphia, April, 1877.

A LONDON WEST END PHARMACY.

The *Chemist & Druggist* gives the following description of a newly fitted Pharmacy in London, which embodies several points of novelty:—"On opening the inner folding glass doors of the lobby an electric bell informs the assistant that a customer has entered. Opposite the door, and facing the proprietor's desk (which is surrounded with plate glass instead of the usual wood fittings), is placed a physician's writing desk, provided with pen, ink, black leather folding blotting-pad, containing prescription paper, and on either side such books of reference as "The Court Guide," "Medical Directory," "Post Office London Directory," &c. On the serving counter is arranged a row of bent-glass show cases, which have a novel feature attached to them. On opening the bent-glass top of each a tray the size of the case is liberated by a spring: this serves to place the goods on whilst the customer is choosing the article. This is a most convenient and useful arrangement. The dispensing counter has been manufactured from a design suggested by Mr. Cooper. It is planned for six assistants, three on each side. The top is about three feet in depth, giving ample room. Opposite the assistants are

arranged, of course, the chemicals, extracts, and preparations required for dispensing. The great point of novelty in this counter is that each assistant has scales, measures, mortars, knives and scissors, pill machine, powder folder, pill coating utensils, cork drawer, cork presser, evaporating dishes, all arranged within reach without moving from his position. The pill machine pulls out like a drawer ready for use, with a recess for the cutter by its side. On the same principle a powder folder slides out, both being fixed in their places ready for use, without moving on to the counter. The same with the cork presser, which pulls out from its recess by the side of the cork drawer. Beneath are arranged drawers of proper dimensions to hold the articles likely to be required in the dispensing of prescriptions. There are also cupboards behind the assistants. At the end of each counter is the dispensing desk, under which are the label drawers, recesses for ledgers and prescription books, &c. By the side of the counter speaking tubes are fixed, communicating with the laboratory. A small lift is also placed handy to the dispensing counter, for bringing up anything which may be required from the warehouse below, and for sending down empties; and last, though not least, at the extreme end of the counter a small tank or reservoir is arranged, with two taps, always supplied, one with hot and the other with cold water. This, though a part of the dispensing counter, is entirely out of observation, yet no screen of any description is placed between the dispensing and the serving counters, and all the assistants may be seen at work by the customers in the shop.

LINIMENT IODIDE OF AMMONIA.*

BY THEODORE G. DAVIS, PH. G.

I was induced, from the large amount of advertising and high testimonials given to "Giles' Liniment Iodide of Ammonia," to look into its composition with a view of framing a satisfactory formula, should such prove a desirable addition to our list of liniments. It smells strongly ammoniacal, slightly camphoraceous and lavender-like; when mixed with water it becomes milky, and globules of oil may be seen floating on the surface. Iodine could not be detected by chlorine water and starch, nor was any precipitate produced when boiled with hydrate of potassium until all odor of ammonia had disappeared, acidulated and tested with acetate of lead and mercuric chloride. A quantity was evaporated, by means of a water-bath, to a small bulk, thus getting rid of the oil of lavender, alcohol, and

*Am. Jour. Pharm.

greater part of the ammonia; water was added, and the whole thrown on a filter, thus separating the camphor; a portion of the filtrate was neutralized with muriatic acid and tested by cupric and ferrous sulphates; it *did not* yield a precipitate. I then estimated, with nitrate of silver, the quantity of *iodine*, and found *one-tenth* grain as iodide of ammonium.

From the result of a number of experiments, the following would give a very similar preparation, containing sufficient "iodide of ammonia" to give it a name.

Take of	Iodide of Ammonium,		grs. ii
	Camphor,		
	Oil of Lavender,	āā	ʒi
	Water of Ammonia,		ʒiv
	Alcohol sufficient to make		Oi

Mix.

If a liniment of iodide of ammonium should prove desirable I would suggest the following, as containing iodine in a form of combination—iodide and iodate, most favorable for absorption and the elimination of *free* iodine.

Take of	Water of Ammonia, (10 per ct.)	fʒii
	Glycerin, or	
	as I prefer, Soap Liniment,	fʒvii
	Tincture of Iodine,	fʒviii
	Alcohol,	fʒiv or q. s.

Mix the soap liniment (or glycerin) with the tincture of iodine and add the alcohol and ammonia; shake and add alcohol to make one pint. When first mixed it is of a ruby red color, but in two or three days becomes colorless, affording a cleanly preparation, which may be appropriately called a liniment of "iodide of ammonia," but the correct name of which would be Linimentum ammonii iodidi et iodatis.

Bridgeton, May 5th, 1877.

SENEGA ROOT.*

The Senega plant is a native of this country, and in points of importance it is one of our leading medicines. The plant received its name of Senega in consequence of being named by our early settlers after a tribe of Indians, located at one time in Virginia, called the Senegaroos, who secretly held the root as an antidote against the bite of the rattlesnake, thereby it received the English name of rattlesnake root. In the year 1735, Dr. Tennant, of Virginia, secured the

*Read at the Fourth Session of the Am. Pharm. Association, and published in the Proceedings.

secret from the Indians by offering alluring rewards for their discovery, which was as an antidote, that the root was to be given internally,and applied externally in the form of a cataplasm. Dr. Tennant invited the attention of physicians to this medicine, and for bringing it into medical practice for the cure of one of the most dreaded attacks upon the human race, the bite of a venomous reptile; for this the Doctor was in return rewarded by the House of Representatives of the State of Pennsylvania. Suffice it to say that, so far as the root's usefulness was for the cure indicated, it only proved as one of the often-told "snake stories," but singularly not a stranger to the traditions of ancient pharmacy. The Senega was introduced into England in 1759, by Philip Miller, as a garden plant; not having a handsome appearance, it was brought into disfavor and discarded.

As to the plant's geographical range, it grows sparingly in isolated places on sides of hills and woods through Canada, along the western slope of the Alleghany range of mountains to the Ohio river, embracing the Ohio valley to the State of Indiana, in which latter State, in its southern portion, considerable Senega is found. The growth increases through the western parts of the Virginias, North Carolina, Kentucky, Tennessee, and the northern parts of Georgia, Alabama and Texas. It is scarce in Missouri, but grows profusely in many parts of Iowa and Minnesota. There are conflicting reports as to whether the Senega plant does or does not grow in Montana.

In looking over the different explorations under the patronage of our government, from the Mississippi river to the Pacific coast, no Polygala Senega was found from the 32d to the 45th parallel, and from 97 longitude to the Pacific coast. In the explorations of Lieutenant Park, accompanied by the celebrated botanist, Dr. John Torrey, who in his collection of plants only found two Polygalas, the P. cuculata and the P. Leidenheimeri, he states that no other Polygalas could be found through California nor any part of the Pacific coast.

Prof. Gray, in his collection of plants east of the Rocky Mountains, makes no mention of having found Senega. Dr. J. S. Cooper, in his explorations embracing the 47th and 49th parallel, also found no Senega. Dr. Bigelow's reports give the same account.

In my endeavors to ascertain the importance of Senega root as an article of commerce, I have been unsuccessful; the Chief of the Bureau of Statistics, the Hon. E. Young, in Washington, replied to my inquiry that no separate account of the exports of Senega root was kept by our custom houses.

In the reports of our exports of last year sent to me, I find very meagre accounts are kept of the exports of medicines in general from the United States, which defect certainly calls for an amendment to existing laws upon this subject by Congress, for if it is important to keep statistics of the exportation of the articles of commerce as food

that sustains human life, it is equally as important to have a complete record kept of medicines exported that relieve human suffering.

A leading wholesale drug house of New York estimates the annual exportation of Senega root at over two thousand pounds.

SYRUP OF CHLORAL.

At a meeting of the Pharmaceutical Society of Paris, M. P. Carlos called attention to the great difference in the strength of this syrup, as made by the formulas of different authors, which vary in the amount of chloral directed between 1 and 12 per cent. Follet's syrup appears to be used in France more generally than any other, and since the dose is convenient and the odor and taste of chloral well disguised by the peppermint employed, the author recommends a somewhat modified formula, whereby a syrup even more pleasant in odor is obtained, as follows: Powder 4 grams of pure chloral hydrate in a porcelain mortar, dissolve it in 2 grams of boiling water, and add, drop py drop, of a concentrated solution of sodium carbonate until the solution has a neutral reaction. Then agitate it well with one drop of English oil of peppermint, mix it rapidly with 96 grams of simple syrup, filter if necessary, and dissolve in it one drop of chloroform. Each tablespoonful of the syrup contains one gram 15½ grains), and each teaspoonful 0·25 gram (4 grains) of chloral hydrate.

IRON IN THE BLOOD.*

"There is iron enough in the blood of 42 men to make a plowshare weighing 24 pounds."—*Exchange.*

The above statement, which we copy from one of our western exchanges, illustrates the sensational and absurdly erroneous character of many of the paragraphs which find their way into the "popular science" columns of the press, starting nobody knows where, and clipped from paper to paper, to fill a corner in many a journal, the editor neither knowing nor caring whether the statements are reliable, or exaggerated beyond all reason, as in the above instance. The truth is, that the entire bodies of more than three regiments, of 1000 men each, do not contain so large an amount of iron as that above stated to be obtainable from the blood of 42 individuals. The amount of iron generally supposed to be present in the blood is, according to the popular conception, greatly overestimated.

*From the Laboratory.

Towards the end of the 17th century, Menghini discovered iron in the blood, and notably in the red corpuscles. The proportion of this metal in the blood of man appeared so considerable to this physician that to him, perhaps, is to be attributed the pleasing fiction that swords, nails and instruments might one day be made of it. Deyeux and Parmentier proposed to produce medals from the iron obtained from the blood of distinguished men, by which their memory might be perpetuated. Poets have availed themselves of the discovery, to attribute valor or other qualities to their heroes, according to the quantity of this metal circulating in their veins and arteries. Alfred Tennyson, in his *Princess*, makes the father of the heroine exclaim, when his daughter shows no signs of relenting towards the wounded prince,—

"I've heard that there is iron in the blood,
And I believe it."

The patients of Reichenbach declared that their sensations were different according as they lay parallel with or across the magnetic meridian, and to-day thousands of physicians attribute an anæmic condition to a deficiency of iron in the system, and prescribe this metal in a great variety of medicinal forms, some of which contain in two or three doses a greater quantity of the element than the whole body in a state of health.

The question arises, How much iron is contained in the body and in the blood of an individual of average weight? The amount of blood in the human body is considered by physiologists as about one-eighth of its total weight. Assuming the average weight of man to be 156 lbs., we have between 19 and 20 pounds as the weight of the blood of a single individual. According to an analysis by Dumas, 1000 parts of blood contain 2 parts of the hæmatin or hæmatosin—the red coloring matter of blood which contains the iron in a state of organic combination—hæmatin having a formula,—

$$C_{23}\ H_{22}\ Fe\ N_3O_3 \text{ (Watts.)}$$

From this it is easy to calculate the amount of iron, which is $6\frac{73}{100}$ per cent. of the weight of the hæmatin, and it will be found to be in 20 lbs. only about 19 grains (18.84.)

But the blood is not the only source of iron in the system; it exists, in traces, in the gastric juice, according to Berzelius, as the proto-chloride of iron, and in other fluids as a phosphate. Iron is found in the bile, and in gall stones, especially such as consist chiefly of pigment; also in the coloring substance of the hair, although there appears to be no direct relation between its color and the amount of iron it contains.

In regard to the total amount of iron in the whole body, we have no direct or accurate means of determination. Some ten years ago, the late Dr. Lankester, of London, in a public lecture, exhibited the various elements entering into the composition of the human body,

and among them included 100 grains of iron; but this is probably more than double the actual quantity.

Assuming, then, that the human body contains 50 grains of iron, including, of course, the 19 odd grains found in the blood, it appears that, to produce iron enough to make a plowshare weighing 24 pounds, the bodies of no less than 3360 full-grown individuals would require cremation, producing more than 15 tons of ash, from which the iron would have to be extracted.

Large doses of iron may be of therapeutic value, but the value does not depend upon any lack of this metal in the system; for chemical analysis shows that the various articles of food contain so much of it, that a large portion is always thrown off by the solid excretions. Lehman observes that "Nature has provided that the animal organism shall receive the necessary quantity of this essentiol metal with every kind of food." B.

NOTES ON THE PREPARATION AND TOXIC EFFECTS OF GELSEMIA.*

BY THEO. G. WORMLEY, M. D.

In a former number of this journal (Jan., 1870) we showed that Gelsemium sempervirens contained an organic acid, *gelseminic acid*,[1] and a nitrogenized basic principle or alkaloid, *gelsemia*, to the latter of which the plant owes its activity.

The method there pointed out for the preparation of these two principles was to concentrate the fluid extract of the root to about one-eighth its volume, dilute the concentrated extract with several times its volume of water, and, after subsidence of the resinous matter and filtration, to again concentrate the liquid to the original volume of the extract employed. The liquid was then acidulated with hydrochloric acid and the gelseminic acid extracted with ether, after which the liquor was rendered alkaline and the gelsemia extracted by chloroform.

More recent investigations have shown that, by the former part of this process, a large proportion of both the principles in question are separated with the resinous matter, and thus escape recovery.

After trying various methods for the more complete recovery of these principles from the fluid extract, we find the following to give the best results: A given volume of the fluid extract, acidulated with acetic acid, is slowly added, with constant stirring, to about eight volumes of water; after the separated resinous matter has

*American Journal of Pharmacy.

[1] According to the recent researches of Dr. C. A. Robbins, made in the laboratory of Sonnenschien, in Berlin, this principle is identical with *æsculin*.

completely deposited, the liquor is filtered and the filtrate concentrated on a water-bath to something less than the volume of fluid extract employed. The gelseminic acid is then extracted from the concentrated fluid by ether, after which the liquid is treated with slight excess of carbonate of sodium, and the gelsemia extracted with ether or chloroform. For the extraction of the first of these principles it is not essential that the liquid should be acidulated, but in the presence of a free acid the results are more satisfactory.

A series of examinations of a number of samples of the fluid extract of gelsemium, prepared by several of the more prominent manufacturers, showed that, as found in commerce, it quite uniformly contains about 0.2 per cent. of gelsemia, and 0.4 per cent. of the non-nitrogenized principle. The only marked exception to this was found in the case of a fluid extract furnished a physician as a sample, which contained just double the ordinary proportion of the alkaloid and acid. Two samples of fluid extract, prepared by the same firm, as obtained from the shops, contained the ordinary quantity of the alkaloid and acid.

Within the last several years quite a number of cases of poisoning, by the preparation of gelsemium, have been reported. We have thus far collected reports of thirteen cases of this kind as having occurred in this country. Of this number nine proved fatal.

In the fatal cases the dose of the fluid extract varied, in the case of adults, from about one fluid drachm to one tablespoonful; and the time of death from two hours and a half to seven hours and a half.

In one instance, 15 grains of the resinoid "gelsemin" proved fatal to a woman in one hour after the dose had been taken.

Fifty minims of a tincture prepared from four ounces of the root to one pint of dilute alcohol, proved fatal to a child, aged three years, in two hours. And in another instance a much less quantity of the tincture, taken in two doses, caused the death of a child in one hour after the second dose had been taken.

In one of the non-fatal cases a tablespoonful of the fluid extract had been taken; but it was soon followed by vomiting, induced by an emetic.

In another instance, in which from one to two teaspoonfuls of the ordinary fluid extract produced most profound symptoms, recovery took place under the administration of three grains or more of morphia, employed hypodermically, in half-grain doses, repeated every few minutes. From the report of this case, by Dr. Geo. S. Courtright ("Cincinnati Lancet and Observer," Nov., 1876), it would appear that the morphia was the means of saving the life of the individual.

In the cases thus far reported there seems to be only one or, at most, two instances in which the poison was administered with criminal intent.

Columbus, Ohio, February 27th, 1877.

CROTON-CHLORAL AND ITS USE.*

Dr. E. M. Skerritt writes to the *Lancet*, on this subject, as follows :—

In my hands, croton-chloral has been of the greatest use in neuralgias of the fifth nerve, and has appeared, in many cases, to act as a specific. Its effect is not always, however, to be relied upon, and I have found that certain conditions are more favorable to its success than others; thus, the most marked benefit has attended its use in the neuralgias of young or comparatively young patients, especially in the headaches of anæmic women and girls. In these cases there has been either cure or relief in 86 per cent. of the cases treated. About the climacteric period, the success has fallen to about 50 per cent., while in later life there has again been a rise to about 60 per cent. At the climacteric period, bromide of potassium has seemed to be more reliable in its action.

Again, when the headache has occurred in patients with marked hysterical symptoms, the result has not been nearly so favorable ; in fact, I have come to look upon the presence of hysteria as making the success of the drug very doubtful.

Dose and Mode of Administration.—Croton-chloral is but sparingly soluble in water, but to a sufficient degree to make a solution as strong, in my opinion, as any patient will be likely to take, as it is the reverse of palatable. Ten grains will dissolve in the ounce of water, without much difficulty ; glycerine makes it rather more soluble. Dr. Yeo thinks four grains to the drachm, as the strongest solution that can be made with water and glycerine. At the hospital, Mr. Berry uses an alcoholic solution. The drug may also be administered in the form of pills.

There does not seem to be any risk from large doses of croton-chloral. Dr. Ringer has given five grains to a patient, every hour, for a fortnight ; and Dr. Liebreich has prescribed a sleeping-draught, containing about a drachm and a half.

In hospital out patient practice, I generally order five grains, three times a day, and have found that patients unrelieved by this dose are often very much benefited by the addition of another dose of five grains per diem. Elsewhere I have given the same dose every two, three, or four hours, according to the urgency of the case.

The only unpleasant effects I have observed have been the following : In two cases, vomiting; in one of these this was so constant after the dose that the medicine had continued ; in the other it ceased when the drug was taken immediately after meals, and the desired effect was obtained. In several cases, drowsiness, but not so great as to necessitate the discontinuance of the remedy. In two or three cases, giddiness ; in one, headache.

*Phila. Med. & Surg. Reporter.

ON A SIMPLE MODE OF DETECTING THE PRESENCE OF ALCOHOL IN ESSENTIAL OILS.*

BY H. DRAPER, F. C. S.

This was based on the application of "magenta," or acetate of rosaniline, to the detection of alcohol in essential oils, by virtue of the non-solubility of magenta in most of the volitile oils, and its solubility in those oils if mixed with spirits.

The Magenta was perfectly insoluble in a large number of the oils tried ; with others it gave the slightest colouration imaginable, but this was probably owing to the presence of a slight trace of moisture in them : 5 per cent. of alcohol (a low amount of adulteration) immediately produced a brilliant coloration. The following oils were tried :—

Bergamot	No colour
Lemon	"
Nutmegs	"
Lavender, dried over $CaCl_2$	"
Lavender, not dried	Slight colour
Juniper (berries)	No colour
Sassafras	"
Cajeput	"
Rosemary	"
Santal	Coloured slightly
Peppermint	Coloured
Carui	"
Otto of Rose	"
Oil of bitter almonds	"

Mr. Draper said that the important point about this test was the ease and quickness with which it could be applied.

GATHERING FLORIDA ARROWROOT.†

A correspondent, writing from Biscayne Bay, Dade county, Florida, gives some items of interest, among them the gathering of the roots from which arrowroot is made. The correspondent says :

"Two men, with mule and cart, usually make $100 per month gathering and preparing the coontie for market. One hand gathers twelve barrels of the root, which makes about one and a third barrels of marketable coontie, or what is known as Florida arrowroot. The roots much resemble the rutabaga turnip. It is washed and ground,

*Abstract of a paper read before the Irish Pharmaceutical Society, and published in the Chemist and Druggist.

†Phila. Med. & Surg. Rep.

then put in a tub and water applied, stirred thoroughly, and left to settle about two hours, or until the starch, "thick as soft cheese," settles to the bottom. Then draw off the water, and change to another tub, separating the light coontie which collects on the top, leaving the pure article in the first tub, to which sufficient water should be added to give a consistency thin enough to facilitate its passage through the finest sieve or strainer. Place it in dryers containing twenty-five pounds each. In two days of good weather it is ready for market. The refuse, or "mash," is fed to stock; horses, hogs, poultry, all thrive well upon it. By boiling the skimmings, a substance as hard as bread is produced, which keeps well, and fattens hogs for market as readily and as well as corn."

LOCAL APPLICATION OF CROTON OIL.*

M. Limousin has succeeded in preparing croton oil pencils, by means of which the application of croton oil to the surface can be more accurately localised than when the oil is used in its natural state. Two parts of croton oil are added to one of cocoa butter and one of white wax, melted over the water bath: when the mixture begins to cool it is poured into cylindrical moulds, in which it soon solidifies. Although the pencil only contains 50 per cent. of oil, still, owing to the avoidance of all loss through volatilization, the repulsive action of the drug is found to be even more powerful in this form than in its natural condition, and it has been successfully employed with the view of obtaining this action by Dr. Jules Simon at the Hopital des Enfants Malades. Dr. Lailler has used these pencils in the treatment of tinea tonsurans. The pencils seem to retain their properties at any rate for several months.

PHENICATED CAMPHOR.†

The preparation which has been introduced by Dr. Soulez under this name is a simple solution of 2½ parts of camphor in one part of carbolic acid. The liquid thus obtained is pale yellow, of an oleaginous consistency, and smells slightly of camphor without any admixture of the carbolic odour. Phenicated camphor is insoluble in water, in glycerine and in alcohol; but it dissolves in all proportions in the fat oils (olive and almond), and readily emulsifies with water containing saponin.

This preparation is recommended by Dr. Soulez as a preventive

*Repertoire de Pharmacie, in Chemist & Druggist.

†Journ. de Pharmacie [4], vol. xxv., p. 32, from the Bulletin Therapeutique.

of fermentation in dressing for wounds. The dressings are steeped in a mixture of 10 parts of phenicated camphor and 200 parts of olive oil, or one of 10 parts of phenicated camphor and 200 parts of infusion of saponaria. The infusion may be prepared by pouring 1000 parts of boiling water upon 100 parts of saponaria leaves. Dr. Soulez, however, prefers to make a tincture by macerating 250 grams of *Quillaia saponaria* bark for ten days in a litre of 90° alcohol. This tincture, mixed with its weight of phenicated camphor, forms a concentrated emulsion, which is diluted with ten parts of water when required for use.

RECOGNITION OF OIL OF TURPENTINE IN OTHER ESSENTIAL OILS.*

A novel, and as the author appropriately calls it, somewhat primitive method has been devised by Callet for recognizing the presence of oil of turpentine in other essential oils. It is based upon the well-known fact that turpentine, either taken internally or inhaled, communicates to the urine a very marked odor of violets. The author has ascertained that no other essential oils, not even those of lemon, bergamot or peppermint, produce such an effect, and that the presence of other oils does not mask the characteristic odor produced by turpentine. As it may happen, by way of exception, that in certain persons the absorption of turpentine or its elimination by the kidneys may be imperfect, he recommends to make a preliminary trial, with a few drops of pure oil of turpentine at least 24 hours previous to making the trial with an essential oil.

LAC FERRI.†

This mixture, which is used in Europe, and has received its name from its resemblance to milk, consists of freshly precipitated ferric phosphate suspended in water. It is prepared by precipitating ferric chloride with sodium phosphate in very dilute solution, washing the precipitate and mixing it with water, so that 100 parts of the mixture contain 1 to 1.2 parts of ferric phosphate. The last traces of free acid may be removed, during the washing, by a small quantity of sodium carbonate; at all events, every trace of free acid must be removed. The precipitation may also be accomplished in neutral solution, by adding to the sodic phosphate an equivalent of sodium

*Schweiz. Woch. f. Ph., 1877, 21, in New Remedies.

†Pharm. Zeit., 1877, No. 7., from New Remedies.

carbonate; but in this case the precipitate is less white, probably owing to the deposition of a small quantity of hydrated ferric oxide. The first-mentioned process, of course, produces a loss of a portion of ferric phosphate, which, however, is of no importance, in view of the cheapness of the ingredients. The amount of ferric phosphate is easily ascertained by evaporating a sample portion, after which the bulk of the mixture may easily be adjusted to the above-named strength.

Editorial.

NOMINATIONS FOR COUNCIL.

The following list comprises the names of those gentlemen who have been nominated, and who are eligible and willing to stand for election. Voting papers must be returned to the Registrar before Wednesday, July 4, at noon:

BENNETT, A. B., Brantford.
BOWER, JOSHUA, Perth.
BRAY, W. T., Chatham.
CARPENTER, E. R., Collingwood.
ELLIOT, WILLIAM, Toronto.
HARVEY, EDWARD, Guelph.
HUFFMAN, T. A., Napanee.
JORDAN, F., Goderich.
LOVE, NEIL C., Toronto.
LYMAN, BENJAMIN, Toronto.
MILLER, HUGH, Toronto.
MITCHELL, W. J., Toronto.
MONKMAN, GEO., Barrie.
MCLEAN, G. S., Sarnia.
PARKER, E. H., Kingston.
ROBERTS, JOHN, Ottawa.
ROBINSON, W. S., Yorkville.
SAUNDERS, WM., London.
TAPSCOTT, S., Brantford.
WALSH, W., Peterboro'.
WAUGH, G. J., Stratford.
WOOD, R. A., Toronto.
YEOMANS, L. W., Belleville.

A list of those entitled to vote will be found stitched within the covers of this journal.

WORKING OF THE ADULTERATION ACT IN CANADA.

The Report on Adulteration, issued by the Inland Revenue Department, furnishes some information as to the working of the Adulteration Act since it has been in operation until the close of last

year, a period averaging about eleven or twelve months. During this time some one hundred and eighty analyses have been made, chiefly of articles of food, and, on the whole, the result may be taken as decidedly unfavorable to the honesty of dealers.

The most numerous analyses were those of milk, and, of 58 samples, 34 were reported as being adulterated. In all cases the admixture consisted of water, with perhaps a trace of common salt, and sometimes the cream was so deficient as to warrant the supposition that some of it had been removed. With regard to the adulteration of milk there is, however, considerable uncertainty, and the statements of our analysts must be taken *cum grano salis.* Whether from peculiarities arising from kind or sex we cannot say, but, at all events, the cow appears to hold lightly all standards which may be set up for the estimation of her milk, and, accordingly, she furnishes it of all densities and qualities, as her breed, condition, food, lodging, season, age, or capricious feminine fancy may necessitate or dictate. Making all allowance for this fact we may however conclude that the fraternity of milkmen numbers a fair average of rogues who thoroughly understand and practice the art of dilution.

Judging from the analyses of condiments and spices we can hold no very high opinion of the morality of the grinders and vendors thereof. Both classes, however, attempt to vindicate themselves by a course of reasoning, specious, but, we fear, unsound. Talking on this subject to one of the largest spice grinders in this province, we were told that the public are to blame; they demand a cheap article and will not pay the price for one which is good and genuine. Of pure pepper he said that he did not or could not sell ten pounds a year, as his customers would not pay for the ground article one-fourth the price he would have to pay for the peppercorns; he simply diluted his pepper and fortified it with cayenne so as to meet the market price, and yield him a fair profit. Under these circumstances we are prepared to learn that of 3 samples of ground cloves, 3 were adulterated; 5 of allspice, 2 adulterated; 5 of cinnamon, 5 adulterated; 19 of pepper, 17 adulterated; 10 of coffee, 9 adulterated. The principal adulterants were wheat flour, peas, burnt or unburnt; starch, mustard husks, pepper dust, ground rice, Indian corn, clove bark and stems, and turmeric. With regard to cinnamon the analyst held the opinion that cassia must be considered an adulteration, and those of the samples reported adulterated consisted entirely of cassia

bark. This view is, of course, untenable, and could not be maintained in any court of law. Granted that the analyist might be able to refer the barks of commerce to their true botanical sources—a task sufficiently difficult—it does not follow that the public or their guardians care to do so, or that they would at all profit by the attempt. A good article of so-called cassia may be far better than an indifferent sample of true cinnamon, and both grocers and customers would be better pleased, and receive better value for their money if they sold or purchased the former. We think that nice distinctions are altogether out of place in investigations of this kind, and tend to injure and destroy the effect of an otherwise beneficial legislation. They savor strongly of the spirit of nitre and lac sulphur type, and it will frequently be found that the analyist has been "straining at a gnat and swallowing a camel." We do not wish our remarks to be taken as applying particularly to the case referred to, but as pointing out a danger into which analyists have often fallen and are liable to fall.

We have not space to consider the details of the report as referring to tea, sugar, meats, and other articles of food, but will pass on to consider the analyses of Quinine wine, which have been largely commented on by the press. Five samples of wine were, in all, examined. None of them were represented by the vendors to bear any relationship to the *Vinum Quiniæ* of the Pharmacopœia, but were simple tonic wines, designed to take the place of the mixtures of "wine and bark" or wine and quinine, used largely, and often very beneficially, in household practice. Four of the samples consisted of sherry or Italian wine, citric acid, and quinine sulphate, the latter varying in quantity from one-third to one grain to the ounce. The fifth sample consisted of inferior red wine, colored with logwood, and rendered bitter by gentian and nux vomica. The respective alcoholic strengths of the samples were, by volume, 12, 14, 16, 20, and 22 per cent., differing of course with the wine employed. The analyst thinks that "there is therefore an obvious danger of these preparations being used as stimulants rather than as simple tonics," a conclusion in which we cannot for a moment concur. People will not pay a dollar a bottle for twenty or thirty ounces of a liquor weaker than the weakest whiskey, and use such as a "simple stimulant," especially when they know that in consuming that quantity they will have taken a quantity of a powerful

medicine sufficient to break up an ordinary attack of ague. We cannot see that the spirituous strength of the wine calls for any remark. In the most extreme case--22 per cent. absolute alcohol, by volume, or 64 under proof—the strength of ordinary port or sherry was not greatly, if at all, exceeded. The orange wine with which the vinum quiniæ of the B. P. is ordered to be made, has, as a solvent, turned out a notable failure, as will be seen by an article, from an English source, in last month's JOURNAL (p. 391); and a purely spirituous solvent, of proof strength, is now often substituted. The tincture of quinine of the B. P. is also of this strength. The fact that manufacturers of quinine wine use a solvent of 64 under proof, need not, therefore, excite surprise.

With regard to the quinine strength of the wines the analyst does not tell us whether he took into account the sediment which always forms in quinine wine, and which consists largely of quinine. A disregard of this would lead to very fallacious results.

The case of Quinine wine containing no quinine is obviously a case for the interference of the authorities. As far as we know of the others they come up to what they were represented to be—quinine wine, containing quinine, and claiming merit solely as the public may adjudge.

With regard to the future working of the Act we cannot do better than quote from the excellent report of Mr. Brunel, the Commissioner of Inland Revenue.

"The Act has been in practical operation too short a time and in too few places to justify me in venturing on any decided expression of opinion as to its value. As yet no prosecutions have been instituted, but it is not unreasonable to suppose that the knowledge that analysts have been appointed, and that samples have been submitted to them will have had its effect in the places where such appointments have been made. The publication of the names of the parties whose goods have been subjected to examination, together with the results arrived at will, without doubt, exercise a powerful influence, perhaps a greater influence than prosecutions. It is, however, a matter for consideration as to whether the system of abstentation from prosecuting offenders against the law, which has so far prevailed, shall be continued in the future. Probably prosecution in the most flagrant cases may be found necessary for the suppression of gross adulteration.

"In the event of its being decided that no prosecutions shall be instituted, the Government will fail to obtain any revenue from fees which parties convicted would have to pay, and the public at

large would in that case have to bear the whole cost of administering the law—a cost which will increase as the places at which it is put in operation are multiplied.

"If further experience of the law should tend to enhance its importance, it will become necessary to provide for its operation in all the principal cities and towns, and in so doing to arrange for analyzing of samples taken in the smaller places. As the law now stands, it appears that the analyist can only legally act for the Inland Revenue Division for which he is appointed, but there does not appear to be any obstacle to the appointment of the same analyst for several divisions. This being the case, I submit that the Inland Revenue Divisions should be grouped together and so arranged as to make the services of the analysts that are or may be appointed available over the largest possible area. This is necessary in order to keep down expenses, but still more so in view of the limited number of competent analysts who can be made available; and it is evident that in order to administer the law so as to command public respect, it is imperative that the examination of the samples submitted should not be intrusted to mere amateurs or incompetent persons.

AMERICAN PHARMACEUTICAL ASSOCIATION.

One of the leading features of the annual meeting has hitherto been the exhibition of specimens, and a difficulty presents itself at the approaching meeting to be held in Toronto September 4th, in the matter of Custom House regulations, which may interfere with a successful exhibit. The committee appointed to make preparations for the meeting would like to know what to expect from Canadian exhibitors, so as to decide on space required, etc., as soon as possible, and would like every druggist in Canada to notify the local secretary, H. J. Rose, Toronto, if he has anything suitable for exhibition, such as rare, new interesting specimens of medicinal plants, chemicals, materia medica, pharmaceutical products, or appliances, chemical apparatus, pharmaceutical antiquities, or anything interesting to pharmacists. Secret or proprietary articles are not required. The committee will see that goods are carefully handled, and returned to the owners, free of expense. We are glad to know that the G. W. R. and G. T. R. have agreed to grant tickets at one-and-one-third fares from any stations to Toronto, for the meeting, on presenting a certificate signed by G. Hodgetts, Secretary Ontario College of Pharmacy. This should secure a good attendance.

AN ENTERPRISING CANADIAN.—We clip the following paragraph from the editorial pages of our esteemed contemporary, the *Pacific Medical & Surgical Journal:*

A SUPERB PHARMACY.—Travelers tell us that the retail drug stores of the United States are fitted up with more care and better taste than those of any other part of the world. This being so, it is reserved for San Francisco to excel any Atlantic city in this regard. There can be little doubt that the establishment of Mr. Slaven, in the Baldwin building, takes the lead. Its apparel is truly gorgeous. There is something curious in the thought that on the Pacific Coast, which thirty years ago was a wilderness, there should have sprung up the most sumptuous and beautiful pharmaceutical establishment in the world.

The Mr. Slaven referred to is a brother of Dr. Slaven, druggist, of Orillia, and was, for a long time, manager of the business there. He is a member of our college of Pharmacy, and we have pleasure in stating the fact that, on presenting our diploma, it was very courteously received and recognized by the California College, and Mr. Slaven was at once admitted to membership, without examination, and also allowed to conduct business under the Pharmacy Act of the State.

THE EXAMINATIONS will be held on Tuesday, July 31st, and the following day, and the Council meeting on Thursday, August 2nd. Students will learn of the place where the examinations will be held by calling on the Registrar, 305 Yonge Street.

THE WOODRUFF SCIENTIFIC EXPEDITION.

An expedition of a somewhat novel and very interesting character is contemplated by a number of scientific gentlemen connected with some of the colleges of the United States, and will, in all probability, start from New York, on the first of October next, for a two years cruise round the world. The purpose of the expedition is that of studying the arts, archæology, and present condition of the better known countries, and the geology, geography, fauna and flora, as well as the history and character of the people of those less known. Opportunity will be given to visit the chief points of interest in the various parts of the world at less expense than could be done on a smaller scale, or by individual enterprise, and the expedition will also enable schools, colleges, and museums, to obtain collections at less cost than has been hitherto possible.

The originators and directors of the expedition are gentlemen well known in scientific circles, and are at present connected with Cornell, Yale, Harvard, Michigan, and other universities. They are to form a staff of instructors numbering fourteen or thereabouts, but the chief portion of the party will consist of so-called students and cadets; these, with the professors, crew, etc., will number about two hundred persons. Each student will be required to contribute $5000; each cadet $2500, and a fund will thus be formed from which the expenses of the expedition will be paid. Thirty thousand dollars of this will be set aside for land excursions, a number of which have been planned. Private excursions will of course have to be made at the expense of the parties who take part in them. The total individual outlay for the trip need not, however, be over the sum named.

The steamship *City of Merida*, 1492 tons, of the Havana and Mexico S. S. line, has been chartered for the voyage, and will be commanded by officers of the U. S. Navy. Every provision will be made for the comfort and instruction of the party, and as there will be no cargo, save that belonging to the expedition, there will be ample opportunity to bring home specimens and collections, either the property of individuals or of the party. A class of lady students is spoken of, and it is to be hoped that this interesting feature will be carried out.

The route has been decided on, and the following points may be dotted down as showing the direction to be taken: New York, St. Thomas, Barbadoes, Marajo—an island at the mouth of the Amazon—Rio de Janeiro, Montevideo, Buenos Ayres, Straits of Magellan, Gulf of Penas, Valparaiso, Society and Navigator's Islands, (Feb. 1878), Fiji Islands, (April, 1878), Australia, Solomon Islands, Formosa, Takao, Nagasaki, Osaka, Yokohama, Jeddo, Yellow Sea, Pekin, Shanghai, Nankin, Hong Kong, (Oct. 1878), Macao, Canton river, Canton, Philippines, Islands of the Soo-Loo seas, Mindanao, Island Celebes, Spice Islands, Java, Singapore, Siam, Calcutta, Bombay, Ceylon, Persian Gulf, Euphrates river, Mecca, Red Sea, Suez canal, (May, 1879), Alexandria, Nile to First Cataract, Jaffa, Jerusalem, Dead Sea, Athens, Sicily, Etna, Naples, Leghorn, Florence, Genoa, Marseilles, Cadiz, Lisbon, Cherbourg, Plymouth; there the vessel will stay until Oct. 1st, 1879, to allow the excursionists to visit the many places of interest in Great Britain and Ireland, and will then start upon her homeward voyage, touching at the Azores, and arriving at New York towards the end of the month.

This expedition is a very tempting one, promises a vast amount of pleasure and instruction to those who have time and money to engage in it, and we hope and doubt not but some of the "students" with a leaning to materia medica and other branches of pharmaceutical study, may be thus enabled to increase and enrich our knowledge of these subjects.

Editorial Summary.

ANALYSIS OF A CURE FOR DRUNKENNESS.—Prof. Maisch, *(Am. Jour. Pharm.)*, has examined Zell's cure for love of liquor, "Das wunderbare Heilmittel"—the wonderful remedy—a nostrum of German origin, sold in the form of powders, at $1.00 per dozen, and finds it to consist of a mixture of sugar and carbonate of magnesia.

PRESERVATION OF SOLUTION OF TARTARIC ACID.—Wittstein states that the addition of one part of salicylic acid to a solution of 1000 parts of tartaric acid in 5000 of water, entirely prevents the formation of the flocculent masses observed in solutions of the pure acid. It is probable that the salicylic acid would act in like manner in regard to citric acid, and it might thus be very useful in the preservation of lime and lemon juices.

COSMOLINE.—In a paper read by an eminent surgeon of Paris, at a meeting of the Society of Medicine, the use of cosmoline, as a non-irritating application was very highly spoken of, especially for ointments for the eye. Cosmoline is defined by this author to be a soft olefine, unctuous, clear, yellow, greasy and adhesive, of fatty taste, without odor, having a density of 0.92, and fusing at 40° C. It is unaffected by oxidizing agents, and, like paraffin, is without affinities. It is soluble in ether, but insoluble in water and alcohol.

RECOVERY OF ALCOHOL FROM RESIDUES OF PERCOLATIONS.—In a paper in the *Am. Jour. Pharm.*, Mr. J. W. Lloyd recommends that the exhausted powders be turned out of the percolators, loosely repacked, and the spirit displaced by water. In the case of powders which are inclined to again cohere together, and resist the passage of the water, an addition is made of a quantity of sawdust. With squill, or buchu, an equal bulk of sawdust will be required, with cimicifuga or aconite, one half part. The author does not say how much of the spirit may be thus recovered.

ASBESTOS CARDBOARD.—Specimens of this substance were exhibited by Mr. W. N. Hartley, at a recent meeting of the Chemi-

cal Society, and it was stated that for laboratory work it would prove very useful. Its thickness ranges from three-sixteenths to one-eighth of an inch; it can be readily cut with scissors or borers; after being moistened it can be moulded to any shape; and it answers very well for making crucible supports, sandbaths, muffles, retorts, and such like purposes. It is manufactured at 31 St. Vincent Place, Glasgow, and it's cost there is about one dollar a pound.

PREPARATION OF SOLUBLE GUN COTTON.—Mr. G. H. C. Klie, (*Amer. Jour. Pharm.*, June), reviews various processes for making pyroxylin, and also states his own experience on the subject. He prefers the old method with nitrate of potassium, and prolonged immersion of the cotton, as giving the most uniform and satisfactory results. This method may be described for those who are unacquainted with it; but we might mention, incidentally, our own convictions, based on considerable experience, that cotton prepared by long immersion may be very soluble, but collodion made with it yields a film which is not perfectly transparent, but more or less cloudy or dull. This is no detriment if the collodion be for medicinal use, but is an insuperable bar to its employment in photography. The mode of preparation is as follows: Mix, in a mortar of proper size, 7¼ ounces of granulated nitrate of potassium and 6¾ fluid ounces of sulphuric acid, which may range in specific gravity from 1·833 to 1·900. By the aid of a pestle quickly incorporate 180 grains of cotton freed from impurities, and allow the mixture to stand 12 or 15 hours. Take out the cotton and wash thoroughly in many waters, finally finish with hot water and remove every trace of acid. Dry carefully, or, if the pyroxylin be wanted for immediate use, displace the water by percolation with alcohol. By limiting the immersion to five minutes, or less, soluble cotton may be produced, but if boiling water be used for the first washings, as sometimes recommended, the pyroxylin will lose its solubility, but retain its explosiveness. The yield from 180 grains of cotton is about 290 grains or an increase of 61 per cent.

CELLULOID.—It is stated that in the United States there are now fifteen manufacturing establishments, employing twelve to fifteen hundred hands engaged in the production of articles made of celluloid. This substance was invented some eight years ago, by an American, but it was not until 1874 that celluloid goods were put upon the market. It has however turned out quite a success, and is capable of being applied to innumerable uses. It can be made to imitate ivory, tortoise shell, horn, leather, rubber, jet, amber, lapis

lazuli, and many other substances. It is used for brush backs, piano keys, and can be put to all the uses of ivory or rubber. It is susceptible of a high polish, is elastic, hard, and, at high temperatures, malleable, plastic, and even fusible. It is produced by treating paper with a mixture of nitric and sulphuric acids, as in the process for pyroxylin; washing the product, drying, powdering, and mixing with a certain proportion of camphor. It is then dried and subjected to repeated pressure, when, on again being heated, it takes the form in which it is used. The principal place of production is Newark, New Jersey, where the parent organization—the Celluloid Manufacturing Company conduct their business. This establishment supply the crude material to other companies, who also pay a royalty for the privilege of using the compound. Amongst the companies using it may be enumerated the Celluloid Novelty Company, the Celluloid Brush Company, the Harness Trimming Company, the Spencer Optical Company, the Meriden Cutlery Company, and the Emery Wheel Company. There are also branch factories at Paris and London for the production of the crude material.

Varieties.

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

EXTRACT OF MALT.—The German formula for this preparation is as follows:

Take of Barley malt, bruised..... 1
Common water, each, *one part*..... 1
Mix, set aside for three hours, then add of common water *four parts* 4

Digest for an hour at a temperature not exceeding 65° C. [149° Fah.]; then heat the mass to a boiling point and strain immediately by expression.

Evaporate the clear liquid as rapidly as possible, stirring constantly, to the consistence of a *thick* extract.

Extract of malt is yellowish-brown, having an agreeable sweet taste. It should be preserved in a cool place.—*New Remedies*

DRUGS, MEDICINES, &c.	$ c.	$ c.
Acid, Acetic, fort	0 13 @	0 14
Benzoic, pure	0 22	0 27
Citric	0 80	0 85
Muriatic	0 03½	0 05
Nitric	0 10	0 13
Oxalic	0 15	0 17
Sulphuric	0 03	0 05
Tartaric, pulv	0 45	0 47
Ammon, carb. casks	0 18	0 20
" jars	0 18	0 20
Liquor, 880	0 20	0 22
Muriate	0 14	0 15
Nitrate	0 45	0 60
Æther, Acetic	0 45	0 50
Nitrous	0 25	0 38
Sulphuric	0 45	0 50
Antim. Crude, pulv	0 15	0 17
Tart "	0 50	0 55
Alcohol, 95 per ct.....Cash	2 18	0 00
Arrowroot, Jamaica	0 18	0 22
Bermuda	0 50	0 65
Alum	0 02¼	0 03
Balsam, Canada	0 33	0 38
Copaiba	0 60	0 65
Peru	2 10	2 20
Tolu	3 50	3 60
Bark, Bayberry, pulv	0 18	0 20
Canella	0 17	0 20
Peruvian, yel. pulv	0 35	0 50
" red "	1 60	1 70
Slippery Elm, g. b	0 18	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	1 00	1 20
Vanilla	18 00	24 00
Bismuth, Alb	2 25	2 50
Carb.	2 40	2 65
Camphor, Crude	0 33	0 35
Refined	0 38	0 40
Cantharides	1 80	1 90
Powdered	1 90	2 00
Charcoal, Animal	0 04	0 06
Wood, powdered	0 10	0 15
Chiretta	0 23	0 30
Chloroform	0 90	1 55
Cochineal, S. G	0 85	0 90
Black	88	0 95
Colocynth, pulv	0 60	0 65
Collodion	0 70	0 80
Elaterium.....oz	3 20	4 00
Ergot	0 85	0 90
Extract Belladonna	1 65	1 80
Colocynth, Co	1 25	1 75
Gentian	0 50	0 60
Hemlock, Ang	0 co	0 95
Henbane, "	2 50	2 60
Jalap	4 50	5 00
Mandrake	1 75	2 00
Nux Vomic.....oz	0 40	0 50
Opium.....oz	1 25	
Rhubarb	5 00	5 50
Sarsap. Hon. Co	1 00	1 20
" Jam. Co	3 50	4 00
Taraxacum, Ang	0 70	0 80
Flowers, Arnica	0 22	0 25
Chamomile	0 30	0 35
Gum, Aloes, Barb. extra	0 70	0 80
" " good	0 40	0 50
" Cape	0 16	0 20
" " powdered	0 20	0 30
Socot	0 50	0 75
" " pulv	1 00	0 00
Arabic, White	0 31	0 58
" powdered	0 60	0 75
" sorts	0 19	0 24
" " powdered	0 42	0 50
" com. Gedda	0 13	0 16
Assafœtida	0 15	0 20
British or Dextrine	0 13	0 15
Benzoin	0 35	0 75
Catechu	0 12	0 15
" powdered	0 25	0 30
Euphorb, pulv	0 40	0 45
Gamboge	1 00	1 20
Guaiacum	0 35	1 00
Myrrh	0 50	0 80

DRUGS, MEDICINES, &c.—*Contd*	$ c.	$ c.
Sang Dracon	0 60	
Scammony, powdered	5 50	6 00
" Virg. "	14 50	—
Shellac, Orange	0 30	0 35
Gum, Shellac, liver	0 27	0 32
Storax	0 40	0 45
Tragacanth, flake	1 10	1 75
" common	0 53	0 65
Galls	0 22	0 30
Gelatine, Cox's 6d	1 15	1 20
Glycerine, common	0 25	0 28
Vienna	0 30	0 32
Prices	0 60	0 75
Honey, Canada, best	0 16	0 17
Lower Canada	0 10	0 12
Iron, Carb. Precip	0 16	0 20
" Sacchar	0 40	0 55
Citrate Ammon	1 10	1 20
" & Quinine, oz	0 50	1 30
" & Strychine	0 17	0 20
Sulphate, pure	0 05	0 07
Iodine, good	5 25	5 50
Resubiimed	5 75	6 00
Jalapin	1 25	1 50
Kreosote	2 50	2 60
Leaves, Buchu	0 22	0 32
Foxglove	0 25	0 30
Henbane	0 35	0 40
Senna, Alex	0 27	0 60
" E. I.	0 14	0 20
" Tinnevilly	0 20	0 30
Uva Ursi	0 15	0 17
Lime, Carbolate.....brl	5 50	—
Chloride	0 05	0 06
Sulphate	0 08	0 12½
Lead, Acetate	0 13	0 14
Leptandrin.....oz.	0 60	—
Liq. Bismuth	0 45	0 55
Lye, Concentrated	1 30	1 50
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 19	0 20
Calcined	0 60	0 65
Citrate.....gran.	0 60	0 75
Mercury	0 70	0 75
Bichlor	0 68	0 70
Chloride	0 85	0 00
C. Chalk	0 45	0 50
Nit. Oxyd	1 05	1 10
Morphia Acet	3 15	3 25
Mur.	3 15	3 25
Sulph	3 30	3 40
Musk, pure grain.....oz	25 00	.....
Canton	0 60	0 70
Oil, Almonds, sweet	0 55	0 60
" bitter	8 00	8 50
Aniseed	2 75	3 00
Bergamot, super	5 75	6 00
Caraway	3 20	3 50
Cassia	1 40	1 60
Castor, E. I	0 13½	0 15
Crystal	0 22	0 25
Italian	0 24	0 26
Citronella	1 00	1 10
Cloves, Ang	3 20	3 50
Cod Liver, Imp. Gal	2 00	2 10
Croton	1 40	1 50
Juniper Wood	0 80	1 00
Berries	2 75	3 00
Lavand, Ang.....oz.	0 00	1 00
Exotic	1 25	1 50
Lemon, super	3 40	3 50
ord	0 00	0 00
Orange	2 40	2 60
Origanum	0 65	0 75
Peppermint Ang	14 00	15 00
" Amer	3 75	4 00
Rose, Virgin	8 25	8 50
" good	6 00	6 25
Sassafras	0 65	0 70
Wintergreen	3 75	4 00
Wormwood, pure	5 00	6 00
Ointment, blue	0 60	0 70
Opium, Turkey	7 00	7 25
pulv	8 50	8 75

DRUGS, MEDICINES, &c.—*Cont'd*	$ c.	$ c
Orange Peel, opt.	0 35	0 36
" good	0 15	0 20
Pill, Blue, Mass	0 52	0 57
Potash, Bi-chrom	0 14	0 16
Bi-tart	0 30	0 32
Carbonate	0 13	0 15
Chlorate	0 27	0 30
Nitrate	9 00	9 80
Potassium, Bromide	1 05	1 10
Cyanide	0 55	0 60
Iodide	4 25	4 50
Sulphuret	0 25	0 35
Pepsin, Boudault's oz	1 25	—
Houghton's doz.	8 00	9 00
Morson's oz.	0 85	1 10
Phosphorus	1 10	1 20
Podophyllin	0 50	0 60
Quinine Pelletier's	—	—
Howard's about	4 90	—
	—	—
	—	—
Root, Colombo	0 13	0 20
Curcuma, grd	0 12½	0 17
Dandelion	0 17	0 20
Elecampane	0 16	0 17
Gentian	0 08	0 10
" pulv	0 15	0 20
Hellebore, pulv	0 40	0 50
Ipecac, "	2 20	2 30
Jalap, Vera Cruz	90	1 15
" Tampico	0 70	1 00
Liquorice, select	0 12	0 13
" powdered	0 15	0 20
Mandrake "	0 20	0 25
Orris, "	0 20	0 25
Rhubarb, Turkey	2 10	2 25
" E. I	1 00	1 10
" " pulv	1 10	1 20
" " 2nd	0 60	0 70
" French	0 75	—
Sarsap., Hond	0 38	0 50
" Jam	0 95	1 00
Squills	0 10	0 15½
Senega	0 90	0 95
Spigelia	0 30	0 32
Sal., Epsom	2 00	2 50
Rochelle	0 30	0 32
Soda	0 01½	0 02
Seed, Anise	0 13	0 16
Canary	0 06½	0 07
Cardamon	1 60	1 70
Fenugreek, g'd	0 08	0 09
Hemp	0 06	0 07
Mustard, white	0 16	0 17
Saffron, American	0 50	0 60
Spanish	10 00	11 00
Santonine	20 00	22 00
Sago	0 08	0 09
Silver, Nitrate Cash	14 90	16 00
Soap, Castile, mottled	0 11	0 14
Soda, Ash	0 03¾	0 05
Bicarb. Newcastle	4 00	4 25
" Howard's	0 14	0 16
Caustic	0 03¾	0 04
Spirits Ammon., arom	0 38	0 40
Strychnine, Crystals	1 70	1 80
Sulphur. Precip	0 12	0 13
Sublimed	0 03½	0 05
Roll	0 03	0 04½
Vinegar Wine, pure	0 55	0 60
Verdigris	0 35	0 40
Wax White, pure	0 70	0 80
Zinc. Chloride oz	0 10	0 15
Sulphate pure	0 10	0 15
" common	0 06	0 10
DYESTUFFS.		
Annatto	0 35 @	0 60
Aniline, Magenta, cryst	2 00	2 60
" liquid	2 00	—
Argols, ground	0 15	0 25
Blue Vitrol, pure	0 07½	0 09
Camwood	0 07	0 08
Copperas, Green	0 01½	0 02
Cudbear	0 16	0 25
Fustic, Cuban	0 03	0 04
Indigo, Bengal	2 40	2 50
Madras	0 90	0 95
Extract	0 26	0 30

DYESTUFFS—*Continued.*		
Japonica	0 06½	0 07
Lacdye, powdered	0 33	0 38
Logwood	0 02½	0 03
Logwood, Camp	0 02⅝	0 03
Extract	0 12	0 13
" 1 lb. bxs	0 15	—
" ½ lb. "	0 16	—
Madder, best Dutch	0 09	0 10
2nd quality	0 08	0 09
Quercitron	0 03	0 05
Sumac	0 06	0 08
Tin, Muriate	0 10½	0 12½
Redwood	0 05	0 06
SPICES.		
Allspice	0 13 @	0 14
Cassia	0 25	0 28
Cloves	0 48	0 50
Cayenne	0 17	0 20
Ginger, E. I	0 14	0 15
Jam	0 25	0 30
Mace	1 00	1 10
Mustard, com	0 20	0 25
Nutmegs	1 00	1 05
Pepper, Black	0 15	0 16
White	0 26	0 28
PAINTS, DRY.		
Black, Lamp, com	0 09 @	0 10
" refined	0 25	0 30
Blue, Celestial	0 08	0 12
Prussian	0 65	0 75
Brown, Vandyke	0 10	0 12½
Chalk, White	0 01	0 01½
Green, Brunswick	0 07	0 10
Chrome	0 16	0 25
Paris	0 26	0 28
Magnesia	0 20	0 25
Litharge	0 07	0 09
Pink, Rose	0 12½	0 15
Red Lead	0 06½	0 07½
Venetian	0 02½	0 03
Sienna, B. & G	0 07	0 08
Umber	0 07	0 10
Vermillion, English	0 75	0 80
American	0 25	0 35
Whiting	0 85	1 00
White Lead, dry, gen	0 08½	0 09
" " No. 1	0 07	0 08
" " No. 2	0 05	0 07
Yellow Chrome	0 09	0 15
" Ochre	0 02½	0 03½
Zinc White, Star	0 09	0 11
COLORS, IN OIL.		
Blue Paint	0 12 @	0 15
Fire Proof Paint	0 06	0 08
Green, Paris	0 30	0 37½
Red, Venetian	0 07	0 10
Patent Dryers, 1 lb tins	0 10	0 12
Putty	0 03¾	0 04½
Yellow Ochre	0 08	0 12
White Lead, gen. 25 lb. tins	2 20	—
" No. 1	1 05	—
" No. 2	1 70	—
" No. 3	1 45	—
" com	1 30	—
White Zinc, Snow	2 50	2 75
NAVAL STORES.		
Black Pitch	3 00 @	3 25
Rosin, Strained	3 75	4 00
Clear, pale	4 50	6 00
Spirits Turpentine Imp. Gall	0 55	0 57
Tar Wood	4 50	4 75
OILS.		
Cod Imp. Gall	0 84 @	0 86
Lard, extra "	1 25	1 27
No. 1 "	1 14	1 16
No. 2 "	1 02	1 05
Linseed, Raw per 7½ lbs	0 70	0 71
Boiled "	0 74	0 75
Olive, Common Imp. Gall	1 26	1 30
Salad "	2 04	2 10
" Pints, cases	4 00	4 20
" Quarts	3 25	3 50
Seal Oil, Pale Imp. Gall	0 78	0 80
Straw "	0 75	0 80
Sesame Salad "	1 56	1 60
Sperm, genuine "	2 70	2 75
Whale refined	0 00	0 00