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# CANADIAN DRUGGIST.

DEVOTED TO THE INTERESTS OF THE GENERAL DRUG TRADE AND TO THE ADVANCEMENT OF PHARMACY.

VOL. 5. STRATHROY, DECEMBER, 1893. No. 12.

## CANADIAN DRUGGIST.

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## Pharmacy and Pharmacology.

From an inaugural address to the Pharmaceutical Society of Great Britain by Prof. J. C. CASH, M. D., F. R. S.

He first referred to the field of interest which is common to pharmacist and pharmacologist, dealing especially with the work of the former, and commenting upon the necessity for the strictest accuracy and care in preparing drugs and chemicals, in order to make good therapeutical agents. It is, he continued, the pharmacologist who has to answer the question—Why do we use this drug? The pharmacist answers—How is it to be used? And the therapeutist replies to—When should it be used? He considered that these three classes could not be independent of each other; each must sympathize with, and be interested in, the labors of the others. This labor is demanded of all the workers, and in the future it will be more strenuously exacted than it has been in the past. It does not entail any rash prediction to forecast that the advent of every new remedy will be through the channels of close research and study, and that the scientific practitioner of the future will refuse to make use of anything which reaches his hands by less certain ways.

### PURE EMPIRICISM IS DECAYING,

Credulity is loosing its hold on all of us, and whether the cry is a new cancer-cure by green or yellow electricity, or a great Chinese cure, the rush of the credulous amongst those who have been educated to discern the right hand from the left in medical matters is a very small one. But it is not likely that in this generation, or the next, the will o' the-wisp will fail of a following amongst the uneducated and the uninstructed. Prof. Cash spoke of the influence of the poisons schedule in warning people not to tamper with powerful remedies. It is right, he said, that they should be labelled "Poison." He then dealt with the advance of the practice of medicine, and the necessity for honest and ungrudging original work in order that it may continue. Recent records bear unimpeachable testimony to the extraordinary progress which is being made in the direction of furnishing the practitioner with fresh

### REMEDIES OF DEFINITE CHEMICAL COMPOSITION.

There has been what one may term a genuines *pate** of bodies having germicidal, antipyretic, and hypnotic properties. To some a permanent position is reserved, others are already vanishing, and whilst of the latter certain could well be spared, a small residue which promised fairly have been jostled out of sight, and are in danger of being lost to us. If there is a fault in this wealth of production, it is that its very magnitude threatens to exceed the strength of pharmacologists. This is one reason why some of those bodies, whilst possessing considerable value, yet not having received the attention requisite to establish their action upon a firm basis, are liable to fall short of the position they are really entitled to amongst curative remedies. Attempts are being successfully made to to produce modifications and combinations of certain carbon compounds of the aromatic and fatty series, with the object of enforcing and improving their effect, or else of eliminating some undesirable property. The fact that such a body as the synthetic product

### SULPHONAL

has been proved to possess valuable hypnotic properties, but that its prolonged and unintermitted use is accompanied by some danger, has led to the introduction of trional and tetronal, which contain increasing proportions of ethyl. The theory advanced by Baumann and Kast, that the hypnotic value would be increased proportionately with the ethylic content, has not as yet been clearly supported by experiment, and it is premature to allot them a precise position. But if, as seems likely, Ranoni is justified in preferring them to sulphonal, not merely on account of their more rapid primary effect, but because of the after-action being less disadvantageous, they may be used as alternatives to this drug with distinct advantage. The substitution of methyl in the phenyl group of antipyrin has led to the production of

### TOLYPYRIN,

which possesses, according to Guttmann, as full an action in reducing pain and pyrexia as the more current remedy. As the result of the search after substances which will prove toxic towards micro-organisms, whilst relatively harmless towards man and the higher animals, colouring matters, many of them coal-tar derivatives, have passed largely into practice. These pigments have long been recognised as bacteriological stains for the purpose of demonstrating the presence of certain microbes, and it is highly interesting and instructive to note that the selective power they exert in this respect may indicate a destructive property which may be used to advantage in the treatment of disorders associated with such microbes and their products. Enlarging upon this topic, Professor Cash referred to the advantages of antiseptics or disinfectants in the

### TREATMENT OF CHOLERA,

amongst them being salol, tannin, and beta naphthol. A single drachm of the latter is sufficient to disinfect the alimentary canal, but, unhappily, it is not toxic towards the bacillus, 8 oz., according to Sternberg, being required for that purpose. The rapidity with which cholera develops and progresses is probably our greatest difficulty. Increased facilities for the employment of iodine - which has admirable disinfectant properties, but is, unfortunately, both a powerful irritant and odorous agent—have also been sought for. Aristol, containing 46 per cent. of iodine, formed by the action of thymol in caustic-soda solution upon an aqueous solution of iodine with caustic soda, and also, more recently, iso butyl ortho creosol iodide, commonly known as europhen, have been introduced. Both of these bodies serve the purpose held in view, and so facilitate our employment of this important element. Iodopyrin is decomposed on entering the stomach, and therefore exerts the disinfectant action of iodine and the complex effect of phenazone. In a similar manner to this the Professor touched upon other drugs, such as caffeine and diuretin, and in speaking of gelsemium he emphasised the existence in that drug of two alkaloids—the first, gelsemine, having a te-

*Scotch for "a river-flood."

tanising or strychnine-like effect; whilst the second, gelseminine, actually paralyses by exerting a curative-like action upon the motor-nerve terminations. Yet this drug has been used in medicine as a sports*man would use a swivel-gun, and he* thought it would be wisdom to withhold the introduction of such a body into an official list until such information as is requisite for its scientific adaptation and employment in treatment is actually in our hands. Referring to the use of

INTERNAL DISINFECTANTS,

Professor Cash said that this is a department of medicine in which the progress has been disappointing. It does not follow that a substance which is a disinfectant outside the body will have that power inside it. Some years ago he was working for the Local Government Board on the subject, and he tested a number of disinfectants by administering them for a long period to animals which were ultimately inoculated with pathogenic microorganisms. In this way, amongst other bodies, sulphocarbolate of sodium, phenylpropionic acid and its potassium and sodium salts were examined, but with regard to both anthrax and tuberculosis the results were practically negative, no increased resistance of the invasion of these disorders having been observable. Perchloride of mercury gave more encouraging results, however, and he ultimately succeeded in demonstrating that this body produced an immunising action when administered daily to rabbits in minute doses before the inoculation of anthrax took place. Positive results have been recently obtained by the method of Kitasato, as applied by Behring, who successfully administered the disinfectant—in this case the terchloride of iodine—after infection had been communicated by inoculation of the tetanus bacillus. Little as there is to show as yet, Professor Cash believes that with the introduction of disinfectants which, while having a high toxicity towards microbes are relatively innocuous towards the tissues of the higher animals, we may still obtain a brilliant reward. Such treatment will be prophylactic as well as curative.

TOXALBUMINS

were then spoken of, beginning with the ricin of castor-oil seeds and abrin of *Abrus precatorius*. Ehrlich's work on these toxalbumins was described, and this gradually led up to some considerations in regard to the use of animal extracts, especially thyroid extract, in the treatment of myxœdema. He also spoke generally of the production of immunity to disease by the injection of serum which has been proved to possess protective influence. Thus fowls, which are very resistant by nature to the tetanus bacillus, become more so when inoculated with the bacillus, *and the serum of their blood thus* confers immunity upon rabbits, which are highly sensitive against this pathogenic microbe. Just, however, as there is no immunity produced by one toxalbumin (such as ricin) towards another, so we have no evidence that the animal protected against tetanus acquires any increased resistance against tuberculosis or anthrax. Having described Brieger and Kisato's research on diphtheria, and Haffkine's on *cholera, which have resulted in the* preparation of appropriate vaccines, Professor Cash concluded with some comments on pharmacological research and by wishing the Branch a successful session.—*Chemist and Druggist.*

WM. B. MCVEY, PHARMACEUTICAL CHEMIST, PROFESSOR OF CHEMISTRY AT COLLEGE OF PHYSICIANS AND SURGEONS, LATE OF CHEMICAL DEPARTMENT OF BOSTON DENTAL COLLEGE.

The subject of the above engraving was born in Kings Co., N. B., Canada, July, 1866, where his early boyhood days were spent. When 10 years old, his parents moved to St. John, N. B, where he received a good education. At the age of 16 he entered the drug store of Harrington Bros., and after serving the necessary 4 years' apprenticeship, passed the examinations of the Pharmaceutical Society, securing first class diploma, and then entered the employ of R. W. McCarty as prescription clerk, but shortly afterwards was granted leave of absence in order to take the required course of studies at the Ontario College of Pharmacy, Toronto. After successfully completing his studies, he returned to his former position. On his return was appointed Council examiner to the Pharmaceutical Society, and for three years was elected a member of the N. B. Pharm. Council. His term as examiner having expired, was on recommendation of the Council, appointed Government Examiner in Chemistry. Having abandoned his drug interests, he removed to Boston and entered the employ of the *Maverick Drug Co. as manager* of one of their branch stores. The study of chemistry being his favorite one, he decided to take up professional studies, and entered Harvard University. Last year was appointed assistant Professor of Chemistry at the Boston Dental College, and, on the resignation of Prof. Sharpler before the term expired, was selected as his successor, on the opening of the College of Physicians and Surgeons, which has been reorganized, and now occupy their extensive new buildings. Mr. McVey was elected Professor of Chemistry at that institution and has accepted the new honor, and resigned his former position at the Boston Dental College, at which he was very popular. He is prominently identified with many leading pharmaceutical and scientific societies, and is a member of the Canadian Club of Harvard University. He is an active worker in the field of toxic chemistry, and during the vacation season has made arrangements to enable him to pursue this advance work in Germany, in the laboratory of the celebrated chemist, Dr. C. Fresenius.

## The Preparation of Thiosapoles.

Thiosapoles are a class of soaps containing sulphur in chemical combination, and are intended for toilet, cosmetic and dermatological purposes. To prepare these soaps, fats or resin acids or natural fats or oils of the unsaturated hydrocarbons are heated to 120° to 160° C. with sulphur until combination has been effected. The resulting thio-acids or thio fats are mixed with fat or resin acids that have not been thus treated, and then saponified with bases at a low temperature.

The thio-acids are mixed with an equivalent of dilute alkali solution (1 molecule alkali being employed for 1 molecule acid); the temperature being kept at about 25° C. by suitable refrigeration. The soap is then separated from the liquor. Or, the thio-acids may be dissolved in 2 parts of 90% alcohol and a strong solution of alkali gradually added to neutralization, and the saponified product then evaporated to dryness at about 50° C.

Thio-oleate of sodium is prepared by heating for 4 hours at 120° to 160° C. 1 kg. oleic acid with 120 gms. sulphur. The sulphur will be dissolved and should not separate in cooling. 600 gms. solution of sodium hydroxide (25% NaOH) is now added and the resulting soap separated from the mother liquor, or the thio-acid dissolved in 2 kg. of 90% alcohol and 430 gms. of a 35% solution of sodium hydroxide added and the whole evaporated to dryness in a water bath.—*Pharm. Zeitung.*

ALLIGATORINE.—This product is suggested as a basis for ointments. The fat of alligators is saponified by alcoholic potash, the soap decomposed by hydrochloric acid and the fatty acids—alligatoric acid, as the introducer terms it—mixed with cotton-seed oil. This is what *is termed alligatorine. It is urged that* the metallic salts of this peculiar acid are readily absorbed by the skin.—*Repertiore de Pharmacie*

Don't take your work as a dose.

## TRADE NOTES.

N. D. Norris has opened a new drug store at Elora, Ont.

J. P. Wright has opened a new drug store at Balter, Man.

A. T. Gamsby, druggist, Toronto, Ont., has assigned to H. Vigeon.

F. W. James, druggist, of Leamington, Ont., has made an assignment.

O. V. D. Jones, druggist, of St. John, N. B., has sold out to C. Brown & Co.

Robt. W. Webb, druggist, of 2263 St. Catharine st., Montreal, died Nov. 18th.

The drug stock of J. E. Defoy, Montreal, has been sold at 50c. on the dollar.

W. Scott has purchased the drug business of the late T. Edmonson at Bradford, Ont.

Latham & McCulloch, patent medicine dealers, of Halifax, N. S., have made an assignment.

W. H. Clark has removed to his new drug store, corner Water and Main sts., St. Stephen, N. B.

W. F. Teetzel & Co., druggists of Nelson, B. C., have dissolved partnership. J. A. Gibson continues the business.

Allan Turner & Co., druggists, Brockville, Ont., have compromised with their creditors at 25 cents on the dollar.

H. S. Northrop, of the firm of Northrop & Lyman Co., dealers in patent medicines, Toronto, Ont., died Nov. 21st, aged 73 years.

J. H. Nault, druggist, of 2449 Notre Dame st., has been asked to be an aldermanic candidate in Hochleaga Ward, Montreal.

Dawson, Bole & Co., of Winnipeg, are in possession of the store of Peter Ross, druggist, of Edmonton, N. W. T., under a chattel mortgage.

G. H. Graydon, formerly with Bole, Wynne & Co., Winnipeg, Man., has purchased the drug stock of R. Ross at Edmonton, N. W. T.

The sale of F. W. Meek's drug stock at Strathroy, Ont., which was announced last month, was not consummated owing to some technicalities.

Jas. D. Webb has assumed the drug business of the late R. W. Webb, Montreal, and will carry it on under the firm name of R. W. Webb & Co.

At a meeting of creditors of the estate of Melville Roseburg, druggist, Toronto, Ont., held in Mr. Clarkson's office, arrangements were made to wind up the estate.

The name of the late firm of Little & Cleveland, Lethbridge, Alberta, has been changed, and hereafter the business will be carried on under the name of W. G. Cleveland & Co.

By the disastrous fire in Regina, N.W. T., last month, John Dawson's loss on building and drug stock was about $4,000. The building was partly insured, but no insurance on stock. W. Pettingell's drug store, valued at $1,800, was partly insured, and the stock, which was damaged by removal, was fully insured.

## Commercial Travellers' Association.

ELECTION OF OFFICERS.

The annual meeting of the Dominion Commercial Travellers' Association, was held in Montreal Dec. 9th. Mr. David Watson of Kerry, Watson & Co. wholesale druggists, Montreal, was elected president by a majority of 555 over his opponent, Mr. Lawrence A. Wilson, the vote standing:—Watson, 1,085; Wilson, 530. The new officers of the association are as follows:—President, Mr. D. Watson; Vice-President, Mr. Wm. McNally, Treasurer, Mr. Chas. Gurd, Directors, Messrs. T. L. Paton, John Hughes, Geo. H. Bishop, J. L. Gardner, E. D. Marceau, James Armstrong, Max Murdock, F. X. D. Grandpre, M. E. Davis.

## Combine in Paris Green.

It is stated that a combination in Paris green has been formed. It comprises English and Canadian manufacturers. As a result both the quality and the price will be uniform. Last year some of the stuff put on the market was very far from being pure. Now, the association has so fixed the business that any green offered other than the pure article, will have to be adulterated to the extent that both prices and quality must be at least twenty to twenty-five per cent. below the price and quality of pure Paris green.

## Prince Edward Island Notes.

Dr. Dodd of Charlottetown, accompanied by Mrs. Dodd, have gone to Southern California to spend the winter.

Charlottetown is to have its eighth Drug store. The shop lately occupied by Mr. C. B. Warren as a boot and shoe store is to be fitted up immediately. This is the old Skinner stand where Mr. P. G. Fraser conducted a drug business for many years. It is not yet known by the public whether the new departure is to be a branch of Mr. A. S. Johnson's or a venture of the owners of the building with Mr. Richard Johnson as manager.

## British Columbia Notes.

"Botanical Druggist" Thomas Hardy, Nanaimo, is a nice sociable old fellow. There's many a crisp piece of news told o' evening at his convenient stand. Perhaps he wasn't as spry as usual; the lounger's yarn was still bothering him when a country looking fellow with an ugly black beard, shambled into the store and asked for belladonna leaves and afterwards for sugar of lead. Mr. Hardy hesitated just a little and wondered if sugar of lead could be called "botanical." Probably the lead tree occurred to him at that moment, anyway he sold the articles and not being a registered man he was fined $5 by Magistrate Planta on Nov. 18th. The B. C. Pharmaceutical Association prosecuted, and the "country fellow" was Mr. Mee, their detective.

About ten days prior to this the tranquil waters of the drug trade of Vancouver were violently disturbed by five of their number being served with a blue paper. Mr. H. McDowell, the President of the B. C. Pharmaceutual Association, felt like kicking himself as he remembered the resolution carried at the last meeting of the Council. Here was he being tortured with an instrument of his own making. An apprentice of his in a branch store had sold strychnine to the same country looking fellow and had actually failed to register the sale. The apprentice ran things generally at this branch store and yet Mr. McDowell did not look upon this as a gross infringement of the Pharmacy Act. Costs and a ten dollar fine for selling a chedule A poison without registering was the decision of magistrates Schofield, Mellon and McLean. Dr. McAlpine did not feel that he was called upon to register as a druggist though it transpired he kept open shop and did other business besides dispensing his own prescriptions. Fine of $25 and costs. Dr. Rolls also failed to record the sale of a schedule A poison and was fined $10. I. A. McAlpine had to answer to three charges; 1st, selling a poison, arsenic, and not labelling it poison or registering the sale. 2nd, employing an unregistered apprentice; 3rd, failing to register as a druggist. He was fined $35 and costs.

One case only was heard in Victoria; that of the Central Drug Store. Here a prescription was dispensed containing schedule A poison by an apprentice. The apprentice at the time was quite alone and had full charge of the store. The proprietor Dr. F. W. Hall was prosecuted, but owing to some technical error in laying the information the charge was dismissed. As a result apprentice L. W. Hall has decided to qualify as a licentiate and is now taking a course at an American College.

In this connection the writer would like to ask the readers of the CANADIAN DRUGGIST what is the rule followed by them in reference to apprentices. "Are apprentices left in charge and allowed to dispense in the absence of a graduate or licentiate?" This is a question I would like to see answered and would also like to have the opinion of the Editor thereon. If the apprentice with a year or two year's experience may take the place of a registered druggist in the store the licentiate examination is merely honorary.

If the Pharmacy Law of British Columbia is needing repairs let it have them right away. The Provincial Legislature meets this month.

## Quebec Notes.

Quite a ripple of excitement is going the round in Quebec City. The druggists are highly incensed at the way the wholesale houses are treating the trade in that city. The traveller of an American firm is being "waited for," and will receive a hot reception. It appears that a Quebec photographer, who has made some money, decided to make use of it in the drug business, and, being satisfied with a five-per-cent. turnover, sells his goods just above cost. For instance, he gives Hood's Sarsaparilla for 75c. per bottle, Wampole's Cod Liver Oil for 67c. He will not put up a prescription, but is so obliging to the public that he tells the prescription owner what the cost of the ingredients is, and so sets the people against the druggists. The wholesale trade, of course, deny supplying this cutter, but there is no use in trying to cloak their actions. This is the way they now get around this kind of business:—A wholesale firm can have its headquarters in Montreal and a branch at Toronto. Mr. Eaton may come to Montreal and purchases his goods there in very large quantities and retail them at cut rates in Toronto; and Mr. Livernois places his orders with the Toronto branch and undersells the patrons of the Montreal house. At the end of the year the members of the Montreal and Toronto house meet and pocket the dividends. A Detroit house lately signed a contract with Livernois, the Quebec photographer, who now sells some of their preparations at less than list prices. The Quebec druggists very naturally object to this kind of business and will not purchase goods of the Detroit house, much to its chagrin. A Montreal house, luckily, did not supply the Quebec photographer, and reaped quite a harvest in Quebec City this fall, as most of the druggists placed large orders with this firm.

This Quebec cutting question has aroused most of the druggists in this province, and it is very likely that the firms who will cater to the consumers, country doctors, merchants, and cutters will, in the long run, loose a good paying part of their trade.

Castoreum is getting more and more scarce in Montreal and Quebec. One of the reasons is that the beaver is becoming a rare animal. But the greatest cause of this dearth in the trade is the Hudson Bay Co., who buy up all they can and ship it to England, refusing to sell an ounce of it in Canada.

The Montreal College of Pharmacy is in full swing and is doing good work. The Quebec Association lately granted a license to an Austrian druggist, who had first to produce certificates showing he had studied chemistry, pharmacy, botany, etc., etc., during two college terms, equalling our curriculum; had passed his examinations at same, and was in possession of his diploma. Another gentleman, who matriculated in English, French, Latin, geography, history, arithmetic, etc., at the Edinburgh University, was, on the strength of his university certificate, placed on the register as an apprentice, and will have to pass his minor and major examinations after following two courses of lectures at our College of Pharmacy. So much for the high standing of the diplomas of the Pharmaceutical Association of the Province of Quebec.

Spruce gum is beginning to show itself on our local markets and realizes good prices. Very little of the best quality is met with though.

It appears very little Canada balsam was gathered last season. Some say it is owing to the small figure offered by wholesale men when the balsam gatherers made inquiries as to the probable figure of the drug, and they were discouraged at the poor prospect. Very few druggists sell poison to unknown persons, but cyanide of potassium, etc., can be obtained without legal restraint from photographers and wholesalers.

## Notes from England.

*(From our own Correspondent.)*

It is quite evident that the latest development of scientific pharmacy is toward a more thorough knowledge of the histological characters of drugs. It has long been a reproach against us in England that whilst we investigated the chemical constituents of new drugs with almost feverish haste, we completely neglected a detailed microscopical examination which alone could ensure the recognition of the drug with certainty. The new professor of the Pharmaceutical Society has entered the subject with enthusiasm, and although no particularly brilliant results are yet recorded, a foundation for more systematic work has been laid. Personally, I am not one of those who believe that it is possible to recognize adulterations of powdered drugs, for instance, by microscopical examination. Of course, certain gross adulterations can always be easily detected, such as the addition of starches or other well marked bodies. It is quite certain that our knowledge of the microscopical appearance and histological characters of drugs must be vastly increased before we can identify adulterations by this method, even when the drug is whole and not powdered. Professor Greenish was able to state that certain leaves were clearly not what they were represented to be, and his diagnosis was amply confirmed by the microscopical examination, but he was not definitely able to state what they really were. At the School of Pharmacy the use of the microscope is being taught, with special reference to the identification of drugs, and the wide field which lies open will probably soon have many English workers therein. Journals of pharmacy can do much to assist this desirable work by reproducing as often as possible illustrations of the microscopical appearance of drugs, concerning which papers may be written. It is a serious drawback to students at the present time that most of the works on materia medica are absolutely devoid of these illustrations, and that such a leading volume as Hanbury and Fluckiger's "Pharmacographia" was published without illustrations has long been recognized as a palpable error.

Pharmacists would do well to cultivate a thorough knowledge of microscopy. Chemistry, botany and microscopy are taught in medical schools in such an elementary fashion that few medical men are really expert at all in these subjects. It is here that the pharmacist's superior training should ensure that analyses and examinations requiring care and skill should be left in his hands by the physician. Urine analysis is exactly one of those subjects. Most doctors keep and apply tests for sugar, albumin, etc., none of which are infallible and which often require supplementing before a safe opinion can be expressed. Many druggists are in in the habit of performing these examinations for doctors without fee. They meet with this reward, however, in the increased confidence and esteem of the medical practitioner and his valuable recommendation to his client.

The marvellous spread of photography as a scientific hobby of multitudes of amateurs has rendered it a lucrative adjunct to the chemists' business. There are few "profitable extras" that pay so well and are so easily handled as photographic goods. A good stock can be stored in a small space, whilst if only a corner of the window be spared and a large and striking photograph displayed, a fair amount of business usually follows. Many of the leading camera makers will supply a photo for exhibiting purposes. The Eastman Company, with their celebrated "Kodak," have made immense strides in this country, whilst the Thornton-Pickard Co., with their instantaneous shutters, are becoming known all over the world. The particular plates of certain firms, such as the Ilford, Blackfriars, etc., have their constant adherents, and it is surprising how amateurs stick to the same kind and decline to try new ones. The business in photographic chemicals falls very properly into chemists' hands, since many of them are poisons. From experience of the success of photographic goods as an adjunct to pharmacy in this country, I feel sure there is a big future in store and those who start first will reap the benefits.

The long-expected action, started by the manufacturers of Lanoline against Messrs. Richardson & Co., of Leicester, Eng., has just commenced. Over a year ago I acquainted your readers with the fact that the German manufacturers, through Messrs. Burroughes, Wellcome & Co., their English agents, has set the law in motion to restrain the Leicester firm from imitating (as they averred) their patented article. Unfortunately the result of the trial will not be known before the mail leaves, but it bids fair to become a pharmaceutical *cause celebre.*

The manufacturers have secured the evidence of Professor Dunstan, F.R.S., Professor Dewar, F.R.S., and Dr. Lauder Brunton, F.R.S., whilst Messrs. Richardson are supported by Professor Attfield F.R.S., Mr. Otto Hehner and several medical men. The action, primarily, is to restrain the defendants from selling any prepared wool-fat, not of the plaintiff's manufacture. Messrs. Richardson reply that no patent can be valid for wool-fat *per se*, as it was known in Pliny's and Dioscorides' time. They only admit the plaintiff's claim as to a particular method of purifying wool-fat and not to all purified wool-fat. It is obvious that it is a serious matter for the trade, if the German manufacturers are allowed to monopolize all methods of purifying wool-fat and the result is awaited with considerable interest. Chemists can appreciate the point when they reflect what an important matter it would have been if the Cheesebrough Co., had sought to limit all forms of purified petroleum jelly to their vaseline. The comparison is all the more appropriate as in each instance the introducers of the refined preparation still stand superior to the numerous articles of similar composition which have appeared since.

## The Successful Druggist.

There has been a great deal said lately, as to the best methods of becoming a successful druggist: and the means to which druggists resort to make their business a success, are both numerous and varied. But there is one thing which is apt to be overlooked by the majority of the druggists of to day,—and that is *tact* in dealing with customers. One of the most successful druggists I ever knew, owed his success almost entirely to the wonderful amount of tact he displayed in handling his trade. He studied his customers as a teacher might study his pupils; his customer was his friend, and a friend that he could ill afford to lose; and he regarded him as such individually and collectively. His clerks were instructed to exercise carefulness and nice discernment in all branches of the profession, but first and foremost was to be considered the treatment of customers.

After all, a customer is an independent sort of person; and a druggist has more to contend with from his particular class of customers, than any other man in business. A man who brings a prescription to a drug store, is either ill himself, or some of his friends are ill, which circumstance renders him irritable and often unreasonable; and in dealing with such a person, the druggist's patience is often put to a severe test. He will fret and fume, and hurry the druggist, which will tend to make the latter speak his mind too freely; and words are apt to ensue which might result in the loss of that customer.

Not so with the careful druggist, however, who has made it his business to cultivate tact; he will at once see that any controversy with a customer may be a question of dollars and cents to him; and he will control himself and trust to his tact, to get him out of any difficulty which may arise.

Many druggists take an independent stand, and assert that they "don't want such a man's trade." Now this is a great mistake; a mistake which the careful druggist never makes. The man who has made a fortune with the mortar and pestle and is about to retire, might be excused for "airing" his independence in such a manner: but hardly the poor pharmacist who is struggling for success in his business.

A man in business, particularly a druggist, cannot afford to lose a single customer, for, by so doing, he is foolishly turning his trade over to a rival druggist; and then again, one customer may be the cause of influencing many others to trade where he trades, and in the end, the independent druggist who "didn't want that man's trade" may become doubly the loser.

I would say to my fellow-druggists, that it does not pay to be "stiff" in business. Humility, like honesty, is the best policy: make your customer your friend; overlook his weaknesses and humor him by all means, and in return he will stand by you and speak a good word for you every time an opportunity presents itself. Do not follow the example of a certain druggist, who, when a customer told him he could get a porus plaster cheaper at another store, said, "my friend that is the place for you to trade."

The same druggist has been in the business fifteen-odd years, and is just as poor to day as he was when he started: he understands his profession in all its details, is a Ph. G., but lacks that most important of all adjuncts, *tact*; consequently he is not, and never will be, a successful druggist.

The druggist who assumes a surly exterior and tries to make himself believe that it adds to the dignity of his appearance, is laboring under a great mistake. It may do for judges, or lawyers, but not for druggists. Let him understand that a smile goes a great deal farther than a frown, and leaves a better impression: and the way to maintain dignity in his profession, is to win the confidence and respect of his customers.

In these days of competition it is hard to control trade; druggists will say, "People buy only what they need, and buy it where they can get it cheapest." That is very true; but by exercising a little tact, we can make them buy what they need, of us, and go a long distance to trade with us.

Let the would-be successful druggist bear in mind that he must be humble in his profession, as in the other walks of life, and court patronage, rather than demand it; and that the most valuable secret of success in business is the cultivation of tact.—*Correspondent of Merck's Market Report.*

## The Pharmacy of Bromoform.

By William Lyon, at the Edinburgh Chemists' Assistants' Association.

Bromoform, although not at present much prescribed, is considered by many physcians to be a valuable remedy in the treatment of whooping cough, and accordingly we may expect to come across it in precriptions more frequently in the future than we have done in the past. The expenditure, therefore, of some time in considering its pharmacy will not, I think, be but useful to us. A search through the *medical and pharmaceutical literature* appertaining to it does not, unfortunately, give much light, so far as the pharmacy of it is concerned. The common method of administration is objected to by some physicians, and the reason is that sometimes those in charge of patients are not sufficiently careful in giving the exact number of drops, and I can readily believe there is some truth in what they say. The other methods mentioned are:

1st. A solution in alcohol or in alcohol and water.

2nd. Suspended in syrup or in water, and sent out with a "shake the bottle" label.

This last method is not what one would call correct dispensing, and is open to serious objection. In the transactions of the American Pharmaceutical Association, Mr. P. W. Bedford suggests the following:

Take of

| | |
|---|---|
| Bromoform ..... .... .. | 16 minims. |
| Alcohol ..... ..... | 2 drms. |
| Glycerine .. ..... ..... | 12 drms. |
| Compound tinc. cardamoms | 2 drms. |

Mix in order mentioned. This makes a very good mixture, and, moreover, a palatable one. So far as I have been able to ascertain, this completes the pharmacy of it up to the present time, and you will readily perceive that the physician has not many methods to choose from when prescribing it. Some time ago I was requested to prepare the following prescription:

Take of

| | |
|---|---|
| Bromoform ..... | 20 minims. |
| Rectified spirit.. ..... | 2 drms. |
| Water.... .. ..... | to 1 oz. |

Mix. Take a teaspoonful in water every six hours.

The bromoform dissolved quite readily in spirit, but on adding the requisite quantity of water it quickly separated, and would not dissolve again on shaking. On communicating the result to the prescriber he gave instructions to use sufficient rectified spirit to get a solution. It was found necessary to use the spirit and water in the proportion of five to three before a satisfactory solution could be got. This overcame the difficulty so far as the dispensing of it was concerned, but, unfortunately, the susceptibilities of patient (a child of three years) to the intoxicating effects of alcohol were greater than the prescriber had calculated upon, as it became partially intoxicated after taking the second dose. A continuation of the

medicine in that form was, therefore, out of the question, and a method of giving it in solution without the presence of such a large percentage of alcohol had to be found. It is not very soluble in water (1 part of bromoform requiring about 550 parts of distilled water), and an aqueous solution may be passed over, as the quantity required to be taken each time would be inconveniently large. It is readily soluble in oil of almonds, olive oil, and cod-liver oil, and these might in some cases be suitable vehicles for its administration. Gelatine capsules would also be a good method, but for most children these are not available on account of their being either not able or not willing to swallow such. In emulsifying it four different agents have been tried—viz., mucilage of acacia, mucilage of tragacanth, mucilage of Irish moss, and tincture of soap bark.

I.—MUCILAGE OF ACACIA,

Take of

| | |
|---|---|
| Bromoform | 20 minims. |
| Mucilage | 2 drms. |
| Water to | 1 oz. |

Prepared in the usual way this gives a fairly satisfactory result. On keeping, a sediment forms, but it is readily distributed through the water when the bottle is shaken.

II.—MUCILAGE OF TRAGACANTH.

This is a failure. The bromoform very soon separates.

III.—MUCILAGE OF IRISH MOSS.

When used in the same proportion as the mucilage of acacia, the result is very similar, and after a time a sediment also forms, but it is more easily distributed through the water when the bottle is shaken.

IV.—TINCTURE OF SOAP BARK.

Take of

| | |
|---|---|
| Bromoform | 20 minims. |
| Tincture | 2 drms. |
| Water to | 1 oz. |

This appears all right at first, but the bromoform very soon separates. Reviewing these results, the conclusion arrived at, is that where alcohol is admissible the glycerine and alcohol mixture suggested by Bedford is undoubtedly the best, but where not, then either a solution in oil, or an emulsion with mucilage of acacia, or Irish moss, might with propriety be utilised instead.—*British and Colonial Druggist.*

## The Vegetable Mercury of Brazil.

In the April number of the *Annales de Dermatologie* there is an article by Dr. Cathelineu and Dr. Rebourgeon on this drug, founded on experiments in Prof. Fournier's laboratory. It seems that in the equatorial regions of Brazil there grows a tree called by the natives *murure*. It has not yet received its scientific name or been classified. By incisions into the bark of this tree a juice called vegetable mercury is obtained. In a work entitled *Formulario e guio medico*, published in Paris in 1884, Chernovitz stated that murure juice was used in doses of a drachm, in half an ounce of water, the dose being repeated on every alternate day, according to the effects produced. It is an energetic purgative, and the natives use it especially in rheumatic affections, and above all in syphilis, whence its name. The bark is of a brick-red color. From its outer surface scales of a much deeper red are somewhat readily detached. Its inner surface is fibrous, grayish, and rather hard. The juice is a reddish liquid of rather a vinous odor and a sweetish taste. It is syrupy and of acid reaction. After being neutralized, it was administered to a rabbit, by intravenous injection, to the extent of four cubic centimetres to the kilogramme of the animal's weight, and caused death in thirty minutes. At the necropsy the stomach and intestine presented a vinous-red color. In the left ventricle of the heart there were reddish spots here and there. The kidneys were affected in like manner. In a dog an intravenous injection of four cubic centimetres to the kilogramme gave rise to the same phenomena, and produced death in forty-five minutes. Given by the mouth to the amount of eight cubic centimetres to the kilogramme, it caused death in twenty-four hours, and the lesions found were the same as have been mentioned.

Murure juice is only partially soluble in distilled water, but the residue is soluble in alkalinized water. The authors experimented separately with the portion that is soluble in water and with that which dissolves only in alkalinized water. When the former was used, at the necropsy the heart and kidneys were found particularly affected, while the stomach and intestine presented merely a light coloration. When the latter was employed, death took place much more tardily, but the animals had intense diarrhœa, which was not observed in the others; moreover, at the post-mortem examination it was particularly the stomach and intestine that showed an intense red coloration, while there were no visible lesions of the heart and kidneys. The authors do not seem to have employed their drug remedially.—*Phar. Era.*

## Indigo Cultivation in the Straits Settlements.

In a report upon the Straits Settlements, the Belgian Consul-General at Singapore, dealing with the question of the cultivation of indigo, says:—At Singapore, production is much below the demand, and if a method for the more intelligent and more careful extraction of the indigo than the Chinese method were adopted, the profits on the supplies to the European markets, which take nine-tenths of their indigo from India, would be very considerable. The climate of the Malay Peninsular is, in fact, more favorable to the cultivation of the indigo, which is reproduced without any difficulty by simple cutting. In India seeds only are made use of for the reproduction of the plant, which is much more costly, since at each crop it is necessary to re-gather the seed, work the ground, roll and sow it. At Singapore the cutting is planted without any special care; it requires neither attention nor manure for six years, and the harvest takes place every four months, whilst in India it only takes place after five or nine months. As there exists no dry season under the equator, the plant is perpetual, and is not exposed, as in India, to the total destruction of the crops by the prolonged droughts. In order to extract the indigo, the Chinese are content to plunge twenty bundles of a foot in diameter for twenty-four hours into a wooden tub filled with water. These bundles are stirred with the aid of a kind of rake in a continuous manner, and then withdrawn from the tub. The indigo is then precipitated by pouring into it a certain quantity of lime-water (obtained by the calcining of sea shells). The whole is left for the night, the excess water is withdrawn, and the deposit which constitutes the indigo is ready to be sent to market. In spite of the defective process just described the yield per acre and per annum is valued at 136 dollars. In India the precipitation of the indigo is obtained by oxidisation; the product is very pure, whilst the indigo obtained by the Chinese process contains numerous impurities coming from the lime-water at first, and then from the usually foul and dirty water used by the Chinese.—*Board of Trade Journal.*

## New Remedies in Skin Diseases.

*Thilanin* is a combination of sulphur with lanolin, and mixes with water and oily fluids. It is available in many forms of eczema, in sycosis when inflammation is severe, and in herpes. *Thiosinamin* has been lately brought forward as a constitutional remedy, especially in lupus and other local forms of tuberculosis. It has a softening influence upon scars, thus removing the effects of contraction and pressure. *Thiol* is a sulphur compound, introduced as a pleasant substitute for ichthyol. It is admirable for raw surfaces, in herpes zoster, and dermatitis herpetiformis. *Thioresorcin* and *thiophen* are compounds containing sulphur. *Tumenol* is obtained from the fusion of bitumen and oleum. It has been employed with success in acute eczema with weeping, in burns of the first and second degree, and in superficial and deep ulcerations.

## Leaves from a Sanscrit Pharmacopœia.*

By Thomas Stephenson, F. C. S., Pharmaceutical Chemist, Bombay.

The methods of medical treatment adopted by the "medicine men" of uncivilized nations have always a peculiar interest to those of the medical and pharmaceutical professions. It is true that little, if any, material benefit can accrue to the members of these professions by such study, and no pharmacist can hope to make his fortune any more quickly because he is well acquainted with the methods of the aborigines of his own or any other country. But, as an intellectual pleasure, the inquiry into such matters will fully repay itself to any one who has sufficient knowledge to appreciate it, and such knowledge is possessed in the best degree by physicians and pharmacists only. I feel that these few apologetic remarks are necessary in these practical times, as I do not wish to be assailed with the perpetual *cui bono* (?) complaint, which is always levelled at those who do not make money the direct or indirect object of their leisure time researches.

Some time ago it was my good fortune to make the acquaintance of a high-caste Hindu gentleman in this city, whose family had for generations back practised as "hakims," or native doctors, and in whose possession were a number of very ancient Sanscrit manuscript works on medical subjects. One of these he was engaged in translating into Guzerati, and, in return for certain favors received, he showed me his translation, some of the more interesting parts of which I was able, with his assistance and that of a dictionary, to further translate into English. The greatest difficulty that stood in the way was that his knowledge was not sufficient to bring the names of diseases or drugs any nearer than Guzerati. However, he was able to give me a full description of the symptoms of the diseases and furnish me with specimens of most of the drugs, with the result that in nearly every case I was able to find the English synonym.

The manuscript in question appears to be arranged in a very unsystematic manner. It is divided into a number of chapters. Starting with an article on "Fever Medicines," it goes on to treat of "Purgatives," "Female Diseases," "Pills," "Powders," "Ointments," "Aphrodisiacs," "Cough Medicines," "Oils," etc., each chapter containing a more or less lengthy list of recipes, some very sensible, others amusing in their absurdity. It would be impossible, even if desirable, to go through the whole list, so I have singled out a few of the more important groups, and from these will select the more interesting formulæ.

### I.—OILS.

The oils used in native practice are very many, the natives of India appearing to place great faith in such forms of medication. They are generally applied externally, but are often taken in doses of 1 or 2 drops on betel leaf (*Piper betel*) for various complaints. Although the processes for the preparation of these oils are, as a rule, varied and complicated, they end in most cases with distillation, and consequently a description of this process as carried out by the natives might with advantage be given here before proceeding to describe the oils themselves.

The process of distillation is a very primitive one indeed. A quantity of the bruised drug is mixed with a certain proportion of milk; this is left to macerate for four or five days, after which it is put into a vessel made of metal or glass. This vessel, which consists of two flask-shaped portions, the necks of which fit into one another, is now closed, and the lower or empty part buried in the ground, whilst the upper part, which contains the drug, remains exposed above the earth. A fire is now kindled round the upper part of the vessel, and the oil eventually collects in the lower part. This process, I am told, is still employed by hakims for distilling nearly all their oils, those of sandal-wood, nux vomica, jequirity, etc., being typical examples of the process.

#### *Oil of Sandal-wood (Chandan.)*

Half a maund (14 pounds) of sandal-wood is powdered and mixed with half a pound of milk; this is left to macerate for four days, after which it is distilled in the manner described below.

The oil is employed by natives for asthma, insanity, gonorrhœa and five different forms of fever.

#### *Oil of Nux Vomica—No. 1.*

Take of

Nux vomica..... ..... 4 parts.
Bachnag (aconite) ..... 4 parts.

Break into small pieces and add 1 pound of milk daily for three days. Dry in the shade for three or four days and distil.

This is used as an aphrodisiac, being applied locally on a betel leaf.

#### *Oil of Nux Vomica—No. 2.*

Take of

Nux vomica ..... ....10 pounds.

Break up into small pieces and add 2 pounds milk daily for seven days. Dry in the shade for seven days and distil as usual.

The dose of this is one to two drops, given with caution, and its uses are as follows:

Internally, one drop on betel leaf is given as an aphrodisiac, also for indigestion, diarrhœa, dysentery, hæmorrhoids, puerperal fever, hemicrania and epilepsy.

Externally it is applied for leucoderma, leprosy and leprous sores, ringworm (the round variety), piles, partial paralysis, and weakness of the sexual organs.

#### *Oil of Buffalo's Horn.*

Take of

Buffalo's Horn ..... ..... 2 pounds.

Chop up and subject to dry distillation in the same manner as in the preparation of other oils.

Dose, one drop on betel leaf, given internally as a general tonic. It is also said to be a useful medicine in diabetes, as it has the power of lessening the amount of sugar in the urine.

#### *Oil of Red Sandal-wood.*

Take of

Red Sandal-wood..... ½ maund.

Break into small pieces and add 1½ pound cow's milk daily for four days, shaking it every morning. Dry in the shade for four days, and distil.

Given internally in doses of two drops on betel leaf for elephantiasis, orchitis, insanity and gonorrhœa.

#### *Oil of Chanoti (Guz.) : Gunja (Sans) : Jequirity (Eng).*

Take of

Red Chanoti (Jequirity) .....2 parts.
Laving (Cloves).....1 part.
Jaiphur (Nutmeg).....5 parts.
Javantri (Mace).....1 part.
Nag Kesar (Cassia pods) .....1 part.
Ajwain-Khorassan (Omum seeds)5 parts.
Dhatura Seeds .....5 parts.

Steep the jequirity in milk for four days and dry in the shade, then add the other ingredients and distil as usual.

Dose.—Two drops as a nerve tonic.

#### *Oil of Sulphur.*

Take of

Purified sulphur .....6 parts.
Juice of Calves' dung, a sufficiency.

Rub the sulphur in a mortar with sufficient juice to wet it, daily for three days; then distil. It is used externally for leucoderma, while we have the author's assurance that this marvellous "oil" will, if taken internally in doses of one drop on betel leaf, cure *every* disease known!

#### *Oil of Loban (Olibanum).*

Take of

Loban (Olibanum) ..... 5 parts.
Oil of Malka-gani (Celastrus),10 parts.

Break up the olibanum and macerate with the oil in a well-closed vessel for fifteen days. Applied for articular rheumatism.

#### *Oil of Hen's Eggs.*

Take six or seven eggs and boil soft; remove from the water, take off the shells, and put the yolks and whites together in a copper pot on a fire. As soon as a smell of burning is perceived, open the cover of the pot, add 1 or 2 grains of opium, and shut again. Then remove from the fire and set aside on the ground for four or five minutes, when the oil will separate.

Oil of hen's eggs is used as a strengthening application, also as an aphrodisiac, like oil of nux vomica.

### II.—PILLS.

This form of medicament is, as with us, one of the principal forms used by these hakims. Their pills, however, are very unscientifically made, being small, irregular in size and shape, and very unequally mixed. The hakim's knowledge of pharmacy does not appear to be so advanced

*Reprinted from *Phar. Jour. Trans.*, Aug. 26, p. 161.

as his knowledge of the healing art. The following are a few of the principal pills :

*Aqui-tund-wati Gutika.*—"Warming" Pills.

Take of

| | |
|---|---|
| Quicksilver | 1 part. |
| Sulphur | 1 part. |
| Aconite | 1 part. |
| Parsley seed | 1 part. |
| Myrabolams (three varieties, *Hirda*, *Bira*, and *Amra*,) of each | 1 part. |
| Soda | 1 part. |
| Javkhar (potas. carb.) | 1 part. |
| Chitro (plumbago) root | 1 part. |
| Sindan (white salt) | 1 part. |
| Black salt | 1 part. |
| Sea salt | 1 part. |
| Ginger (dried) | 1 part. |
| Long pepper | 1 part. |
| Nux vomica | ½ part. |
| Cummin seed | 1 part. |

Powder, mix, mass with lemon juice, and divide into pills of about 2 grains each. Such pills are given as a remedy for fever, jaundice, indigestion and loss of appetite.

*Ashwa-chori Gutika.*—"Horse-Power" Pills.

Contain quicksilver, sulphur, aconite, dried ginger, long pepper, myrabolams (three kinds), *Tankalkhar* (borax), *Nipala* (croton), and *Harya* (orpient).

Make into a powder, grinding along with the juice of *Jalbhangra* for thirty-six hours, and divide into pills the size of *chanoti* (jequirity) seeds.

These pills are said to cure the following diseases : Dropsy, epilepsy, eighteen varieties of fever, dysentery, cough, asthma, children's cough, pleurisy, jaundice, cramp, stoppage of urine, ague, rheumatisim, indigestion, worms, piles, leucorrhœa, gonorrhœa, gleet and diabetes. Rubbed up with sweet oil and applied they are recommended for hemicrania, while rubbed up with juice of *chitro* root and taken internally they are looked upon as a specific for consumption.

*Atisar Gutika.*—Diarrhœa and Dysentery Pills.

Composed of

| | |
|---|---|
| Opium | ½ part. |
| Catechu | 1 part. |
| Gapan (sulphate of lime) | 1 part. |
| Hing juice (asafœtida) | ¼ part. |

Made into 2 grain pills. Dose, two pills twice a day. This formula is one of the few grains of wheat among the chaff.

*Ichabedi Gutika.*—Purgative Pills.

These are composed of

| | |
|---|---|
| Mercury (metal) | 1 part. |
| Sulphur | 1 part. |
| Borax | 1 part. |
| Croton | ½ part. |
| Ginger | 1 part. |
| Harda (myrabolams) | 1 part. |

Mix and make into small pills of about 2 grains each.

*Madan-Ka-ameshwar Gutika.*—"Passion-controlling," or Aphrodisiac Pills.

These contain—

| | |
|---|---|
| Camphor | 1 part. |
| Ginger | 1 part. |
| Red oxide of mercury | 1 part. |
| Musk | ½ part. |
| Opium | ½ part. |
| Mace | 1 part. |
| Nutmeg | 1 part. |
| Pellitory (akalkaro) | 1 part. |
| Cloves | 1 part |
| Talc (abrak) | 1 part. |

Made into pills of 3 grains each, one for a dose.

*Vijai Gutika.*—"Success" Pills.

Contain—

| | |
|---|---|
| Chini-Ka-bulla (China cubebs) | 1 part. |
| Akalkaro (pellitory) | 1 part. |
| Kaveha (cowhage) | 1 part. |
| Mal-Ka-gani (celastrus seeds) | 1 part. |
| Laving (cloves) | 1 part. |
| Jaiphur (nutmeg) | 1 part. |
| Kesar (safflower) | ¼ part. |
| Khora-sa-min-ajmo (Niger seed) | 1 part. |
| Hinglo (cinnabar) | ½ part |
| Mastaki (mastic) | 1 part. |
| Chota Gokhru (tribulus terrestris) | 1 part. |

Made into small pills of 2 or 3 grains. Dose, one twice a day with milk, for spermatorrhœa.

III.—POWDERS.

This class of medicines is divided into two sub-classes, viz : *Churan*, which contain only vegetable drugs, and *Ras*, which contain chemicals only, or at least as the principal ingredients. A few examples of the latter must suffice.

*Powder for Cough.*

Contains

| | |
|---|---|
| Sanchlkhar (black salt) | 1 part. |
| Sindankhar (table salt) | 1 part. |
| Dhatura seed | ¼ part. |

Calcine together in an earthen pot. Dose, about 4 grains with butter.

*Gaji-Keseri-Ras.*—"Elephant and Lion" Powder.

This a cure for paralysis and allied complaints, for which it is given in doses of about 2 grains with sugar. It consists of mercury, sulphur, garlic (*Lasan*), lime (*Chunam*), ammonia, alum (*Fatki*), long pepper (*Pipar*), borax (*Tankalkhar*), barilla (*Sagikhar*), common salt (*Lohnkhar*), arsenious acid (*Somul*), five varieties of rock salt in equal quantities, ginger, pepper, (*Silagit*) plumbago root (*Chitrak*), aconite (*Backnag*), cinnabar (*Hinglo*), orpiment (*Harthal*), and realgar (*Mansir*).

IV.—OINTMENTS (*Malam*).

One example of these will suffice, as they present no peculiarity.

*Ointment for Wounds and Boils.*

Contains—

| | |
|---|---|
| Mercury | 4 parts. |
| Bhudaism (litharge) | 4 parts. |
| Murthu-thu (capri sulph.) | 4 parts. |
| Catechu | 5 parts. |
| Resin | 10 parts. |
| Wax | 10 parts. |
| Chikaai-supari (a kind of betel) | 5 parts. |
| Red lead | 4 parts. |
| Sweet oil | 10 parts. |

Mix the oil with the wax and resin, and rub up with the powders, previously mixed with the mercury.

V.—VARIOUS CURES.

*Scorpion Bites.*—Take of—Pure sulphur, tamarind fruit, nutmeg, and opium, equal parts. Make into a paste with water and apply, keeping it warm by holding the part over a fire. This preparation is said to effect an absolute cure in ten minutes.

*Snake Bites.*—Three internal remedies for this are mentioned in the work in question :

*Prean-Mool* (root of ?) rubbed up in rice water may be given every half hour; *or the juice of Gallo* (*Tinospora cordifolia ?*) given at similar intervals; or, again, half-hourly doses of *Indra varani* (colocynth) root rubbed up in whey are said to effect a cure.

*Rat Bites.*—A mixture of *Bhudaism* (litharge), *Dirwenchi* (rhubarb), and *Dharam* (pomegranate rind) is to be rubbed with water and applied on cotton.

*Swelling of the Neck.*—This is a complaint from which many natives suffer, and no fewer than five rather curious remedies are given in this book. They are as follows :

(1) *Sarpankha* root mixed with cow's urine, to be applied by rubbing.

(2) Black Serpent's bones strung together and worn round the neck as a necklace. My Hindu friend informed me in perfect good faith that this was really a marvellous remedy, his father having cured many patients by no other treatment than this. Such a statement sounds amusing to our ears, but after all may not our modern teething necklace and electric belts be only a development of this ancient method of treatment? Necklaces of serpent's bones are very costly; my friend told me that in his father's possession had cost about eighty rupees.

(3) Mango seeds and horse's hoof parings are to be burnt together in a pot, mixed with butter, and applied.

(4) Camel's bones and buffalo's horns in powder are to be mixed with sweet oil (in which the flowers of *Canna indica* have previously been boiled), and applied to the affected part. This, next to the serpent's-bone necklace, is the favorite treatment for the complaint.

(5) *Akra* flowers (*Hibiccus esculentus*) are to be heated in a closed pot and applied with *ghee* (clarified butter) to the affected part.

The book under review contains many more items, both interesting and amusing but space forbids more being detailed at present. Many of the remedies mentioned appear absurd to our eyes, but it must be remembered that these remedies are all prepared and administered by the hakim himself, and in many cases simply act as a mask or blind while the patient is being subjected to rigorous hygenic treatment, otherwise it would be difficult to account for the many wonderful and authentic cures wrought by the native medicine men of this and similar countries.

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Gymnemic Acid is the active principle of Gymnema sylvestris. It is a greenish white powder, slightly soluble in water, very soluble in alcohol; it entirely destroys the sense of taste as regards bitter but without effect on acid, astringent or salty substances.

## Winter Specialties.

ELBERT E. FISHER, PH. G.

Winter medicines are now in order, and the pharmacist who aims to keep abreast of the times and is enterprising is busying himself at the moment in bringing the specialties of his own make to the front.

While no attempt will be made in this article to bring forward *a complete* list of the medicines popular at this season, mention will be made of the cough syrups, cod liver oil compounds (including the wine), and the stimulating preparations of wine and coca, in popular demand.

Cough mixtures naturally demand first attention and the formulas given below will be found to afford really good and tried mixtures which can be disposed of at a profit.

WIGGINS' SPRUCE GUM SYRUP

is a name which can be applied to a syrup of spruce gum which is much called for in some localities and is prepared as follows:

| | |
|---|---|
| Tincture of red spruce gum | fl. ℥ ij |
| Sugar | ℥ xxvi av |
| Water | O i |
| Caramel | ℥ i |
| Fuller's earth | ℥ ii |

Mix two ounces of the sugar with the tincture of spruce and Fuller's earth, rub well and add the water in divided portions; then filter, returning the filtrate until it comes through clear; add the caramel and sugar, which dissolve with a gentle heat, and strain while warm.

A syrup of a different and richer appearance may be made by mixing equal parts of the syrup prepared as above and syrup of wild cherry of the U. S. Pharmacopœia.

TINCTURE RED SPRUCE GUM.

This tincture is best prepared according to the following formula:

| | |
|---|---|
| Red spruce gum (in fine powder) | ℥ ij |
| Alcohol, q. s. | O i |

Macerate until dissolved and filter.

CHLORODYNE OR PULMONIC SYRUP.

This furnishes a most efficient compound and is prepared as follows:

| | |
|---|---|
| Tincture of cannabis indica | fl. ℥ iii |
| Tincture of tolu | fl. ℥ ii |
| Oil of peppermint | fl. ℥ i |
| Morphine sulphate | fl. ℈ i |
| Chloroform | fl. ℥ iv |
| Fluid extract of lobelia | fl. ℥ i |
| Water | fl. ℥ vii |
| Syrup, q. s. ad | fl. O v |

Mix the tinctures of tolu and cannabis indica with the chloroform and oil of peppermint, dissolve the morphine in the water, add this solution to the foregoing, shake thoroughly and lastly add the syrup.

This furnishes a greenish-opalescent syrup of a pleasant flavor which finds many favorites. The syrup may be bottled in two and one-half or three ounce panels to be sold for 25 cents. The total cost to the maker, including bottle, cork, medicine and label is about 10 cents.

Many people like a cough mixture containing oil and having the appearance of an emulsion. The formula given below will produce an almond oil emulsion which is already prepared for sale by many druggists.

HYATT'S EMULSION FOR COUGHS, ETC.

| | |
|---|---|
| Sweet almond oil | fl. ℥ ii |
| Syrup of acacia | fl. ℥ x |

*M. ft. emulsio et adde*

| | |
|---|---|
| Chloroform | fl. ℥ ii |
| Morphine sulphate | gr. iv |
| Syrup of tolu | O i |

Mix thoroughly.

This can be put up in the same way as the chlorodyne compound, or for a change may be sent out in four ounce panels and sold for 35 cents, which affords even a larger profit than the preceding prepara tion.

LINSEED COUGH MIXTURE.

Linseed oil is very often prescribed by physicians in the treatment of pertussis and colds, and a mixture prepared according to the formula given below is deemed by many to be of particular value:

| | |
|---|---|
| Linseed oil | fl. ℥ iv |
| Powdered acacia | ℥ iv |
| Mucilage of Irish moss | fl. ℥ ii |
| Syrup | fl. ℥ iiss |
| Glycerin | fl ℥ i |
| Oil of cassia, Oil of wintergreen, Oil of sassafras, āā | fl. ℥ ss |
| Chloral hydrate | ℥ iv |
| Dilated hydrocyanic acid | fl. ℥ ss |
| Morphine sulphate | gr ii |
| Water, q. s. ad | O i |

M. *ft. emulsio.*

Any number of cough mixtures may be made from the above type, and no fear may be entertained that they will not afford satisfaction.

CHERRY COUGH SYRUP.

This is an agreeable and pleasant syrup composed of:

| | |
|---|---|
| Syrup of squill | fl. O i |
| Tincture of blood root | fl. ℥ vi |
| Tincture of opium | fl. ℥ iv |
| Ammonium chloride | ℥ i |
| Syrup of wild cherry, q. s | O iv |

It is a profitable idea to expose for sale on the glass show case syrup of hypophosphites in bottles of distinctive design; for while many people have no elevated idea as to its value the fact remains that there are others who pin their faith to it. Many mothers want it for their children, and it has the advantage over other syrups in not having a bitter taste. The writer would recommend a smaller size than is usually placed by wholesalers to be put up in connection with the larger size retailing at $1.00. A six-ounce bottle to sell at 50 cents, when put up by the retailer, affords a fair margin of profit. A full pint for a dollar is always a good drawing card with the public, as it compares to advantage alongside of the twelve ounce package of the large dealer. For a syrup hypophosphites the U. S. P. formula is advised, though coloring substances may be added at the discretion of the maker. For the latter purpose hydrastis, eucalyptol, terebene, etc., may be used.

COD LIVER OIL COMPOUNDS.

So many essays have appeared in the journals on the preparation of cod liver oil emulsions that it is presumed every druggist has a recipe of his own. To those who do not manufacture their own emulsions of cod liver oil no better advice can be given than to begin at once. Its preparation is easy and there is much profit and satisfaction in selling a good preparation.

A "tasteless" compound of cod liver oil is something which is always in demand to more or less extent, and the formula which I bring forward, when rightly manipulated, furnishes a product which places it clear in the first rank of "tasteless" preparations of cod liver oil.

ARTHUR'S PERFECTED PREPARATION OF COD LIVER OIL.

| | |
|---|---|
| Fluid extract of wild cherry | fl. ℥ ii |
| Fluid extract of licorice | fl. ℥ iii |
| Glycerin, Syrup āā | fl. ℥ i |
| Liquid extract of malt | fl. ℥ vi |
| Syrup of hypophosphites | fl. ℥ iii |
| Gaduol | gr. lxiv |
| Fuller's earth | ℥ iv |
| Caramel, q. s. as desired. | |

Mix the gaduol with the glycerin and rub with the Fuller's earth; then add the fluid extracts, syrup and malt, shake well let stand one day, occasionally shaking and filtering. To the filtrate add the syrup hypophosphites and mix well.

Should the resulting product not quite come up to the expectations of the compounder a slight modification of the formula in regard to the quantities of some of the ingredients, such as the fluid extracts and glycerin, will result in a different appearing compound.

WINE OF COCA.

The Boston formula for this preparation is thought most highly of, and the formula given below will turn out a compound closely resembling it:

WINE OF COCA.

| | |
|---|---|
| Port wine, Claret wine, āā | O iv |
| Sugar | ℥ xxii |
| Alcohol | fl. ℥ xxxviii |
| Fluid extract of coca | fl. ℥ iss |

Let stand two weeks and filter.

The addition of beef to a compound of this order is very highly esteemed in some quarters and is thought to afford a more nourishing and stimulating preparation. I would suggest a combination as follows:

WINE OF COCA WITH BEEF.

| | |
|---|---|
| Liebig's extract of beef | ℥ vi |
| Wine of coca, q. s. | Cong. j |

*Let stand about three days and filter.*

Each fluid ounce of the above will represent about two-thirds of a fluid ounce of lean beef. This makes an elegant preparation which commends itself readily to buyers, presenting as it does in pleasant combination two well known articles of medicinal value.

WINE OF COD LIVER OIL.

Wine of cod liver oil is having a run just now, and for its preparation I have found these formulas of excellent value. The formula given first contains the active principles of cod liver oil as isolated by French chemists; it reads as follows:

WINE OF COD LIVER OIL.

| | |
|---|---|
| Gaduol (Merck's) | gr. lxiv |
| Alcohol | fl. ℥ iv |

| | |
|---|---|
| Syrup ..... ... ... ..... | fl. ʒ ii |
| Fuller's earth ..... | ʒ iv |
| Port wine, q. s. ad..... | O i |

Mix the gaduol with the alcohol and add the Fuller's earth; rub well together, then add the syrup and wine. Let stand a day or so, shaking occasionally, then filter, passing sufficient wine through the filter to preserve the volume. If these directions are followed the product will be an elegant preparation, resembling, but a little sweeter, than other preparations of the same name.

A preparation of the same character but of a more distinctive taste and appearance may be compounded as follows:

TART WINE OF COD LIVER OIL.

| | |
|---|---|
| Gaduol ..... | gr. lxiv |
| Alcohol ..... ..... | fl. ʒ iv |
| Fuller's earth..... | ʒ iv |
| Port wine, Claret wine, āā p.c., q. s. ad. | O i |

Proceed as before.

Compounds prepared as above contain 25 per cent. of the active medicinal principles of cod liver oil. The first is the pleasanter preparation of the two, but both are certain to give satisfaction.—*American Druggist.*

## Practical Pharmacognosy.

THE SCOPE OF PHARMACOGNOSY.

Pharmacognosy treats of the botanical or zoological origin, geographical source, history, formation or secretion, collection and preparation, description, histology, chemical composition, and adulteration or substitution of drugs. It has been briefly defined as implying a scientific knowledge of drugs, and has thus a much wider scope than the sister subject pharmacology, which is concerned only with the physiological action of drugs, whilst a wide acquaintance with its subject matter is essential to the scientific development of pharmacy, which deals with the technical manipulation of crude drugs to render them fit for use in medical practice.

It will be found that, although pharmacognosy undoubtedly constitutes a distinct subject of study, its limits are not very sharply defined. A good idea of what may be regarded as suitable limitations can be gathered from Fluckiger and Hanbury's 'Pharmacographia,' which so far as it goes is an ideal work on pharmacognosy. With regard to origin it is usually sufficient for the pharmacognosist's purpose to definitely know what is the particular plant (or animal) that furnishes the drug, the part used, and most suitable time of collection. Anything beyond this falls strictly within the province of the botanist (or zoologist). Then, since climate, soil, etc., are often factors of importance, in their bearing upon the development of plants and animals, the statement of origin must be supplemented by naming the geographical source also. A knowledge of the history of drugs is of value, inasmuch as, if the introduction of each substance into medicine and its subsequent career can be satisfactorily traced, it is possible more readily to ensure the identity of modern specimens offered under the same names. Again, acquaintance with the methods of formation, collection, or preparation of a drug serves as an aid in determining its quality and freedom from improper admixture. As regards chemical composition, that should be dealt with in connection with pharmacognosy so far as may be necessary only, a knowledge of proximate principles and their characters being of chief importance. Methods of isolation of alkaloids, glucosides, etc., and the determination of the amounts of these present in drugs, fall properly within the domain of chemistry as applied to pharmacy.

HISTOLOGY OF DRUGS.

But it is familiarity with the physical characteristics of drugs that is of most direct application and practical importance, though this does not attain its greatest value unless based upon a thorough knowledge of the botany, chemistry, etc., of the subject. For the most part it has been considered sufficient in this country to describe general physical characteristics such as color, taste, odor, etc., as revealed to the unaided eye or by the assistance of a simple lens. The progress of science, however, has reacted upon this subject as upon so many others, and both investigators and students have realised that a more or less complete knowledge of the minute structure of drugs is a practical necessity. This, of course, entails the use of a microscope, with accessories for use in drawing and measuring minute details, and for examining objects by the aid of polarised light.

It may be well to outline briefly such a course of study in the histology of drugs as may be followed with advantage by students in pharmacognosy. In the first place, it is requisite to be thoroughly acquainted with the appearance and reactions of isolated structures, such as starch granules, glands, crystals, etc., in their several varieties. Then the various kinds and forms of cells, vessels, and cavities must be similarly studied, in the differently constituted tissues of which they form part. These tissues, again, with their constituent parts, vary greatly in development and arrangement in distinct plants. It becomes necessary, therefore, to examine them to ensure identifying them without risk of error when found under conditions that are at all novel. Finally, after this preliminary training, the systematic and detailed examination of individual drugs, together with their adulterations and substitutions, will remain to be performed.

NECESSITY OF PROLONGED TRAINING.

Without such an extensive acquaintance with the details of structure in roots, stems, leaves, etc., observed under varying conditions, and a sufficient grasp of the arrangements of tissues in plants generally, no examinations of the structure of drugs can be expected to yield any results of permanent value, and the whole of the ground specified should be covered by pharmacists if they would attain a definite and unassailable position as specialists in their own particular department of activity. As pointed out in Fluckiger and Tschirch's 'Principles of Pharmacognosy,' "in order to obtain a satisfactory knowledge of vegetable drugs, an accurate anatomical study of them is in most cases indispensable." Otherwise, it is certainly not possible to properly fulfil the primary object of pharmacognosy, which was defined by the late Professor Maisch as being "to enable us to recognise drugs, to determine their quality, to detect their adulterations, and to distinguish the characteristic elements of those which are closely allied."

To ensure accuracy in observation, sketches should be made of all tissues examined, the different elements being denoted by means of pencils of various colors, whilst reagents and stains should be applied in a systematic manner, and never used except for some definite purpose. Above all, nothing must be taken for granted, the aim of the worker being to convince himself in the fullest manner possible of the reality of all that is seen, and to overlook nothing that is present. A sound judgment can only be acquired if based on a wide experience, and it must ever be borne in mind that in the present state of knowledge in this subject, it will frequently happen that the most that can be said of a specimen under examination is that it is not what it was supposed to be. More definite results than this, though now attainable in many instances, can only be obtained generally as the outcome of extended investigations by a large number of patient, persistent and accurate workers.—*Pharmaceutical Journal and Transactions.*

## Sanatol.

Sanatol is another new disinfectant, described (*Oesterr. Sanitatswesen*) as a blackish-brown, rather thin fluid, having a tarry odor and a strongly-acid reaction; soluble in water with a milky turbidity and a subsequent precipitation of resinous, little flakes. Investigation apparently shows that the article is prepared by treating not fully-purified so-called "100% carbolic acid" with an excess of concentrated sulphuric acid, and diluting with water.—Sanatol is reported to be a quite efficacious disinfectant. A 1% solution killed cholera vibrios within half a minute; a 2% solution is said to have destroyed the bacterium coli commune in one-half, and the micrococcus pyogenes in one minute; but it proved much less efficient against anthrax spores, which were killed, even by a 20% solution, only in six days. Owing to its physical properties, sanatol can only be used for coarse disinfection, not for surgical purposes.—*Merck's Report.*

FOWLER'S SOLUTION.—Brantigam finds that the precipitate often found in Fowler's solution is composed principally of sillicic acid, due to the action of the alkali on the glass.

## The Decomposition of Chloroform Containing Alcohol.

DAVID BROWN.

It is very satisfactory to find from the article published in the *Pharmaceutical Journal* of June 10, 1893, by Dr. Schacht and Dr. Biltz, that our independent work on chloroform has led us to such concordant results. I am not, however, at one with them in so far as their statements apply to the products of the decomposition of chloroform to which alcohol has been added. They say, "Though the direct products of pure chloroform are only chlorine and carbonyl chloride, it is natural that in the case of chloroform containing alcohol the chlorine thus eliminated should act upon the alcohol and so give rise to the production of hydrochloric acid, consequently in the first stage of the decomposition of chloroform containing alcohol hydrochloric acid is always found in the place of free chlorine," and they further add, "So soon as the alcohol is consumed by the joint action of the free chlorine and carbonyl chloride directly resulting from decomposition of chloroform, the products of the change that has gone on up to that point without injurious consequences become all at once recognizable just as if the alteration had suddenly commenced. At that point the presence of free chlorine and carbonyl chloride—the initial products of the decomposition—can be detected."

I understand by these statements that chlorine and carbonyl chloride are produced in decomposing chloroform containing alohol, that they are consumed by the alcohol, and that therefore they cannot be recognized as such until all the alcohol has been used up. This is not in keeping with my experience, and the following experiments show that free chlorine and carbonyl chloride are not only produced in chloroform containing alcohol, but that their presence can readily be detected before the added alcohol has all been consumed, and further, that there is only a very faint reaction with silver nitrate at the time when a very marked one is obtained with zinc iodide and starch.

Samples of pure chloroform to which 0.077 per cent. of absolute alcohol had been added were exposed to sunlight in the presence of air in white glass bottles one-third filled. After nine days' exposure no signs of decomposition could be detected, whereas a sample of the same chloroform, free from alcohol, was found to be far advanced in decomposition. After fourteen days the alcohol reduced samples reacted distinctly with zinc oxide and starch and faintly with silver nitrate. The exposure was continued for five days' longer, when zinc iodide and starch, as well as baryta water, gave marked reactions. A quantity of 10 C.c. was then washed with 10 C.c. water, and and distinct alcoholic reactions with the iodoform and Dr. Biltz's potassium bichromate tests were obtained. Similar results were also obtained after exposing a sample of specific gravity 1.490 in the presence of oxygen for thirteen days.

There may be some decomposition of the added alcohol, but it evidently does not prevent decomposition being recognized in its early stages by both zinc iodide and starch and by baryta water. It is admitted that free chlorine and carbonyl chloride are produced in chloroform containing alcohol, but I am not aware of any reason why they should show a preference to combine with the alcohol and refuse to give indications of their presence to zinc iodide and starch and baryta water. Whatever the action of the decomposition products of chloroform may be on alcohol in the proportions given it is evident that for all practical purposes zinc iodide and starch is of equal value in detecting decomposition in alcohol, reduced chloroform, and in pure unreduced. The preservative action af alcohol on chloroform is not explained by saying that the products of decomposition combine with it to form harmless substances, some more satisfactory explanation is necessary.

That decomposition is retarded by its presence is seen by comparing the results obtained from the exposure of chloroform containing 0.077 per cent. of absolute alcohol and pure chloroform. These were exposed under similar conditions and examined at intervals. After several days the reduced samples showed no signs of decomposition, and were found to contain alcohol, while the others were decomposing rapidly and gave on analysis 0.348 per cent, carbonyl chloride, which if made to react on alcohol to produce chlorocarbonic ether and ethyl chloride would require a quantity equal to 0.323 per cent. In addition to this there is 1.329 per cent. of free hydrochloric acid, which, if it acted on alcohol to produce ethyl chloride, would decompose an additional quantity equal to 1.674 per cent., or a total of 1.997 per cent. of alcohol. The products obtained from the unreduced samples are therefore able to consume twenty-six times the quantity of alcohol added to the reduced ones which remained free from decomposition.

The chloroform employed had been washed ten times with twice its volume of water, and by Dr. Biltz's test was found to be free from alcohol; it was also free from decomposition products. It is undoubtedly necessary to add a quantity of alcohol to preserve chloroform from decomposition, but it is folly to attempt by excessive addition to prevent it under any conditions. Chloroform, either pure or with alcohol, may be kept for very long periods in darkness if not exposed to a temperature of from 90°-100° F., or *in vacuo*, but when exposed to sunlight in the presence of air decomposition sooner or later sets in. Dr. Biltz, in his admirable work on the decomposition of chloroform by light (1892), says: "There exists no chemical difference between the different kinds of chloroform when it has been properly purified." This statement, coming from one who has devoted so much time to the chemistry of chloroform, is very strong testimony in favor of the position which I have so long held, and should help to convince those who still contend that because a substance like chloroform is prepared from this, that, or the other substance, it must necessarily be purer than another prepared from something else.—*Pharm. Record.*

## The Evils of Substitution.

By Cyrus Edson, M. D., President of the Board of Pharmacy of the city and county of New York.

The term "substitution," in its commercial sense, is the preparation of a fraud by the seller upon the buyer, the former selling the latter something different from the article demanded, under the same name. This fraud is really but another phase of commercial adulteration, and in the practice of pharmacy its evils are as insidious and harmful as those of any crime committed by man. These evils are both direct and remote in their effects. They injure, first, the patient; second, the physician; third, the manufacturer. From the standpoint of the patient, the evil affects him directly and indirectly. The dishonest pharmacist has, of course, palmed off on his unsuspecting customer a cheaper preparation than that ordered by the prescriber, because the motive for the crime is, in ninety-nine cases out of a hundred, a mercenary one. The result to the patient from the inhibition of the substituted article may be one of the following; first, no therapeutic action; second, therapeutic action of less potency; third, therapeutic action of greater potency; fourth, therapeutic action of different character than aimed at by the prescriber. It needs no argument to prove that any of these four results would, under certain conditions, be likely to be disastrous to the patient.

The pharmacist is the responsible and trusted dispenser of the physician's order, and when he acts differently than ordered by the doctor, he snips at the threads of fate, possibly without the slightest idea of what will result from the snipping. Then he is no better than a man who fires a bullet among a crowd of people. The result in either case may be manslaughter. Let us take a less extreme view of the crime from the patient's standpoint. The latter fails to get benefit from his medicine, and, as a result, loses time and money. He was cheated when he bought the preparation. Now, indirectly, he has lost the fee he paid the physician, and last, but not least, he has lost confidence in his doctor.

From the standpoint of the physician the evils of substitution have a wider range in their effect than on the individual patient. Medicine has been said to be an inexact science. The reason of this is because it is very difficult to ascribe a given effect to a certain cause. In other words, so many causes operate to produce a given effect in the human economy that it is difficult to ascertain and fix upon a definite cause. Modern therapeutics is the out-

come of the physician's observations and experience of the effect of drugs upon the human system. It is a science to which every physician contributes his mite or his much, according to his ability and its opportunity.

The pharmacist who substitutes, leads physicians astray. By presenting false premises to the latter, the former causes him to make erroneous deductions. The entire medical profession may thus feel the result of a single instance of substitution, and numerous other invalids suffer on account of the errors following faulty experience in the case of the physician treating a single patient who is the victim of the fraud in question.

I have already spoken of the loss of confidence in his physician on the part of the victimized patient. This has not only a direct effect upon the invalid, because confidence in his doctor's efforts are, to a great extent, essential to the latter's success in the treatment of the case, but it may also cause the dismissal of the physician and his loss of what perhaps would have been a lucrative practice. In this country physicians have the reputation of being practical. They are the best practitioners in the world. In other countries, medical men are deeper students and better theorists, but here, we pride ourselves on the results we obtain in curing disease. The reason for this is because we strive less for honor and glory than we do for the almighty dollar. We must give our patients the worth of their money, and we know that we will not be tolerated unless we do. Our patients are quick to discover mistakes, and they are laid at the door of the physician rather than at that of the pharmacist. If this was not the case, the subject of substitution would not be worth consideration, for it would be a rarely-committed crime.

The question of injury to the manufacturer is a very important phase of the matter, for, rather singularly, the remedy for the great evil must spring mainly from this source. This is not so strange after all when we come to think of it, for here we find the effects of the evils of substitution so direct and so distinctly felt that interest is natural. Nothing causes men more concern than pecuniary loss. Cause and effect are here so closely associated that a hue and cry at once follows. The manufacturer invests large sums in producing a reliable preparation; he spends more in bringing it before the medical profession. The latter find it worthy of use and patronize it until the weeds of substitution check its growth. The way these weeds act after what I have said is obvious. For example, some pharmacist substitutes an inferior mixture or drug in the preparation of the physician's prescription; the effect of the medicine on his patient is nil. The disappointed doctor heralds the fact to his brethren. Such news travels faster than any favorable comments, and undoes in a short time that which the manufacturer has taken months or perhaps years to accomplish. Great injury is in consequence done to a deserving business.

Then again, the evil is a widespread one, and the same substitution in a good preparation is very large and directly affects its sale. I know of no other crime that tends so much to destroy one's faith in man's goodness as substitution. For the sake of insignificent profit the dishonest pharmacist deliberately cheats and perhaps destroys his fellow man. I can only account for the practice by assuming that the perpetrator in some way persuades himself that he is doing no harm, that he is selling something "just as good," that he holds the judgment and knowledge of the physician in small repute, and that he feels perfectly confident to act in the premises. It is a curious psychological fact that it is the easiest thing in the world for a man engaged in a nefarious trade to persuade himself that he is doing no harm so long as he is making money by his acts.

To correct the practice of substitution does not seem to me a difficult matter. A few years ago the adulteration of food products was a very serious fraud. Confectionery, for example, was greatly adulterated at that time. The exposure of the practice by the Health Department of New York city so injured the confectionery business that the reputable manufacturers banded together in an Anti-Adulteration League. Not only did the Health Department cause the formation of the league in the way I have described, but the unfair competition engendered by adulteration also had its effect in forcing honest manufacturers to protect themselves. This league made it its business to run down and punish all persons who adulterated their wares. The result was that in a short time adulteration ceased, and to day it is impossible to find any adulterated candy offered for sale. Another instance of manufacturers banding together for mutual protection is offered by the Jewellers' Protective Association. This body pursues like an avenging Nemesis any one who robs or cheats its members. Let the manufacturers or pharmaceutical preparations who suffer from the evils of substitution form a like union and charge its agents with the duty of bringing to justice the perpetrators of the fraud of substitution. The Penal Code and the Pharmacy act both afford excellent laws for the punishment of these criminals. The Board of Pharmacy is not sufficiently equipped to enforce the provisions of the law to this end, and the Health Department is too busily engaged in fighting disease to cope with the evil. The formation of such a union as I have indicated, however, and the punishment of a few offenders would soon stop the practice. The mere publication of a few instances of fraud, giving the names and addresses of the dishonest pharmacists, would go far towards suppressing substitution, for the public is quick to discover and shun the druggist who is considered unreliable and unscrupulous. -*Phar. Era.*

## Citric Acid from Glucose.

C. Wehmer claims to have prepared critic acid by the fermentation of glucose. He states that the acid is a secretion product of certain moulds, being formed in a manner analogous to that by which glucose is transformed into lactic and acetic acids by the action of bacteria. If saccharine solutions be exposed to the action of the moulds, sugar is decomposed, carbonic acid being evolved and an organic acid formed, the properties and composition of which are said to be identical with those of citric acid obtained from lemon juice. According to the author this property is possessed by two species of moulds or filamentous fungi which have previously escaped observation on account of their resemblance to other well known species. He proposes to term them Citromycetes, the two species being distinguished as pfefferians and glaber respectively. There are described as forming felt like green tissues, about half a centimeter thick, on the surface of suitable solutions, and as greatly resembling Penicillium, from which they are distinguished with difficulty. Various saccharine fluids, fruits, etc, favor their development, but solutions of glucose constitute the most suitable media. Under proper conditions as to temperature, aeration, etc., it is claimed that citric acid is formed to the extent of more than fifty per cent. of the glucose employed. Eleven kilos of the sugar yielded six kilos of pure citric acid in one experiment, without any secondary organic products being formed. The process has been patented.--*Druggists Circular.*

## Hydrogen.

An interesting example of the capacity of some of the oldest and most hackneyed chemical reactions for improvement is supplied by a communication of Mr. John Ball, of the Royal College of Science, South Kensington, to the *Chemical News*, upon the preparation of hydrogen by the ordinary zinc and acid laboratory apparatus. Mr. Ball states that he has recently observed that, by the addition of a few drops of a solution of nitrate of cobalt to the acid and zinc, the rate of evolution of hydrogen is enormously accelerated, especially at the beginning of the reaction. The effect is the same with either hyrochloric or sulphuric acid; and a couple of drops of solution of nitrate of cobalt will suffice for a large quantity of acid. The action does not seem to have been noticed before; and it should be useful in the rapid preparation of hydrogen in the laboratory. Most, if not all, of the cobalt salt is quite unaltered. There appears to be a very thin film of cobalt deposited on the zinc, which probably acts with the zinc as a voltaic couple; but the amount of cobalt deposited appears to be too small to weigh. There is no particular virtue in the cobalt in this regard; a solution of a nickel salt exerts a similar action.

CANADIAN DRUGGIST.
WM. J. DYAS, EDITOR AND PUBLISHER.
DECEMBER 15TH, 1893.

## An Interesting and Profitable Line for Druggists.

In a communication in our last issue, the writer called the attention of the trade to a line of goods which may be handled with profit, and, at the same time, be made a source of pleasure and instruction to the dealer. The study of the art of photography is a most interesting one, and the druggist who interests himself in it and becomes familiar with the preparations employed may find in it a profitable source of revenue. The trade of professional photographers need not be antagonized, but rather encouraged by the keeping of such chemicals, dry plates, etc., as are required, and the number of amateur photographers has so largely increased during the last few years that the dealer who keeps a well-assorted stock need not be afraid of any loss.

Amateurs, as a rule, do not care to make their own solutions, nor are they, as a rule, competent to do so, and these druggists could keep in stock either concentrated or otherwise. A few cameras, dry plates, and the necessary chemicals would not necessitate a large outlay, and if the druggist himself would become an artist in this line, the pleasure derived from it, and the relaxation which he would be sure to take in order to devote some time to the art, would of itself be a profitable investment. It is a matter of some surprise that this matter has not been more generally taken up by druggists, although a goodly number are already keeping these goods, but we predict for it a more increased interest and more general stocking-up, not only in the city drug stores but also in country towns and places where not only the amateur but the professional photographer may obtain a good portion of his supplies. In order to facilitate the pushing of this line amongst druggists and to give them "pointers" which may be useful to themselves as well as their customers, we have commenced a section in this journal which will be devoted to "Photographic Notes," and trust our readers may find it from time to time valuable aids in this growing branch of industry.

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A GERMAN has taken out a patent for producing varnish from linseed oil by means of an electric current. The oil, after being purified in a proper manner, is thoroughly mixed and agitated with sulphuric acid and water, and subjected to the action of an electric current for two or three hours, to that the oxygen produced in the nascent state by the passage of the current converts the oil into varnish. The varnish so produced is said to be almost colorless and perfectly free from all mineral or metallic admixtures or impurities.

## CORRESPONDENCE.

Correspondence is invited from all members of the profession. We do not hold ourselves responsible for opinions of correspondents. All communications must have the name of the writer attached, not necessarily for publication, but as a guarantee of good faith. Any nom de plume may be used for publication. Write only on one side of the paper, and be concise.

### Unfair Competition.

*Editor* CANADIAN DRUGGIST:

Will some of your readers tell me if they have had any experience like the following: One of my opposition is selling American proprietary goods to doctors at a discount, which, buying in a small way, would be what they cost me, and its a question to me of losing some trade, selling at cost, or buying a quantity of stuff that sells at a small profit in comparison to the B. P. preparations that would be sold to medical men under other circumstances. I would like to hear the views of any who have had a similar experience, as it is a serious question to the retail trade.

Yours,

SALOL.

Dec. 6th, 1893.

### Code of Ethics for Pharmacists.

*Editor* CANADIAN DRUGGIST:

SIR,—Is it not high time that the Council of the Ontario College of Pharmacy drafted and adopted a code of ethics, to which each coming graduate should be compelled to affix his signature before being allowed to practice pharmacy.

Quite a number of our local pharmacists have lent themselves to the dignified (?) undertaking of permitting their names to be used in the daily newspapers in connection with testimonials for quack medicine manufacturers. No wonder that the drug profession is being discredited more largely every day, and the members looked upon as mere tools in the hands of the patent medicine man.

Yours complainingly,

PHARMACIST.

Toronto, Dec. 5th, 1893.

### Pharmaceutical Microscopy.

JOHN AUSTEN.

Read at a meeting of the Sheffield Pharmaceutical Society.

It is my intention this evening to enumerate some of the many uses to which a pharmacist may place his microscope, and that with considerable advantage to himself. In the first instance, as a pharmaceutical student, he becomes acquainted with the microscope when pursuing the study of botany. In the first stages of this science a simple microscope or lens will be found adequate for all his requirements, and will enable him to clearly distinguish any external characteristics of the plant otherwise indistinct to the unaided eye. When, however, the interior of the plant is reached, and we wish to become intimately acquainted with its structure and workings, its cells and tissues, and the thousand and one other minute structures which go to make up the plant, then it is that a good compound microscope must be brought into play. In fact, we thus see that without the microscope the science of botany would be reduced to a mere list of plant names, and the all-important anatomy, histology, physiology and scientific classification of the plant would be unknown. My advice to the students here to-night is to study botany with diligence and perseverance, so as to obtain a complete mastery of its principles, for upon those principles is built the foundation of the knowledge of vegetable drugs. And yet after this we sometimes here the question raised, "Of what practical use is botany to the pharmacist?"

I maintain, and I am sure every one present will agree with me, that the pharmacist of to-day should be able to ascertain the purity of the preparations and chemicals sold by him; he also should possess a thorough knowledge of the quality of the crude vegetable drugs which he puts into stock. But very many of these drugs must be sold and dispensed in powder form, and although no doubt it would be much more satisfactory if the pharmacist would powder his own drugs, yet, where is there a pharmacy containing the necessary apparatus for so doing? Therefore, in most cases the retail chemist is obliged to obtain his powdered drugs from the wholesale houses. The consequence is, that unless he is prepared to examine such powders chemically and microscopically he cannot give a personal guarantee of their purity. At the present time the important subject of microscopical pharmacognosy is in its infancy. It is a most inviting field of enquiry, and one in which much valuable work has yet to be done, especially in that part of it which deals with the microscopical appearance of powdered drugs. In order to detect adulterations and admixtures in any particular instance, the pharmacist must of course be familiar with the anatomy of the pure drug itself, and also the appearance which it presents when reduced to fine powder. There are very few drugs which loose their identity, no matter to what state of division they have been subjected. The individual cells, glands, stomata, hairs, etc., often remain unbroken, and with patience and practice an adulterated powder may be readily detected.

I have several specimens of adulterated powders on the table. In the sample of rhubarb you will detect the smooth elongated cells of turmeric. Fænu greek and several others contain added starch, and some show a coniferous structure pointing to ordinary deal sawdust. Powdered leaves are often adulterated with exhausted senna leaves, ginger with exhausted ginger, and so on.

It is very surprising to note what a large variety of powders are now adulterated with starch. This is a very serious

matter, and should demand the attention of every pharmacist; and seeing the comparative ease with which starch is detected, it seems all the more surprising that this form of adulteration is allowed to continue.

Not many weeks ago a chemist of my acquaintance had a complaint raised by one of his customers to the effect that some slippery elm powder, which the chemist had supplied, contained a large proportion of added starch. I may note that the customer was a microscopist, and had discovered the fraud by means of his microscope. Be this as it may, it was none the less galling to be told by an outsider that the drug was adulterated. To say that the powder was in the same condition when it was received from the wholesale house would not simplify matters in the least. Mustard, pepper, acacia, fenugreek and many other powdered seeds frequently contain a large percentage of added starch. Fine sawdust is sometimes found in cayenne pepper and powdered barks. Floor sweepings and sand are put into lupulin. Brickdust and bole are not uncommon in kamala.

Saffron is a drug open to all kinds of sophistications, on account of its high price. I have sometimes noted a reddish-colored sand adhering to the stigmas, but oftener the stamens and petal shreds of various flowers have been detected. Adulterations like the foregoing can best be detected by applying the microscope.

In the laboratory the pharmacist could not very well get along without his microscope. The simple lens will be found serviceable in detecting gritty particles in various ointments, especially those intended for a delicate organism like the eye. A small portion of the ointment should be pressed between two cover glasses and viewed in the ordinary way.

Preparations containing metallic mercury should show no globules of the metal when viewed under a magnifying power of ten diameters.

Pill masses and compound powders are also important items to be considered. It is indeed of the utmost importance that the ingredients forming these preparations should be intimately mixed together, and the microscope should be applied as a test of this.

We find very few references to the microscope in the British Pharmacopœia. It is found mentioned under such articles as starch and yeast. But if it has been found necessary to give an elaborate microscopical description of the various starches, how much more important it is to have reliable details of the microscopical structure of our more important roots, barks and leaves.

Especially this should be so now that the microscopical structure of vegetable drugs is included in the subjects for the Major examination.

And now a word as to the pests which chemists have to contend with. They come chiefly in the form of bacteria, moulds, mites, and many kinds of insects.

I think every pharmacist should know something about bacteria, for they play such a very important part in the world's history. Bacteriologists tell us that if it were not for these minute organisms all vegetable and animal life would soon be at an end.

Bacteria may be found almost everywhere. In a normal state they exist in the blood, stomach, kidneys, and intestines, and it has been found that the digestion of food stuffs in the human subject is largely brought about by the activity of these micro-organisms. Bacteria play sad havoc with some of our preparations. They cause infusions and decoctions to go sour and muddy, syrups to ferment, and ointments to become rancid; in fact, all organic decomposition is attributed more or less to their action.

Moulds of various kinds are always with us. Preparations liable to become mouldy should be examined from time to time under the microscope, and if any mycelia be found, suitable preservatives should be added. Mites and insects are very troublesome, and they are the cause of much loss to the pharmacist. Almost all raw drugs are liable to be attacked, and some particularly so. Mites, similar to those found in cheese, attack cantharides, and in a surprisingly short time render them absolutely worthless.

Ergot, seeds and farinaceous drugs are often infested with these mites, and it is no easy matter to keep clear of them. In many cases the drug may be exposed to a temperature which will destroy the mites and the eggs, or a small lump of naphthalin or camphor kept in the bottle containing the drug will generally be found effectual in preventing these pests.

Here is a sample of pearl barley from our museum; it is infested with the mite and two or three distinct species of beetle. Together they have entirely destroyed its its identity, every single grain of it being cleverly scooped out, and the whole reduced to a blackish honeycombed mass.

Many other cases could be mentioned, but this one is sufficient to show how important it is to watch our stock, examining it from time to time lest these microscopic enemies get the mastery of us.

Many other uses are found for the pharmacist's microscope, but we cannot dwell on these to-night. In these days the pharmacist is often called upon to examine water, urine, sputum, etc., and for such work a good compound microscope is absolutely essential.

I would strongly recommend all young students to become early acquainted with the microscope. Carry a simple lens in your pocket, and use it whenever an opportunity presents itself. I can see before me several pharmacists who long since adopted this excellent plan, and they will never have cause to regret so doing. —*Phar. Jour. and Transactions.*

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MUAWINE is a poisonous alkaloid found in a Mozambique tree called "muawi." Its action very closely resembles that of erythrophlœine.

## A Colorimetric Method for the Estimation of Phenol.

BY HARRIE ELIAS CARPENTER.

This subject was suggested by the extensive controvery that has arisen as to the relative value of the methods of estimation, both by gravity and volume; and I have endeavored by careful comparison to determine the value of one of the later processes, and one that has received much praise for its accuracy. It has not been my intention to determine the % strength of market samples, neither to find tests for the identification of phenol, as both of the subjects have been well written upon in papers read before the "American Pharmaceutical Association." The history and literature of the subject has been very thoroughly considered in an article which appeared in *The Pharmaceutical Era*, October 15th, 1891; so it will be unnecessary for me to dwell on these points. Although this thesis is confined to the two methods to follow, many others have been examined; but as they are, with few exceptions, the same methods slightly modified, it is not necessary to mention them here.

### A COLORIMETRIC METHOD FOR THE ESTIMATION OF PHENOL.

This method was suggested by L. Carre, in a recent number of the *Analyst*, and depends upon the conversion of Phenol into Picric Acid by the use of Nitric Acid, and the colorimetric estimation of this body by means of its sodium salt. The valuation is conducted as follows: 10 grams of pure phenol are weighed and made up to 1 liter with dissolved water, and, from this solution others containing 5, 4, 3, 2, 1, .8, .6, .4, .2 and .1 grams of phenol are prepared. 25 c. c. of the solution containing the phenol to be estimated, (taken after dilution if necessary) and heated in a small flask on a steam bath for 1 or 2 hours (generally 1 hour.) 5 c. c. Nitric Acid is added, and the standard solutions being treated the same, a preliminary trial shows which of the standard solutions approximates to the sample being tested. To obtain greater accuracy 20 c. c. of Soda Solution is added to the contents of the flask after heating, and the liquid is made up to 50 c. c. filtered and compared in a colorimeter with the standard solution to which it is the nearest in tint. I find it is necessary to observe several precautions to obtain good results by this process, viz.:—

### PRECAUTIONS.

The use of concentrated solution should be avoided. If alcohol is present the solution must be heated for some time after adding the nitric acid, and if much Alcohol, the solution must be well diluted to prevent the formation of Ethyl Nitrate. If the Phenol is very impure, the heating must be continued for some time to decompose all the tarry matter. It being necessary to obtain perfectly pure Phenol for the standard solutions for comparison tests, and being unable to obtain such an article in the market, I was

obliged to make it, and as the method used may be of interest, it is given here. This method was used by A. M. Reade, and was given in the *American Journal of Pharmacy*, and though he did not obtain a pure Phenol, he stated that he thought he could do so by repurifying several times, which for lack of time he did not do. The method is as follows :—

METHOD FOR PURE PHENOL.

One oz. of crystals, Calvert's (No. 1) Acid was placed in a pink flask and 10 ozs. of distilled water was gradually added, and contents agitated well after each addition. Found that 6¼ oz. of the acid dissolved, leaving 1¼ oz. undissolved, and containing the impurities less soluble than the acid. When clear, the liquid was poured off and placed in a hydrometer glass, and finely powdered salt, (previously purified by dissolving in water, filtering and recrystalizing) was added with constant agitation, until the liquid was saturated and the acid rose to the top. The acid was then carefully removed with a pipette and as a preliminary test for its purity, it was dissolved in strong ammonia water and allowed to stand for a few hours. As standing 8 hours produced a pronounced violet color, a second purification was necessary, and on repurifying for the third time no violet color was present on standing 36 hours, showing a great degree of purity. To prove the absolute strength and purity of this purified Phenol it was subjected to Koppeschaar's Bromine Method of Estimation, conducted as follows :

KOPPESCHAAR'S METHOD.

0.783 gms. of acid was dissolved in sufficient water to make 100 c. c., 20 c. c. of this solution (which contained .1566 gms. of acid) was placed in a glass stoppered bottle of 250 c. c. capacity. To this solution was added 50 c. c. Volumetric Solution Bromine and 5 c. c. pure Hydrochloric Acid. Stopper was inserted and contents of the bottle agitated briskly until reaction was over, then 5 c. c. of test solution of KI was quickly added. The result was the production of a white flocculent precipitate of tribromphenol suspended in a colorless liquid, indicating that the Phenol examined was of absolute strength and purity. It may be of interest to state that this method, (Koppeschaar's) has been adopted by the U. S. P. of 1890 as the official process, and is applied to impure Phenols to determine exact %, by titrating the contents of the bottle with Volumetric Solution of Sodium Thyosulphate until the iodine tint present is exactly discharged. Deducting from 100, the number of c. c. Volumetric Solution Thosulphate Soda required, gives the % of absolute Phenol. This method proved of great value in proving the correctness of the Colorimetric Method by comparison tests and by proving the purity of the standard solutions used.

CONCLUSIONS.

After thoroughly investigating the Colorimetric Method and comparing it with the many so-called best methods, I conclude, that for the use of the pharmacist, it is a most excellent method, and one that, with little apparatus and little time needed, is productive of the most satisfactory results. The process is one that does not involve great chemical skill in manipulation, and although precautions must be observed to attain good results, I can recommend it as a method that will estimate near enough for all practical results and purposes, and does not involve the use of a burette, which is an advantage, as many pharmacists are not provided with this most useful piece of chemical apparatus.—*N. E. Druggist.*

## Determining the Density of Gases

A recent number of *Nature* contained the following notice of a convenient modification of the hydrometer method of determining the densities of gases, devised by M. Meslans, whose apparatus is described and illustrated in the *Comptes Rendus*. It consists of two hollow spheres hung to the arms of a balance. Each sphere, which is made of glass, aluminum, or gilt copper, hangs in a separate compartment, the suspending thread being introduced through a hole in the lid. The compartments are inclosed in a box, and surrounded by water in order to keep them at equal temperatures. They are at first filled with air to determine the position of equilibrium. The gas of which the density is to be determined is then introduced through a long tube immersed in the water, and enters one of the compartments, having previously been dried. It is passed through in a slow and continuous stream ; and if its density differs from that of air, the equilibrium of the balance is disturbed. The weight necessary to re-establish equilibrium is noted, and the density calculated according to a simple formula. Thus the density of a particular gas is found by a single weighing ; and by keeping the current continuous, variation in its density is easily observed. A fairly high accuracy is attainable, depending upon the sensitiveness of the balance and upon the perfection of gauge of the spheres. One important application of the apparatus is that for determining the density and composition of the products of combustion in furnaces. The scale of the balance is graduated so as to show at a glance the percentage of carbonic acid, and hence the degree of efficiency of the furnace in question. This percentage, which is about 21 theoretically, never exceeds 18 in practice, except in gas generators. In a great number of works it varies between 6 and 8. The apparatus is being applied to the study of the various methods of heating. Another application is that by which the presence and percentage of marsh gas is indicated. With spheres of 1 liter capacity and a balance sensitive down to 0.5 milligramme, it was found possible to detect 0.1 per cent. of menthane in the air of a mine.

## BUSINESS NOTICES.

As the design of the CANADIAN DRUGGIST is to benefit mutually all interested in the business, we would request all parties ordering goods or making purchases of any description from houses advertising with us to mention in their letter that such advertisement was noticed in the CANADIAN DRUGGIST.

The attention of Druggists and others who may be interested in the articles advertised in this Journal, is called to the SPECIAL CONSIDERATION of the Business Notices.

**Gibbons' Toothache Gum.**

This preparation has gained steadily in public favor since its introduction to the trade, and is one of the best selling as well as one of the most reliable of preparations. It is kept in stock by all wholesale druggists throughout Canada. See advt. on page 23.

**Chase's Liquid Glue.**

The attention of the trade is directed to the advt. of this preparation on page 4. Always reliable and a good seller, it commands the confidence of the trade as well as the consumer.

**Peppermint and Pepsin.**

John L. Upham, proprietor of the celebrated Swiss Cough Drops, which, although only introduced last year, are amongst the best selling cough candies on the market, has this season put out two new specialties, viz., "Peppermint and Pepsin" and "Chocolate Creams." These goods are neatly put up, sell at popular prices, and are well advertised. We would advise sending an order for sample lots at least.

**Dick's Veterinary Preparations.**

Dick's Blood Purifier for Horses and Dick's Liniment are advertised on page 25. As these goods are thoroughly advertised and are leading staples, dealers should see to it that their stock is always kept up.

**Boulanger's Emulsion.**

A good Emulsion of Cod Liver Oil is one of the best selling articles amongst the lines of proprietary remedies. Many of those now advertised are neither a credit to the manufacturer nor satisfactory to the druggist who knows a good emulsion when he sees it. The preparation made by the Montreal Chemical Co. is offered to the trade as one that can be thoroughly relied upon, and which will give every satisfaction to their customers.

A SIMALE process to prevent oils from becoming rancid is thus described in *Cosmos* :—The oil is poured into perfectly clean dry bottles or stone jars (the latter are preferable), only room enough being left in each for the subsequent addition of about 5 c.c. of good brandy. The bottles are carefully corked, and bladders tied over their mouths. The brandy being lighter than the oil, remains on top, and prevents the oxygen of the surrounding air from entering, so that the oil cannot turn rancid. The bottles should be of dark glass, as daylight is injurious to the oil. The vessels are stored in a dry, cool and dark cellar. This method is especially applicable to nut oils, since the latter soon become rancid, losing thereby half their value.

## PHARMACY ABROAD.

PROFESSIONAL LIBERTY IN RUSSIA.—The practitioner of medicine in Russia has, in marked contrast to his American brother, very little liberty in the pursuit of his profession, and none at all save as it is doled out by the police. According to George Kennan, than whom no better authority on Russian laws and customs exists, the physician must get permission from the police before he can practise his profession, and then, if he does not wish to respond to night calls, he must have permission to refuse to go; furthermore, if he wishes to prescribe what are known in Russia as "powerfully acting" medicines, he must have special permission or the druggist will not dare to fill the prescriptions. "Chemists and apothecaries, both in the cities and in the provinces, are furnished by the police with a complete list of names of all physicians who have the right to prescribe 'powerfully acting' medicines, such as anæsthetics, narcotics, and poisons. If a doctor's name is not on this list the chemists dare not fill his prescription, for any drug that might be used by a 'terrorist' for the attainment of illegal ends."—*Medical Progress.*

†‡†

THE PHARMACEUTICAL SOCIETY OF JAPAN.—This Society is the successor of the Tokio Pharmaceutical Society, which was founded in 1878 by the graduates and undergraduates of the pharmaceutical section of the Medical Department of Tokio University. At first it comprised only 50 members, and owing to defective organization gradually declined in activity, ultimately ceasing to hold meetings. It was reinstated on a firmer basis in 1881, the number of members gradually increased to six hundred and, in 1892, the name of the society was altered to that of the Pharmaceutical Society of Japan. The Society consists of a President, Vice-President, Secretary, Treasurer, and ten other members of Council, besides a Committee of Publication of five members. An ordinary meeting is held every month except August to hear and discuss reports of investigations by the members. These are subsequently published in the monthly journal called *Yaku-Gaku-Zasshi* Of this journal 136 numbers have been published since 1881, each on an average containing about 60 pages. On two occasions pharmaceutical exhibitions have been organized, viz., in January, 1890, and April, 1893. On these occasions the products of pharmaceutical investigations and applications were exhibited with the view of showing the recent progress made in pharmacy in Japan, and of suggesting directions in which future advances might be made. A list of the contents of the journal since 1881 is published in the English language. Besides a series of papers on ordinary pharmaceutical articles and dietetic substances, it contains the records of a number of original investigations of native remedies, etc., of which the following may be mentioned, since information concerning them can scarcely be found elsewhere. *Pachyma Cocos*, Fries., *Muricia Cochinchinensis*, Don., *Coriaria Japonica*, A. Gray; *Tanakea radicans*, Fr. and Sav., *Nandina domestica*, Thunb., *Paonia "Moutan,"* Sims; *Sophora angustifolia*, Sieb et. Zucc., *Mosla Japonica*, Max; *Phytolacca acinosa*, Roxb.; *Aconitum Fitscheri*, Reich., *Quercus glandulifera*, Bl.; *Bambusa Senanensis*, Fr. and Sav.; *Senecio Kempferi*, D. C.; *Scutellaria lanceolaria*, Miq.; *Pueraria Thunbergiana*, Bth.; *Sagittaria sagittæfolia*, L.; *Datura alba*, Nees.; *Adonis Amurensis*, Reg. and Radd.; *Ephedra vulgaris*, Rich.; *Brassica cernua*, Bth; *Begonia grandis*, Dry.; *Eutrema "Wasabi,"* Max.; *Atractylis lancea* and *A. ovata*, Thunb., *Ligistrum Japonicum*, Thunb.—*Phar. Journal.*

†‡†

AT ROUBAIX, France, the druggists are up in arms against a proposal to establish municipal stores for the sale of drugs at cost price. The measure found great favor at the National Congress of Workingmen held at Lyons last year, and Roubaix is the first place where a Municipal Council has been found to take it up seriously. The Council, which has a Socialist majority, has in fact decided to try the experiment by opening one store, and if this should be successful others will be established. The Prefect of the Department, on the other hand, points out to the President of the Council the danger of the undertaking on which they propose to embark. As the law stands, he thinks it is illegal, and in any case he is of opinion that the Council is going beyond its province in creating a monopoly, and at the same time incurring serious responsibility should any mistake be committed by their dispensers.—*B. and C. Druggist.*

## Dr. Leo Egger, of Vienna, on American Manufacturing Pharmacy.

The eagerness of Americans in general to learn what European travellers think of our land and its institutions, and their excessive sensitiveness to the severe criticisms of some distinguished foreigners in the past—Charles Dickens, for example—have long been regarded as constituting an amusing foible in the national character. The all-exaggerating humorist has not failed to seize upon this trait, and to make all manner of fun of the enterprising journalists who send their reporters out in tugs to greet the arriving celebrity and ascertain his "impressions of America" ere he puts foot on our soil!

Certain it is that an unusual interest attaches to the comments of intelligent Europeans, if made with proper care after ample and adequate opportunity for observation, reflection and comparison. Such interest is not found wanting in a recent contribution to the well known *Pharmaceutische Post*, by Dr. Leo Egger, of Vienna, on the subject of American pharmacy in genera and, notably, the development of industrial pharmacy as typified in our most extensive manufactories. We quote briefly from Dr. Egger's report.

"It remains for me to speak briefly of individual manufacturing establishments. This journal has previously contained such detailed reports on Parke, Davis & Co., of Detroit, that I need add but a few words respecting the internal operation of these laboratories which stand alone in extent and perfection of equipment. The most outrageous pedant is forced to unqualified admiration when he sees the painstaking care and caution to ensure reliability, with which the colossal manufacturing operations are conducted, and with which every single pill, tablet, solution and extract is made actually and absolutely to contain what is claimed on the label. This is achieved by a remarkable system of graduated responsibility within the entire corps of officials, each superior being held accountable for the errors of his subordinates, should the real culprit not be detected.

"A visit to this factory shows that operations on a manufacturing scale are conducted at no sacrifice whatever of the accuracy and caution characteristic of our craft—on the contrary, that the extensive production renders possible a perfection in the preparations which would be inconceivable in work of lesser magnitude."

## Determination of Water in Syrups and Massecuites.

A. JOSSE.

White filter paper is cut into strips of 1·2 Cm. wide to a total length of 3 M. A spiral is formed out of these strips, after they have been previously folded so that the windings of the spiral do not adhere to one another. This spiral is then placed in a metallic capsule 2 Cm. high and about 7 Cm. in diameter, provided with a tightly fitting cover. The paper has thus a surface of 1 sq. m. and can absorb 100 C.c. of liquid. The capsule containing the spiral is dried in an oven, and, after placing the cover upon it, its weight is ascertained. The spiral is then removed, and a portion of the substance (about 2 Grms.) weighed out in the capsule, 6·8 Grms. of water added, and the substance dissolved at a gentle heat; the solution is then absorbed by the spiral. Care must be taken that none of the solution is left on the bottom of the capsule. The capsule and its contents are then heated at 100°-110° until the weight remains constant, which occurs in about two hours, when the lid is replaced, and after cooling the weight determined. The method is applicable to all substances which are difficult to dry, such as glucose, honey, wine, beer, etc.—*Bull. de l'Assoc. des Chim.*

LAXATIVE FOR CHILDREN.—Castor oil, 15; infusion of coffee, 60; sugar, 20 grams., and yolk of one egg, to be made into an emulsion.

## Pharmaceutical Notes.

LACTOPHENINE.—This is phenacetin in which the acetic residue is replaced by the radicle of lactic acid. It is far more soluble than phenacetin.

§§§

ASPAROL.—This is the calcium salt of the sulphuric derivative of beta-naphtol. It is a white powder easily soluble in water and alcohol. It is an antipyretic and anti-rheumatic and is used with advantage in cases of influenza. *Journal de Pharmacie d'Anvers.*

§§§

MALAKIN is the latest addition to the list of antiseptics, antipyretics, and anti-neuralgics. It is a derivative of salicylic acid and phenacetin.

§§§

TONQUINOL is a new compound offered as a substitute for musk, and is said by the patentees (Germany) to be a derivative of a nitrited terpene and a nitrited sulpho-acid of xyol. Tonquinol is in the form of a white crystalline powder, which, after solution in fifty parts of alcohol, may be mixed with water in all proportions. It is claimed to be very permanent and cheaper than Baur's artificial musk.

§§§

PIXOL is a soluble wood tar preparation made by heating together three parts of tar and one of green soap, and gradually adding three parts of 10 per cent. solution of potash. It is a brownish, clear liquid, soluble in water, is not caustic, and has been found to prevent the formation of bacteria in culture media.

§§§

VASOGENE.—Klever, of Cologne, designates as vasogene mineral oils which have undergone certain treatment which gives to them the property of forming stable emulsions with water. It appears to be a partially oxidised product of the hydrocarbons. It dissolves numerous substances in common use in medicine. Amongst these are iodoform, creasote, menthol, camphor, and pyrogallol. Since these form good mixtures with vasogene without the aid of heat, this latter should prove a useful excipient.—*Journal de Pharmacie.*

§§§

ABRASTOL.—This is a sulphonated derivative of naphtol. It was brought forward by M. Bang. It is quite innocuous, and is a splendid preservative for foods or wines. The addition of a very small quantity to wine prevents the development of germs due to the presence of ferments. It appears to be very useful in arthritis, so that its discovery is of interest both from an economic and a therapeutic point of view.—*Bull. Commercial.*

§§§

PEROXIDE OF HYDROGEN has been used as a handy method of removing bacteria from drinking water for household purposes during outbreaks of cholera or other zymotic diseases. It is stated on the authority of careful scientific experiments that an addition of one part to 1000 parts of the water when allowed to stand for twenty-four hours will effectually destroy any cholera or typhoid germs which may be present. The taste of the water does not suffer any alteration, and it is perfectly harmless. But in case this expedient should be tried it must be borne in mind, first, that the particular peroxide of hydrogen employed must be the purest purchasable, as it may contain minute traces of the poisonous barium chloride; and, secondly, that, to insure its acting efficiently on the microbes, the samples used must be freshly prepared.

§§§

HYDROBROMIDE OF MAUVINE.—Mauvine is an alkaloid extracted from the bark of Mauvi, a tree growing in Mozambique. The botanical relations of this plant are not yet well made out. The pure alkaloid is an amorphous, syrupy compound, easily soluble in alcohol and ether. The hydrobromide is an amorphous salt easily soluble in water; to detect it the best reagent is a solution of sulphate of vanadium which gives a most characteristic play of colors with a trace of the alkaloid. It gives at first an intense green, then starting from the periphery it changes to a fine blue, and finally to a bright yellow. The salt is best administered hypodermically, as it produces no inflammation at the point of application. Its action is almost identical with that of digitalin, but its influence on the cardiac activity is less lasting, owing probably to its extreme solubility.—*Repertoire de Pharmacie.*

§§§

CANTHARIDIN may be obtained by the following improved process, advanced by a contributor to the *Jr. Ph. et de Chem.* The powdered insect is digested in acetic ether, a little sulphuric acid is added, the solution neutralized with barium carbonate, exhausted with acetic ether, and the solution distilled. The residue is evaporated to dryness, treated with petroleum ether and then with alcohol to remove resinous coloring matters, and purified by repeated crystallization.

§§§

CAFFEINE-CHLORAL.—Chloral possesses the well-known property of most aldehydes of combining with feebly basic compounds, such as formamide, urea, cyanogen, etc. It does so with caffeine. The compound so formed appears to be very useful in relieving constipation. The compound occurs in colorless tables, easily soluble in water. Prof. Ewald, of Berlin, has used it in hypodermic solution, in doses of .2 to .3 grammes at a time, given two or three times a day.—*Journal de Pharmacie d' Anvers.*

§§§

NIAOULI OIL.—Dr. G. Bertrand (*Bull. Gen. d. Ther.* 1893, No. 20,) states that niaouli (*Melaleuca viridiflora*) grows abundantly in New Caledonia. The oil produced by distilling its leaves is of a slightly yellow color and of a strong aromatic odor. Its taste is at first pungent and then refreshing (like our peppermint). The density of this oil was found by the author to be of 0.922, and its deviation of a ray of polarized light to be 0.42° to the right. The oil is not affected by litmus; it is insoluble in water and glycerin, but soluble in alcohol, ether or benzin.

§§§

MURURE JUICE.—This juice is stated by Dr. Chernowitz to be extracted from the incised bark of *Bichetea officinalis* (Urticaceæ). It is an alterative and anti-rheumatic, and is known also as "Vegetable Mercury." It is a thick, muddy, reddish, sweetish acid fluid, sp. gr. 1,100, has a vinous odor, and is said to contain an alkaloid. The juice is extensively employed in Brazil in grave cases of syphilis and in rheumatism. The dose is 1 fl. dr. in water, once every other day. It is drastic when employed in large doses.

§§§

RUBIDIUM IODIDE, A SUCCEDANEUM FOR POTASSIUM IODIDE.—Rubidium iodide, Rb I, is a new remedy said to possess the same therapeutic action as potassium iodide, but free from the disagreeable by-effects of the latter salt, particularly on the heart. The new iodide is reported to be well borne by the stomach even on continued use—impairing neither the appetite nor digestion—and to be without effect on the circulatory apparatus. Rubidium iodide is described as occurring in white crystals, which are permanent in the air, odorless, and of a milder taste than potassium iodide; it is somewhat more easily soluble in water than the latter salt. The new remedy has already been employed in a number of clinics for internal diseases, cutaneous, and ophthalmologic affections.—*Merck's Report.*

## Nasrol, a New Diuretic.

Nasrol, is the name applied by Dr. R. Heinz (as elicited in a paper read at the recent session of German naturalists and physicians at Nurnberg), to Sodium Caffeine-sulphonate. Experiments with this substance showed that the vascular nervous system was not affected, and that blood-pressure remained unchanged, even with doses of 0.5–1 gramme [7½–15 grains]; while urinary secretion was greatly increased. The solvent action of lithium in cases of urinary calculus, gravel, gout, etc., was considerably increased by the addition of caffeine-sulphonic acid. The same acid is also likely to increase the diuretic action of strontium, it is stated. Since a solution of nasrol—by which is always understood *sodium* caffeine-sulphonate—stronger than 5% does not keep long and is of a rather bitter taste, it might be better to administer this new remedy in capsules.—*Merck's Report.*

BENZOIN VS BALS. PERU IN OINTMENTS. —F. Ede states (*Med. Age*) that Balsam Peru is preferable to benzoin as a lard ointment preservative.


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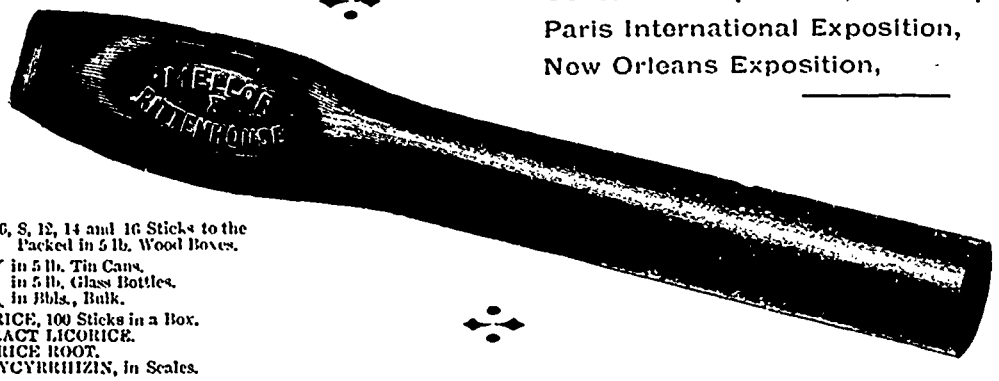


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## FORMULARY.

### ICHTHYOL SUPPOSITORIES.

The following formulary, according to Freudenburg, yields the best preparation:

Sulph. ichthyol ammoniata..... .3
Cacao butter ..... ....2.0

For one suppository.—*Pharm. Central.*

### KEUTEMANN'S BORO ZINC PASTE.

The *Int. Pharm. General-Anzeiger* gives the following:

Zinc oxide ..... ..... 4 gm
Starch ..... . .... 4 gm
Boric acid..... .... .. .50 cgm
Iodoform ..... .....14 cgm
Salicylic acid ..... .....12 gm
Carbonate of lead plaster... 12 gm
Talc ..... .....12 gm
Peru balsam..... ..... .....15 cgm
Vaselin ..... 50 gm

Mix and make a paste.—*Nat. Drug.*

### IODOFORM EMULSION.

Emulsion of iodoform is sometimes prescribed as an injection in certain kinds of fistula, and may be best prepared as follows:

Iodoform .....3 parts
Starch ..... ... .....1 part

Triturate in a mortar until a fine powder results, and then add the following mixture:

Glycerine ..... . .. ....20 parts
Water..... ..... .....12 parts

Warm gradually, and stir constantly until 133° C. is reached. The resulting emulsion will be 10 per cent., and is very stable. Moreover, it is found to act more energetically than the emulsion prepared in the ordinary way.—*Journal de Pharmacie d'Anvers.*

### SOLIDIFIED SANDALWOOD OIL.

Caimel suggests the following method for preparing sandalwood oil pills:

Colophony ..... 8 parts
Oil of sandalwood ..... .....10 parts
Calcined magnesia ..... 1 part

Melt the rosin with a gentle heat, rub up the essential oil and magnesia and add to the melted mass, stirring well. Remove from the fire and stir until cold.

### MACASSAR POMADE.

Castor oil ..... .....10 oz. weight
Suet..... ..... 2 oz.
Spermaceti..... 1 oz.
Oil of nutmegs ..... ℥ f ʒ
Oil of sweet marjoram..... ℥ f ʒ
Oil of rosemary..... ℥ f ʒ
Oil of rose ..... .... ....15 ♏
Oil of rose geranium.....10 ♏
Alkanet root..... ....sufficient to color

Mix the spermaceti and suet adding the castor oil previously colored by digesting with alkanet, and lastly add when nearly cold the perfumes, which in this case are also the medicaments.

### LASSAR'S HAIR-OIL.

According to *Der Pharmacent*, this preparation has the following formula:

Salicylic acid ..... 2 parts
Tincture of benzoin ..... 3 parts
Best olive oil ..... 95 parts

Mix. The prepartion is a stimulant to the growth of hair, and acts at the same time as an antidote to soreness of the scalp arising from neuralgia, etc.

### COSMETIC ALMOND JELLY.

Honey ..... 4 drms.
Naples soft soap ..... 2 drms.
Sweet oil of almonds .....14 ozs
Essential oil of almonds..... 1 drm

### NEW INDELIBLE INK.

Kayser's formula, which we find in the *Pharmacent*, is as follows:

Copper sulphate .....20 parts
Anilin hydrochlorate .....30 parts
Dextrin ..... .....10 parts
Glycerin..... 5 parts
Water, sufficient.

Rub up the copper salt and the anilin, separately, to impalpable powder. Mix the powders and rub up with the dextrin and glycerin, and finally add sufficient water to make a paste or liquid that will flow from a pen or pencil. Applied to linen this ink in a few days becomes a deep and lasting black, which will stand many washings without fading.—*Nat. Drug.*

### A NEW AND QUICK FURNITURE POLISH.

In the German patent list we find the following specifications of a patent for a new furniture polish, issued to Paul Theil of Copenick, near Berlin:

Resin of guaiac ..... .....125 parts
Gum benzoin ..... .....125 parts
Shellac ..... ..... 30 parts
Linseed oil .....150 parts
Benzin..... ..... 30 parts
Alcohol, or wood spirit ....3000 parts

Mix, and dissolve. The polish is applied with a sponge or brush, and the object is let stand for a half-hour. A linen cloth moistened with oil is then used as a rubber, and a brilliant polish is obtained, which is said to be very lasting, and is unaffected by water or other substances which usually injure varnish. Another advantage of it is that it may be applied to woods that have never been varnished or polished, and gives a result equal to the best French polish. No skill is said to be requisite in its use. The rubber must be of linen, and oiled only sufficiently to prevent it sticking when first applied.—*Nat. Druggist.*

### LABEL PASTE.

One of the best pastes for sticking labels on tin cans is made by mixing one pound of the very best flour with six to eight ounces of brown sugar. Boiling water should be used as with ordinary paste. If the labels are light in color this paste will be likely to stain them, and in that case white sugar may be used. It is necessary to make the paste every day as required, as it turns sour very quickly.

### SOME PREPARATIONS OF HYPOPHOSPHITES.

#### GLYCERINUM HYPOPHOSPHITUM.

℞ Calc hypophosphites .... .....gr. 384
Sodii hypophosphites, Potass. hypophos āā..... gr. 256
Aquæ fervens ..... ...ʒ vj.
Aquæ aurantii floris . .....ʒ j.
Oleum amygdalæamaris..... ♏ ij.—M
Glycerini, q. s. .....ad fl. ʒ xvj.

Dissolve salts in boiling water, filter and add the other ingredients.

Each fluid drach contains 3 grs. H. C., and 2 grs. each of H. S. and H. P.

#### SYR. CALCIUM HYPOPHOS.

℞ Calcii hypophos ..... ..... gr. 128
Aquæ dest .....ʒ viij.
Sugar..... .....ʒ xij.

Dissolve H. C. in aquæ, filter and dissolve sugar by percolation.

Each fluid drach contains 1 gr. H. S.

#### SYR. SODIUM HYPOPHOS.

℞ Sodii hypophos .....gr. 128
Aquæ dest .....ʒ iij.

Dissolve, filter and wash with one drachm of aquæ destil., and add sufficient syr. simpl. to make one pint.

Each fluid drachm contains 1 gr. H. S.

#### SOL. HYPOPHOSPHITES (ACID).

℞ Calcii hypophos .....gr. 256
Sodii hypophos, Potassii hypophos āā.....gr. 128
Quiniæ hypophos, Manganese hypophos āā.....gr. xxxij.
Ferri hypophos .....gr. 65
Strychniæ hypophos .....gr. j.
Glycerini .....ʒ xij.
Sol. acidi hypophos .....ʒ iv.
Aquæ, q. s.....ad ʒ xvj.

M. Sec.art.—*R.I.Med. Science Monthly.*

## Salol as a Material for Coating Pills

The difficulty of securing a satisfactory coating of pills with keratin has induced Dr. G. Oeder to make trial of various other substances in its stead, and he has found that salol is well suited for the purpose. The object in view is to provide for the pills passing through the stomach without alteration and being acted upon only when they reach the intestines. Salol has already been recommended as a pill coating for this purpose by Ceppi and Yvon, but they proposed using it in the form of an ether solution. That mode of application was not found to give good results, the deposit of salol upon the pills being too friable and readily rubbed off. Dr. Oeder prefers to apply salol in a melted condition for coating pills, and the operation is carried out in an enamelled sheet iron tray, upon the bottom of which some powdered salol is melted over a spirit lamp or gas flame. The pills are then placed in the tray and rolled in the melted salol, sufficient heat being applied meanwhile to prevent solidification until the surface of the pills are coated with a thin layer. The heating is then discontinued and the rolling of the pills kept up for about one minute until they have sufficiently cooled. For thirty pills of average size the quantity of salol requisite is from a gramme to a gramme and a half, but if the pills are not sufficiently coated in one operation the treatment must be repeated. The pills should have a uniform translucent coating, free from cracks or bare places, and the quantity of salol on each pill need not exceed two centigrammes. Dr. Oeder states that he has succeeded in obtaining a sufficient coating with as little as five milligrammes, and even in the case of the largest sized pills the salol coating need not exceed one decigramme. In carrying out the operation the chief point to be observed is to avoid heating too much, as that would have the effect of decomposing the salol. The low melting point of salol (40°-43° C,) facilitates the operation, and if that temperature is not exceeded the substance may be repeatedly melted without undergoing alteration.—*Pharmaceutische Zeitung.*

# PHOTOGRAPHIC NOTES.

## Pointers in Photography.

From the *Pharmaceutical Journal*, of Australasia.

CONTRAST.

If we have an evenly lighted view deficient in contrast, shortening the exposure will increase the contrast, and prevent flatness in the resulting negative, while, on the other hand, increasing the exposure will soften down a view in which the contrasts are too strong.

DEVELOPMENT.

Development is the complement of exposure, the best photographic result being attained by a normal exposure followed by a standard development; at the same time, under-exposure may be to a certain extent corrected by strengthening the developer, and, on the other hand, even very considerable over-exposure may be neutralised by judicious alterations in the developer.

THE ESSENTIALS OF A GOOD SHUTTER.

A shutter should be (1) free from vibration, (2) adjustable to give various definite exposures, (3) adjustable to vary the relative exposures given to the foreground and sky, (4) portable, (5) simple in construction, (6) should occupy as small a portion as possible of the exposure in opening and closing, and (7) should not be liable to be easily damaged.

SWING-BACKS.

Swing-backs are essential to enable the plate to be placed parallel to the plane of building when the lens cannot be so placed as to have its principal axis perpendicular to the plane of the front of the building, since this parallelism is essential, even with rectilinear lenses, to the reproduction of straight lines. The more fully the building occupies the plate, and especially with high vertical lines near its extremities, the more essential this parallelism is.

THE PERFECT SHUTTER.

An ideal shutter is one which, if it were possible, would open to its full aperture suddenly and without lapse of time, and having remained open a certain time, would close thus suddenly again. Such a shutter would possess the summit of efficiency, but is impossible of construction, and is only spoken of as a standard for comparing other shutters. It is right to make such a shutter the ideal of attainment, generally speaking, although for a certain class of shutter, working within certain limits of speed, as I shall point out, a shutter of low efficiency will give far better results.

PHOTOGRAPHIC CONTROL

A fairly accurate simile of the control of the photographic artist over his developer is supplied by the control of the engineer over his engine. The engine is mechanical, it is true, but it may be made to go slowly or quickly as the guiding mind may decide. In our case, pyro may be said to be the engine and ammonia the steam. For pyro, the moving force, is practically powerless without the infusion of some vitality, which is supplied by the ammonia. Bromide is a safety valve, and keeps the boilers from bursting. But the motto of intelligent development is, keep your finger on the regulator and don't let all the steam in with a rush. Have a safety valve, but don't depend upon it to keep the engine from running away.

## Fluoreal.

Fluoreal is a new developer containing sodium sulphite, lithia in the proportion of 6 parts per 1000, and fluorescein, the function of the latter being to arrest any light waves of short wave length that may have penetrated into the developing room. —*Photography Annual.*

## Paramidophenol.

Citric acid is one of the best solvents of this reducing agent. A solution of 100 parts of the acid in 100 parts of water at 17° C dissolves about 97 parts of the paramidophenol. A satisfactory formula is:

| | |
|---|---|
| Water ..... | 50 parts |
| Paramidophenol citrate,(concct. sol.) ..... | 1 part |
| Sodium sulphite (concct. sol.).. | 4 parts |
| Sodium carbonate (concct. sol.). | 5 parts |
| Caustic potash (10 per cent.). | 2 parts |

Or, for a weaker developer:

| | |
|---|---|
| Water ..... | 150 parts |
| Para-citrate ..... | 2 parts |
| Sodium sulphite ..... | 50 parts |
| Sodium carbonate ..... | 50 parts |

Use concentrated solution as above.—*Amer. Jour. of Photography.*

## Pyro-Stained Negatives.

Five causes are given for the yellowing or staining of negatives developed with pyro: (1) An insufficient quantity of sulphite in the developer: (2) prolonged development of under-exposed plates; (3) insufficient washing before fixing; (4) insufficient fixing; (5) an exhausted hypo bath.—*Amer Jour. Photography.*

## Carbon, or Pigment Printing.

F. GOLDBY, in the *British and Col. Druggist.*

It has often occurred to me as somewhat strange that this most fascinating of all photographic printing processes is generally so much neglected by amateurs. The simplicity and ease with which beautiful and artistic results are obtainable, and the permanency of the finished prints and its adaptability to the making of enlargements, all combine to make the process indispensable to every amateur who wishes to do good and, above all, permanent work. I cannot within the scope of a short article give anything like a complete description of pigment printing, my object being to correct any impression that may exist as to any insuperable difficulty in working. For full information on the subject I must refer the reader to the little manual published by the Autotype Company, which deals simply and fully with the subject.

The process depends upon the sensitiveness to light of gelatine which has been treated with bichromate of potass, this sensitiveness being not in producing any visible image, but in rendering the gelatine insoluble in warm water whenever it has been exposed to light. To prepare the tissue, as it is called, a stout paper is first coated with a thick film of gelatine, with which is incorperated the pigment, finely ground, and of any color required consistent with permanency. This coated paper, when dry, is sensitised by soaking for a short time in a solution of bichromate of potassium or ammonium, and dried in an even temperature in the dark, or in non-actinic light, and when dry is ready for exposure in the printing frame. Now, as no visible image is produced, recourse must be had to an actinometer, which usually consists of a band of ordinary sensitised paper, so placed in a small box that it can be drawn forward, and exposed to light through an aperture in the cover. When the paper under the action of the light has colored to the depth of the index tint given, it is said to have registered one tint; again drawn forward to expose a fresh surface of the paper, and again having reached the standard depth, it has registered two tints, and so on. It is, therefore, quite easy to determine with a little practice the number of tints necessary for any negative. But in my own practice, I have found it simpler, and quite as convenient, to select another negative of about equal density to that which I wish to print from in carbon, and expose a small strip of gelatine chloride printing out paper behind it, and place both frames in the light at the same time, for carbon tissue being of about the same sensitiveness as silver paper, or rather more sensitive, when the latter is nearly printed the carbon will be fully exposed. Before "development," the tissue is soaked for a few minutes in clean cold water, and must then be transferred to a "temporary support." This is accomplished by simply squeezing it whilst wet face downwards into close contact with either a piece of matt surfaced opal, or a piece of the stout paper prepared with resin, supplied by the Autotype Company for the purpose. The temporary support should always be rubbed with a solution of wax and resin in turpentine, before use, in order to facilitate the final transfer. After being allowed to rest for a few minutes between blotting paper, it is ready for development; the development consisting simply of hot water at a temperature of about 100° F. A short time after immersion in this, the pigmented gelatine will begin to ooze from under the edges of the paper, which can then be lifted off, leaving the image buried in the excess of pigment and gelatine upon the temporary support. By gently laving or rocking the dish at the same time keep-

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# "BELLS PERFUMER"

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Any child can understand and operate it.

Every Machine tested and guaranteed.

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W. J. DYAS, Strathroy, Ontario.

ing up the temperature to the required point, the whole of this excess will be gradually dissolved away, leaving the picture upon the support, composed of the pigment imbedded in the gelatine, which has been rendered insoluble by the action of light through the negative. A rinse in clean cold water and a few minutes soaking in an alum bath, and then it is allowed to dry before being finally transferred. The above, so far as it has gone, is as concise a description as I can give of a preparation of a print for what is known as the double transfer process, which is necessary in printing from ordinary negatives, as were the picture developed upon its final support it is obvious that it would be reversed—just as a negative when we look through it from the film side. If, however, a reversed negative be first made, and the print be taken from that, the development can be effected upon the final support, and no double transfer is necessary; but the difficulties in the double transfer process are often much exaggerated, and it is certainly easier to practise than to describe. One precaution I should have mentioned, and that is, that with all carbon printing it is necessary that the negative should have what is called a "safe edge." This is done by affixing a narrow strip of black or red paper around the edges on the back of the negative; a lantern-slide binding strip, half width, answers perfectly. If this be not done there is danger of the film washing up around the edges during development. In the development of the prints there is more latitude than might be expected; an under-exposed print may be often saved by using a cooler temperature than that given; and on the other hand a little hotter water may be kept at hand in a jug to pour over parts that may be over dense. This latter, however, must be carefully done, and if too great a temperature be employed there is a liability to blister.

But to return now to our print upon its temporary support of opal or paper, which we left to dry, and is now ready for its final transfer. We soak a piece of final transfer paper, somewhat larger than required, in a weak alum bath, and then place both this and the print on its temporary support in tepid water, and bring the face of the transfer paper into contact with the print under the water. Lifting both out together, the squeegee is again applied, and the whole left to dry. When *perfectly* dry, the picture, imbedded in the gelatine surface of the final support, will peel off with it just as a gelatine chloride print will from a glass surface, and have a surface, smooth or matt, according to the nature of the temporary support employed. And I can promise that anyone who may take up this process, using negatives of average quality, will be not merely charmed with the result, but will have the satisfaction of producing pictures which can be handed down from generation to generation unchanged, and as permanent as any print can be—of course, provided that the pigment selected is itself permanent. The process is, moreover, an inexpensive one.

For the production of enlargements, the first step is to make a transparency from the negative. This is best done in carbon; a special tissue, prepared with filtered Indian ink, being employed—and the printing must be carried very much farther than in the case of an ordinary print. The development is effected upon an ordinary glass plate of a size a little larger than the print, and the plate should be previously flooded with a 5 per cent. solution of gelatine, in which a small piece of bichromate of potass. is dissolved, and dried in the light. As these plates will keep indefinitely, a number may be prepared and packed away for future use. The reason why this method of obtaining a transparency is resorted to, is that by this process, more than by any other, the details of the highest lights can be secured and at the same time the deepest shadows will have perfect transparency, and the image being composed of finer particles, shows less "grain" than a silver deposit. The transparency being obtained, the next step is to produce from it an enlarged and revised negative upon an ordinary dry plate, the method of procedure being much the same as that employed in making a bromide enlargement, excepting that, of course, a much shorter exposure is required. When the enlarged negative is completed, and any little imperfections spotted out, any number of permanent enlargements may be obtained from it by contact printing and single transfer as before described.

Negatives upon celluloid films are useful for printing from in carbon, as a print may be made from the reverse side with but little loss of sharpness, and thus the necessity for double transfer is obviated.

There is one peculiarity in connection with this process I have omitted to mention, viz., the continuating action of light upon the sensitive tissue, that is, after exposure behind the negative in the printing frame if development be delayed the action of the light still goes on. This fact is often an advantage, especially in very dull wintry weather; when a piece of tissue known to be somewhat under-exposed may be put away for some hours before development, and may then be found to give a fully exposed print.

I trust that this short description may be the means of inducing some to take up the process, who may hitherto have been deterred by some fancied difficulties. So far as difficulties are concerned, there are none greater—I think myself, none so great—as those encountered in ordinary silver printing. Nothing special in the way of apparatus is required, the tissue either sensitised or unsensitised may be obtained in small quantities, and at very moderate prices, from the Autotype company, and from other sources, and will keep in good condition for about fourteen days after being sensitised; prepared temporary support and transfer papers may be obtained from the same sources as the tissue, or for the single transfer process, ordinary drawing paper of any required tint or texture may be employed, being first prepared by brushing over with a strong solution of hard gelatine with a little chrome alum to which the film may adhere during development.

## Newfoundland Cod Liver Oil.

It is really surprising in what a lot of ways this oil is put up to suit the requirements and needs of the many patients that are ordered by their medical advisers to partake of its health-giving virtues.

The greatest medical authorities are all unanimous of the grand recuperative power this oil excels in, above any other kind of oil, in building up the wasted tissues, of weak and exhausted lungs.

For many years the Newfoundland oil was the only one used by Canadian and American druggists, but it had many impurities. Very often the color was against it, but the most serious fault was that when the oil stood for any length of time in a bottle that a sediment or stearine settled down on the bottom, which made the oil look very unattractive to patients, and what was very annoying to the druggists, as well as the consumers, this sediment turned the oil rancid very quickly which made it almost worthless as a medicine for a delicate stomach.

The Norwegians were the first to make improvements in remedying these defects, and by a process of cold storage they made the non-freezing cod liver oil. By a simple means the temperature in a room is reduced to several degrees below freezing point, and then the oil is placed in linen bags, it gets chilled and becomes quite thick. The gravity of the oil always necessitates a certain quantity to run off at this temperature, and it is found that this oil will never get chilled again at the same temperature. It also takes out the stearine and improves the appearance as well as preventing it from getting rancid quickly even when exposed in a hot climate or temperature.

The Newfoundlanders finding that the Norwegians had made such an improvement are not long in adopting the same method, as we find that Munn's Genuine Newfoundland Cod Liver Oil will stand the cold test at 19 degrees below freezing point, while many Norwegian Oils are quite thick at 10 degrees below.

Quite lately an expert in Montreal has been testing the density of Newfoundland Oil as compared with Norwegian to find out which had the heaviest body, and therefore the greatest nourishment for invalids.

A sample of Munn's Newfoundland Oil taken indiscriminately and a bottle of Campbell's Skrei (which is considered the finest Norwegian imported), were the one's that this experiment was tried on. The result shows that by Beaumen's scale Campbell's Skrei is 20° density at 60° Fahrenheit, and Munn's Newfoundland Oil is 19° density at 60° Fahrenheit, which proves that the Newfoundland Oil is one point ahead of the Norwegian. To

give a better idea of what the difference is we may explain that Beaumen's scale is registered 1° of density equals 10° of temperature. This shows that the quality of the Oil manufactured on this side of the Atlantic is much superior to that of Europe, and that the Newfoundland manufacturers only need proceed on the path which now lies open to them to regain the trade which the Norwegians have taken.

## Books.

DUANE'S STUDENTS' DICTIONARY OF MEDICINE.—The Students' Dictionary of Medicine and the Allied Sciences. Comprising the pronunciation, derivation and full explanation of medical terms, together with much collateral descriptive matter, numerous tables, etc. By Alexander Duane, M. D., assistant surgeon to the New York Ophthalmic and Aural Institute; Reviser of Medical Terms for Webster's International Dictionary. In one square octavo volume of 658 pages. Cloth, $4.25; half leather, $4.50; full sheep, $5.00. Philadelphia, Lea Brothers & Co., 1893. Dr. Duane's experience as a medical lexicographer and his accurate scholarship are a sufficient guarantee to students that the work now provided for them is one which embodies every qualification of value in the matter supplied and the extensive tables given are scrupulously exact. The arrangement of the work is excellent, and as an aid to the student of medicine is far in advance of previous works of this nature.

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THE CHEMIST AND DRUGGIST'S "DIARY" for 1894, is to hand, and as usual contains much that is useful to the retail druggist. The principle feature this year, outside the diary proper, is a selection of formulæ which have appeared from time to time in answer to queries from readers of the *Chemist and Druggist*.

## Magazines.

### Brainard's Musical World.

The Christmas number of *Brainard's Musical World* is a particularly choice one. It contains articles by Christine Nilsson, J. G. Holland, Miss Virginia Key, Karl Merz and others. The musical selections are The Bridal Bells Waltz, Odson Polka, a song entitled, Jack and May, by Cawthorn, and Mosaics No. 4. The subscription price of this publication is only $1.50 a year. Published by the S. Brainard's Sons Co., 145 and 147, Wabash Avenue, Chicago.

### Cyclopedic Review of Current History.

Among the excellent periodicals that it is our privilege to notice in these columns, there is none more deserving of praise than *The Cyclopedic Review of Current History*, now published at Buffalo. Its usefulness becomes at once apparent to any one who tries to obtain information of events of recent date—too recent to have been recorded in permanent form in cyclopedias, histories, or other books of reference. Newspaper files, if preserved, are too cumbersome for convenient use. *Current History* stands alone in the field, in furnishing its readers every quarter a concise statement of the principal events of the world's history for the preceding three months, entirely free from political or sectarian bias, and fully comprehensive and reliable.

The *Third Quarter*, for 1893, has just been received. It covers the events of the quarter ending September 30, and is an interesting record of an interesting period of history. It contains 228 pages, fully illustrated, $1.50 per year. Single number, 40 cents.

Published by GARRETSON COX & Co., Buffalo, N.Y.

### The Woman's Christmas Magazine.

The most popular little boy character ever created in a story, "Little Lord Fauntleroy," lives again in the Christmas *Ladies' Home Journal*. But this time Mrs. Frances Hodgson Burnett begins to tell "How Fauntleroy Really Occurred," while Mr. Birch, the original illustrator, sketches Fauntleroy again in his inimitable pictures. Frank R. Stockton, too, gives us back his most delightful character "Pomona," and in a deliciously funny way this quaint girl begins a series of letters to her former mistress of "Rudder Grange," telling her of her social boom abroad with her husband amid the aristocracy of England. William Dean Howells begins his literary autobiography which he happily calls "My Literary Passions," and tells of the reading of his boyhood in his father's house. George W. Childs is likewise autobiographical in a brief narrative of "My Christmas as a Boy." So, too, is Hamlin Garland, who goes back to his boyhood and describes "A Pioneer Christmas," which Reinhart illustrates. The full piano score of Sousa's new "Manhattan Beach March" is given exclusively in this issue of the *Journal*, and has all the spirit of his famous "High School Cadets" and "Washington Post" marches. Mrs. A. D. T. Whitney writes the first of a series of "Friendly Letters to My Girl Friends." Julia Magruder begins what gives promise of being a powerful serial, "A Beautiful Alien," with superb illustrations by A. B. Wenzell. A new biographical series is started, "Wives of Famous Pastors," which sketches Mrs. John R Paxton, with portrait. The humorous "Bob Burdette" is very funny in his description of "My Christmas Shopping"; the Rev. T. De Witt Talmage prophesies "This Christmas in America" based upon the present financial stringency; three of A. B. Wenzell's most stylish girls portray Mrs. Mallon's article on "The Art of Street Dressing," while other writers give eminently practical advice on every point touching the giving, making and sending of holiday gifts. Altogether, the Christmas *Ladies' Home Journal* is the best this magazine has ever sent out, and seems ridiculously cheap at its price of ten cents. It is certainly an ideal woman's magazine, and this particular issue stamps it as being without a peer. The *Journal* is published in Philadelphia at One Dollar per year by The Curtis Publishing Company.

### The Canadian Magazine.

The *Canadian Magazine* in its December, or Christmas number, fully bears out the high character of this periodical, which has already attained in literary quality and interest, a position rivalling any magazine on the continent. The fiction is excellent, and well illustrated; the articles are fresh, and of great variety; the poetry is equal to that of any magazine in the world. Ogilvie's famous trip "Down the Yukon and up the Mackenzie," furnishes a most entertaining and well illustrated story of travel and exploration. Rev. H. H. Gowen's "Salmon Fishing and Canning on the Fraser," is another illustrated article of much interest. J. L. Hughes tells charmingly of "An Hour with Oliver Wendell Holmes." W. H. Blake in "Humors of Bench and Bar," writes one of the best of recent contributions to fun. Lieut'-Col. O'Brien writes thoughtfully on "Our Militia," and J. S. Ewart, Q.C., vigorously, in reply to his critics on the Manitoba School Question. J. Castell Hopkins, in "Lord and Lady Aberdeen," contributes a timely article. "Art at the World's Fair," by J. A. Radford and "W. T. Stead on Telepathy," make interesting reading. H. Beaugrand, of Montreal, gives an excellent Christmas story of French-Canadian life, and Miss Freeland another of Ontarioan flavor; the former beautifully illustrated; while A. H. Morrison, in "A Christmas Tragedy," produces a well illustrated, comic tale. Bliss Carmen's "The Ships of St. John," and Moncton's "Kootenoy," are amongst the striking poetical contributions.

Altogether, the magazine scores a distinct success. It is published by the Ontario Publishing Co., Ltd., Toronto; $2.50 per annum. As a Christmas gift to a friend, the *Magazine* for one year would be one of the very best of the season's remembrancers.

## Crystalline Salol-Camphor.

Crystalline Salol-Camphor is prepared by H. Bernouvin (*Rep. de Pharm*, 1893; No. 9) by powdering salol and camphor, melting them with a gentle heat, and then allowing them to crystallize. The author points out that mixtures of these two substances crystallize rapidly as the proportion of salol is increased, and recommends the use of only 10% of camphor. Crystallization takes place in about one-quarter of an hour. The result will be brilliant, dry and white crystals, which may be powdered. This compound, it is claimed, admits of therapeutical applications for which the liquid form of salol-camphor (salol 3 parts, camphor 2) is not available.

It is only the really busy man who can find time to attend to the demands of others for assistance.

## Peruvian Balsam.

This article is the product of the *Myrospermum salvatoriensis* or *Hoitziloxitl*, which grows almost exclusively on the "Costa del Balsamo," or "balsam coast," of Salvador, comprised by the southern shores of the department of Sonsonate and La Libertad.

The balsam is a beautiful tree averaging one hundred feet in height and 20 inches in diameter. There are two ways to extract the liquid, erroneously styled Peruvian balsam. The first consists in scraping the skin of the bark to the depth of one-tenth of an inch with a sharp machete in small spaces some 12 to 15 inches square all along the trunk and stout branches of the tree. Immediately after this operation the portions scraped are heated with burning torches made out of the dry branches of a tree called "chimaliote," and after this pieces of old cotton cloth are spread on the warmed and half-charred bark. By punching the edges of the cloths against the tree with the point of the machete they are made to adhere. In this condition they are left for 24 and even 48 hours (in January), when the rags are gathered and submitted to a decoction in big iron pots. After this the rags are subjected, while still hot, to great pressure in an Indian machine made of strong ropes and wooden levers worked by hand. The balsam oozes out and falls into a receptacle, where it is allowed to cool. This is called raw balsam. To refine it, they boil it again and drain it, after which they pack it in iron cans ready for market.

The other method of extracting balsam consists in entirely barking the trunk and heavy branches of the tree, a process which, as a rule, kills it outright and at best renders it useless for several years. The bark is finely ground, boiled and submitted to pressure in order to extract the oil, which is considered of an inferior quality to that obtained by the system first described. Both methods are defective, but the latter is ruinous and forbidden by the authorities.

The name of Peruvian balsam was given to this article because it was first sent from San Salvador to Peru in the time of the Spaniards and from Callao reshipped to Europe.—*U. S. Consular Report.*

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MICROBES IN MINERAL WATER.—Vichy and other waters are originally destitute of microbes, but are quickly contaminated, and experiments show that the contamination arises from the air at the apertures through which the water rises. During the first fortnight after bottling the number increases, but later and in equal period decreases. The number of germs found in waters from various springs differs according to the temperature of the spring, the higher it is the more numerous the microbes.

# Canadian Druggist Prices Current:

**CORRECTED TO DECEMBER 10th, 1893.**

The quotations given represent average prices for quantities usually purchased by Retail Dealers. Larger parcels may be obtained at lower figures, but quantities smaller than those named will command an advance.

| | | |
|---|---|---|
| Alcohol, gal | $4 05 | $4 25 |
| Methyl, gal | 1 90 | 2 00 |
| Allspice, lb | 13 | 15 |
| Powdered, lb | 15 | 17 |
| Aloin, oz | 40 | 45 |
| Anodyne, Hoffman's bot., lbs | 50 | 55 |
| Arrowroot, Bermuda, lb | 45 | 50 |
| St. Vincent, lb | 15 | 18 |
| Balsam, Fir, lb | 45 | 50 |
| Copaiba, lb | 65 | 75 |
| Peru, lb | 2 50 | 2 75 |
| Tolu, can or less, lb | 75 | 80 |
| Bark, Barberry, lb | 22 | 25 |
| Bayberry, lb | 15 | 18 |
| Buckthorn, lb | 15 | 17 |
| Canella, lb | 15 | 17 |
| Cascara Sagrada | 25 | 30 |
| Cascarilla, select, lb | 18 | 20 |
| Cassia, in mats, lb | 18 | 20 |
| Cinchona, red, lb | 60 | 65 |
| Powdered, lb | 65 | 70 |
| Yellow, lb | 35 | 40 |
| Pale, lb | 40 | 45 |
| Elm, selected, lb | 16 | 18 |
| Ground, lb | 17 | 20 |
| Powdered, lb | 20 | 28 |
| Hemlock, crushed, lb | 18 | 20 |
| Oak, white, crushed, lb | 15 | 17 |
| Orange peel, bitter, lb | 15 | 16 |
| Prickly ash, lb | 35 | 40 |
| Sassafras, lb | 15 | 16 |
| Soap (quillaya), lb | 13 | 15 |
| Wild cherry, lb | 13 | 15 |
| Beans, Calabar, lb | 45 | 50 |
| Tonka, lb | 1 50 | 2 75 |
| Vanilla, lb | 7 00 | 8 00 |
| Berries, Cubeb, sifted, lb | 75 | 80 |
| powdered, lb | 85 | 90 |
| Juniper, lb | 10 | 12 |
| Ground, lb | 12 | 14 |
| Prickly ash, lb | 40 | 45 |
| Buds, Balm of Gilead, lb | 55 | 60 |
| Cassia, lb | 25 | 30 |
| Butter, Cacao, lb | 75 | 80 |
| Camphor, lb | 65 | 70 |
| Cantharides, Russian, lb | 2 00 | 2 10 |
| Powdered, lb | 2 10 | 2 20 |
| Capsicum, lb | 25 | 30 |
| Powdered, lb | 30 | 35 |
| Carbon, Bisulphide, lb | 16 | 18 |
| Carmine, No. 40, oz | 40 | 50 |
| Castor, Fibre, lb | 16 00 | 17 00 |
| Chalk, French, powdered, lb | 10 | 12 |
| Precip., see Calcium, lb | 10 | 12 |
| Prepared, lb | 5 | 6 |
| Charcoal, Animal, powd., lb | 4 | 5 |
| Willow, powdered, lb | 20 | 25 |
| Clove, lb | 25 | 30 |
| Powdered, lb | 30 | 35 |
| Cochineal, Honduras, lb | 40 | 45 |
| Collodion, lb | 75 | 80 |
| Cantharidal, lb | 2 50 | 2 75 |
| Confection, Senna, lb | 25 | 30 |
| Creosote, Wood, lb | 2 00 | 2 50 |
| Cuttlefish Bone, lb | 35 | 40 |
| Dextrine, lb | 10 | 12 |
| Dover's Powder, lb | 1 50 | 1 60 |
| Ergot, Spanish, lb | 1 00 | 1 10 |
| Powdered, lb | 1 15 | 1 30 |
| Ergotin, Keith's, oz | 2 00 | 2 10 |
| Extract, Logwood, bulk, lb | 13 | 14 |
| Pounds, lb | 14 | 17 |
| Flowers, Arnica, lb | 15 | 20 |
| Calendula, lb | 55 | 60 |
| Chamomile, Roman, lb | 30 | 35 |
| German, lb | 40 | 45 |
| Elder, lb | 20 | 22 |
| Lavender, lb | 12 | 15 |
| Rose, red, French, lb | 1 60 | 2 00 |
| Rosemary, lb | 25 | 30 |
| Saffron, American, lb | 75 | 80 |
| Spanish, Val'a, oz | 1 00 | 1 25 |
| Gelatine, Cooper's lb | 1 20 | 1 25 |
| French, white, lb | 40 | 50 |
| Glycerine, lb | 16½ | 18 |
| Guarana | 3 00 | 3 25 |
| Powdered, lb | 3 25 | 3 50 |
| Gum Aloes, Cape, lb | 18 | 20 |
| Barbadoes, lb | 30 | 50 |
| Socotrine, lb | 65 | 70 |
| Assafœtida, lb | 25 | 28 |
| Arabic, 1st, lb | 65 | 70 |
| Powdered, lb | 75 | 85 |
| Sifted sorts, lb | 40 | 45 |
| Sorts, lb | 25 | 30 |
| Benzoin, lb | 50 | 1 60 |
| Catechu, Black, lb | 9 | 20 |
| Gamboge, powdered, lb | 1 30 | 1 35 |
| Guaiac, lb | 75 | 1 00 |
| Powdered, lb | 95 | 1 20 |
| Kino, true, lb | 45 | |
| Myrrh, lb | 45 | 48 |
| Powdered, lb | 55 | 60 |
| Opium, lb | 4 50 | 4 75 |
| Powdered, lb | 6 50 | 6 75 |
| Scammony, pure Resin, lb | 12 80 | 13 00 |
| Shellac, lb | 40 | 45 |
| Bleached, lb | 45 | 50 |
| Spruce, true, lb | 30 | 35 |
| Tragacanth, flake, 1st, lb | 1 00 | 1 10 |
| Powdered, lb | 1 10 | 1 15 |
| Sorts, lb | 40 | 75 |
| Thus, lb | 8 | 10 |
| Herb, Althea, lb | 27 | 30 |
| Bitterwort, lb | 27 | 30 |
| Burdock, lb | 16 | 18 |
| Boneset, ozs, lb | 15 | 17 |
| Catnip, ozs, lb | 17 | 20 |
| Chiretta, lb | 25 | 30 |
| Coltsfoot, lb | 20 | 38 |
| Feverfew, ozs, lb | 53 | 55 |
| Grindelia robusta, lb | 45 | 50 |
| Hoarhound, ozs., lb | 17 | 20 |
| Jaborandi, lb | 45 | 50 |
| Lemon Balm, lb | 38 | 40 |
| Liverwort, German, lb | 38 | 40 |
| Lobelia, ozs., lb | 15 | 20 |
| Motherwort, ozs., lb | 20 | 22 |
| Mullein, German, lb | 17 | 20 |
| Pennyroyal, ozs., lb | 18 | 20 |
| Peppermint, ozs., lb | 21 | 25 |
| Rue, ozs., lb | 30 | 35 |
| Sage, Ozs., lb | 18 | 20 |
| Spearmint, lb | 21 | 25 |
| Thyme, ozs., lb | 18 | 20 |
| Tansy, ozs., lb | 15 | 18 |
| Wormword, oz | 20 | 22 |
| Yerba Santa, lb | 38 | 44 |
| Honey, lb | 13 | 15 |
| Hops, fresh, lb | 20 | 25 |
| Indigo, Madras, lb | 75 | 80 |
| Insect Powder, lb | 25 | 28 |
| Isinglass, Brazil, lb | 2 00 | 2 10 |
| Russian, true, lb | 6 00 | 6 50 |
| Leaf, Aconite, lb | 25 | 30 |
| Bay, lb | 18 | 20 |
| Belladonna, lb | 25 | 30 |
| Buchu, long, lb | 50 | 55 |
| Short, lb | 22 | 25 |
| Coca, lb | 55 | 60 |
| Digitalis, lb | 25 | 30 |
| Eucalyptus, lb | 18 | 20 |
| Hyoscyamus | 25 | 30 |
| Matico, lb | 70 | 75 |
| Senna, Alexandria, lb | 25 | 30 |
| Tinnevelly, lb | 15 | 25 |
| Stramonium, lb | 20 | 25 |
| Uva Ursi, lb | 15 | 18 |
| Leeches, Swedish, doz | 1 00 | 1 10 |
| Licorice, Solazzi | 45 | 50 |
| Pignatelli | 35 | 40 |
| Grasso | 80 | 85 |
| Y & S—Sticks, 6 to 1 lb., per lb | 27 | 30 |

## DRUG REPORTS.

### Ontario.

Business shows signs of reviving and the future looks brighter with the advent of sleighing, which it is to be hoped will stay until after Christmas. Druggists are doing very little in fancy goods, depending more on a general line of perfumery and druggists' sundries. Some few have gone into confectionery of a fine kind. This class of goods can be nicely handled in a drug store. The great trouble is to make *cash* sales. People seem to think druggists did not go to the World's Fair, as well as themselves, and are not as much in need of money, Would it not be well if local druggists combined a little more on shortening credits? It seems to us drugs and medicines should be sold for cash, or thirty days account at outside.

Bromide of Potash has advanced and is worth 55 cents.

Oil of Peppermint is advancing.

Antipyrine—the patent on this has expired, we understand, and the Germans have the French as competitors. The French is a little lower in price.

Further than this there is no special change in values to note.

### England.

London, Nov. 25th, 1893.

The conclusion of the coal strike will tend to reduce prices of heavy chemicals, but at present there has been no change.

The most important decline is in Opium, owing to speculators requiring to realise. As the stocks are not large it is doubtful if it will decline further.

Quinine remains steady, but without demand.

Ipecacuanha is easier.

There are large stocks here of Curacoa Aloes, and prices are barely maintained.

Balsam of Copaiba is dearer.

American and Japan Oil of Peppermint are also higher.

Fine qualities of Rhubarb obtain good prices, but they are scarce. Medium qualities are quiet.

Chlorate of Potash is firmer. Other compounds, unaltered.

An advance has been made by the Scotch manufacturers of Chloroform, and also by the English makers of Ammonia Compounds.

Mercurials are unaltered.

### Cod Liver Oil.

Joh. Rye Holmboe, of Tromsoe, Norway, writes us as follows, under date of November 22nd:

The Cod Liver Oil and Fish Oil markets have been dull through almost the whole year. It seems that exporters have not expected prices to improve, as all stocks are pretty well cleared out. As far as I can judge, a good many factories will be going next season, and if the fishery at Lofoten does not fall below the average, we may look out for moderate prices next season. Until the end of January no new oil will be ready for shipment.

### Heavy Chemicals.

We take the following from Arthur P. Tippet & Co.'s report for December, from St. John, N. B.:

During the season there have been but few radical changes in prices and we note below the more leading features in this respect.

Bicarb. Soda.—This is ruling at a slightly higher rate than during last season, with a prospect of continuing at the present price for some time to come. The high quality and purity of the Bicarb. Soda manufactured by the United Alkali Co. has led to a very satisfactory increase in the trade, and we trust to see still larger demands during the coming season.

Soda Crystals.—After the opening of the season these fell, without good reason, to a very low rate. Present price is about 5 shillings higher than the opening price of the season.

Crystal Carbonate or Concentrated Washing Soda.—The increase in the sale of this article has been very gratifying and is an evidence that all users of washing soda are beginning to appreciate the great advantage of having this article in a concentrated form.

Soda Ash is at present ruling lower than at the opening of the season, but its future is entirely uncertain. Present rates distinctly favor buyers.

Sulphur.—This article also experienced a slight reduction during the summer. There is but little question of higher rates during the coming season. In this, also, prices favor buyers.

Epsom Salts.—The demand for high class goods has led to a very satisfactory increase in shipment of the brand we sell.

With the exception of Cream Tartar, little change has taken place in other lines. In that article, however, the course has been systematically downward, the present price being the lowest ever known. The coal strike in England has so entirely upset manufacturing industries that it will take many months to restore the equilibrium, and the feeling in England appears to be that it will be a long time before we see as low a range of prices on Chemicals as during the past season.

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Gollanol is a new remedy employed in psoriasis, and prepared by boiling tannin and aniline together. It is a white, crystalline, bitter powder, sparingly soluble in cold water, readily in hot water, alcohol, and ether; insoluble in benzine and chloroform.—*Rev. de Ther.*

| | | |
|---|---|---|
| Y & S—Purity, 100 sticks in box | 75 | 75 |
| " Purity, 200 sticks in box | 1 50 | 1 50 |
| " Acme Pellets, 5 lb. tins | 2 00 | 2 00 |
| " Lozenges, 5 lb. tins | 1 50 | 1 75 |
| " Tar, Licorice & Tolu, 5 lb. tins | 2 00 | 2 00 |
| LUPULIN, oz | 30 | 35 |
| LYCOPODIUM, lb | 70 | 80 |
| MACE, lb | 1 20 | 1 25 |
| MANNA, lb | 1 60 | 1 75 |
| MOSS, Iceland, lb | 9 | 10 |
| Irish, lb | 9 | 10 |
| MUSK, Tonquin, oz | 46 00 | 50 00 |
| NUTGALLS, lb | 21 | 25 |
| Powdered, lb | 25 | 30 |
| NUTMEGS, lb | 1 00 | 1 10 |
| NUX VOMICA, lb | 10 | 12 |
| Powdered, lb | 25 | 27 |
| OAKUM, lb | 12 | 15 |
| OINTMENT, Merc., lb ½ and ¼ | 70 | 75 |
| Citrine, lb | 45 | 50 |
| PARALDEHYDE, oz | 15 | 18 |
| PEPPER, black, lb | 22 | 25 |
| Powdered, lb | 25 | 30 |
| PITCH, black, lb | 3 | 4 |
| Burgundy, true, lb | 10 | 12 |
| PLASTER, Calcined, bbl cash | 2 25 | 3 25 |
| Adhesive, yd | 12 | 13 |
| Belladonna, lb | 65 | 70 |
| Galbanum Comp., lb | 80 | 85 |
| Lead, lb | 25 | 30 |
| POPPY HEADS, per 100 | 1 00 | 1 10 |
| ROSIN, Common, lb | 2½ | 3 |
| White, lb | 3½ | 4 |
| RESORCIN, White, oz | 25 | 30 |
| ROCHELLE SALT, lb | 25 | 28 |
| ROOT, Aconite, lb | 22 | 25 |
| Althea, cut, lb | 30 | 35 |
| Belladona, lb | 25 | 30 |
| Blood, lb | 15 | 16 |
| Bitter, lb | 27 | 30 |
| Blackberry, lb | 15 | 18 |
| Burdock, crushed, lb | 18 | 20 |
| Calamus, sliced, white, lb | 20 | 25 |
| Canada Snake, lb | 30 | 35 |
| Cohosh, Black, lb | 15 | 20 |
| Colchicum, lb | 40 | 45 |
| Columbo, lb | 20 | 22 |
| Powdered, lb | 25 | 30 |
| Coltsfoot, lb | 38 | 40 |
| Comfrey, crushed, lb | 20 | 25 |
| Curcuma, powdered, lb | 13 | 14 |
| Dandelion, lb | 15 | 18 |
| Elecampane, lb | 15 | 10 |
| Galangal, lb | 15 | 18 |
| Gelsemium, lb | 22 | 25 |
| Genitan, lb | 9 | 10 |
| Ground, lb | 10 | 12 |
| Powdered, lb | 13 | 15 |
| Ginger, African, lb | 18 | 20 |
| Po., lb | 20 | 22 |
| Jamaica, blchd., lb | 27 | 30 |
| Po., lb | 30 | 35 |
| Ginseng, lb | 3 00 | 3 25 |
| Golden Seal, lb | 75 | 80 |
| Gold Thread, lb | 90 | 95 |
| Hellebore, White, powd., lb | 12 | 15 |
| Indian Hemp | 18 | 30 |
| Ipecac, lb | 2 65 | 2 75 |
| Powdered, lb | 2 80 | 3 00 |
| Jalap, lb | 55 | 60 |
| Powdered, lb | 60 | 65 |
| Kava Kava, lb | 40 | 90 |
| Licorice, lb | 12 | 15 |
| Powdered, lb | 13 | 15 |
| Mandrake, lb | 13 | 18 |
| Masterwort, lb | 16 | 40 |
| Orris, Florentine, lb | 30 | 35 |
| Powdered, lb | 40 | 45 |
| Pareira Brava, true, lb | 40 | 45 |
| Pink, lb | 75 | 80 |
| Parsley, lb | 30 | 35 |
| Pleurisy, lb | 20 | 25 |
| Poke, lb | 15 | 18 |
| Queen of the Meadow, lb | 18 | 20 |
| Rhatany, lb | 20 | 30 |
| Rhubarb, lb | 75 | 2 50 |
| Sarsaparilla, Hond, lb | 40 | 45 |
| Cut, lb | 50 | 55 |
| Senega, lb | 55 | 65 |
| Squill, lb | 13 | 15 |
| Stillingia, lb | 22 | 25 |
| Powdered, lb | 25 | 27 |
| Unicorn, lb | 38 | 40 |
| Valerian, English, lb true | 20 | 25 |
| Virginia Snake, lb | 40 | 45 |
| Yellow Dock, lb | 15 | 18 |
| RUM, Bay, gal | 2 25 | 2 50 |
| Essence, lb | 3 00 | 3 25 |
| SACCHARIN, oz | 1 25 | 1 50 |
| SEED, Anise, Italian, sifted, lb | 13 | 15 |
| Star, lb | 35 | 40 |
| Burdock, lb | 30 | 35 |
| Canary, bag or less, lb | 5 | 7 |
| Caraway, lb | 10 | 13 |
| Cardamom, lb | 1 25 | 1 50 |
| Celery | 30 | 35 |
| Colchicum | 75 | 80 |
| Coriander, lb | 10 | 12 |
| Cumin, lb | 15 | 20 |
| Fennel, lb | 15 | 17 |
| Fenugreek, powdered, lb | 7 | 9 |
| Flax, cleaned, lb | 3½ | 4 |
| Ground, lb | 4 | 5 |
| Hemp, lb | 6 | 6½ |
| Mustard, white, lb | 11 | 12 |
| Powdered, lb | 15 | 20 |
| Pumpkin | 25 | 30 |
| Quince, lb | 65 | 70 |
| Rape, lb | 8 | 9 |
| Strophanthus, oz | 50 | 55 |
| Worm, lb | 22 | 25 |
| SEIDLITZ MIXTURE, lb | 25 | 30 |
| SOAP, Castile, Mottled, pure, lb | 10 | 12 |
| White, Conti's, lb | 15 | 16 |
| Powdered, lb | 25 | 35 |
| Green (Sapo Viridis), lb | 12 | 25 |
| SPERMACETI, lb | 50 | 55 |
| TURPENTINE, Chian, oz | 75 | 80 |
| Venice, lb | 10 | 12 |
| WAX, White, lb | 50 | 75 |
| Yellow | 40 | 45 |
| WOOD, Guaiac, rasped | 5 | 6 |
| Quassia chips, lb | 10 | 12 |
| Red Saunders, ground, lb | 5 | 6 |
| Santal, ground, lb | 5 | 6 |
| **CHEMICALS.** | | |
| ACID, Acetic, lb | 12 | 13 |
| Glacial, lb | 45 | 50 |
| Benzoic, English, oz | 20 | 25 |
| German, oz | 10 | 12 |
| Boracic, lb | 20 | 25 |
| Carbolic Crystals, lb | 30 | 38 |
| Calvert's No. 1, lb | 2 10 | 2 15 |
| No. 2, lb | 1 35 | 1 40 |
| Citric, lb | 65 | 70 |
| Gallic, oz | 10 | 12 |
| Hydrobromic, diluted, lb | 30 | 35 |
| Hydrocyanic, diluted, oz. bottles doz | 1 50 | 1 60 |
| Lactic, concentrated, oz | 22 | 25 |
| Muriatic, lb | 3 | 5 |
| Chem, pure, lb | 18 | 20 |
| Nitric, lb | 10½ | 13 |
| Chem, pure, lb | 25 | 30 |
| Oleic, purified, lb | 75 | 80 |
| Oxalic, lb | 12 | 13 |
| Phosphoric, glacial, lb | 1 00 | 1 10 |
| Dilute, lb | 13 | 17 |
| Pyrogallic, oz | 35 | 38 |
| Salicylic, white, lb | 1 80 | 2 00 |
| Sulphuric, carboy, lb | 2½ | 2¾ |
| Bottles, lb | 5 | 6 |
| Chem. pure, lb | 18 | 20 |
| Tannic, lb | 90 | 1 10 |
| Tartaric, powdered, lb | 40 | 45 |
| ACETANILID, lb | 90 | 1 00 |
| ACONITINE, grain | 4 | 5 |
| ALUM, cryst., lb | 1¾ | 3 |
| Powdered, lb | 3 | 4 |
| AMMONIA, Liquor, lb .880 | 8¾ | 10 |
| AMMONIUM, Bromide, lb | 65 | 75 |
| Carbonate, lb | 12 | 13 |
| Iodide, oz | 35 | 40 |
| Nitrate, crystals, lb | 40 | 45 |
| Muriate, lb | 12 | 16 |
| Valerianate, oz | 55 | 60 |
| AMYL, Nitrite, oz | 16 | 18 |
| ANTINERVIN, oz | 85 | 00 |
| ANTIPYRIN oz | 1 00 | 1 10 |
| ARISTOL, oz | 2 00 | 2 25 |
| ARSENIC, Donovan's sol., lb | 25 | 30 |
| Fowler's, sol., lb | 13 | 15 |
| Iodide, oz | 35 | 40 |
| White, lb | 6 | 7 |
| ATROPINE, Sulp., in ¼ ozs., oz | 7 00 | 8 00 |
| BISMUTH, Ammonia-citrate, oz | 40 | 45 |
| Salicylate, oz | 30 | 35 |
| Subcarbonate, lb | 2 75 | 3 00 |
| Subnitrate, lb | 2 40 | 2 60 |
| BORAX, lb | 9 | 10 |
| Powdered, lb | 10 | 11 |
| BROMINE, oz | 8 | 13 |
| CADMIUM, Bromide, oz | 20 | 25 |
| Iodide, oz | 45 | 50 |
| CALCIUM, Hypophosphite, lb | 1 50 | 1 60 |
| Iodide, oz | 95 | 1 00 |
| Phosphate, precip., lb | 35 | 38 |
| Sulphide, oz | 5 | 6 |
| CERIUM, Oxalate, oz | 10 | 12 |
| CHINOIDINE, oz | 15 | 18 |
| CHLORAL, Hydrate, lb | 1 00 | 1 10 |
| Croton, oz | 75 | 80 |
| CHLOROFORM, lb | 65 | 2 00 |
| CINCHONINE, sulphate, oz | 25 | 30 |
| CINCHONIDINE, Sulph., oz | 15 | 20 |
| COCAINE, Mur., oz | 8 50 | 9 00 |
| COPPER, Sulph. (Blue Vitrol) lb. | 7 | 8 |
| Iodide, oz | 65 | 70 |
| COPPERAS, lb | 1 | 3 |
| ETHER, Acetic, lb | 75 | 80 |
| Sulphuric, lb | 40 | 50 |
| EXALGINE, oz | 1 00 | 1 10 |
| HYOSCYAMINE, Sulp., crystals, gr. | 25 | 30 |
| IODINE, lb | 5 00 | 5 50 |
| IODOFORM, lb | 6 00 | 7 00 |
| IODOL, oz | 1 30 | 1 40 |
| IRON, by Hydrogen | 1 00 | 1 10 |
| Carbonate, Precip., lb | 15 | 16 |
| Sacch., lb | 35 | 40 |
| Chloride, lb | 45 | 55 |
| Sol., lb | 13 | 16 |
| Citrate, U. S. P., lb | 90 | 1 00 |
| And Ammon., lb | 75 | 80 |
| And Quinine, lb | 1 50 | 3 00 |
| Quin. and Stry., oz | 18 | 30 |
| And Strychnine, oz | 13 | 15 |
| Dialyzed, Solution, lb | 50 | 55 |
| Ferrocyanide, lb | 55 | 60 |
| Hypophosphites, oz | 20 | 25 |
| Iodide, oz | 40 | 45 |
| Syrup, lb | 40 | 45 |
| Lactate, oz | 5 | 6 |
| Pernitrate, solution, lb | 15 | 16 |
| Phosphate scales, lb | 1 25 | 1 30 |
| Sulphate, pure, lb | 7 | 9 |
| Exsiccated, lb | 8 | 10 |
| And Potass. Tartrate, lb | 80 | 85 |
| And Ammon Tartrate, lb | 85 | 90 |
| LEAD, Acetate, white, lb | 13 | 15 |
| Carbonate, lb | 7 | 8 |
| Iodide, oz | 35 | 40 |
| Red, lb | 7 | 9 |
| LIME, Chlorinated, bulk, lb | 4 | 5 |
| In packages, lb | 6 | 7 |
| LITHIUM, Bromide, oz | 40 | 45 |
| Carbonate, oz | 30 | 35 |
| Citrate, oz | 25 | 30 |
| Iodide, oz | 50 | 55 |
| Salicylate, oz | 35 | 40 |
| MAGNESIUM, Calc., lb | 55 | 60 |
| Carbonate, lb | 18 | 20 |
| Citrate, gran., lb | 40 | 45 |
| Sulph. (Epsom salt), lb | 1¾ | 3 |
| MANGANESE, Black Oxide, lb | 5 | 7 |
| MENTHOL, oz | 35 | 40 |
| MERCURY, lb | 90 | 95 |
| Ammon (White Precip.), | 1 25 | 1 30 |
| Chloride, Corrosive, lb | 1 00 | 1 10 |
| Calomel, lb | 1 15 | 1 20 |
| With Chalk, lb | 60 | 65 |
| Iodide, Proto, oz | 35 | 40 |
| Bin., oz | 25 | 30 |
| Oxide, Red, lb | 1 30 | 1 35 |
| Pill (Blue Mass), lb | 70 | 75 |
| MILK SUGAR, powdered, lb | 50 | 55 |
| MORPHINE, Acetate, oz | 2 00 | 2 10 |
| Muriate, oz | 2 00 | 2 10 |
| Sulphate, oz | 2 25 | 2 30 |
| PEPSIN, Saccharated, oz | 35 | 40 |
| PHENACETINE, oz | 45 | 50 |
| PILOCARPINE, Muriate, grain | 5 | 6 |
| PIPERIN, oz | 1 00 | 1 10 |
| PHOSPHORUS, lb | 90 | 1 10 |
| POTASSA, Caustic, white, lb | 55 | 60 |
| POTASSIUM, Acetate, lb | 35 | 40 |
| Bicarbonate, lb | 15 | 17 |
| Bichromate, lb | 14 | 15 |
| Bitrat (Cream Tart.), lb | 25 | 30 |

| | | |
|---|---|---|
| Bromide, lb | 45 | 50 |
| Carbonate, lb | 14 | 16 |
| Chlorate, Eng., lb | 28 | 30 |
| Powdered, lb | 30 | 33 |
| Citrate, lb | 75 | 90 |
| Cyanide, fused, lb | 40 | 55 |
| Hypophosphites, oz | 10 | 12 |
| Iodide, lb | 4 00 | 4 10 |
| Nitrate, gran., lb | 8 | 10 |
| Permanganate, lb | 50 | 55 |
| Prussiate, Red, lb | 50 | 55 |
| Yellow, lb | 32 | 35 |
| And Sod. Tartrate, lb | 30 | 35 |
| Sulphuret, lb | 25 | 30 |
| PROPYLAMINE, oz | 35 | 40 |
| QUININE, Sulph., bulk | 25 | 28 |
| Ozs., oz | 32 | 38 |
| QUINIDINE, Sulphate, ozs., oz | 16 | 20 |
| SALICIN, lb | 3 75 | 4 00 |
| SANTONIN, oz | 20 | 22 |
| SILVER, Nitrate, cryst., oz | 90 | 1 00 |
| Fused, oz | 1 00 | 1 10 |
| SODIUM, Acetate, lb | 30 | 35 |
| Bicarbonate, kgs., lb | 2 75 | 3 00 |
| Bromide, lb | 63 | 65 |
| Carbonate, lb | 3 | 6 |
| Hypophosphite, oz | 10 | 12 |
| Hyposulphite, lb | 3 | 6 |
| Iodide, oz | 40 | 45 |
| Salicylate, lb | 1 80 | 2 00 |
| Sulphate, lb | 2 | 3 |
| Sulphite, lb | 10 | 12 |
| SOMNAL, oz | 85 | 00 |
| SPIRIT NITRE, lb | 30 | 60 |
| STRONTIUM, Nitrate, lb | 18 | 20 |
| STRYCHNINE, crystals, oz | 1 00 | 1 10 |
| SULFONAL, oz | 32 | 34 |
| SULPHUR, Flowers of, lb | 2½ | 4 |
| Pure precipitated, lb | 13 | 20 |
| TARTAR EMETIC, lb | 50 | 55 |
| THYMOL, (Thymic acid), oz | 55 | 60 |
| VERATRINE, oz | 2 00 | 2 10 |
| ZINC, Acetate, lb | 70 | 75 |
| Carbonate, lb | 25 | 30 |
| Chloride, granular, oz | 13 | 15 |
| Iodide, oz | 60 | 65 |
| Oxide, lb | 13 | 60 |
| Sulphate, lb | 9 | 11 |
| Valerianate, oz | 25 | 30 |
| **ESSENTIAL OILS.** | | |
| Oil, Almond, bitter, oz | 75 | 80 |
| Sweet, lb | 50 | 60 |
| Amber, crude, lb | 40 | 45 |
| Rec't, lb | 65 | 70 |
| Anise, lb | 2 75 | 3 00 |
| Bay, oz | 50 | 60 |
| Bergamot, lb | 4 00 | 4 25 |
| Cade, lb | 90 | 1 00 |
| Cajuput, lb | 1 80 | 1 90 |
| Capsicum, oz | 60 | 65 |
| Caraway, lb | 3 50 | 3 75 |
| Cassia, lb | 1 40 | 1 50 |
| Cinnamon, Ceylon, oz | 1 50 | 1 60 |
| Citronelle, lb | 70 | 75 |
| Clove, lb | 1 60 | 1 65 |
| Copaiba, lb | 1 60 | 1 75 |
| Croton, lb | 1 50 | 1 75 |
| Cubeb, lb | 9 50 | 10 00 |
| Cumin, lb | 5 50 | 6 00 |
| Erigeron, oz | 20 | 25 |
| Eucalyptus, lb | 1 50 | 1 75 |
| Fennel, lb | 1 60 | 1 75 |
| Geranium, oz | 1 75 | 1 80 |
| Rose, lb | 3 20 | 3 50 |
| Juniper berries (English), lb | 4 50 | 5 00 |
| Wood, lb | 70 | 75 |
| Lavender, Chiris. Fleur, lb | 3 00 | 3 50 |
| Garden, lb | 1 50 | 1 75 |
| Lemon, lb | 2 75 | 3 00 |
| Lemongrass, lb | 1 50 | 1 60 |
| Mustard, Essential, oz | 60 | 65 |
| Neroli, oz | 4 25 | 4 50 |
| Orange, lb | 3 75 | 5 00 |
| Sweet, lb | 3 25 | 3 50 |
| Origanum, lb | 65 | 70 |
| Patchouli, oz | 1 75 | 1 80 |
| Pennyroyal, lb | 3 00 | 3 25 |
| Peppermint, lb | 4 25 | 4 50 |
| Pimento, lb | 2 60 | 2 75 |
| Rhodium, oz | 80 | 85 |
| Rose, oz | 7 50 | 8 00 |
| Rosemary, lb | 70 | 75 |
| Rue, oz | 25 | 30 |
| Sandalwood, lb | 5 50 | 9 00 |
| Sassafras, lb | 75 | 80 |
| Savin, lb | 1 60 | 1 75 |
| Spearmint, lb | 6 00 | 6 25 |
| Spruce, lb | 65 | 70 |
| Tansy, lb | 4 25 | 4 50 |
| Thyme, white, lb | 1 80 | 1 90 |
| Wintergreen, lb | 3 00 | 3 50 |
| Wormseed, lb | 3 50 | 3 75 |
| Wormwood, lb | 6 50 | 6 75 |
| **FIXED OILS.** | | |
| CASTOR, lb | 9 | 11 |
| COD LIVER, N. F., gal | 1 00 | 1 25 |
| Norwegian, gal | 1 25 | 1 50 |
| COTTONSEED, gal | 1 10 | 1 20 |
| LARD, gal | 90 | 1 00 |
| LINSEED, boiled, gal | 65 | 67 |
| Raw, gal | 63 | 65 |
| NEATSFOOT, gal | 1 00 | 1 10 |
| OLIVE, gal | 1 30 | 1 35 |
| Salad, gal | 2 25 | 2 40 |
| PALM, lb | 12 | 13 |
| SPERM, gal | 1 75 | 1 80 |
| TURPENTINE, gal | 65 | 68 |