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CANADIAN PHARMACEUTICAL SOCIETY.

PRESIDENT, - - - WM. ELLIOT, ESQ.

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

The Society admits as members, Chemists and Druggists of good standing, and their assistants and apprentices, if elected by a majority vote, and on payment of the following fees:

Principals - - - - - $4 00 per Annum
Assistants & Apprentices, 2 00 "

The JOURNAL *is furnished* FREE *to all members.*

Parties wishing to join the Society may send their names for proposal to any of the members of the Society. A copy of the Constitution and By-laws of the Society will be furnished on application.

HENRY J. ROSE, *Secretary.*

CANADIAN MEDICINAL PLANTS.

PRIZES.

PRIZES are offered for collections of indigenous medical substances of vegetable origin, as follows:—

1ST PRIZE—FIFTEEN DOLLARS—a copy of *Griffith's Medical Botany*, and *Certificate.*

2D PRIZE—TEN DOLLARS—a copy of *Wood's Class-Book of Botany.*

3D PRIZE—FIVE DOLLARS—a copy of *Wood's Class-Book of Botany*, and *Certificate.*

Conditions of competition to be—

1st. *Competitors to have been engaged in the drug trade, and for not more than three years, and to be members of the Pharmaceutical Society previous to* 1869.

2. *Specimens to be forwarded (carriage paid) to the Secretary of the Society, Toronto, by* 1st *September*, 1869, *with a sealed letter, enclosing the address of the competitor, a certificate from his employer that the collection has been made by the competitor solely within a year; that he has been engaged in the drug trade during that time, and that he has not been more than three years so engaged at the date of this notice.*

3. *Each specimen is to be carefully prepared ready for sale or use, and packed in a paper bag. On each shall be written legibly, the common and scientific names, the date and locality of collection, and a private mark, which shall also be put on the outside of the letter accompanying the collection.*

4. *Three judges shall determine the order of merit; they shall be at liberty to withhold any or all of the Prizes, if the collections do not warrant an award, and to select such specimens as they may deem meritorious for the Museum of the Society, which specimens will have the name of the collector put upon them.*

5. *The points of competition to be number of specimens, condition, correctness of naming, and general excellence; quantity a secondary consideration.*

Collections to which Prizes are awarded will be sent to the Provincial Exhibition at the expense of the Society; and any Prizes secured there, shall be for the benefit of the collector.

Address—Collections,
Canadian Pharmaceutical Society,
H. J. ROSE, *Secretary,*
September 15th, 1868. *Toronto.*

THE CANADIAN
Pharmaceutical Journal.
E. B. SHUTTLEWORTH, EDITOR.

TORONTO, ONT., AUGUST, 1869

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

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

All communications connected with the paper to be addressed, post-paid,
"EDITOR CANADIAN PHARMACEUTICAL JOURNAL, TORONTO."

CLASSICAL LORE vs. PRACTICAL KNOWLEDGE.

Many of our readers have, doubtless, perused with pleasure the excellent paper on "The Commerce of Marseilles," read before the Society at its July meeting, and which appeared in our last issue. As embodying the impressions of a Canadian, and the views of a practical business man, exhibited in a clear and practical manner, we thought the article would meet with general acceptance by the commercial community, and not prove uninteresting to the casual reader. From the numerous commendatory opinions we have since received, in regard to the paper, we have reason to believe our conclusion correct. On picking up a Montreal journal, a few days ago, we were, however, somewhat surprised to find a leading article in which Mr. Elliot's paper was made the subject of the most ill-natured and unscrupulous criticism, actuated evidently by an animus which the writer betrayed no pains in concealing. Although occurring under the editorial guise, we can scarcely ascribe the authorship to the unaided malignity of even the Montreal *Telegraph.*

We do not intend to review the article in question, nor should we have alluded to it at all, had it not been that a point is involved in which we feel the deepest interest; we refer to the undue prominence given in educational training to a study of the classics.

We do not wish to be understood as underrating the value of such study as a means of mental culture, nor do we deny the advantages which accrue, to some classes, from a familarity with the dead languages; but we do say that in the great majority of instances—and more especially in the case of those intended for commercial pursuits, the time spent in acquiring a knowledge of Greek and Latin might be much better employed, in gaining possession of information which would be of direct and practical benefit in after life. This appears to be the view taken by the author of the paper in the paragraph which so aroused the ire of the *Telegraph.* Mr. Elliot says:—

"There is (in Marseilles) no English house of any standing or importance, a sad commentary on the fact, that while British youths have been translating the obscenities of pagan mythology, these Greeks and Germans have mastered the modern languages which give them the best positions in practical affairs."

We have already admitted that the acquirement of the ancient languages is beneficial in promoting a habit of concentration, in exercising the memory, and otherwise developing and cultivating the mind. But is not the study of the modern languages of equal value in all these respects? and to a non-professional man of how much more practical utility? How often have we heard business men exclaiming against that system, which, though familiarizing them with the language of pagan deities, left them speechless before mortals, save of their own tongue.

In these progressive times, everything that is learned should be learned with an object. There is no time to waste in fulfilling the requirements of a so called perfect education, unless the achievement of those requirements promises to be of real sterling benefit. If the mind is to be trained, let it earn that training by acquiring, at the same time, information which can be utilized. We might illustrate this by a case of which we read recently. A worthy divine, professor in an American college, being deeply impressed with the necessity of physical culture, was in the habit of taking daily exercise, which he accomplished by alternately filling and emptying bags of sand, carrying them from one end of his cellar to the other. Had we known this good man we should certainly have suggested a wood saw, or presented him with a few gardening implements. In like manner would we substitute the modern for the ancient languages—a knowledge of living mortals and fresh truths, culled in the bright sunshine of actual existence, for the mouldering records of fabulous monstrosities and extinct nations, dug from the musty cellars of a barbarous antiquity.

Our remarks are to be taken as referring to the education of business men; to such Mr. Elliot's remarks were directed, and to others, at present, we shall not allude.

CHAMPAGNE FROM PETROLEUM.

An article from the Cincinnati *Journal of Commerce*, under the above title has, for the last year, been going the rounds of the press; we can safely vouch for having seen it, in various shapes, at least a score times. It does not astonish us that it should be extensively copied in the ordinary newspapers of the day, as the announcement of such a start-

ling discovery is too good to be lost by a sensation loving public; but when journals of an avowed scientific character give prominence to it with all the blazon of a full head and leaded type, our patience must certainly give way, or rather, our impatience must find vent.

One extract will be sufficient to show the character of the article in question. After stating that in the hands of an intelligent and dishonest chemist, a barrel of peanuts can be transformed into excellent coffee, and lard can be made to absorb an enormous quantity of water, the writer, out of consideration for the nerves of his readers, breaks the discovery of champagne gently upon them, and then bursts into the following rhapsody:—

"Yes, from the fiery benzoles a sparkling bubbling, foaming champagne can be produced, which will delight the eye, tickle the palate, gladden the heart momentarily—but quicken our paces to the graveyard."

The idea is too absurd to require comment, and the possessor of the smallest amount of chemical knowledge, or common information, cannot fail to see untruth on the very face of it. Even supposing petroleum benzole capable of taking the part of alcohol in wine, in regard to taste, and effect, we know it could not be rendered miscible with the water necessary for dilution.

There is as little excuse for the writer of the above paragraph as those would-be scientific journalists who, if they lack the capacity for promulgating truth, should, at all events, possess the negative quality of withholding error.

Remedy for Toothache.—When this distressing complaint is accompanied with inflammation of the gums, great relief may be procured by the application of nitrate of silver, in stick, or strong solution. We have tried it.

EDITORIAL SUMMARY.

Death of Professor Dussauce.—This well-known chemist and author, died suddenly, at his residence, New Lebanon, N.Y., on the evening of June 21st. The name of Prof. Dussauce is familiar to all our readers, through his practical treatises on the industrial arts, and the widely spread contributions of his pen, in American scientific periodical literature. Up to the time of his death, he held the office of manager of the laboratory of Tilden & Co., N. Y.

Accident to Prof. Bunsen.—The illustrious chemist of Heidelburg recently met with a serious accident. Having prepared a quantity of metallic rhodium, he was proceeding to examine it, when an explosion occurred, which so far injured his eye that it is feared he will be completely blind. It may be remembered that some years ago he lost the sight of one eye while experimenting on kakodyl and its compounds. To the renowned spectroscopist the loss of sight would be indeed grievous, and in recording our deepest sympathy, we would also hope that the injuries sustained are not of so serious a nature as represented.

Accidental Poisoning.—The *Pharmaceutical Journal* (London, Eng., July) reports four cases. Mr. Williams, surgeon, Penbury, had been in the habit of taking a solution of acetate of morphia. A fresh supply of the medicine being required, the bottle was re-filled by an apothecary, who, in making the solution, used from a package labelled "acetate of morphia," which had been received from a wholesale druggist, three years previously, and which turned out to be a salt of strychnia. The first dose resulted in the death of Mr. Williams, who expired in great agony. Verdict—"Poisoned by misadventure." The second case arose from the substitution of strychnia for sugar, by a registered chemist of Gravesend, in making up some "teething powders" for an infant. The bottle from which the poison was taken was labelled *strychnia*, which was probably mistaken for *saccharum*. Shortly after taking one of the powders the infant died. Verdict as in the first case. The druggist had only commenced business in that locality, on the day of the occurrence. The third case resulted in the death of a miner, in the Isle of Man, who eat the root of *atropa belladonna*, thinking it to be wholesome, from its resemblance to a carrot. Death supervened in less than ten minutes. The last case occurred in Dublin, and is said to have created intense excitement, partly from the rarity of such accidents in Ireland, and also from the social position held by the unfortunate subject—Mr. F. Grattan Guinness. This gentleman sent a clerk to the establishment of Messrs. Hamilton, Oldham, Long & Co., Grafton street, with two empty bottles to be re-filled with medicine, "as before." The mixture containing carbonate of ammonia, and the shop bottle being empty, a porter was sent up stairs to replenish it. He filled the bottle with cyanide of potassium from a stone jar, whicl he supposed contained the article in which he was in quest. The medicine was compounded under this supposition, and sent to Mr. Guinness, who took a dose almost immediately, which resulted in death before medical aid could be procured. It appears to have been the custom of the establishment from which the medicine was dispensed, to send two persons to fill their shop bottles, in order that one might keep a check on the other; but in this instance the rule had not been complied with. The jury returned a verdict of accidental death, but considered there was not sufficient circumspection taken by the firm in question, against whom the deepest censure was recorded.

A case is reported in Schmidt's *Zahrbücher*, of a woman who drank two glassfuls of an infusion of arnica, made from a large handful of the leaves. Symptoms of poisoning ensued: violent vomiting, intense headache, diarrhœa, with very severe colic, followed by collapse, cold extremities, and remarkable depression of the pulse—these lasted seven days; but under a treatment consisting of thebaine and morphia, the patient ultimately recovered.

Acid Proof Cement.—R. T. Fairthorne, (*Jour. Franklin Institute*) recommends a paste composed of silicate of soda and finely powdered glass. It is said to remain unaffected even when immersed in strong nitric, sulphuric or muriatic acids. Corks protected by it were but slightly acted upon, though remaining over boiling nitric acid for more than four hours, and over hot acid for ten. The corks were previously soaked in a solution of silicate, covered with the paste, and washed with a solution of chloride of calcium. The cement hardens quickly.

Excretion of Carbonic Acid by Plants.—J. Broughton, F.C.S., read a paper before the Royal Society, detailing experiments made by him on living plants, showing that they excrete carbonic acid, even when deprived for days of all access of oxygen. The conclusions arrived at by the author, are as follows:—

1st. That nearly all parts of growing plants evolve carbonic acid in considerable quantities, quite independently of direct oxidation.

2nd. That this evolution is connected with the life of the plant.

3rd. That it is due to two causes, namely, to previous oxidation, resulting after a lapse of time in the production of carbonic acid, and to the separation of carbonic acid from the proximate principles of the plant while undergoing the chemical changes incident to plant-growth.

Composition of Sow's Milk.—Prof. Cameron (*Chemical News*) has been making an analysis of this fluid, and finds it of the following composition:—

Water	818·00
Butter	60·00
Cheesy matter	53·00
Sugar	60·70
Mineral matter	8·30
	1000·00

This goes to show that sow's milk is one of the richest of that class of liquids, containing nearly 50 per cent. more nutritive matter than is found in cow's milk. Prof. Cameron thinks that in certain forms of disease, where a milk diet is prescribed, the use of so concentrated a liquid food might prove serviceable.

CANADIAN PHARMACEUTICAL SOCIETY.

The regular monthly meeting of this Society was held at the usual place, with the Vice-President in the Chair. The minutes of last meeting were read and approved, and the following new members elected:—

H. Davidson, Walkerton.
D. Thompson, Toronto, Assistant.
G. Willoughby, Walkerton.

In reply to a question by the Vice-President, the Corresponding Secretary said that the notification of members in arrears would be proceeded with at once.

The report of the Council for the past year was referred to as being scarcely of sufficient detail as to the expenditure of the funds of the Society, so as to give non-resident members a clear statement of where the money went.

Mr. Elliot brought up the question of holding a re-union or conversazione, say in the month of October, and thought it was quite time something was done regarding it. A general conversation was then entered into and a list made out of the subjects of interest which were thought available, and it was moved by Mr. Elliot, seconded by the Corresponding Secretary, that the list be handed to a committee, consisting of Messrs. W. H. Dunspaugh, C. E. Hooper, and E. B. Shuttleworth, with a request that they report at the next meeting of the Society, as to the resources available for such a purpose. Carried. Meeting adjourned.

H. J. Rose,
Secretary.

Note on Linimentum Potassi Iodidi cum Sapone.

The difficulty experienced in always producing a good result in making this preparation seems to depend on some slight difference which exists in Marseilles soap, even in different samples obtained from the same maker.

To obviate this, it has been suggested to replace one-third of the hard soap with the same quantity of the potash soap of the Pharmacopœia. This has been tried with perfect success, the liniment forming a jelly which does not separate, as is so often the case when made with Marseilles soap only, a slight difference in which is quite sufficient to prevent the formation of a good liniment. —*Pharmaceutical Journal (London).*

Chemical Infinity.—*Appleton's Journal* concontains in its first number a calculation by Berthelot, the eminent French chemist, of the number of combinations which may be made of acids with certain alcohols. He says, if you give each compound thus possible a name, and allow a line for each name, and then print 100 lines on a page, and make volumes of 1000 pages, and place a million volumes in a library, you would want 14,000 libraries to complete your catalogue.

Composition of Solders.

The Manufacturer and Builder gives the following table of solders, with the fluxes and melting points of each:

Name	Composition.	Flux.	Melting Point. Fahr.
Plumbers' coarse solder	Tin, 1; lead, 3	R.	500°
Plumbers' sealed solder	Tin, 1; lead, 2	R.	441°
Plumbers' fine solder	Tin, 1; lead, 1	R.	370°
Tinners' solder	Tin, 1; lead, 1	R. or Z.	334°
Tinners' fine solder	Tin, 2; lead, 1	R. or Z.	340°
Hard solder for copper, brass, iron	Copper, 2; zinc, 1	R.	
Hard solder for coppers, brass, iron	Good tough brass, 6; zinc, 1	B.	
Hard solder for copper, brass, iron, more fusible than No. 6 or 7	Copper, 1; zinc, 1	B.	
Hard solder for copper, brass, iron	Good tough plate brass	B.	
Silver solder for jewelers	Silver, 10; copper, 1; brass, 1	B.	
Silver solder for plating	Silver, 2; brass, 1	B.	
Silver solder for silver, brass, iron	Silver, 1; brass, 1	B.	
Silver solder for steel joints	Silver, 19; copper, 1; brass, 1	B.	
Silver solder, more fusible	Silver, 5; brass, 2; zinc, 1	B.	
Gold solder	Gold, 12; silver, 2; copper, 1	B.	
Bismuth solder	Lead, 4; tin, 4; bismuth, 1	R. or Z.	320°
Bismuth solder	Lead, 4; tin, 3; bismuth, 1	R. or Z.	310°
Bismuth solder	Lead, 4; tin, 2; bismuth, 1	R. or Z.	292°
Bismuth solder	Lead, 2; tin, 1; bismuth, 1	R. or Z.	256°
Bismuth solder	Lead, 3; tin, 5; bismuth, 2	R. or Z.	252°
Pewterers' solder	Lead, 4; tin, 3; bismuth, 2	R. or Z.	202°

Abbreviations—R., Resin; B., Borax Z., Chloride of Zinc.

Syrupus Ferri Iodidi.

A correspondent of the *Journal of Applied Chemistry*, makes the following remarks regarding Mr. Ruston's paper on the subject:—

"In the June number of the *Journal of Applied Chemistry* I find an article under this head, by W. B. Ruston, as read before the Canadian Pharmaceutical Society, in which the author very ably discusses the various modes of preparing and keeping syrupus ferri iodidi. The authorites he cites are all English, and no doubt produce a very desirable syrup. By preparing this syrup, however, in accordance with the formula laid down by Wood and Bache in the United States Dispensatory, I have obtained a syrup, not only of the proper color, but also possessing the requisite chemical properties. I adhered to the formula as close as possible, with this exception: before introducing the iron wire, I subjected it to a slight action of a solution of common potash, in order to remove the oily matter with which wire is commonly covered with when in market, cleaning it thoroughly, and thereby, I believe, facilitating the chemical re-action. The product was a syrup corresponding in every particular with the properties enumerated in the U. S. Dispensatory. After letting it cool, I filled a number of ounce vials, cork stoppered, covered them with blue paper, and placed them in a glass case in the storeroom, where the temperature seldom, or perhaps never, exceeds 70° Fahrenheit, nor recedes below 40°. These are never opened, and only dispensed when a prescription calls for syrup alone. To dispense small quantities, I filled an 8 ounce flask, glass stoppered, with which I proceeded in a similar manner. The syrup has now remained in the position in which I first placed it for at least ten months, and, upon reading the article above referred to, I instituted an examination of the remainder at once, with the following results: the syrup in ounce vials has retained its pale-green color, without the least change or any perceptible deposit, while that contained in the eight ounce flask, from which a portion had been used, has not only changed its color from the original to a reddish-brown, but also formed a deposit. The flask having been covered in a similar manner to that of the small vials, the oxygen of the atmosphere must have been the decomposing agent in this case. The unchanged condition of the syrup in the small vials clearly demonstrates that the tannic acid contained in cork-wood does not affect it in the least; hence discoloration or other chemical changes must proceed from other causes.

I shall, however, institute different experiments, preparing the syrup from various formulas, and report their results at some future day. This much I claim, that syrupus ferri iodidi, prepared in strict accordance with the U. S. Dispensatory, transferred to small vials, guarded against the action of light or atmosphere, and kept in a temperate situation, will retain its chemical properties for an indefinite length of time." C.M.Z.

Lancaster, Pa., June, 1869.

Selections.

Improved Mode of Preparing Animal Membrane for Covering Stoppers.

Animal membrane is employed for hermetically sealing corks and bottles. Before using it, it is necessary to soak it in water to destroy its brittleness and render it soft and elastic. Dr. Vogel recommends glycerine as a substitute for water. For this purpose he puts the bladder into a suitable dish, and completely covers it with glycerine, and leaving it for a few hours, or, better still, for a few days, it thus becomes perfectly soft and elastic. After draining off and pressing out the glycerine, the membrane is in condition for use. This method has a great advantage over softening with water, as the bladder remains permanently elastic, whereas, after the soaking in water, it becomes hard and brittle. It is also more tight, as moist membrane has far less diffusive or dialysing property than the dry.

When parchment is rendered soft by water, there is great danger of its beginning to putrefy, and this difficulty is also avoided by the use of glycerine. The suggestion of Dr. Vogel, may, therefore, enable us to use parchment for many purposes to which it has not hitherto been regarded as applicable.—*Manufacturer and Builder.*

How Paper and Cloth may be rendered Water-proof.

Mr. N. C. Szerlmey, of Pimlico, England, has recently invented a mode of rendering paper and other like materials water-proof, which is thus described: He melts, in ten pints of hot water, thirty ounces of glue, gelatine, or size, and three ounces of gum arabic. In another thirty pints of hot water, he melts twenty ounces of soap and four pounds of alum, afterwards mixing together the whole liquid in one pot. This is composition No. 1. In another pot, he heats half

a gallon of benzole and one gallon of paraffine oil, and melts in it twenty-four ounces of resin. To these materials, resin, oil and copal or mastic varnish may in some cases be added, and he lets it boil until it attains a moderate degree of consistency. This is composition No. 2. He first dips the article to be water-proofed into the composition No. 1, in a heated state, and afterward dries it; then he applies the second composition, in a cold state, with a brush, or in other convenient manner.

This recipe is very easily tested, and if it should prove reliable, it will prove of great value for many purposes. Applied to wall-paper in damp houses, it could hardly fail to be of service if it fulfills the inventor's description.—*Manufacturer and Builder.*

Photographic Seals.

A photographer in Freiberg has made seals and stamps with the portraits of his customers. A thin layer of gelatine sensitized with bi-chromate of potash, is exposed to the action of light under a photographic positive, by which the parts acted upon are rendered insoluble in water. The gelatine-film is immersed in water, and the parts not acted upon by light swell up, and we obtain a picture in relief, of which a plaster cast can be taken. A galvanoplastic copy being taken of the cast, we have a metallic fac-simile of the photograph, which can be employed as a seal. This is essentially an application to Woodbury's photographic process, and suggests an excellent method for obtaining perfect likenesses of persons in metallic cliches for the use of the printer, as well as an admirable way of illustrating scientific books.—*Manufacturer and Builder.*

Crystallized Digitalin.

M. C. A. Nativelle finds that crystallized digitalin often contains a notable quantity of another crystalline principle, which exists associated with it in the digitalis but is inert and devoid of any bitter taste. This substance is insoluble in chloroform, while pure digitalin freely dissolves in that menstruum. M. Nativelle recommends the following method for obtaining pure digitalin in crystals:—100 parts of powdered digitalis are mixed with a solution formed of 100 parts of water and 25 parts of crystallized acetate of lead; after twelve hours' maceration, this mixture is exhausted with water in a displacement apparatus. About 300 parts of liquid are thus collected, which may be set aside for the extraction of *digitalein*; the digitalin remaining entirely *in the residue*. This residue is dried, and exhausted by displacement with alcohol at 56° (sp. gr 935). About 300 parts of alcoholic tincture are obtained, to which a solution of 4 parts of acetate of lead is added; the mixture is filtered, and the decolorized liquid mixed with a solution of 2 parts of phosphate of soda; the precipitate is again separated, and the liquid distilled in a water bath to recover the spirit. The residue of the distillation contains in suspension some small crystals and a pasty glutinous mass. These crystals are chiefly the inert substance already referred to, and the digitalin is in the glutinous mass. The whole is evaporated by the water bath to about ten parts, and the dense liquid separated from the deposit, which is then washed with a little cold water and spread on filter paper. From 2 to 3 parts of this matter are obtained; it is dissolved by heat in twice its weight of alcohol of 60° (sp. gr. 914), and allowed to crystallize in a cold place. The inert substance deposits first, and after some days the digitalin separates out in yellowish radiating opaque crystals. The crystalline deposit is afterwards drained, washed slightly with weak spirit, redissolved in hot alcohol of 80° (sp. gr. 864), with a little animal charcoal, and again crystallized. These crystals are dried, powdered, and agitated with 20 parts of pure chloroform; the digitalin dissolves, leaving the inert substance insoluble. Upon distilling off the chloroform the crystallized digitalin remains, still however, possessing a yellow color. It is further purified by animal charcoal and re-crystallization from alcohol. One part of pure crystallized digitalin may be obtained from 1000 parts of digitalis which has been exhausted by water.

Crystallized digitalin is a neutral, non-nitrogenous, without odour, and of an intense bitter taste, especially perceivable in in the taste of alcoholic solution. It dissolves in all proportions in cold chloroform; its purity may be recognized by this character. Rectified spirit dissolves about one-twelfth part in the cold, and one-half at the boiling-point. Absolute alcohol is a less perfect solvent. Ether, benzol, and water only take up traces. Sulphuric, nitric, and hydrochloric acids dissolve it with coloration.—*Pharmaceutical Journal (London).*

Yield of Extracts.

Kohlmann gives in Apoth. Ztg. the following table, but remarks that various circumstances—locality of growth, relative dryness of the drugs, and manipulation, may considerably influence the results. The spirituous extracts were prepared according to the Pharm. Germ., and if that contains no formula, according to the Prussian or Saxon Pharmacopœias.

	Per cent.
Extr. absinthii.	18·00
" aconiti tuber	28·33
" arnicæ flor.,	28·00
" aurantii	27·33
" calami,	25·00
" cannabis indic.,	13·33
" chamomillæ (matricar.)	25·00
" chinæ (cinch.)	18·21
" colocynthid	9·82
" columbo	9·97
" fol. jugland.,	23·61
" guaiaci	14·00
" hellebori vir.,	15·79
" lupuli plv. sic.,	13·20
" millefolii,	27·44
" pimpinellæ,	23·33
" polygalæ,	39·16
" rhei,	51·72
" sabinæ,	22·22
" sarsaparill.,	8·61
" scillæ,	66·66
" secal. corn.,	11·60
" strychni (nuc. vom.) mas. pil.,	11·33
" strychni pulv.,	9·5

—*Am. Jour. of Pharmacy.*

Valerianic Acid.

C. Stahmann has again examined the natural and artificial valerianic acid with the view of determining their asserted difference. He found the salts of strontia, zinc and quinia (the latter contains 1 equiv. acid, 1 of base, and one of water) of both acids precisely alike; but while the baryta salt of the true acid would be readily obtained in large laminæ when the solution was evaporated in vacuo over sulphuric acid, the salt from the artificial acid would yield only a thick syrup; he therefore regards the two acids as isomeric but not as indentical.—*Archiv d Pharm.*, 1869, *March*, 285. *From Ann. d. Ch. und Pharm.* 1868, *Aug.* 129—134.

Zeitschr f. Anal. Chem.

Reduction of Chloride of Silver.

According to Grager, an ammoniacal solution of chloride of silver is very completely reduced by placing therein tolerably large lumps of zinc; the solution is best placed in a wide-mouthed glass-stoppered bottle, and this requires to be shaken frequently; there should be zinc in excess. When the fluid, on a drop thereof being tested, no longer yields a precipitate with hydrochloric acid, the operation is finished; the silver is then separated by pouring the fluid off from the spongy mass, and washing by decantation; the pieces of zinc having been removed, the spongy silver is washed with pure strong hydrochloric acid, and next with water. The silver thus obtained is, according to the author, chemically pure.—*Chemical News.*

Testing Opium.

Professor Schneider has proposed in the 6th revised edition of the Pharmacopœia Austriaca, the following method for testing the goodness of opium. Ten grammes of previously dried and powdered opium is treated with a mixture of 150 grammes of distilled water, to which 20 grammes of pure hydrochloric acid, sp. gr. 1·12, is added; the residue, after extraction, should not exceed 4·5 grammes weight; to the acid fluid 20 grammes of common salt are added, and the precipitate thereby caused is collected after 24 hours, on a filter, and the latter with a solution of common salt; to the filtrate, ammonia is added, and the fluid left standing again for 24 hours; the crystals which have separated are collected, re-dissolved in acetic acid, and precipitated with ammonia; the precipitate so obtained is washed, dried, and weighed; its weight should not be less than one gramme.

Fluorine in the Brain.

Professor Horsford, of Harvard College has tried to detect fluorine in the human brain, he was induced to do so by the fact that fluorine so frequently accompanies phosphoric acid in the mineral kingdom, and also on account of the large proportion of phosphoric acid found in the brain and nerves by Von Bibra and others. After having very carefully ascertained that the reagents he was about to apply were quite free from fluorine, the learned professor operated upon a human brain which had been long kept in spirits of wine, but which in consequence of neglect, had by the evaporation of the liquor, become wrinkled up and dry. A series of carefully made experiments proved undoubtedly the existence of fluorine in the brain.—*Chemical News.*

CHEMICAL NOTICES.

From the Chemical News.

Les Mondes.

Action of Light upon Chloride of Silver.—When freshly precipitated chloride of silver (best obtained by means of decomposing a soluble silver salt with chlorine water) is placed in a white glass tube about 15 inches in length, and exposed to the action of direct sunlight, it will be observed that the chloride of silver remains quite white as long as the solution of chlorine water retains it greenish yellow color; but as soon as that color has vanished, the chloride of silver begins to decompose water under the influence of the direct rays of sunlight; the chloride gradually blackens, and after a shorter or longer duration of time, the whole quantity will have become black, especially if care be taken to shake the tube now and then, so as to expose the whole mass to the light. When the tube is afterwards placed in a dark place entirely excluded from daylight, the black color of the chloride of silver again disappears gradually, and the chloride becomes white; this experiment can be repeated over and over again with the same tube. The bromide, and probably also the cyanide of silver, behave in the same manner; the iodide of silver blackens only after having been rendered sensitive to light by pyrogallic acid.

Platinising Copper, Yellow Metal and Brass.—In order to obtain the platinising fluid, add, to a moderately concentrated solution of chloride of platinum, finely-powdered carbonate of soda until effervescence ceases, next some glucose, and afterwards just so much common salt as will cause a whitish-colored precipitate. When it is desired to apply this mixture for platinising, the objects to be treated are placed in a vessel made of zinc and perforated with holes; the vessel is then placed, with its contents, for a few seconds into the mixture just described, which, just previous to using, should be heated to 60° C. On being removed from the zinc vessel, the objects are to be washed with water and dried in sawdust.

Journal für Praktische Chemie, 1869, No. 2.

On a Constituent of the Resin from the Ferreira Spectabilis.—It appears that in the Brazils there is in use, as a febrifuge, a resin, known in some parts of the country as *sulphato*, in others as *Resina d'angelim pedra*. When this resin is first digested with water, which removes coloring matter, the residue dissolved in water acidulated with hydrochloric acid, and the crystals thereby obtained first purified with water, next with absolute alcohol, again dissolved in hot water, and this solution treated with ammonia, a substance is precipitated which has been named *angelin;* this material has been sent from Cantagallo to Vienna, and was thence forwarded to Prague, to Dr. Gintl, for examination and report. That gentleman, after very exhaustive qualitative and quantitative researches, found, on elementary analysis of the frequently purified substance, that it consists, in 100 parts, of:—C, 61·51; H, 6·81; N, 7·26; O, 24·42; formula—

$$C_{10}H_{13}NO_3.$$

Dr. Gintl further found that angelin is in all respects identical with Ruge's ratanhin, also in its behaviour with nitric acid by which both these substances are first made rose, next ruby-red, and finally deep violet colored, provided only dilute acid be applied, and heated very gradually and gently.

Bulletin Mensuel de la Societé Chimique de Paris, March, 1869.

Iron in Milk.—M. Bistron has found that the milk of the female goat contains on an average 0·1 grm. of iron in 1,000 parts of milk; this quantity of the metal appears to be constantly present in that fluid, and corresponds with the quantity found in the milk of women.

On the Action of Light upon Sulphide of Carbon.—Many of our readers have had the opportunity of noticing that the bottles, especially if made of white glass, containing sulphide of carbon often become lined, if exposed for any length of time to direct sunlight, with a coating strongly adhering to the glass. M. Loew has experimented on this substance, by enclosing the sulphide in sealed glass tubes previously moistened with water which has the effect of lessening the adhesiveness of the brownish coating. On opening the sealed tubes after a few months' exposure to sunlight, the water was observed to have an acid reaction, due to the formation of some formic acid; the solid substance alluded to is insoluble in alcohol, chloroform, ether, and sulphide of carbon, but soluble in a boiling solution of caustic potassa, becoming, however, at the same time decomposed. The substance is sesquisulphide of carbon, which, on being submitted to distillation, is decomposed, yielding sulphur and carbon; the sulphide of carbon from which this substance is deposited contains sulphur in solution, though perfectly pure previous to exposure to sunlight.

Testing Sulphate of Quinine.—M. Panot applies, for the purpose of ascertaining the presence of salicine in sulphate of quinine, the well-known action of oxidizing substances upon salicine, and the transformation of the hydride of salicyl into a substance which, under the influence of perchloride of iron, assumes a bluish violet color. The suspected sulphate of quinine is placed in a flask, to which, by means of a perforated cork, a glass tube can be fixed; then 2 c.c. of a dilute sulphuric acid (1 of acid upon 4 of water), and 4 c.c. of a saturated solution of bichromate of potassa, are poured into the flask; heat is applied to the flask, and its contents brought to boiling, while the products of the distillation carried off by the glass tube are collected in distilled water. When the reaction ceases, some few drops of a solution of chloride of iron are added to this distilled water, and should a violet coloration ensue, this will be evidence of the adulteration with salicine of the sulphate of quinine; the presence even of ½ per cent. of salicine is very readily proved by this process.

Moniteur Scientifique, No. 297, 1869.

The Use of Bran in Brewing, Manufacture of Spirits and Starch Making.—Since bran contains from 40 to 60 per cent of its weight of starch (farine), M. Poncelet proposes to use a certain quantity of bran instead of malt or raw grain for the purpose of brewing, making spirits from grain, and the manufacture of starch. He either uses the bran as it is, or extracts the starch from it previously, and adds this substance to the materials required for the mash-tubs.

The Substitution of Alum-shale for Bone-black in Sugar Manufacture.—M. Belin proproposes to do away with the use of animal charcoal for sugar manufacturing purposes, and to substitute instead the exhausted alum-shale after it has been applied to the manufacture of alum, or sulphate of iron. 100 parts of juice from beet-root require from one to eight parts of the exhausted shale. The liquid, after having become clarified, is evaporated to 26 degrees, Beaume, in contact with air without any previous filtration, and next concentrated in vacuum pans to 43 degrees. The concentrated syrup thus obtained is run into large iron tanks and left to crystallise. The only advantage gained by this process is, beside the saving of animal charcoal, the obtaining of molasses better fit for the distillery of spirits usually connected with beet-root sugar works.

Sulphurous Acid for Dissolving Bones.—It is well known that hydrochloric acid is used for the purpose of dissolving the earthy salts of bones, in order to obtain the gelatine they contain in such a state as to render that substance readily soluble in boiling water. The use, however, of hydrochloric acid is rendered rather inconvenient for this purpose, on account of the formation of chloride of calcium which interferes with the drying of the gelatine. M. Coignet, at Paris, has found that sulphurous acid answers the purpose of hydrochloric acid in this instance perfectly well. The bones are placed in cold water, and through the water a current of sulphurous acid gas is forced so long as it is required to completely soften the bones, which are afterwards washed in fresh water wherein some sulphurous acid gas has been previously dissolved.

Bull. Mensuel Soc. Chimique, Paris.

A New Compound of Lime and Sugar.—Messrs. Boivin and Loiseau have formed a new combination of lime and sugar which, moreover, contains carbonic acid. It is prepared in the following manner:—To 200 kilos. of syrup containing 60 per cent of crystallisable sugar, 120 kilos. of caustic lime as a thickish milk of lime are added, and next carbonic acid gas is passed through the mixture. After some time a precipitate is formed and as soon as it makes its appearance, 20 litres of tepid lime water are added, and the stream of carbonic acid gas is stopped. The precipitate just alluded to is the new compound, and it contains in 100 parts 43 of sugar, 40 of lime, and 17 of carbonic acid

On the Estimation of the Iodine of Commerce by Volumetrical Analysis.—M. Robierre dissolves a weighed quantity of the iodine, the true value of which has to be estimated, in a concentrated solution of iodide of potassium, the solution is diluted to 100 c.c., and is dropped into an alkaline solution of arsenious acid of known strength. Instead of using starch water, as a means of recognising the end of the reaction, the author adds a few cubic centimetres of benzol to the solution of arsenious acid, and ceases to add more of the solution of iodine as soon as the former solution becomes rose-coloured. The arsenical solution is made by weighing off 49·95 grms. of arsenious acid and 14·5 grms. of crystallised carbonate of soda, and dissolving these in a litre of water, representing 12·688 grms. of iodine to the litre; 10 c.c. of this solution are taken for each assay, and 4 c.c. of benzol are added.—*J. de Pharmacie.*

Bleaching Paper Pulp.—M. Gaumy proposes to bleach paper pulp by means of bichromate of potassa. For 100 kilos. of pulp (supposed to be dry) he uses 50 kilos. of bichromate and 150 kilos. of hydrochloric acid, mixed with a sufficient quantity of water to make the pulp float. After twelve hours' standing, the chloride of chromium is washed out by means of clean water, and the pulp treated with a small quantity of bleaching powder to make it thoroughly white. The chloride of chromium is precipitated by means of excess of lime, and this mixture is calcined in a reverberatory furnace, where it is converted into chromate of calcium.

Zeitschrift für Chemie, von Beilstein, No 5, 1869

Oxidation of Acetic into Oxalic Acid. Dr. F. Lossen states that when one part of acetate of soda, one part of hydrate of soda, and two parts of permanganate of potassa are dissolved in a little water, the solution concentrated by boiling, and next brought to dryness at a temprature at which oxalic acid is not decomposed, and this heating continued until a small test-portion ceases to yield, with water, a green coloured solution, oxalic acid can be readily proved to exist in the remaining saline mass.

On the Estimation of the Value of Indigo. M. George Leuchs estimates the indigo-blue, the chief and only valuable constituent of the drug, in the following manner:—By means of 35 grms. of lime and 30 grms. of protosulphate of iron, 10 grms. of indigo are dissolved in 3 litres of water. In order to exclude the access of air, some petroleum was poured on the top of the fluid; (this fluid, however, was simply used as one to experiment with), and the experiments lead to the result that equal portions of this solution reduce equal quantities of peroxide of iron, and that this reaction proceeds as expressed by—

$$C_{16}H_6NO_2+Fe_2O_3=2FeO+C_{16}H^5NO_2+HO.$$

In order to test any sample of indigo, 1·31 grms. thereof are so mixed with lime and sulphate of iron as to form a solution measureing 300 c.c., which should be placed in a tall cylindrical glass vessel provided with a well-fitting glass stopper. To 100 c.c. of the solution thus obtained, 66⅔ c.c. of a solution containing 1-10th of iron alum acidulated with sulphuric acid are added, the fluid so obtained is filtered, and 100 c.c. of the filtrate are taken and titrated with a solution containing 1-10th of bichromate of potassa, which is best run into the indigo containing fluid from a burette having divisions of ½ c.c., in which case every division is equal to 1 per cent of indigo-blue.

Neues Jahr. für Pharmacie.

Analysis of Crude Cream of Tartar, Argol.—One gramme of this substance, taken from a thoroughly well mixed large average sample, previously powdered, is weighed into a tared procelain crucible; the crucible and contents are heated to a redness, and kept ignited until the contents are quietly in igneous fusion; let the weight of the residue found after cooling be called p. The crucible and contents are next boiled in distilled water, the fluid separated by decantation from the sediment is set aside, and the sediment washed until the wash-water no longer turns red litmus blue; the insoluble residue is dried at first on a water and next on a sand-bath. After its weight has been ascertained, it should be called r; $p - r$ is equal to the soluble portion of the ash which represents the carbonate of potassa. When the result of $p - r$, expressed in grammes, is multiplied by 271, the percentage of pure bitartrate of potassa is obtained contained in the sample of crude argol submitted to experiment; when the result of $p - r$ is multiplied by 216, the percentage of crystallised tartaric acid is obtained.

On the Specific Gravity of Chlorine.—M. E. Ludwig observes that, as a consequence of a series of determinations of the specific gravity of chlorine gas, the conclusion must be come to that the gas belongs to those kinds of vapors which only obey Mariott's law when it is at a temperature rather remote from that at which it is condensed to the fluid state. The specific gravity of chlorine at 20° C. is 2·4807; at 50° C., 2·4780, at 100°, 2·4685; at 150°, 2·4609; at 200°. 2·4502. According to experiments made by Stas, the specific gravity of chlorine, deduced from its atomic weight, is 2·45012. M. Ludwig has repeated experiments on this subject, and found the figures obtained and just quoted to be substantially correct.

Instability of the Solutions of Alkaloids. A solution of 1 grm. of sulphate of quinine, 50 centigrms. of tartaric acid, and 20 grms. of water, was tested after having been standing in a stoppered bottle for twenty months. It contained 1·05 grms. of the saline constituents, instead of 1·40 grms. as when first prepared; it lost, therefore, 25 per cent. It appears, from communications received from various parties on this subject, that the same is observed to take place with most other alkaloids applied in pharmacy, and such solutions should not, therefore, be prepared for use in too large a quantity at the time.

Les Mondes, Revue Hebdomadaire des Sciences, May.

To Preserve Butcher's Meat in Hot Weather, by placing it in large earthenware pans, putting clean heavy stones on it, and covering it with skim milk; the milk will become sour, of course, but may afterward serve as food for pigs, and the meat will be found to have kept its natural primitive freshness, even *after eight or ten days.*

Copal Varnish, according to Prof. Buttger's prescription, should be made by dissolving one part, by weight, of camphor, in twelve parts of ether, when the camphor is dissolved, four parts of the best copal resin, previously reduced to an impalpable powder, are added to the ethereal camphor solution, placed in a well-stoppered bottle. As soon as the copal appears to be partly dissolved, and has become swollen, four parts of strong alcohol, or methylated spirits in ¼ part of oil of turpentine is added, and, after shaking the mixture, and letting it stand for a few hours longer, a thoroughly good copal varnish is obtained.

Detection of Minute Traces of Hydrocyanic Acid.—Pagentecher some time ago pointed out that guiaicum resin with hydrocyanic acid, and some salt of copper, caused a blue colouration. More recently Schönbein has shown how to prepare test paper of great sensibilty with tincture of the above-named resin, for detecting hydrocyanic acid; but the following observation of the same sensibility of the shavings from which the resin is derived, especially with the shavings of the lignum sanctum, is, I believe, new. Moisten a few shavings with a weak solution of sulphate of copper, place them on a piece of perforated paper over the mouth of a bottle containing cherry-laurel water; after a few minutes the colouration will take place. By the same way I have confirmed M. Longet's observation of the existence of a minute dose of a cyanide in salivation. Moisten a few shavings with the weak solution of copper, upon simply spitting upon it, immediately the blue colour will appear.—S. Cohne, London, April 5, 1869.

Quantitative Estimation of Tartaric Acid.—(*Pharm. Zeitschr. f. Russ.*, 1869, No. 1.)—Dr. Martenson First Assistant in the Chemical Laboratory of the Pharmaceutical Institute of Dorpat, Russia, has made a series of experments, with a view to obtain a trustworthy and readily executed method of quantitative estimation of tartaric acid. After first ascertaining by a series of experiments that tartrate of lime is less soluble in water than is commonly reported in books (he ascertained that one part of the aforesaid salt requires at 18° C. 2388·26 parts of water for complete solution), he discovered the almost complete insolubility of the tartrate of lime in alcohol of 85 per cent strength. In order to estimate the tartaric acid in tartrate of potash, for instance, the salt is dried at 100° C., dissolved in a small quantity of distilled water, next pure chloride of calcium solution is added, with the precaution to avoid excess thereof, afterwards a few drops of lime-water are added, and the porcelain capsule wherein this operation is performed is left standing for some hours. A crystalline precipitate is thus obtained; it is collected and washed with strong alcohol, the precipitate and filter are thoroughly dried at 100°, the precipitate is weighed as—

$$2CaO,C_8H_4O_{10}+8HO.$$

It is of importance to take care to use a porcelain basin, the glaze of which is quite free from cracks, otherwise the precipitate has a strong tendency to adhere to such portions of the basin. When either hydrochloric or nitric acids are present along with *tartaric, the fluid is first nearly neutralised* with pure carbonate of lime, and warmed to expel carbonic acid, while the last traces of acid are removed with lime-water. The presence of either chloride of ammonium or chloride of calcium in excess interferes with the correctness of the results and makes it necessary to add alcohol to the liquid to be operated upon. Results are accurate when proper care is taken.

Preparation of Carbonic Acid.—(*Revue Hebd. Chim.*)—Messrs. Rousseau and and P. Boeuf propose to obtain carbonic acid from sulphate of lime (plaster of Paris), by heating in retorts, arranged and made as those in use at gas works, a mixture of the material alluded to and charcoal or coke. The decomposition which ensues is represented by $SO_3CaO+C_2=SCa+2CO_2$.

Carbolic Acid.—We think it necessary to put our readers on their guard against an incautious use of carbolic acid. It seems to be forgotten sometimes that this substance exercises a powerfully destructive action upon

animal tissues, and that it is, in fact, a very strong caustic when concentrated. There is no doubt that many serious accidents have recently occurred from Surgeons not being aware of the properties of the remedy they use so freely. It must also be remembered that the direct application of carbolic acid, even in a diluted form, to a granulating surface, will often delay cicatrization, and tend to promote suppuration, whereas, if it is employed at a distance from the wound, it will tend to diminish the formation of pus. There is moreover, a good deal of evidence to show that it tends to stimulate circulation through the smaller vessels, and thus gives rise to hæmorrhagic oozing, from recently cut surfaces, preventing their primary adhesion. If, however, it be properly applied in a diluted form to the wound itself, and in some permanent and non-volatile form to the external parts, it will be found to have a powerful influence in retarding and diminishing suppuration.—*Medical Times Gazette.*

Observations on the Preparation of Strong Hydriodic Acid in Solution.—(*Bulletin de la Société Chimique de Paris*, 1869, No. 2.)—Since this acid is becoming daily more and more used, Mr. Ferd. Vigier has studied the best mode of its preparation. It is well known that, for this purpose, a mixture of amorphous phosphorus (as first suggested by M. Personne), iodine and water is gently heated in a tubulated retort to the beak of which a glass tube has been soldered. Vigier has found that too often, in text and handbooks on chemistry, a wrong proportion of the ingredients to be used is given; and after some experiments on this subject, he finds that 1 part of phosphorus, 20 part of iodine, and 15 of water, are the best and only proper to ensure the taking place; these proportions correspond to the formula,

$$P+5I+5HO=PO_5+5HI.$$

On the Cause of a Pink Colour in White Lead Corrosions.—It appears from the experiments of Mr. W. Baker (*Phil. Mag.*, May, 1869), that not, as he formerly supposed, oxide of copper, but metallic silver, when present in lead in small quantity, is the cause of the pink colour now and then observed by white lead manufacturers. Analysis of 5.000 grs. of white corrosion gave. CuO, 0·0050; FeO, 0·0022 NiO, trace; Ag., 0.005 per cent. Pink corrosion.—CuO, 0·0060, FeO, 0 0022; NIO, 0·0013; Ag, 0 0058 per cent. A decided colour, which is uniform throughout the mass of the corrosion, is obtained when the silver amounts to about 1½ ozs. per ton. The author ascertained that the silver is present in metallic, but of course finely divided, state.

To Bleach Mucilage of Gum Arabic.—This may easily be done by means of recently precipitated gelatinous alumina, which absorbs the color to itself, and leaves a clear solution. The pure white gum, in a state of powder may then be obtained by adding alcohol to the clear solution as long as any precipitate is formed. It may afterwards be dried in the sun or by a gentle heat. The hydrate of alumina, or the gelatinous alumina, may be easily procured by decomposing a solution of common alum, by an excess of carbonate of ammonia, and washing the precipitate thus obtained until all traces of soluble matters are removed. In decolorizing mucilage, the alumina will generally answer for two operations.—*Jour. of Applied Chemistry.*

Journal of Applied Chemistry.

To Discharge Aniline Colors A solution of the permanganate of potash in a slight excess of dilute sulphuric acid, thickened with pipe clay, kaolin, or gelatinous silicate will remove the colors produced by the aniline dyes. The small portion of oxide of maganese remaining may easily be removed by a weak bath of sulphurous acid Powdered zinc has hitherto been used, but has now generally generally given place to this, which is the invention of M. M. Dangeville and Gutin.—*Ib.*

New Method of Preparing Tartaric Acid.—The wine growers of this country, with their national characteristics, among which is that of being willing to turn everything to good account, may not be averse to adopting the following method for preparing tartaric acid from the pressed skin of the grape, a hitherto waste product. After treating the skins with water and obtaining lees, two per cent of sulphuric acid is added, and the mixture is boiled till the tartaric acid in combination is set at liberty. The action of the acid on the cellulose of the pulp forms a small quantity of glucose, or grape sugar. The liquor after fermentation, is treated with a solution of lime, and the latter subjected to the action of concentrated sulphuric acid, yields sulphite of lime and free tartaric acid. The present high price of this article, (68 to 72 cents per pound) should be an extra inducement for parties who own large vine yards, like those of California, to enter into this important branch of manufacture.—*Ib.*

To Remove Silver Stains.—According to Grim, old silver stains can be bleached by chloride of copper. Wash the spot with hypo-sulphite of soda solution, and afterwards with water. For white stuff, a freshly prepared and very weak mixture of permanganate of potash and hydro-chloric acid, and washing out with hypo-sulphite of soda, is found to be sufficient. Both methods can be recommended on account of their dispensing with the poisonous cyanide of potassium usually employed for the purpose.—*Ib.*

On Bicarbonate of Ammonia as a Pharmaceutical Preparation.—The writer for many years past has used this salt as an antacid in place of bicarbonate of soda, and now brings it forward as deserving the attention of physicians in certain gastric affections wherein its antacid and substimutlating powers may be indicated, in connection with bitter tonics, aperients, and aromatics.

It is well known to druggists that considerable quantities of this salt are formed on the sides of casks in which carbonate of ammonia is imported; and other portions are derived from the accidental or careless exposure of the sesquicarbonate, whereby an equivalent of monocarbonate is lost. Even in the shop bottles of dispensers, this is constantly going on to a limited extent. It has been usual to reserve the salt thus obtained for forming acetate, nitrate, or other ammoniacal salts, but it has rarely been used medicinally on its own merit. If it were sufficiently abundant, or could be prepared cheaply by a direct process. it would form, by all odds, the best yeast powder that can be offered, as it contains a larger portion of carbonic acid than any of the alkaline bicarbonates, except that of lithia, which of course is unsuited for this use, but it it is too scarce for that use. Bicarbonate of ammonia in its purest state is a white salt, isomorphous with bicarbonate of potassa, and possesses the same crystalline form. Its composition is $NH_4,O\times 2CO_2HO$. Its taste is saline, with a slightly ammoniacal impression and is slowly volatile when exposed, and gradually evaporates with a slight odor of ammonia. It is soluble in 8 parts of water at 60° F., and its aqueous solution has an alkaline reaction with syrup of violets (Liebig.) It is decomposed by the heat of boiling water, giving off carbolic acid; on this property its merits as a yeast powder partially depend. It is nearly insoluble in officinal alcohol, but soluble in (*l*) parts of diluted alcohol. It is most easily prepared in a small way by dissolving out the monocarbonate from the powdered sublimed sesquicarbonate (which consists of one equivalent of each salt) by aid of alcohol (U. S. P. 85 per cent.,) in which the bicarbonate is but slightly soluble. The residue may then, after due washing with alcohol, be dried and used in the pulverulent form. When alcohol is added in excess to a solution of the medicinal carbonate the bicarbonate precipitates in a crystalline form.

When a saturated solution of sesquicarbonate of ammonia in water is saturated with CO_2, a quantity of the bicarbonate separates in crystals, owing to its less solubility.

The translucent lumps of sesquicarbonate of ammonia, when exposed, lose much weight and the residue is almost entirely bicarbonate. This is the form in which it is most usually met with, and it may be obtained from that salt at any time; but it is too expensive, 100 parts of the officinal carbonate yielding only about 50 parts of the bicarbonate instead of 59, the theoretical yield. The relative proportions of the potash, soda, and ammonia salts to saturate one equivalent of SO^3 are 100, 84 and 70, so that ten parts of bicarbonate ammonia nearly equal 14½ parts of the potash and 12 of soda salt.—*Pharmaceutical Journal (London).*

Preparation of Pure Chloroform.—Chloroform, as sold. contains many impurities, which render it less efficacious than when pure. Many of these impurities resemble chloroform so closely as only to be recognized by a careful examination. M. Adrian proposes the following processes for the purpose of preparing a perfectly pure anæsthetic: It should first be shaken with water, to remove the alcohol, these washings being repeated several times, the complete absence of alcohol being proved by chromic acid and recently prepared binitrosulphide of iron, the former of which is not decomposed, and the latter remains insoluble when the chloroform is quite free from alcohol. The water also removes any aldehyde which may be present. When the chlorine and its derivatives have been for the most part removed by the previous processes, the chloroform is put in contact with a weak solution of carbonate of soda, which saturates the last traces of chlorine, as well as the hydrochloric and hypochlorous acids which may remain in solution. The water retained in solution by the chloroform is removed by digestion, for twenty-four or forty-eight hours, with chloride of calcium; and a considerable quantity of this salt must be used, and the process repeated at several intervals. After this purification the density and the boiling point of the chloroform should be accurately determined. If the

point of ebullition exceeds the 61st degree, and rises to the 68th degree C., the chloroform must be subjected to another series of rectifications.—*Bull. Gén. Thérap.*

De-Nicotinized Tobacco.—Dr. T. Williams (*Chicago Medical Journal*) recommends smokers to place in the bowls of their pipes a little powdered tannin, or a sponge saturated with a solution of tannin. The smoke will thus be deprived of its characteristic aroma and all the vaporized nicotine, which is the intoxicating principle. At first the smoke will be entirely free from all taste and smell of tobacco, but as the sponge becomes charged with the nicotine the odor will re-appear. By charging the sponge frequently, the smoker may indulge in his habit as immoderately as he pleases *without injurious effects.*—*Med. Record.*

Substitute for Dover's Powder.

R	Morphia sulph.		3j.
	Camphor.		
	Cretæ prep.		
	Saccharum,	āā	3 xx.
	Misce (intimately).		

Of this, ten grains contain very nearly one-sixth of a grain of morphia, and any person who tries that quantity in a teaspoonful of cold water will at once realize its eligibility over any other anodyne powder.—*Druggists' Circular.*

Black Walnut Polish.—Take asphaltum, pulverize it, place it in a jar or bottle, pour over it about twice its bulk of turpentine or benzole, put it in a warm place, and shake it from time to time. When dissolved, strain it, and apply to the wood with a cloth or stiff brush. If it should make too dark a satin, thin it with turpentine or benzole. This will dry in a few hours.

If it is desired to bring out the grain still more, apply a mixture of boiled oil and turpentine; this is better than oil alone. Put no oil with the asphaltum mixture, as it will dry very slowly. When the oil is dry, the wood can be polished with the following. Shellac varnish, of the usual consistency, two parts; boiled oil, one part. Shake it well before using. Appl it to the wood by putting a few drops on a cloth and rubbing briskly on the wood for a few moments. This polish works well on old varnished furniture. —*Chem. News.*

Phosphorescent Mixtures.—The absorption of light by a certain class of bodies, and their subsequent phosphoresence in the dark, has been a good deal studied, but a perfectly satisfactory explanation of the phenomenon has not been attained. Very interesting experiments have been made by Schrotter, Forster and others, with artificial mixtures, and they have succeeded in imitaing the colors of the rainbow, so that one can have a complete solar spectrum in the dark. It has been found that the light emitted is not actinic; it does not reduce the salts of silver, and it would be impossible to take a photograph with it. Schrotter recommends the employment of magnesium wire as a source of artificial light, and other experimenters burn sulphur, or pass electric sparks cautiously through a tube in which phosphorescent mixtures are enclosed. Any of these methods will answer instead of the sunlight.

We furnish below a number of mixtures that have been found peculiarly fitted for the exhibition of the peenomenon of phosphoresence. It is necessary to keep them sealed up in tubes, and to preserve them in a dark closet. By putting them for a few seconds in the sun, or by burning magnesium wire over them, and then viewing them in the dark, they will emit light sometimes for half an hour. A little practice will soon show what temperature is best adapted for their preparation.

No. 1.	Pulverised oyster shells.....	12 parts.
	Flowers of sulphur.....	4 "
	Oxide of zinc.....	0·5 "
	(Ignite thirty minutes.)	
No. 2.	Pure carbonate of lime.....	12 parts.
	Flowers of sulphur.....	4 "
	Realgar (sulph. arsenic)....	0 5 "
	(Ignite thirty minutes.)	
No. 3.	Nitrate of strontia.....	12 parts.
	Flowers of sulphur.....	4 "
	Sulphide of antimony.....	0·5 "
	(Ignite thirty minutes.)	
No. 4.	Sulphate of Baryta stirred into a paste with white of an egg, and ignited in an open coal fire for one hour.	
No. 5.	Carbonate of strontia.....	12 parts.
	Sulphur.....	4 "
	Oxide of zinc.....	1 "
	(Ignite thirty minutes.)	
No. 6.	Carbonate of strontia.....	12 parts.
	Sulphur.....	4 "
	Sulphide of antimony	0·5 "
	(Ignite thirty minutes.)	
No. 7.	Carbonate of strontia.....	12 parts.
	Sulphur.....	4 "
	Sulphide of barium.....	2·2 "
	(Ignite thirty minutes.)	
No. 8.	Pure carbonate of lime	12 parts.
	Sulphur.....	12 "
	(Ignite thirty minutes.)	

—*Jour. of Applied Chemistry.*

Saturation Table.

One drachm of potass. carbon. pur. requires:		
Tartaric acid	grains	55
Citric acid	"	50
Vinegar	oz.	2
Lemon-juice	oz.	3
One drachm of soda bicarbon. requires:		
Tartaric acid	grains	54
Citric acid	"	48
Vinegar	dr.	15½
Lemon-juice	dr.	23
One drachm cryst. carbon soda requires:		
Tartaric acid	grains	30
Citric acid	"	27
Vinegar	dr.	9
Lemon-juice	dr.	13
One dram of carbonate of ammonia:		
Tartaric acid	grains	53
Citric acid	"	46
Vinegar	dr.	14½
Lemon-juice	dr.	21¼
One drachm of tartaric acid:		
Potass. carbon. pur	grains	65
Sodæ bicarbon	"	66
Ammon. carbon	"	70
Sodæ carbon. cryst	"	119
One drachm citric acid:		
Potass. carbon. cryst	grains	71
Sodæ bicarbon	"	75
Ammon. carbon	"	78
Sodæ carbon. cryst	"	131
3 oz. *Lemon-juice*, or 2 oz. *Vinegar*, require:		
Potass. carbon	grains	60
Sodæ bicarbon	"	62
Ammon. carbon	"	67
Sodæ carbon cryst	"	110

3 oz. *artificial* lemon-juice must contain 50 grains citric acid.—*Mohr's Practical Phar.*

Mastic Cement.—*Pierre Artificielle*, or mastic cement, is the name given in trade to a substance now much used for architectural *effect; it consists of sand, plaster, and* litharge, in linseed oil. Its durability and hardness can be easily affected by alterations of the quantities of the ingredients, so that it can be made harder or softer, or more or less porous. The ground plaster, in fact, is not needed, but the small powder helps to fill up the crevices between the particles of sand, and thus prevents the substance from being porous and spongy.

To each 100 parts of the mixture should be added 7 parts of linseed-oil varnish; this has the property of imparting to the composition the consistency of wet sand, at the same time that it makes it very sticky. It *then retains its form, and is in a much better* condition to work up into fancy forms by pressing or stamping. When first prepared, this cement has no particular adhesive quality, but in from 24 to 48 hours it begins to harden, and in a few weeks it has hardened so as to attain all the firmness of the regular sand-stone. After the lapse of five or six months, it is hard enough to grind steel on. *Journal of Applied Chemistry.*

Proposed Method of Deodorizing Petroleum.

It has been suggested by an English inventor to remove the peculiar odor from petroleum in a manner somewhat similar to that by which palm-oil and other oils have heretofore in some cases been deodorized—by blowing air through them while they are kept heated in a suitable vessel to a temperature of from 170° to 230° Fahr. In place of using the air at such a pressure only as is necessary to cause it to flow through the oil, the present inventor employs it at a high pressure, more especially towards the end of the operation; so that when it enters the oil it expands greatly, thereby becoming intimately mixed with the oil and also cooling it rapidly below the temperature of the air, at which temperature he prefers to commence the treatment, and not to heat the oil as heretofore. The air when used under these conditions, rapidly removes the odor from the oil; and it may at the same time, from the cold it induces, be caused to chill a small proportion of it.—*Am. Artisan.*

Detection of Chlorine, Bromine, and Iodine by Spectrum Analysis.—The difficulty of recognizing small amounts of chlorine, bromine, and iodine in a mixture of haloid salts is well known; and it is found impossible to detect mere traces of these bodies in such mixtures by any hitherto known method. The author, however, by using the haloid salts of copper for the purpose, has succeeded in recognizing the smallest amounts of the above substances by the use of the spectrum apparatus.

By this method, and without further trouble, ¼ per cent. of chlorine, ½ per cent. of bromine, and 1 per cent. of iodine are easily recognized, and a practised eye may detect smaller quantities.—*Poggendorff's Annalen.*

Aluminium Bronze.—In consequence of the observation that aluminium bronze resists the wear of machinery, it has been proposed to employ it as a covering to protect stairs in public buildings, in place of brass. *Druggists' Circular.*