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OFFICE OF PUBLICATION 171 ST. JAMES STREET, MONTREAL, CANADA.

Vol. VI—No. 1. APRIL, 1895. Terms: $1.00 per annum.

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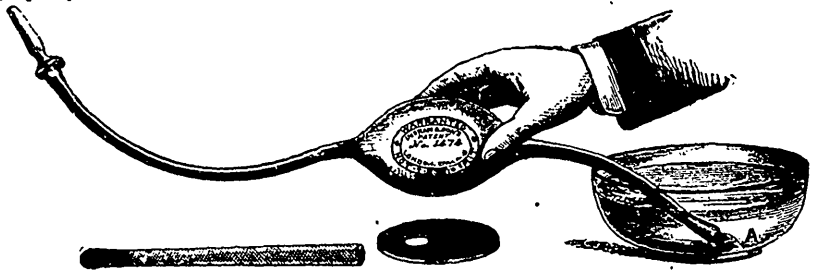

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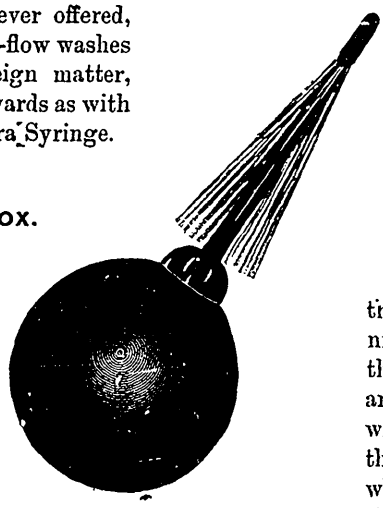

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MONTREAL
PHARMACEUTICAL JOURNAL.

VOL. VI—NO. 1. APRIL, 1895. $1.00 per annum.

The Montreal Pharmaceutical Journal.

171 *St. James St., Montreal, Canada.*

JOSEPH E. MORRISON, Editor.

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MONTREAL PHARMACEUTICAL JOURNAL.
P. O. Box 744, Montreal.
F. L. BENEDICT, Secretary.

Editorial

IMPORTERS AND THE CUSTOMS.

In our last issue we refered briefly to the effort of the Montreal Board of Trade to secure Customs reform and we have now pleasure in placing before our readers the petition adopted by the Council of the Board. This movement was inaugurated by Mr. Henry Miles of the firm of Lyman Sons & Co. Great interest is taken in the matter here and it is likely that a large number of the sister Boards of Trade will co-operate towards obtaining the desired remedy. Signatures are being obtained in Montreal *by trades* and already a very large number have signed. The petition is "headed" by Mr. James A. Cantlie President Montreal Board of Trade and his name is followed by the other officers and the Council of the Board. Some three hundred wholesale firms signed during the first two days Wednesday and Thursday of last week. All the Boards of Trade throughout the Dominion that Co-operate with the Montreal Board of Trade in this movement (there are about 100) will place their own individual petition before Parliament. In most instances the member for the district will present to the Common and the local Senator to the Senate. It is expected that Sir Donald A. Smith will present the Montreal petition to the House of Commons, but final arrangements have not been completed as we go to press. The Committee in charge of the Montreal petition are Messrs. C. F. Smith, J. T. McBride, David McFarlane, Wm. McNally and Henry Miles.

The petition is addressed severally to the Governor General, the Senate and the House of Commons.

The Petition of the Undersigned Merchants, Importers and Manufacturers of the City of Montreal.

HUMBLY SHEWETH,

That your Petitioners suffer from want of uniformity in the application of the Tariff and from the circumstance that there is no satisfactory recourse or remedy in matters of dispute as to classification for duty, value for duty, or in cases where Customs officials inflict injustice upon importers by erroneous and arbitrary rulings;

That your Petitioners believe that these grievances could be removed by the establishment by Parliament of a Board of Experts, with power to deal with all questions and disputes between Collectors of Customs and importers as to rates of duty or classification, and as to value for duty; also to act as a Board of Reference in matters of seizures to the end that the technical facts of a case may be established prior to publicity, and with a view to avoiding practical injustice through error or precipitate

action of irresponsible employees in the Customs service;

That your Petitioners suggest with respect to the establishment of such a Board of Experts:

(*a*) That it shall consist of five members, being one for each of the principal branches of trade as follows:—(1) Dry Goods—(2) Hardware, Oils, Paints, etc.—(3) Drugs, Chemicals, Fancy Goods, Stationary and Jewellery—(4) Groceries, Provisions and Fruits— (5) Leather and Shoefindings;

(*b*) That appointments be made on the basis of competence for the Office;

(*c*) That sufficient remuneration be given to secure men technically competent and with business experience, so that the Board would enjoy the confidence of merchants;

(*d*) That the Board be empowered to administer oaths and subpœna witnesses;

(*e*) That the Board's decisions be published periodically and sent to collectors of Customs and Boards of Trade throughout the Dominion, which would promote uniformity as to classification and value for duty, and;

(*f*) That both the Government and importers should have the right of appeal from the Board's decisions to the Exchequer Court;

That such a Board of Experts has for some years been in operation in the United States, where it appears to have well fulfilled its purpose of insuring to the Government the full customs revenue intended by the Customs Act, of securing uniformity in valuation for duty, and of affording satisfaction to importers;

Wherefore your Petitioners do pray your Excellency in Council to approve the enacting of legislation for the establishment of a Board of Customs Experts as hereinbefore suggested, and so relieve them and importers generally from the serious disabilities now suffered by reason of lack of uniformity in the administration of the Tariff.

And your Petitioners, as in duty bound, will ever pray.

The following will give an idea of the American system. Importers in the United States having a competent board and ready means of settling disputes as to values and rates of duty there exists no "friction" between Customs and Importer, "Customs grievances" and "Customs troubles" are unheard of uniformity prevails and everybody is satisfied:

The administration of the Tariff and Customs law in the United States is conducted upon a plan that insures the intended revenue to the Government, affords every satisfaction to the importers and secures uniformity to the greatest possible extent.

There are Collectors of Customs and Appraisers of Customs at the principal ports. All disputes as to classification or rate of duty as to value for duty and kindred matters pertaining to the Customs are dealt with by what are called General Appraisers.

The President of the United States with the advice and consent of the senate appoints nine general appraisers who receive a salary of seven thousand dollars ($7,000.00) a year. Not more than five of this number can be appointed from the same political party—they shall not be engaged in any other business or employment and may be removed from office by the president for inefficiency, neglect of duty or malfeasance in office. This body or board of general appraisers answers for the United States. They are employed at such ports as the secretary of the treasury may from time to time prescribe, and besides the specific powers and duties accorded them by law, they exercise under the general direction of the Secretary of the Treasury such other supervision over appraisements and classification for duty as may be needful to secure lawful and uniform appraisements and classification at the several ports.

A board of three of these general appraisers are on duty (as a board) daily at the port of New York. At ports of entry where there is no ordinary appraiser, if the collector shall deem the appraisement of any imported merchandise too low he can order a re-appraisement which shall be made by one of the general appraisers, and in the case of the importer under the same circumstances, a written notice to the collector procures for him similar appraisement. If this appraisement is found unsatisfactory by either the collector or importer, the importation in question and re-appraisement thereof is placed before the board of three general appriasers on duty at New York or before the board of three general appraisers who may be designated by the Secretary of the Treasury for such duty.

The decisions of any collector of Customs can by following a certain simple form clearly stated be taken directly to to a board of three general appraisers. The board of general appraisers of the United States have the authority of a court to all intents and purposes, can subpœna witnesses, etc., and are authorized to administer oaths.

The law of the United States further provides for carrying questions in dispute between the Government and importer to the regular courts of the United States, and in this case, the evidence and proceedings of the general appraisers or board of general appraisers form part of record.

There is a penalty provided of one hundred dollars ($100.00) to which any one is liable who fails to appear, declines to answer or who swears falsely. All decisions of the general appraisers individually and of the board of general appraisers respecting values and rates of duty are preserved and filed, and are open to inspection under certain regulations prescribed by the Secretary of the Treasury. All decisions are reported to the Secretary of the Treasury and those of individual general appraisers are

reported to the board of general appraisers on duty at the port of New York. Reports made to this board are accompanied whenever practicable by samples of merchandise in regard to which there has been question.

One of the duties of the board of general apprisers is to make an abstract of the decisions of appraisers with as full description as possible giving the full rate of duty, etc , and said abstract is issued from time to time—at least once in each week for the information of Customs' officers and the public.

The following is a decision given by the American Board of General Appraisers, at New York :

J. L. & D. S. Riker, against the action of the Collector of Customs at New York as to the rate and amount of duties properly collectible on certain merchandise, imported Jan. 22nd, 1895. Opinion by General Appraiser Lunt :

We find that Messrs. J. L. & D. S. Riker imported into the Port of New York certain so-called "crystal carbonate," upon which duty was assessed at one-fourth of one cent per pound, the rate provided for soda ash, in paragraph 67, Act of 1894. The importers claim it to be dutiable at one-eight of one cent per pound, as sal soda, provided for in paragraph 67.

(2) That there is a chemical salt sometimes called soda crystal and washing soda, which is known commercially as sal soda, and another commercially known as soda ash.

(3) That the substance under consideration is not commercially known by either of those designations, but is designated as crystal carbonate, and is an alkaline chemical salt. That while the chemical composition of crystal carbonate is the same as that of sal soda, its chemical constitution differs. A comparative statement of an analysis of sal soda, crystal carbonate and soda ash approximately indicates the differences :

	Sal Soda.	Crystal Carbonate.	Soda Ash.
Carbonate of soda	34.25	81.88	100 (pure)
Hydrate of soda	0.10	0.13	Commerc'y
Sulphate of soda	2.54	0.81	it contains a
Chlor. of sodium	0.28	0.08	perc't'ge of
Water	62.84	17.10	chlorides,
			[etc., anhydrous.

Inasmuch as these salts have distinct commercial designations, and there is a special provision in paragraph 60 for products or preparations known as alkalies, * * and chemical compounds and salts, we cannot classify this article by assimilation to either sal soda or soda ash, but hold it dutiable at 25 per cent. ad valorum, under paragraph 60.

The merchandise in question is produced by the United Alkali Company, at Gaskell and Deacon Works, Widnes, Lancashire, England.

The protest is overruled.

We give the comment of the Montreal *Witness* of date April 11th, and, interesting in connection with the petition:

CUSTOMS REFORM.

This year's council of the Board of Trade of Montreal seems to be much less subservient to the government of the day at Ottawa than any council ever before elected by the Board. Councils in the past have always been extremely considerate in regard to the government, and have always been careful to promote and never to embarrass its policy on any question. The extreme humility of the Board and its council toward the government was shown at the time the government was pursuing the importing interests of the whole Dominion with malignity by means of the black mailing customs system worked by the special detective agents of the government. It will be remembered how these insolent Jacks in office, armed by the government of the day, defied ordinary law processes and authorities, entered warehouses and at the muzzle of revolvers compelled merchants to expose to them their books, accounts, invoices, etc. It will be remembered how they fished through all these for evidences of fraud against the importers and how, when their suspicions were at all justified, they levied fines which were inforced by the customs department of the government, a large proportion of the fines going to the agents. There was hardly an importing firm in Montreal which did not go in fear of an unjustifiable visit from these blasters of the credit of merchants' for it was quite possible that mere errors in entry or mere suspicions on the part of these agents, who got a share of the spoil in the case of each victim would subject the most innocent to a credit-managing investigation or demand for investigation on the part of their special agents. The Minister of Customs, the chief of these special agents, who was responsible for their methods, actions and powers, was Sir Mackenzie Bowell, the present premier of the Dominion. Session after session Sir Mackenzie strengthened the hands of the department and of the special agents against the merchants by means of little bits of legislation which his experience showed to be necessary to perfect his bad system, and so entrenched were they behind the law that the Minister of Customs, his department and his special agents became a terror to the whole importing trade of the Dominion. There sprang up, too, at that time lawyers who would undertake to secure a quiet settlement for victims for so many thousands of dollars, which according to these lawyers, were for distribution among the ministers. Secrecy was a part of the system of trying and convicting the accused, and even the amounts they were fined were not always made known. Everyone remembers the injustice and iniquity of the whole system and what a storm it raised. Just previous to the general elections Sir Mackenzie Bowell came to Montreal to allay the wrath of the people, and at a meeting held in the council room of the Board of Trade he promised alleviating reforms in the system. After the elections were over and the danger past these promises were ignored and the reforms were never granted. Now we see the council of the Board of Trade has prepared a petition praying for reforms in the customs system by which disputes as to valuations shall not be settled arbitrarily by the government or the collectors, but by a board of appraisers, with appeal to the Court of Exchequer. We hope that the present council will act with less

subserviency in this matter than its predecessors, and will not be content with pre-election pledges made like pie-crust to be broken.

CHAMBRE DE COMMERCE.

At the regular weekly meeting of this body the president, Mr. H. Laporte brought up the subject of the difficulties of the importers with the Customs. The petition to Parliament was read and Mr. Henry Miles, who was present by invitation of the president, addressed the meeting in French, explaining fully the object of the movement and the details arranged for bringing it before the House at Ottawa. A resolution was passed endorsing the petition and authorizing the Officers of the Chambre de Commerce to sign it officially and to arrange for presentation at Ottawa.

The date of the next meeting of the Ky. Phar. Ass'n has been changed from May 29th to May 21st.

We have delayed publication for a few days in order to obtain the results of the examination, but have not space to make any comments thereon, but we hope next month to have something to say about the manner in which the examinations were conducted, and the ability of some of the examiners, which we think will prove interesting reading.

BOOK REVIEWS.

ETIDORPHA.

We have recently been favored with advance sheets of this work by Prof. J. U. Doyd, who has already won for himself distinction as the authority on percolation and kindred practical subjects and it is a surprise to find him enter the field of fiction especially of such a philosophic nature. Llewellyn Drury tell his story of wonderful adventures in a long journey under the surface of the earth, the relation of which is frequently interrupted with discussions upon philosophic subjects, science, religion, theories of life, the destiny of man, matter, force, etc., are discussed and some of the ideas advanced are in opposition to accepted views upon these subjects. Judging from the preface it is written in a dreamy philosophic vein well suited to the character of the work.

The author's edition of 500 copies has already been bespoken and he has decided to increase the issue in answer to many demands from all parts of the country.

The book is well printed and contains about one hundred engravings, and between three and four hundred quarto pages, and will cost between $3 and $4. Those of our readers who are desirous of securing copies should at once send their names to Prof. J. U. Lloyd, Cincinnati.

Proceedings of the N. Carolina Pharm. Assoc. Sept. 1894.

Proceeedings of the New Hampshire Pharm. Association.

PHARMACEUTICAL EXAMINATIONS.

The semi-annual Examinations of the Pharmaceutical Association of the Province of Quebec commenced on Tuesday, April 16th, and closed last night (Friday). Twenty-three candidates for the Major and thirty-two for the Minor examination enrolled their names for these examinations of these three defaulted and of the remaining candidates the following passed and are entitled to be registered as Licentiates of Pharmacy and Certified Clerks respectively and are here named in order of merit, namely:—As Licentiates of Pharmacy: D. J. McManamy, A. M. McMillan, James H. Goulden, Phillipe Lupien, W. J. Furse, J. H. E. Brodeur, Frank L. Woolley. As Certified Clerks: James A. Gillespie, S. Gilbert, Herbert H. Lyons, A. Goyette, Medard Langlois, Jos. Routhier and J. A. A. Drouin. The Examinations were both written and oral, the candidates being examined on Materia Medica, Toxicology, Chemistry, Pharmacy, Botany, practical dispensing, Reading of Prescriptions and Weights and Measures. The Examiners were Messrs. S. Lachance, A. E. DuBerger, R. W. Williams, W. H. Chapman and J. R Parkin. The next Examination will take place in the city of Quebec about the middle of October.

Correspondence.

To the Editor of THE MONTREAL PHARMACEUTICAL JOURNAL.

The druggists of Charlottetown are jubilant over a new state of affairs inaugurated by Mr. Carmichael, traveller for Messrs. Lyman, Sons & Co. No one seemed to know why, how or when cut prices had come to stay, but there they were and most unwelcome guests in the bargain. So Mr. Carmichael came to the rescue, drew up the following agreement, took it around to all the druggists in town and got their ready and willing signatures to the document. Although the new departure is a pronounced success, the public seem satisfied with the assurance that the full price is the lowest obtainable; the druggist has no longer to place himself in the humiliating position of taking just what he can get, but has confidence in asking his proper due, and the druggists welcome a restored feeling of mutual confidence which seemed for a time to have departed. A letter of thanks was sent to Mr. Carmichael whose kindly interest will long be gratefully remembered by the druggists of Charlottetown.

AGREEMENT.

We, the undersigned pharmacists of the city of Charlottetown, Prince Edward Island, recognizing the present unbusiness-like position into which the Patent Medicine trade has fallen and drifted, and for the remedying of this and other grievances.

We, the undersigned subscribers on our honor as gentlemen and pharmacists hereby agree each with the other to following:—

On and after Monday, March 18th. 1895, all Patent Medicines and the goods usually kept in a drug store shall be sold singly at the marked price on the package or advertised by the manufacturer.

When sold in half dozen quantities the price shall be the single price of five.

When sold in quarter dozen quantities the price shall be one half the price of the half dozen quantity.

All articles sold in quantities for cash may, or may not be delivered at the time of sale but the total amount of sale must be deposited.

All articles sold in quantities on credit must be delivered at the time of sale.

The following list of articles as specially exclusive of the foregoing. To the selling price of them we further agree, viz:—

Allan's Hair Restorer	$1 25
Ayer's Hair Vigor	1 00
Beecham's Pills (English)	35
Bullen Leeming's Essence	75
Burnett's Cocaine	60
Collis Brown's Chlorodyne (sm)	40
" " (lge)	1 00
Cuticura Resolvent	1 50
" Ointment	65
" Plasters	30
" Soaps	25
Cockle's Pills	35
Condy's Fluid	35
Dunn's Fruit Saline	75
Enos' Fruit Salt	90
Elliman's Embrocation (sm)	50
" " (lge)	1 00
Florida Water M. & L.	60
Fellow's Syrup	1 25
Holloway's Pills (sm)	35
" " (lge)	90
" Ointment (sm)	35
" " (lge)	90
Horsford's Acid Phosphate	75
Hall's Hair Renewer	75
Kennedy's Medical Discovery	1 75
Lamplough's Saline	90
Murray's Fluid Magnesia	35
Mellin's Food (sm)	50
" (lge)	1 00
Medicamentum	10
McKenzie's Dead Shot	10
Packer's Tar Soap	25
Mexican Mustang Liniment	35
Sozodont	75
Steedman's Soothing Powders	35
Stedman's Teething	35
Tinct. Iodine or Opium, 1 oz	10
" " 4 oz. lots & over	08
" Ordinary	08
4 oz. lots & over	1 00 p. lb

All articles costing from $7.50 to $8.50 no price marked thereon sell for $1.00

Dated this 16th day of March, 1895.

LAWRENCE WATSON.

Safeguards Against Deterioration of Stock.

BY LEON C. FINK.

From the Bulletin of Pharmacy.

A large proportion of the materials which constitute the stock of an average drug store are particularly prone to deterioration, and painstaking pharmacists are required to exercise more than ordinary circumspection to prevent exposure of sensitive pharmaceuticals to pernicious influences. In fact the art of affording such protection is quite as important as the ability to select drugs and prepare medicines properly.

A complete tabulation of all the chemical and physical changes which can modify and injure pharmaceutical preparations is not within the scope of this article, but it is deemed apposite to mention a few exemplary

forms of deterioration which will serve to suggest to the minds of intelligent pharmacists others which can occur from similar causes.

The importance of maintaining a uniform temperature through day and night, in a pharmacy, is apt to be overlooked. Remember that your stock is largely made up of fluid preparations holding chemical substances in solution. These are reasonably permanent at a normal temperature, but, as the temperature lowers, the solvent power of the menstruum is reduced and precipitation of the less soluble ingredients occurs. Results grow gradually worse as the temperature goes down, until disaster comes in the freezing of aqueous solutions and consequent bursting of bottles.

Change of temperature may also cause loss and annoyance from breakage of demijohns, through expansion or contraction of liquid contents. If a demijohn is filled with cold liquid, tightly corked and subsequeutly transferred to a warm room or climate, the liquid will expand with rise of temperature and blow out the cork or burst the vessel. Tightly corked demijohns filled with hot liquids frequently collapse under atmospheric pressure as the contents cool and contract. It is therefore a safe rule never to fill such large glass containers completely, but rather leave an ample cushion of air to allow for expansion and contraction.

Sunlight can do incalculable damage to chemicals, pharmaceuticals, plush goods and toilet articles in general, unless special precautions are taken to prevent its injurious action. Calomel is not altered by the atmosphere if kept in the dark, but when exposed to sunlight it gradually turns gray or black, indicating decomposition. Santonin acquires a yellow color by exposure to sunlight. Silver nitrate becomes gray or black on exposure to sunlight in the presence of organic matter Sunlight darkens yellow mercurous iodide and yellow mercuric oxide in consequence of their partial reduction. Bright green scales of soluble ferric phosphate and soluble ferric pyrophosphate turn dark on exposure to sunlight. Red mercuric iodide is permanent in the air if kept in the dark, but acquires a brownish tint by exposure to sunlight. Quinine bisulphate readily acquires a deep brownred color on exposure to direct rays of sunlight. Quinine sulphate and quinine hydrochlorate are gradually colored yellow by similar exposure. Ferric salts in solution with sugar are reduced to ferrous salts by action of sunlight. Many volatile oils are injured by prolonged exposure to atmospheric oxygen and sunlight, while some are eventually rendered worthless and entirely unfit for use. Perfumes exposed to direct rays of sunlight rapidly degenerate and soon acquire a rank odor; it is apparent, therefore, that they should not be habitualllly presented in show-windows.

Drugs and chemicals are frequently injured by absorbing moisture or carbonic acid, or both, from the atmosphere. Solids that absorb moisture from air are called hygroscopic. Solids which absorb moisture from air, and become liquid, or dissolve therein, are called deliquescent. Crystalline substances which part with their water of crystallization on exposure to air, thereby losing their crystalline form, are called efflorescent.

On exposure to atmosphere, caustic soda absorbs water and is liquified, subsequently solidifying and becoming effeorescent. This change is caused by the absorption of carbonic acid and the crystallization and effloresence of the sodium carbonate thus formed. Potassa also deliquesces and absorbs carbonic acid under similar exposure. Chlorinated lime absorbs moisture and carbonic acid from damp atmosphere, with loss of valued properties and and formation of a plastic mass; it should, therefore, be kept in a closely covered jar and stored in a cool dry place. Lime becomes "air slacked" by exposure to ordinary atmosphere, absorbing water and carbonic acid, and being converted into hydrate and carbonate of calcium. Carbonate of potassium is extremely deliquescent in humid air, forming a colorless or yellowish alkaline liquid of an oily appearance. Chloride of zinc, acetate of potassium and chloride of calcium are also very deliquescent salts which requires special protection.

Powdered extracts should be carefully protected from exposure to moist air, in small bottles with mouths wide enough to admit the blade of a spatula. Selected corks should be used, and the bottles should be kept in a cool place—never in a current of hot air from a stove or furnace.

It is particular essential that granular effervescent salts be kept in securely corked bottles, for if access of air be permitted, sufficient moisture will soon be absorbed to cause the acid to act upon the carbonated base and gradually liberate carbonic acid. The valued effervescent properties of the preparations will thus be irretrievably lost.

If clear lime-water be exposed to the influence of air, a pellicle of calcium carbonate is formed upon the surface; this film sinks to make room for another, until finally nearly all the lime is rendered insoluble and the supernatant liquid is comparatively valueless. It is essential, therefore, that a goodly excess of lime be kept in the bottom of the lime-water bottle to maintain the strength of the solution. The container should be kept in a cool place, as cold water dissolves more lime than hot water.

Solution of lead subacetate is decomposed on exposure to air or on being mixed with water containing air in solution, a white precipitate of insoluble carbonate of lead being formed. When freshly made, it should be divided into two or four-ounce bottles, kept full and tightly sealed until required for use. Liquor potassae and liquor sodae also possess marked affinity for carbonic acid, and should be preserved in securely stoppered bottles.

Quinine sulphate, like some other alkaloidal salts, does not "lose strength" by exposure to ordinarily dry atmosphere, but rather loses water of crystallization by evaporation and becomes correspondingly richer in quinine. It should be borne in mind also that effloresced carbonate of sodium is stronger than the normal crystallized salt in proportion to the amount of water it has lost. Sulphate of soda, commonly called glauber salt, contains more than half its weight of water of crystallization, nearly all of which is dissipated on exposure to dry atmosphere, leaving a dry, white powder, which is a correspondingly richer salt. Sulphate of zinc also effloresces slowly in dry air.

Atmospheric oxygen causes many undesirable changes in chemicals and pharmaceuticals. On exposure to air the color of syrup iodide of iron slowly changes to yellow and subsequently to to brown, the change of color proceeding from the exposed surface downward. This color can sometimes be bleached and the syrup restored to its natural appearance, but here is a case where an ounce of prevention is worth a a pound of cure—keep the syrup in small bottles, full and well corked. Syrup of bromide of iron is of course similarly affected.

Certain fixed oils will remain unchanged for a great length of time in air-tight vessels, but when exposed to the atmosphere they attract oxygen and ultimately become concrete. The tendency of linseed oil to dry or harden on exposure to air is typical in the extreme. Exposed to the air, lard absorbs oxygen and becomes rancid; it should therefore be kept in well-closed vessels, or procured fresh when required for use; in the rancid state it irritates the skin, and sometimes exercises an injurious reaction upon substances mixed with it.

Phosphorus absorbs oxygen from the atmosphere with sufficient avidity to cause rapid combustion and necessitate its preservation under water. Prolonged exposure to air gradually transforms light green ferrous carbonate into the familiar red-brown "sub carbonate of iron," which is ultimately little more than ferric oxide, and can undergo no further change from similar influences.

Not content with ravaging the pharmacist's stock, this belligerent element exhibits a remarkable propensity, in the presence of moisture, for rusting his spatulas and other metallic utensils.

Serious pecuniary loss by evaporation of volatile solids, like camphor, results from exposure of these substances in ordinary open wooden drawers. Menthol is extremely volatile, and should therefore be kept in securely corked bottles to prevent loss. Exposed to the air, carbonate of ammonium partially volatilizes, becomes opaque and crumbles into a white powder. Iodine is most advantageously kept in securely closed glass receptacles—most ordinary wares are liable to be attacked or permeated by it. Chloral evaporates slowly when exposed to dry atmosphere. Powdered drugs which depend upon volatile constituents for medicinal virtue, like cinnamon, cloves, orris root and valerian, should so far as practicable, be kept in bottles or some other comparatively air-tight container.

Stronger water of ammonia should be kept in strong, glass-stoppered bottles, which should be stored in a cool place and opened with extreme care. When warm, the liberated gas frequently forces the stopper out with considerable violence, and many accidents resulting in injury to sight of operators are on record.

Pressed roots and herbs are more convenient to handle, occupy less space and are better preserved than crude drugs in bulk form. Furthermore, the danger of error is materially reduced by handling neatly pressed, wrapped and labelled packages.

Examine your stock of dandelion and rhubarb roots occasionally to be sure that purchasers do not find worms in them and form unfavorable impressions of you and your business methods.

Cantharides should be thoroughly dried and kept in securely closed containers. The vapor of chloroform quickly kills insects which infest cantharides, and their destruction can be accomplished by placing a small quantity of chloroform in a wide-mouth bottle or other open vessel upon the surface of the infested drug and securely closing the container. The heavy chloroform vapor will then gradually sink through the drug and destroy the insects.

The modern method of marketing chlorinated lime in hermetically sealed parcels is not only a source of convenience, but affords protection which serves to prevent loss of the loosely combined chlorine upon which the value of the preparation as a disinfectant is almost entirely dependent. The disagreeable odor of chlorine which clings to the hands of the operator is also avoided.

Charcoal is used in medicine chiefly for its absorbent and disinfectant properties. Owing

to its absorbent powers, it should not be unnecessarily exposed to the atmosphere of a laboratory or pharmacy, lest it be thus rendered unfit for medicinal purposes.

Fine sponges should be kept in a closed show-case or drawer. Carriage and slate sponges, which are frequently allowed to become soiled and lend an untidy appearance to the store by rolling about in a window or on the floor, can conveniently be kept assorted and conspicuously displayed in the wire basket with separate compartments for different sizes.

Oxalic acid should not be kept in paper parcels, since it soon renders the paper fragile, and in being thus scattered about may, by admixture with other drugs, cause loss of life. Owing to its external resemblance to epsom salt, and its very poisonous nature, the substances should not be kept in similar drawers, The practice of keeping them in containers of different style and safely remote from each other is less likely to lead to accidental confusion.

Remember that heated atmosphere usually accumulates near the ceiling, and preparations subject to injury by exposure to elevated temperature should not be kept on upper shelves. Several cases are on record wherin chlorinated lime, which is known to greedily absorb water and carbonic acid from a humid atmosphere, was put up in securely corked and sealed bottles, which were then placed upon an upper shelf until the heat of summer, or a very warm apartment, had liberated sufficient gas to cause a startling explosion, sometimes followed rapidly by a succession of similar ones and a cloud of dust.

Lard, ointments, cerates, and in fact nearly all animal fats, are liable to grow rancid by prolonged exposure to air, this change in many cases being accelerated by heat and light. Every precaution should of course be taken to avoid such decomposition; but when rancidity is apparent, preparations should never be dispensed, for, instead of having the mild demulcent properties which constitute their chief value, they become irritant and entirely unfit to serve as vehicles for medicinal substances to be applied to the skin. Ointment jars should invariably be thoroughly cleaned and freed from rancidity before refilling with fresh stock.

With ordinary drug-store arrangement it is scarcely practicable to entirely protect tinctures and fluid extracts from injurious effects of air, light and changes of temperature, but any provision which tends to prevent precipitation from these causes is commendable. The stock of tinctures should be placed in charge of one capable employee, who should be held responsible for its condition. Haste is apt to make serious inroads upon accuracy in preparing pharmaceuticals.

The danger from leaving bottles insecurely corked is apparent when we consider that, if a fluid extract prepared from a menstruum composed of diluted alcohol be exposed to the air in an open vessel, the alcohol will evaporate much more rapidly than the water. By this change of character in the menstruum, certain resinous constituents of the drug frequently become insoluble and are deposited, rendering the fluid more or less turbid, and materially lessening its medicinal value. Collodion loses ether by evaporation, and becomes comparatively worthless.

The deterioration which can occur in a single drug store from causes indicated here, commands the constant attention of the manager, and much greater is the problem which confronts the wholesale manufacturer who must prepare a great variety of products in large quantities to be distributed in the market in all directions, where they are expected to remain unchanged through the extreme variations in temperature which characterize the severe winters in the north and the torrid summers in the south; and no less injurious is the improper exposure to which pharmaceuticals are frequently subjected in temperate climates.

A DISSOCIATION EXPERIMENT.

Mr. Alexander Gunn describes in the *Chemical News* a new reaction illustrating the phenomenon of dissociation. Dissolve about 0 2 grm. of zinc sulphate in 5 c.c. of distilled water. Add ammonia (sp. gr. 0.880), drop by drop, until two drops in excess of the amount required to re-dissolve the precipitate. Then add 10 or 12 drops of a 10 per cent. solution of sodium phosphate, and 5 c. c. of water. This solution is perfectly bright On applying heat the liquid becomes opaque, the turbidity increasing as the temperpature rises until, when boiling, a thick curdy precipitate falls. On now immersing the test-tube in cold water the precipitate will quickly disappear, leaving the solution as bright as it was at first. The production of the precipitate by heating can be repeated many times if care be taken to prevent loss of ammonia. There seem to be only two possible explanations of the reaction—dissociation, or the loss of ammonia by heat. The latter appears on further experiment to be untenable, whereas the dissociation explanation is well supported by other experiments.—*Chemist and Druggist.*

EVOLUTION AMONG PLANTS.

At a recent meeting of the Massachusetts Horticultural Society a paper, of which the following is an abstract, on "Experimental Evolution Among Plants," by L. H. Bailey, professor of horticulture in Cornell University, Ithaca, N. Y., was read by the author. The speaker prefaced his remarks by saying that all thoughtful persons are now evolutionists, whether they know it or not. They believe in some kind of a transformation of species in the same way that they believe in the gradual unfolding and growth of human institutions. It is by no means essential to a belief in evolution that the person should hold to a single origin of all forms of life. The speaker then proceeded to consider the question, "Do new species originate now?"

This notion that a species, to be a species, must have originated in nature's garden and not in man's, has been left over to us from the last generation—it is the inheritance of an acquired character. John Ray, toward the close of the seventeenth century, appears to have been the first to use the word species in its technical natural history sense, and the matter of origin was an important factor in his conception of what a species is. Linnæus' phrase is familiar. "We reckon as many species as there were forms created in the beginning." Darwin elaborated the new conception—that a species is simply a congregation of individuals which are more like each other than they are like any other congregation—and with a freedom from prejudice which is rarely attained even by his most devoted adherents, he declared that "one new variety raised by man will be a more important and interesting subject for study than one more species added to the infinitude of already recorded species." The old naturalists threw the origin of the species back beyond known causes; Darwin endeavored to discover the "origin of species," and it is significant that he set out without giving any definition of what a species is. I have said this much for the purpose of showing that it is important, when we demand that a new species be created as a proof of evolution, that we are ourselves open to conviction that the thing can be done.

The fact is that the practice of systematic or descriptive botany is at variance with the teachings of evolution. Every naturalist now knows that nature does not set out to make species. She makes a multitude of forms which we, merely for purposes of existing methods of botanical description and nomenclature, call species.

The speaker then proceeded to show that there has been as wide variation in very many garden plants as there is between accepted botanical species of the same genus.

Species-making forever enforces the idea of the distinctness and immutability of organic forms, but study of organisms themselves forever enforces an opposite conception. The intermediate and variable forms are perplexities to one who attempts to describe species as so many entities which have distinct and personal attributes. So the garden has always been the bugbear of the botanist. Even the lamented Asa Gray declared that the modern garden roses are "too much mixed by crossing and changed by variation to be subjects of botanical study." He meant to say that the roses are too much modified to allow of species-making. The despair of systematic botanists is the proof of evolution.

If species are not original entities in nature, then it is useless to quarrel over the origination of them by experiment. All we want to know, as a proof of evolution, is whether plants and animals can become profoundly modified under different conditions, and if these modifications tend to persist. Every man before me knows, as a matter of common observation and practice, that this is true of plants. He knows that varieties with the most marked features are passing before him like a moving panorama. He knows that nearly every plant which has been long cultivated has become so profoundly and irrevocably modified that people are disputing as to what wild species it came from. Consider that we cannot certainly identify the original species of the apple, peach, plum, cherry, orange, lemon, wine grape, sweet potato, Indian corn, melon, bean, pumpkin, wheat, chrysanthemum, and nearly or quite a hundred other common cultivated plants. It is immaterial whether they are called species or varieties. They are new forms. Here is the experiment to prove that evolution is true, worked out upon a scale and with a definiteness of detail which the boldest experimenter could not hope to attain, were he to live a thousand years. The horticulturist is the only man in the world whose distinct business and profession is evolution. He of all other men has the experimental proof that species come and go. —*Pharm. Era.*

Announcement of the Next Meeting of the American Microscopical Society.

The next meeting of the American Microscopical Society will be held at Cornell University in Ithaca, N. Y., August 21, 22 and 23, 1895.

Considering the geographical distribution of the members, Ithaca is as central a point as can be found for the meeting. It is connected with the great trunk lines in such a way as to make it very readily accessible by railroad.

The unsurpassed beauty of the location of the University, and the richness of both its

terrestrial and aquatic fauna and flora, make this an ideal place for holding the meeting. It is equally attractive to the student of natural history and to those who love beautiful scenery.

The facilities of the University and its equipment in all lines for carrying on microscopical work add to the attractiveness of Ithaca as a place of meeting. In most of the scientific departments of the University, there are already members of the Society, and in all departments there will be a most hearty welcome, and every reasonable aid will be furnished for the success of the meeting. Finally and not least, the President of the University, Dr. Schurman, extends to the Society a most cordial welcome.

The University buildings which will be at the disposal of the Society, are especially adapted for the formal presentation of papers, blackboard illustrations, hanging of diagrams, etc., as well as for any demonstration that authors may desire to make. The armory is very conveniently located both for the University and for the city, and a soiree there can hardly fail to be a great success.

Besides the attraction of papers and demonstrations by members, nearly all the opticians have expressed not only a willingness but a desire to be present and make an exhibit of their microscopes and microscopical apparatus, thereby affording the members an opportunity to see all the new and standard apparatus

If one will look over the contents of the proceedings of our Society, it will be found that, following our prototype, the Royal Microscopical Society of London, our Society not only considers and publishes papers upon the microscope, its manipulation and accessories, but also the results of investigation in which the microscope plays an important role. Indeed the papers cover the entire field of human knowledge in which the microscope is an important instrument of investigation. Thus there are articles on the microscope itself and its accessories; microtomes and section cutting; methods of fixing and hardening; indeed on all the processes that must be gone through for the successful study of modern biology. Pathology and bacteriology also have their share of attention. Jurisprudence in so far as it calls upon the microscrope for aid in detecting forgeries, erasures, etc., as well as in detect ing crime is also well represented. And finally there is no modern publication in which is more fully and satisfactorily discussed the principles underlying exact standards of length, a subject vital to every user of the microscope, for if his micrometers are not exact, his work must necessarily in so far be defective. The University possesses one of Roger's dividing engines and the department of Physics has kindly promised to show the members exactly how micrometers are made. There is also a large comparator for carefully testing micrometers after they are made. This one was actually used in determining the exactness of the rulings of our standard centimeter.

A special feature of the coming meeting will be the setting apart of one or more sessions for the reading of papers on methods and the demonstration of special or new methods. The chairman of the local committee, Professor W. W. Rowlee, or the president will be glad to receive requests from those who desire to have some specially difficult method or structure elucidated, and an effort will be made to get some member particularly expect in some subject to demonstrate it before the Society.

President Gage will be upon his own ground and all may rest assured that his enthusiasm for and energies in behalf of this meeting will guarantee a profitable time to all who come. The opportunity to observe his methods in his own laboratory is a privilege none could afford to lose even if there were no other attractions.

Please make plans at once to be present, to help bring new members, and to make the next meeting worthy of the Society.

W. W. ROWLEE,
Chairman of the Local Committee.

College of Pharmacy Examinations.

The Montreal College of Pharmacy closed a very successful lecture session on Friday night last, the usual sessional examinations having taken place during the week. The students were examined in Chemistry, Materia Medica and Botany, and the results given below are those of the combined sessional examination of December and March, the names of the successful students being given in order of merit. The student obtaining the highest points in each subject gains the prize given by the College for these subjects. The names of the successful candidates are as follows: Botany:—Osborne T. Pinck, W. F. Horner. Chemistry, 1st year:—Louis Rogalsky, W. Frothingham Roach, Oscar Turgeon, O. Mowatt, James Franckum, W. F. Horner. 2nd year:—James A. Gillespie, F. L. Woolley, O. T. Pinck, Jas. H. Goulden. Materia Medica, 1st year:—R. J. Lunny, Louis Rogalsky, Norman Holden, D. R. O'Neill, D. S. Baxter. 2nd year:—James A. Gillespie, Osborne T. Pinck and Oscar Turgeon. In addition to the above the following students passed in Materia Medica at the last sessional examination. Namely:—A. Germain, Ed. Thiverge, J. A. Goyer, M. Langlois.

We beg to acknowledge receipt of the Twentieth Annual Report of the National Wholesale Druggists Association in convention at New York City, Oct 1st to 5th, 1894.

PHARMACEUTICAL EXAMINATIONS.

The preliminary Board of Examiners of the Pharmaceutical Examination of the Province of Quebec held their quarterly Examinations in Montreal and Quebec, on Thursday, April 5th, for the examination of candidates desiring to enter the study of Pharmacy. Thirty-one candidates presented themselves in Montreal and three in Quebec, of these the following passed and are entitled to be registered as certified apprentices, their names being given in order of merit. Namely: James A. Gillespie, Joseph Victor Murray, Hercule Guerin, Henry St. George, F. W. Kneen, S. A. Lamoureux, Joseph Pigeon, W. F. Shea, Geo. A. Ricard, Paul Bergeron, A. J. Aubry, A. Bachand, Romeo Casgrain and A. Lauzon. Mr. A Christie passed upon all subjects but Geography. The subjects examined upon were English, French, Latin, Arithmetic, Geography and History. The Examiners were Professors A. Leblond de Brumath and Isaac Gammell, Mr. A. LaRue of Quebec acting as supervisor for that city and district. The next Examination will be held July 4th. Candidates must send their applications at least ten days before the date of Examination.

PHYSIOLOGICAL PHARMACY.

Surely there should be giants in these days! Here in a little scented pellet we have "In functional physiological activity all the digestive agents of the animal economy; stomach, pancroas, spleen, salivary and BRUNNER'S glands, and LIERBERKUHN'S follicles, and free nuclein—the tissue builder of the organism." And, again, the pellet "protects the integrity of the organism by the presence of free nuclein, now regarded as nature's antitoxine, guarding every cell against the attack of toxic germs." Thankful hearts must beat with new strength and pious knees bend in gratitude if this is true; but if it is misleading and so fraudulent, honest natures will revolt at flagrant quackery Let us briefly examine the question, taking in order the "digestive" ferments. The extract of the salivary glands might have been omitted without loss of the power of the pellet, for its action ceases as soon as the acid secretion of the stomach has access to it, and few persons have the leisure or the wish to keep each morsel of food in the mouth for fifteen minutes or so, and it would require that time for any appreciable action of this ferment on a mouthful of starchy food. For the moment we will leave the pepsin and pass to the trypsin and other ferments of pancreas. According to EWALD, MAYS, and other physiologists, pepsin and hydrochloric acid together act upon trypsin and destroy it, hence it is not advisable to administer trypsin by the mouth, as it would be destroyed in the stomach.

Thus the most important of the pancreatic ferments might as well be left out of the pellet. The spleen has been neglected by physiologists as an organ of digestion, perhaps the pellet-makers will enlighten the world on this matter. BRUNNER'S glands, too, are not thought to be of much importance in the digestion of food. Their secretion can be but small in quantity, and is thought to be of the same kind as that of the pyloric glands of the stomach, and so may be considered with the pepsin of the pellet. We have lately had occasion to point out in connection with proprietary foods that long-continued administration of pre-digested foods leads to atrophy of ferment-making glands, and preparations like these pellets or the æsthetic pepsin chewing-gums may have a similar effect and so become distinctly dangerous. We can conceive of a party of pepsin-eaters wrecked on a coast which provided no "gums" or pellets, and dying of inanition for want of their accustomed dose of pig's stomach. As for the nuclein which threatens to eclipse the diphtheria-antitoxin, we learn from Foster's physiology that it can be decomposed by strong hydrochloric and caustic potash, and that it contains a large percentage of phosphorus. Most of us will prefer to take our nuclein and our phosphorous in the shape of mutton and beef. It would appear that preparations which pretend to make us independent of the secretions of both stomach and pancreas are the outcome of ignorance and quackery.

Other offspring of physiological pharmacy are the blood-iron preparations. It has been found that the hæmatin and hæmoglobin of such preparations are reduced to oxides and salts of iron in the stomach, and so have no advantage over the ordinary pill ferri co. We would not discredit honest efforts and not more wonderful than the results of thyroid feeding, as established by the credible evidence of medical men in cretinism, myxœdema, and other conditions in which the functions of the thyroid gland are in abeyance, is the record of the treatment of the sufferings of an elderly lady heard of but lately. The patient suffered from gout, which crippled her extremities. Inspired by the great success of physiological therapy, the doctor advised a diet of sheep's trotters, and behold! the hands grew supple and the pristine elasticity returned to the lady's feet. The patient, however, was not well. She suffered from that nervous instability known as neurasthenia. The doctor, proudly satisfied with the effect of the trotters, sent the patient to a friend who was skilled in making an emulsion from the grey cortex of sheep's brains. This he could do without introducing a single particle of the subjacent. The emulsion was made and injected beneath the skin, and in a few days the lady was free from gout and neurasthenia alike.—*Pharm. Journal.*

HEMATOXYLIN AS A NUCLEAR STAIN.

By Prof. Joseph M'Farland, M.F.

The repeated requests of students and physicians for demonstrations of my method of obtaining clear results with hematoxylin as a purely nuclear stain, have suggested the propriety of publishing a brief description of what is not new, but what in my hands has been eminently successful.

The stain employed by preference is Delafield's stain, made from a formula secured from Weigert. It is compounded in a manner very similar to other formulas, yet experience shows it to be better than any of them.

Solution I.—Dissolve ordinary alum, 20 parts, in water, 200 parts.

Solution II.—Dissolve hematoxylin crystals, 2 parts, in absolute alcohol, 12.5 parts.

Pour the solutions together and allow them to stand, exposed to the light, in a wide-mouthed open bottle for four days; a considerable sediment principally consisting of alum, will be found. Filter, then add 50 parts each of glycerin and methyl alcohol. Cork tightly and keep indefinitely.

Sometimes, when the two solutions are poured together, a faint, transparent blue color results; sometimes they at once form an indigo-blue solution. When finished, the solution should be of a very dark purple color. When old, it sometimes becomes red.

It is used as follows: Enough of the stain is added to a dish of water to make it sufficiently opaque to prevent one from reading through it. I generally find it better to dilute with ordinary tap water, as the salts of calcium and magnesium that are present intensify the action of the stain. When the stain is added to distilled water, it makes a red solution; when to tap water, a blue one.

The section is spread out in a dish of water and transferred to the stain carefully spread upon a section lifter. The sections must not be folded, and must never lie upon each other, as the portions covered in this manner are protected from the stain and will appear much paler than the remainder. No rule can be given for the length of time during which the section shall be immersed in the stain. When the stain is fresh, its activity is much less than when it is old, and an exposure two or three times as long will be required in consequence. Every minute or so, the section should be removed from the stain, washed carefully in clean tap water, and the color noted. If this is not sufficiently intense, the section should be replaced, allowed to remain for a moment or so, then again washed, and this process continued until exactly the tint desired. If the staining need not be done at once, the finest possible result can be achieved by making the diluted stain so weak that only the faintest color exists, and then allowing the section to lie in it for 12 or 24 hours. If through carelessness or accident the section is stained too much, it should be thrown away at once, as it cannot be reclaimed as a first-class preparation. The color may be considerably intensified and made more purely nuclear by the addition of three or four drops of a saturated solution of lithium carbonate to the wash water. If this is done, a second wash water should be used to remove the lithium carbonate. The section passes from the wash water to 95 per cent. alcohol, from this to absolute alcohol, then to oil of cloves, oil of bergamot, carbolxylol, etc., for clearing before being mounted in Canada balsam.

This method gives results that surpass every other stain except safranin in purity of effect for the demonstration of chromatic arrangements. The chromatic spindle of the karyokinetic figures can be beautifully demonstrated by it.

Should it be desired to counterstain the tissue so that the protoplasm presents a transparent, contrasting color, nothing can be better than eosin the use of which is very simple. A few drops of a saturated alcoholic solution may be added to a dish of absolute alcohol, the section allowed to remain in it until a rich, purplish-red color is attained; is then washed in clean, absolute alcohol for a moment, then passed through oil of cloves, etc., before mounting.

Behmer's hematoxylin which is lauded by many; Ehrlich's mixture of hematoxylin and eosin, and, indeed, all the other compounds which I have tried, are far below the stain here described in the results which they produce. It should, however, be remembered that hematoxylin is always a stain which requires care and patience as well as experience for the production of finest effects.—*From the Philadelphia Polyclinic.*

FIRE AT SUMMERSIDE.

An Island Town Scorched to the Extent of $30,000.

Summerside, P. E. I., March 30.—A disastrous fire occurred here this morning, when about $30,000 worth of property was destroyed. The fire is supposed to have originated in the office of the Journal and Agriculturist, owned by W. A. Brennan. The following buildings were destroyed: Journal office, with all contents, valued at $16,000; insurance $8,500. Bank of Nova Scotia, in which J. E. Wyatt had his law office, loss $6,000; insurance $4,000. Building owned by the Tryon Woolen Manufacturing Co., and occupied by J. A. Sharpe, oysters and farm implements, loss $1,000; insurance $700. R. C. McLeod's large carriage warehouse, lost $1,500. Capt. D. McKenzie's grocery store, loss $1,500; insurance $600. Geo. Muttart's building, occupied by himself as a store and by Frank Sperry, and as an hotel by Wm. McIntyre, $2,000; no insurance. Building occupied by J. A. Gourlier as a drug store and Dr. McIntyre, dentist, $2,500; insurance $1,000; loss to drugs $800, covered by insurance. C. B. Saunders, vendor, lost considerable in the removal of goods.

Nature's Polypharmacy,

By Wm. Carter, M.D., B., Sc., L.L.B. (London University) F.B.C.P. (London,) Professor of Materia Medica and Therapeutics, University College, Liverpool.

As a not unnatural reaction from the great complexity of the older medicinal formulæ, there has been of late years an increasing tendency in the direction of what is termed simplicity in prescribing, till at length some physicians appear to shrink from ordering at any time more than one drug, lest they should be considered to sin against reason and nature; while in the practice of a very few, medication has reached the vanishing point, and rather than run the risk of polypharmacy these prefer to have no pharmacy at all. Extremes are always to be avoided. In this, as in every other department of knowledge were experience comes into operation at all, it affords the safest guide for action; and an increasing knowledge of the constitution of many of our old-established and best-approved remedies proves that on that safe ground some degree of polypharmacy is justifiable, while a growing acquaintance with the great complexity of the chemical and physiological processes going on in the human body justifies it on the higher, but less easily-secured ground of scientific reason. The constitution, chemical and physiologieal, of even the simplest unicellular organism, that which seems to have no organs, is so complex that it is not possible to say, except as the result of experiment, how even it will react the drugs, while every step upwards in the scale of living beings presents such an increasing complexity, organ being added to organ, each with its distinct secretion, and system to system, that at last the mind becomes absolutely bewildered in its attempt to grasp the intricate workings of the whole. Our conceptions on this apparently simple, but really most difficult matter of the reaction of our bodies to drugs, are coloured by the belief that the personal identity which makes us feel that morally and intellectually we are the same beings through many succeeding years of life, may be extended so as to embrace our physiological and physical beings as well.

If a man commits a breach of the moral or criminal law to-day, he will be justly amenable to whatever punishment such breach may entail, even if years shall have elapsed since the sin or crime was committed, and he would feel, and justly feel, that he is the very same responsible being in 1905 as he was in 1895; but if because of this just conclusion he thinks that he is so far the same being that he will respond to the action of similar drugs in a similar way at the two periods, he is reasoning foolishly, for it is just possible that a really very great and fundamental change in his entire organism may have taken place in the interval.

Not only is he not the same being in this lower sense of the term "being" at any two years of his life, but he is not the same at any two hours; for probably no more unstable or variable piece of mechanism than a civilised man is anywhere to be found in the world; and the more highly civilised, or as we are apt to term it the more nervously constituted he is, the more and more unstable is he apt to become. There is no more sensitive index of the chemical changes which are going on in the human body than the urine, and this is found to vary in its composition from day to night, and even from hour to hour.

Bouchard, in his well-known experiments, found that the urine of a healthy man, voided immediately after the usual night's sleep, when injected into the veins of a rabbit, was not only more poisonous than the urine of the same man passed at the end of a hard day's work in the open air, but that it was poisonous in a different way—the predominant symptoms in the first case being convulsivant, but in the second coma-producing. It has even been thought possible that the alternating states of sleeping and waking may possibly be due to the gradual accumulation within the body of products which acting on the nervous centres differently; at one period, viz., night, tend to overwhelm the brain with drowsiness, and another, the morning, to irritate it into wakefulness, and call the sleeper back to life and activity. At any rate, the fact that chemical products having an entirely different effect on the system of those within whom they are generated according to the time of the day, makes it easy to understand how it is that a hypnotic always acts best when administered near the time of natural sleep, its effect being than added to those of sleep-producing products, formed in the natural laboratory of the body at that period; as well as why it is that convulsive seizures will often occur in those liable to them as the time of ordinary waking draws near, and gives reason for the practice of doubling the dose of the protective medicine the last thing at night. But what relation have these facts to any facts of drug administration? Why, just this; that so complex and variable a mechanism will probably require a variable and complex treatment when it becomes disordered.

The hackneyed rules which should guide the writer of prescriptions in order that the pharmaceutical preparations may act *cito, tuto et jucunde* (quickly, safely, and pleasantly), generally direct that a medicinal formula may consist of *basis*, *adjuvans*, *corrigens*, and *constituens* or the chief substance with which to cure; that which assists it; that which corrects any unpleasant effect, and that which serves as its vehicle. But they do not contemplate anything outside this, and modern ideas would be very much scandalised if a prescriber, deliberately and of set purposes, placed on paper in the same prescription the names of substances which were directly antagonistic to each other physiologically. He would be reproached for

blowing hot and cold at the same time; with being a mere empiric; with departing from the simplicity of science, and much more to the same effect; yet, probably, such an objector would be very frequently guilty of the same kind of inconsistency as he criticised in others, for it is a curious and instructive circumstance that many of the great vegetable remedies, the value of which has been established by years or generations of the experience of thoughtful and observant medical men, contain such antagonistic principles. But a single name being given to the drug, its contradictory and compound nature is not thought of by those who prescribe it. To a few examples of this kind of natural poly-pharmacy I desire to draw attention; and if it can be established, as I believe it can be, that the effects produced by such a combination of opposite principles are good, that they are often much better than when either of the principles is given alone, there will be established a sufficient justification for the action of those who designedly introduce into prescriptions physiological antagonists, mixing them however, in such proportion that the one shall moderate or control without entirely neutralising the activity of the other. The first example which I will adduce is that of jaborandi. The leaflets of this drug contain in addition to a volatile oil two absolutely antagonistic alkaloids, which, if they existed in such proportion that each could produce an equally powerful though opposite effect would exactly neutralise one another, and no result would follow. But the jaborine or atropine, a like alkaloid, is in so relatively small a proportion to the pilocarpine that it controls, but does not destroy, the effect of this latter.

That it does control that effect I am quite certain; and without any desire to be singular, or to effect a disagreement with men whose opinions are entitled to respect, I cannot help expressing my dissent from not a little of what is said and written concerning this drug. Thus, I find the following statement by a well-known authority:—"Jaborandi appears, however, to irritate the stomach, and often causes nausea and vomiting; and so does pilocarpine, though to a less extent, even when subcutaneously injected." My experience, which is large, would compel me completely to reverse the terms of this sentence by putting pilocarpine for jaborandi, and *vice versa*. So uniformly, indeed, did small doses (such, for example, as ½ gr.) of pilocarpine nitrate cause vomiting when administered by the stomach, that years ago I omitted to employ it in that way, substituting for it jaborandi, as tincture or infusion because it could be generally given without causing emesis. I do not say that jaborandi will never cause sickness, but what I do say is that it causes it very much less frequently than does pilocarpine, and that just as we sometimes designedly introduce a small amount of atropine into our hypodermic doses of morphine with a view of preventing the nauseating effect of the latter, even though atropine is to a certain extent a physiological antagonist of morphine, so nature in the case of jaborandi has effected the same kind of mixture of opposite alkaloids, I have sometimes had striking illustrations of the correctness of this statement.

In another respect the compound of opposites in this drug is superior to the pure alkaloid. It does not like that single alkaloid depress the heart. In the course of a celebrated criminal trial which took place in this city some years ago a medico-legal expert, who admitted that he knew next to nothing of medicine as a practical art, expressed the opinion that the smallest officinal dose of tincture of jaborandi, of which I had advised the administration to relieve a distressing dryness of the mouth, would probably depress the heart. This, however, is just what it will not do; the jaborine and the alcoholic vehicle more than counteracting the depressing effect which pilocarpine alone might cause either directly or indirectly, through provoking sickness and the admission that he had next to no knowledge of the practical effect of medicine seemed to me to be a perfectly needless one after such a statement.

Let me turn to another great drug in which a similar mixture of antagonistic principles is found. The British Pharmacopœia contains digitalis in three forms: 1, the dried leaf: 2, the tincture; 3; the infusion. Now the leaf contains several distinct principles of which one digitonin is the direct physiological antagonist of the others. These last cause the small arteries as well as the cardiac ventricles to contract powerfully, and hence raise the blood pressure, while the first, if pure, will, like saponine with which it is nearly identical, cause them to dilate and the blood pressure to fall. But, owing to its much greater solubility in water than some of the others, there is a relatively larger proportion of digitonin in the infusion than in the tincture—at least such is said to be the case—and the contracting effect of digitalis and the other principles that resemble it, is more controlled and moderated by tne infusion than by the tincture. If this is correct it may help to explain what practical experience seems to have long settled, viz., the superiority of the infusion over the tincture in the treatment of aortic regurgitation in which affection any undue amount of contraction of the smaller arteries would be a great disadvantage. In the case of digitalis, therefore, as in that of jaborandi, experience has established the fact that the blending of physiological opposites which nature has produced for us is superior to either of the things blended when given alone, although any such intentional blending on the part of the prescriber would probably be characterised as the worst form of polypharmacy. I will merely allude, in passing, to the fact that we have in physostigma such physiological opposites as physostigmine and calabarine, yet nobody objects on that account to using the extract. If, however, we turn to the

oldest and best of all the vegetable products of the B.P., opium, we find the most conspicuous example anywhere afforded in nature of this most despised, though, in the present case, most useful polypharmacy—for, besides gum, sugar, and other vegetable products, opium is said to contain no fewer than 17 to 18 different alkaloids, two neutral principles, and one peculiar acid; and so that a prescriber of this drug, even when he may perhaps be flattering himself that he is conforming strictly with present day notions of simplicity in pharmacy, is a polypharmacist of the worst and most pronounced type. And not only are the constituents of opium very numerous, but like the other drugs mentioned, it affords in its thebaine and morphine, a further illustration of direct physiological antagonism. Yet every practical physician knows full well that he can often obtain much more satisfactory results from the natural mixture of many principles, known under the name of opium, than from any single alkaloid which may be separated from it. In conclusion, I should like for a moment to direct your attention to an example or two of polypharmacy of a pre-eminently useful character. though much despised by many who have not taken the trouble to prove its worth. Here is a prescription of the late Dr. Graves:

R	Pulv. jalap,	
	Pulv. rhei.	
	Pulv. scammon.....aa	gr. v.
	Elaterii,.....	gr. iss.
	Pot. bitart,	
	Pot. sulphat.....aa	5ss,
	Syrup, zingib.....	q. s

℞ fiat bolus.

Thus Dr. Graves used to treat, and well treat, as he tells us, many dropsical patients.

I can fancy the scornful curl of the lip of the very clever young pharmacological student of today as he runs his eye over this prescription, in which quick purgatives and slow ones, watery and simple ones, those which require an admixture with bile to ensure their activity, and those which act equally well when injected into the blood are all jumbled up together and finally massed into a bolus big enough for a horse; and if he happens to be as human as he is scientific, the contempt for such old-fashioned prescribers as Graves will be blended with pity for the poor people who grew dropsical before the days when a minute powder of elaterium perhaps even a miniature pilule, and that pilule a sugared one, as representing what is termed the "elegant pharmacy" of the present time, would cure them *cito, tuto, et jucunde.*

If I had the misfortune to be generally dropsical, and could be permitted personally to choose between the two methods, I should feel sure that a complete evacuation of any intestinal contents,and not a mere watery discharge, would be effected, whereas by the other or "elegant" method I have seen fatal results ensue. I will merely mention one other remedy compounded of many drugs which those who do know its value despise, and which those who do know will never consent to be beyond the reach of—Warburg's tincture, which has formed the subject of many controversies. There was one in 1875, when Professor Maclean published a formula for it. When it was known that quinine, aloes, rhubarb, angelica seeds,saffron, fennel seeds, prepared chalk, gentian root, cubebs, myrrh and camphor formed only some of its constituents, you may imagine the mirth that was excited in the minds of the scientific scoffers.

I will only say this—at the Royal Southern Hospital I suppose we have the opportunity of acquiring as large a practical acquaintances with the various types of malarial fevers as can be acquired in any hospital in the kingdom, the "Dreadnought," perhaps, alone excepted, and my opinion has long been that in some of the more dreadful of these fevers, such as those termed "bilious remittent," where jaundice, high temperature, delirium, hæmorrhage,&c., form such a combination of symptoms as would seem almost to shut out the possibility of hope, life has again and again been saved by the administration of Warburg's tincture, administered in Warburg's manner, and would have been saved by no other means as yet made known to us. I do not know which, if any, of the numerous ingredients are useless, and until I do know this I prefer not to omit any; and lastly, I am ready to make the unmanly admission that if ever it should be my lot to be the subject of one of those terrible remittent or intermittents to which I have alluded, I should manifest a weak bias towards being cured by Dr. Warburg's polypharmcay, rather than being allowed to die according to the strictest rules of 19th century scientific pharmacology.—*Read at a meeting of the Liverpool Chemists Association.*

Darwinism Six Centuries Before Christ.—Anticipation of the Atomic Theory, and of the Germ Theory of Disease,

A recent number of that most excellent compendium of current literature, the *Literary Digest*, of Funk & Wagnals, published an article entitled, "Darwinism Six Hundred Years Before Christ", which we produce below. As kindred matter, showing that the philosophers of Greece and Rome had adumbrations of many of the fundamental theories of modern science, anticipations of truth conceived too soon, by two thousand years, for general acceptation by mankind, we have added thereto notes showing that both the Atomic Theory of the nature of matter, and the Germ Theory of the causation of certain diseases, were advanced and boldly advocated by them long before our era. The following is the article of the *Digest;*

Special researches have been made by the historian, Oscar Reader, to show that in history, at

least, "there is no new thing under the sun." An interesting contribution to his researches is made by Prof. Nicholas Murray Butler, who endeavors to show that the old Greek philosophers, notably Anaximander and Xenophanes, held to the theory of the descent of man from the lower types of animals. It is one thing of course, to advance a theory, and another very different thing to bring together in proof of a theory such a wealth of evidence as to revolutionize the thought of the scientific world. But if the old Greeks could not do what Darwin and his followers have done, they seem to have anticipated by about twenty-five hundred years some of Darwin's most important conclusions. Such, at least, is Professor Butler's view, as advanced in a volume entitled "Classical Studies in Honor of Henry Drisler," a collection of essays by former pupils of Drisler, published last year in honor of the fiftied anniversary of his professorship at Columbia College. Professor Butler says:

"Ever since the doctrine of organic evolution began to attact serious attention, about forty years ago, students of Greek philosophy have repeatedly called attention to cosmological opinions put forward by the ancients that parallel in a curious way. or else directly foreshadow, discoveries that are a part of the glory of modern science, Zaller, in his brilliant essay. 'Darwin's Greek Predecessors,' points out that not a few fruitful scientific ideas that were the property of the early Greek philosophers were first forgotten by the Greeks themselves, then overlooked by the Middle Ages, and finally rediscovered and fully demonstrated with great *eclat* by the modern scientific splrit. Among the pre-Socratic thinkers, Zeller cited Anaximander and Xenophanes as leading examples of philosophers who exhibited this form of prescience.

"The close analogy between Anaximander's theory of the development of the earth from a fluid state of matter, and of man from lower animals, and the modern scientific theories, has been fully shown by Teichmuller. It is idle to dismiss these analogies as mere guesses, when the grounds upon which they rest are stated. But while it has been noticed that Anaximander mentioned the fact that the period of infancy in man is longer than in the lower animals, the full importance of the passage has not been recognized, nor has its agreement with the extremely important contribution by John Fiske to the general theory of evolution been pointed out. The passage in which Anaximander's theory is preserved for us is quoted from Plutarch by Eusebius (Prop. Evan. I, 8, 2), and reads as follows: 'Further, he (Anaximander) says that in the beginning man was born from animals of a different species. His reason is that, while other animals quickly find food for themselves, *man alone requires a prolonged period of suckling. Hence, had man been originally such as he is now, he could never have survived.*' Reading this passage, in connection with other fragments of Anaximander, it is clear that he observed and understood the main point in connection with the prolongation of the period of infancy in man; namely, that it affords a needed opportunity for the adjustment of the complex physical and psychical activities to their environment.

"This fact has been pointed out and illustrated by John Fiske, who rightly considers his treatment of it an important contribution to the doctrine of evolution, and one necessary for its completion. . . .

"The materials out of which Fiske constructed his doctrine are: (1) The experience of Wallace in trying to bring up a baby orangoutang; (2) Wallace's emphasis on the importance of psychical rather than physical variations in the highest animals; (3) the statement by Herbert Spencer that where the psychical life is complex there is not time for all capacities to become organized before birth. Thus far Fiske and Anaximander are in entire agreement."

In like manner, it might be shown that the conception and basis of the atomic theory were promulgated by Leucippus and his pupil, Democritus of Abdera, nearly 500 years before Christ. Leucippus first taught that all matter is composed of invisible and indivisible atoms, possessing within themselves (inherently) the principle of motion Before him Anaxagoras, Empedocles, and Heraclitus had taught that matter is composed of infinitely small particles; but it was Leucippus who first held that these particles have a definite figure, and are endowed, inherently, with motion, and to him and to his pupil, Democritus, is due the honor of the promulgation, if not discovery, of the Atomic Theory. Leucippus further held that heat is due to the conflict of atoms. Being innumerable, and constantly in motion, they strike against each other, and heat is the result. Democritus expanded this theory of his master. He maintained the impossibility of division of matter beyond a certain point, to-wit, the atom; that the primary atoms are specifically of the same size and weight, and that their motions are originally in straight lines, which becomes curved by impact. In fact, he referred every active and passive motion or sensation to atomic motion. The atoms are impenetrable, and of a density in ratio to their volume. In reading the fragmentary literature that has come down to us from this school, we are amazed that they should have arrived at such clear ideas of matter, and that the world should subsequently have practically ignored their philosophy for nearly 2,300 years.

Concerning the anticipation of the germ theory of the causation of disease, let us consult M. Terrentius Varro, the Roman Consul to whose rashness and presumption the disaster of the battle of Cannæ was largely due. In a work on Country Life (*De Re Rustica*), written about 115-110 B.C., in one of the chapters devoted to the choice of a site for a villa, and the construction of the latter, he says:

"You shall choose for the site of a villa the foot of a well-wooded hill, where there may be wide-

spreading pasture land, and it (the villa) should front toward the most salubrious winds. A front toward the point at which the sun rises at equinox (*i. e.*, the true east) is very convenient, since it has some shade in summer, and the benefit of the sun in winter. If, by necessity, you must build near by a river, you must be careful to place your house in such a situation that it shall not be intensely cold in winter, and insalubrious in the summer time. You must also pay attention as to whether there be marshy places around, and for the same reasons, and moreover because when they dry up they breed *certain minute animals, invisible to the eye, and which, carried by the winds* (or air), *penetrate the mouth and nostrils, and propagate obstinate disease.*"

Further on we have an imaginary conversation between Fundianus, a landed proprietor; Agrius, a farmer, and Scrofa, a sort of interlocutor, frequently introduced by our author when he wishes, by a dialogue, to enforce some point, previously given in diadactic style, as in the present instance. Says Fundianus:

"Suppose I should become heir to a farm of this kind, what shall I do to avoid contagion?"

"Sell it," answers Agrius, for what you can get for it, or abandon it altogether."

"Not so," interpolate Scrofa, "you must be careful that your house shall not front the direction from which the insalubrious winds usually blow; not be built in a hollow valley, but on an eminence, where, if unwholesome emanations come, they will be most quickly dispelled. Another advantage (offered by the eminence) is that a place on which the sun shines all day is the most salubrious, since *if any animalcules develop, or are brought thither, they are either at once driven away by the wind, or they soon perish from dryness* (of the atmosphere)."

We have translated freely, but have been careful to preserve the exact meaning of the Latin in the more important phrases, printed in Italics.

Varro was not a good general, as the result of Cannæ shows, but he was a philosopher a long way ahead of his day and generation, and nearly 2,000 years thereafter.—*National Drug.*

Constructive Criticism of the British Pharmacopœia.

Criticism of the British Pharmacopœia has within the last few months assumed a more prophetic tone than pharmacopoeial criticism generally has about it, and, although the destructive element is not advancing, it is apparent that the criticism is being rapidly focussed into one common desire—complete revolution in the construction and contents of the British Pharmacopoeia. Not since the disastrous publication of 1864 has the voice of critics so generally condemned much of the Pharmacopoeia as unworthy of the British nation; yet, behind all that, we are bound to say there is a volume of quiet content with things as they are, a satisfaction that the Pharmacopœia meets most of the everyday requirements of medicine and pharmacy.

We are a very conservative people, and as long as that bottle of tr. gallæ reposes on the shelf, where it has stood unstoppered for a lifetime, we have a sentimental objection to having the formula for it removed from the Pharmacopœia. Our only grievance is that the Pharmacopœia revisers have taken our sentiments seriously and retained the formula And so it is with many other things official. We know that there are many that never would be missed, but we dread the act of parting.

It appears, however, that medical practitioners and pharmacists have made up their minds to face that parting, and in a more or less vague sort of way they have expressed their wishes for more chemistry, more pharmacology, more preparations. Destructive criticism is being drawn out thin and reduced to expressions of personal opinion, which are worse than useless to conscientious editors. We have come to a point at which we know not what is left of the old Pharmacopœia, and have no notion at all as to what the new will be like.

Can this be remedied? Is it possible by constructive criticism to formulate the grand principles upon which a Pharmacopœia for the British Empire should be constructed? We think it is, and in a series of papers by well-known pharmacists we propose to show how the Pharmacopœia may be improved by the reconstruction of the old and introduction of new features.

It is not necessary to go into details or to expose existing petty inconsistencies; enough of that is already on record. Moreover, it should be better known than it is that the editor of the Pharmacopœia welcomes from all quarters personal communications in regard to facts in the book which anyone has reasonable grounds for supposing require emendation. There is room for more of the friendly element in pharmacopœial criticism than there has been.

Each of the writers in the series of papers which we will publish endeavours to treat his subject in the broadest way without divorcing that personal opinion which makes all utterances interesting. The fact has not been overlooked that the British Pharmacopœia has an interest beyond the consulting-room and the pharmacy. It is international in respect to trading and science, is a guide to public analysts and law courts, a reference-book for pharmacists wherever Englishmen settle as communities, and should be the daily guide to the immense volume of wholesale dealing in drugs and medicinal chemicals transacted in this country. There is reason for supposing that hitherto the British Pharmacopœia has not recognised all these interests, that its conception is too insular; but it is now agreed that in making it imperial the book should, at the same time, be brought up to the standard which pharmacopœias of other countries exhibit in specific departments.— *The Chemist & Druggist.*

PHARMACY IN ROME.

(A Paper by MR. H. B. MORGAN, read before the Liverpool Pharmaceutical Students' Association.

I eagerly laid hold of an opportunity which was offered to me to spend some months in Rome, and with keen delight I looked forward to the time when I should be within the walls of that famous city. Of all the beauties of the place, the marvels of St. Peter's, the Vatican, and the museums; the wonderful buildings, some erected long before Christianity was founded, many, alas! now in ruins, but a few, such as the Pantheon, after the lapse of nearly 2,000 years, in much the same condition as St. Paul must have seen them, when led a prisoner through the streets. Of the tremendous size of the Coliseum and the gloomy labyrinths of the catacombs I must not here speak.

After driving from the station in the little cab past fountains, ancient ruins, and large modern hotels, to the pharmacy which was my destination, the first thing that struck me on arriving there was the white marble steps and marble counter and the loftiness of the shop.

In very few of the native pharmacies is there any display in the windows—a few cards, bearing such an inscription as "Oxygen," being the only decoration. Some of those which have English assistants, or aim at attracting English customers, pay some attention to the show of goods in the window; but at our pharmacy there was nothing but a couple of small carboys to draw the public, and in many pharmacies there is no window in the sense in which we understand it, all the light coming through glass panelling at the end of the shop, and in the centre of which is the door.

Directly facing, and in some distance from the door, is the counter. On this may be a pair of ornamental jars, and the balance, which is found in every pharmacy; and here, in full view of the public, the dispensing is done. The walls on each side, both before and behind the counter, are lined with the stock-bottles, often in handsome glass cases; whilst generally one or two couches, several chairs, and a table with pen and ink are at one side of the shop, the whole having a scientific and professional appearance. Of course, there are many modifications of this plan, according to the size of the business and the taste of the proprietor. Sometimes there will be a separate room for dispensing, and a counter-case of sundries just as here.

When a window is dressed there is nearly always a fair sprinkling of English articles shown. On the average, the appearance of an Italian pharmacy is superior to that of an English one.

As a rule, there is no connection between the pharmacy and the house above, the pharmacies being generally lock-up shops, and the pharmacist does not usually reside over his shop. This system has its advantages, but there are cases where it may be disadvantageous to have a stranger living over you.

For instance, in the spring of 1893, when the Anarchists were rather lively, our pharmacy was for some time watched day and night by a special guard. Not that the gentlemen of the bombs had any animus against us, but because above us lived a man holding a rather high public office, and it was feared an attempt might be made against him. Fortunately, the efforts of the police were successful.

The pharmacist's stock is partly regulated by law, and in the Pharmacopœia is a list of drugs, the absence of any of which renders the pharmacist liable to a fine of 10 lire (about 7*s* 6*d*.). Those named, however, by no means comprise the whole stock, and the number and variety of alkaloids, and the various synthetical remedies which are kept, are, I think, quite as great as at any pharmacy in this country. But of sundries other than really surgical goods—such as syringes and bandages—the usual stock is small.

Nearly all the articles used in dispensing English prescriptions, with the exception of galenical preparations, which we manufactured ourselves, we obtained from London, but most of the fine chemicals from Germany direct; whilst other things for general customers were got from wholesale houses in the city, and though many were much the same as we use, yet often the comparative sale was very different. Such things as mannite, for example, which I do not remember ever selling in England, are in frequent demand. Lycopodium is sold largely as a dusting-powder. Large quantities of S. V. R. are sold for burning, at the rate of about 1*d*. per oz., as methylated spirit is not made. Limonat Roze, the French purgative lemonade, is also frequently wanted. Mag. sulph. is constantly asked for under the name of Sale Anglese (English salt). Pure oxygen is much used in cases of collapse, or as a last resort when a person seems on the point of death, and is sent out in bags, bearing the name of the chemist, with a tube and special mouthpiece attached. Tea is only used as a medicine, and an order for an ounce of tea and some nitre, which are taken together for a cold, is not infrequent.

Of course the only weights used for dispensing English prescriptions are the metric ones, but many still adhere to the old style of *oncia* and *libra* in buying in large quantities, but the same persons, when asking for such things as antipyrin, seldom use any terms but gramme and centigramme, and such articles as phenacetin, salicylate of quinine, valerianate of quinine, &c., which we rarely sell except in pre-

scriptions, are often asked for by the Italian public.

The sale and importation of saccharin are forbidden, partly to protect the sugar industry and partly because the Government have decided its use to be injurious. A lot of tabellæ coming to us were once seized at the Custom house simply because they were sweetened with that substance. As, however, many English demand it and their prescriptions order it, this law is successfuly evaded.

Prices of the above drugs are regulated by law, and allow the chemist a very satisfactory profit. They are not forbidden to sell more cheaply, but they are not allowed to charge more than the tariff-rates.

The sale of patent medicines and proprietary articles, unless they have the formula printed outside, are forbidden. Makers of some English and American popular nostrums comply with this law by sending them with a special label with the (supposed) recipe on it. But to oblige our English customers, we kept in stock a number of articles of which the makers publish no form, and though the authorities know of it they do not interfere, probably out of courtesy to the visitors who want the things, and on whom, to a great extent, the prosperity of the city depends.

Of course Italian proprietaries always comply with the regulation. There are no patent medicine stamps, but I fail to see what either the chemist or the public gain by their absence.

Beecham's Pills, Benger's Food, Dinneford's Magnesia, Eno's Fruit Salt, Fellows's Syrup, Lactopeptine, Hazeline, Scott's Emulsion, Pond's Extract, and Valentine's Meat Juice, are amongst the proprietaries that have the largest sale.

An average day's work is not very different to that at home. Most chemists keep ice, and it is in frequent demand. Poultices, which we never have to make here, I was often called upon to prepare—but by English doctors, as most of our customers were at hotels, where they had no convenience for preparing them—and we had special boxes to keep them at the temperature of boiling water, and would send a fresh one every two or three hours as ordered.

As doctors are not allowed to dispense, this all falls to the chemist, and constitutes a large part of his business. Italians nearly always wait for their medicines. The law requires the chemist to retain the prescription, but with the exception of those containing such drugs as ergotin, we never adhered to it.

Mixtures, often containing infusions and decoctions and simple emulsions, are the form of most of the prescriptions, usually about 150 to 200 grammes being the quantity ordered, and some very nasty messes of combinations were seen.

All ingredients are added by weight, so that it rarely happens the bottles are quite full. This plan, I think, is inferior, and, on the whole, less accurate than our custom of making up to a certain bulk.

Hypodermic injections of such things as ergotin, strychnine, morphine, iodine, cocaine, arsenic, are frequently ordered. Of course, in preparing such things it is necessary to exercise the greatest care, and we charged a high price accordingly.

Pills and powders are often ordered in great numbers. I have dispensed a prescription for between 200 and 300 powders, and also large numbers of pills at a time; the latter are sent out in much the same style as here; but, I believe, in the native pharmacies pill-machines are unknown, and all pills are rolled and rounded by the fingers. We invariably sent out wafer-papers with all powders, getting through grosses in the week.

This way of taking powders is much superior to our nasty way of taking them, and does away with the necessity of adding sweetening substances. They are used by everyone, rich and poor, and if we forgot, as at first I often did, to supply the wafers, the people would come back in about as excited a manner as if we had send out a bottle of medicine without a label or cork.

Another elegant form is the cachet. They are frequently ordered, and, in my opinion, no neater or more elegant form of dispensing is possible. I think if we in England were to introduce both the wafer and cachets to our general customers, conservative as the public are, they would not be long in seeing the advantage of both.

Boric and corrosive-sublimate lotions are ordered in large quantities, 2 or 3 litres at a time not being uncommon. The way these are sent out is enough to give a West-end chemist a fit. I was quite alarmed at first when I found wine-flasks were the usual vessels in which these poisonous lotions were dispensed; but I soon discovered it to be the general custom, and, in fact, the way the doctors wish, and as I never heard of any accident, either by the lotion being drunk or the flask being afterwards used for wine, I soon got to look upon it as a matter of course.

Native prescriptions are always written in Italian, and are sometimes as difficult to decipher as English ones. The directions are generally disgracefully vague. "By spoonfuls" is a very common expression; but very often no directions are given, and with pills, &c., it is just the same.

The names of the principal ingredients are put on the label, and the patient is left to take

the medicine as he thinks best, or according to the verbal instructions which he may have received.

A very good law provides that if any dispenser detects unusual or poisonous doses he shall demand (not merely ask as a favour) that the prescriber shall declare in writing on the prescription the purpose for which he intends it to be given and also state that he will be responsible for the result.

The prices for dispensing, with a few exceptions, are much lower than in England; but this does not apply to English prescriptions; Eighty centimes is about the average for an 8-oz. bottle, pills and powders in proportion; and this in a country where stores are unknown. The number dispensed makes up, to some extent, for the low prices. Many are certainly very simple, but we may say the same of English ones; though it is no use crying over spilt milk, I can't help thinking that if chemists all round in times gone by had been content with more moderate profit, many of these cutters would not now have been so flourishing, or even in existence.

There is very little counter-prescribing. The certainty of receiving all prescriptions does away with the desire for it, and though the pharmacy is the place people with slight ailments generally visit, and in case of street accidents usually rush to, it is because they expect to find a doctor there.

Most pharmacies have two or three medical gentlemen—some perhaps half-a-dozen (one I know has about twenty), who visit it regularly, some once, others twice, and some three times a day, as near fixed hours as their professional engagements permit, getting any notes that may be left, and prescribing for any patient who may be waiting for them; and it is a common thing for a person to ask, "Is there a doctor in?" and if not to wait for one.

Occasionally the doctor's prescription-form will have printed on it the list of chemists' at which he calls. If he gets any fee at all, it is only a small one, but the plan, as far as I could judge, seems to work well, and may often lead to a visit at the patient's house. It certainly relieves the chemist of a lot of trouble and anxiety.

The hours of business seem extremely long. 7 A.M. to 11 P.M. being about the usual thing; but it must be remembered that, at all events in the warmer weather, from about 12 to 5 there is practically no work done. Still, the hours are longer than necessary, every day of the week (Sunday included) is just the same, and there is no early-closing day.

The general tendency in the north of Italy I believe is to follow the English example and rest on the Sunday, but in Rome, as far as I could find out, the pharmacy in which I was employed was the only one that was shut even part of the day.

The shops being lock-up ones, no one is on night duty. This is met in a very satisfactory way by the authorities dividing the town into districts, and in each division appointing a chemist who is open all night and paying the salary of the night assistant. Here is also always on duty, so to speak, a doctor, who is supplied with a couch to rest on, and a city guard—what we would call a policeman—so that in case of sudden illness anyone may at once ascertain where to obtain both advice and medicine.

The policeman accompanies the doctor both to protect him and to render what help he may need. In smaller places where the night service is not established, the pharmacist is by law bound to have a night-bell.

The first Italian Pharmacopœia was published in 1892. It is in the native language, the titles being in Italian, with the Latin name below. It contains, besides formulæ, various tables and laws relating to the business. Besides those laws already mentioned, a penalty of 100f. (with suspension of licence in case of repetition of offence) may be imposed for keeping bad or weak drugs. Another awards a penalty not exceeding 500f. or twelve months' imprisonment for supplying medicines not in accordance with the quality and quantity ordered; and the same penalty may be inflicted on a person who sells poisonous illegally, or fails to keep certain ones named under lock and key.

Whilst we have thirteen decoctions none are given in the Italian Pharmacopœia, but it is understood that unless specially ordered all are to be 10 per cent. Only two infusions (manna-and-senna and rhubarb) are given, compared with our twenty-eight; and although a great many infusions are ordered, the quantity of the drug is usually stated on the prescription, and they are always freshly prepared. The maximum doses of powerful drugs and the maximum quantity to be administered in twenty-four hours are given in a separate table. Doses of simple things, like tincture of rhubarb, are not given at all.

Generally speaking, the Italian pharmacist occupies a higher social position than his English *confrère*, and is looked upon as a professional man. Having passed the necessary matriculating examination, he commences to study at the university, the curriculum extending over four years. If at the end of that time he satisfies the examiners in botany, mineralogy, organic, inorganic, analytical and pharmaceutical chemistry, physics, and materia medica, he receives his diploma and the licence to open a pharmacy. The education, though not quite free, costs but very little. During

his term at college he mixes with embryo doctors and other professional men on familiar terms, and this seems to create a friendly feeling between the two bodies. There is no fixed age at which to qualify, but it is difficult for a student to finish his course before twenty-three or twenty-four years of age.

In some small places pharmacists are so scarcethat to supply the dearth they are thinking of creating a lower grade of druggists, who will only be allowed to practise in the country.

In conclusion, I would like to say that although there are some drawbacks to every place, and Rome was no exception, yet on the whole I look back to the two seasons I spent in Italy with the greatest pleasure; and though pecuniarily perhaps I was no gainer by my stay there, still to have seen as much of Italian life and customs as a visitor would have cost me a great deal more, and for one who has passed the Minor exam., I could not advise a nicer way of spending a year than by taking a temporary situation with a firm who will treat you fairly in some pharmacy in the south of Europe, and if possible under the blue Italian sky.

ENGLISH PHARMACEUTICAL NOTES

(By our London Correspondent.)

The publication of the revised Imperial Pharmacopœia before the year 1900 is now considered impossible in some of the leading circles of pharmacists in this country. Indeed, at the last dinner of the Pharmacy Club one or two pointed references were made to the opposition which has arisen to Professor Attfield's editorship, and the opinion freely expressed that at least 10 years will elapse before the book can be published! If this should be the case, we shall no doubt receive a further instalment in the shape of an "Addendum" dating about three years hence. Quite apart from the large amount of Experimental work which must be undertaken by a pharmaceutical committee in devising and revising formula, unexpected difficulties are almost daily cropping up. The inclusion of formulæ and drugs, popular and desirable from a Colonial point of view, is causing more anxiety than was anticipated. The question of the recognition of metric weights and measures is found to be more complicated than it was supposed would be the case again, the wants of medical men themselves, when they are intelligibly expressed, are frequently inconsistent with the character and scope of a national pharmacopœia. The absurdity of transforming a pharmacopœia into a prescriber's companion or a treatise on the art of dispensing is apparent to every pharmacist, but some medical men are demanding it. Pharmacologists are asking for the exclusion of galenical preparations in favor of pure alkaloids and active principles, although they are not supported by the majority of their professional brethern. No wonder, then, that pharmacists are beginning to wonder when all the talking will finish and the work commence.

The hitch in the general adoption of the metric system is a little more complicated than might be thought. At the present moment as the law stands in England, any chemist having metric weights and measures in his possesion is liable to a fine or imprisonment. Of course, this grotesque state of affairs after a state department has benevolently blessed the metric system and arranged to stamp the weights and measures is due to legislative oversight. When the county councils were brought into existence they were given the power to stamp weights and measures and appoint inspectors to see that goods were only sold according to those duly stamped. But, unfortunately, the metric weights and measures were not mentioned in the Act and consequently their possession, if used in the way of business, is illegal. Needless to say that as soon as the attention of the Chambers of Commerce was drawn to the anomaly, a bill was drafted and is now under the consideration of a select Committee of the House of Commons to rectify the blunder.

There seems to be plenty of scope now-a-days for the production of peptonised dietetic preparations by pharmacists. Medical men regard these peptonised or partially-digested preparations with great favor in the feeding-up of delicate patients after severe illness. I believe the only patented peptonised preparation is that of condensed milk. The milk is first peptonised then evaporated *in vacus*, sugar added in the usual manner and the condensed milk preserved in tins. But peptonised extract of meat, peptonised meat jellies, peptonised cocoa, gruel, etc., would all probably meet with success. Pepsin and pancreatin are now so very much cheaper than even ten years ago that there is little difficulty on the score of expense. Peptonising pellets or powders are easily put up, composed of pancreation and bicarbonate of sodium, and find a ready sale. Peptic salt—a mixture of pepsin and table salt, is a popular preparation with many a dyspeptic. It is quiet evident from the success of pepsin chewing gum that the possible combinations are by no means exhausted.

Professor Wyndham R. Dunstan, F.R.S., the director of the Research Laboratory and Professor of chemistry to the Pharmaceutical Society is only 39 years of age. He attracted considerable attention in his student days

when attending the practical chemistry courses of the school of pharmacy. He was always indulging in mild explosions and investigating bodies which had little interest to average pharmaceutical students. His studiously reserved manner—which has been attributed by his enemies to conceit—did not render him popular with his fellows, but his abilities and energy were recognized by his teachers at an early date. Joining the Chemical Society in 1879 he at once became reporter on chemistry to the Students' Association and an abstractor for the Journal of the Chemical Society. In 1882 he was chosen by the Council to assist Dr. Redwood (then Professor of chemistry and pharmacy) by delivering lectures on physical subjects, and on Professor Redwood's resignation in 1885, Mr. Dunstan was elected to the chair of Chemistry. Professor Dunstan is not a pharmacist and therefore a separate lecturer in pharmacy was appointed. About this time Professir Dunstan married the daughter of Professor Cash, F.R.S, the eminent pharmacologist, of Aberdeen, and by his influence he obtained an appointment at Oxford to arrange the classes, etc., in Materia Medica and deliver some supplementary lectures. For this he was rewarded by the conferring of the M.A. (Oxon) *honoris causâ*.

In the agitation which was taking place about 1886 for the starting of a Research Laboratory connected with pharmacy, Professor Dunstan was named on all sides as the best man for the post of Director. In a quiet manner ever since his election as professor he has devoted most of his spare time to investigations, with the assistance of Mr. T. S. Dymond the assistant lecturer, and had produced some valuable work. Since the establishment of the laboratory some score or two of pharmaceutical chemists have had the opportunity of learning something about experimental work in a well-equipped laboratory and under efficient guidance. This training should be useful and productive of good results. Partly in recognition of this educative work and partly on behalf of his contribution to our knowledge of many drugs, Professor Dunstan was elected a Fellow of the Royal Society in 1893. He had previously served on the Council of the Chemical Society and is now one of the honorary secretaries. He is a Fellow of the Institate of Chemistry and one of its examiners. About a year ago he was appointed lecturer on chemistry at the medical School of St. Thomas's Hospital and last year was chosen examiner in the same subject to the London University. As a lecturer Professor Dunstan is perfectly at home, combining a distinguished manner with lucidity of exposition and considerable flow of language. But he is not popular with his students. He commands their respect and does not want their affection. His sarcastic remarks, when aroused by an inattentive or thick-headed student are guaranteed to rankle. Professor Dunstan must be classed as a lucky man as without passing, I believe, a single examination in his life he has attained a very high position in the scientific world, and at an early age. From his mother, who is stated to have been of Italian origin, he probably derives the indefatigable energy and tact which has enabled him to succeed where others have failed. Those who know him best have unlimited faith in his capacity and only regard his present position as a step to further distinctions. Space will not allow of more than a reference to his work. In his early days he did excellent work on the standardisation of extracts of nux vomica, belladonna, etc. Since then he has developed his taste for organic work and although the aconite research has been the main undertaking of the last few years, aldoxcines, hypointrous ether, cyanide of zinc and mercury, etc., have been investigated. He was the author of the section upon alkaloids in Thorpe's Dictionary of Chemistry.

The London drug market has had a little excitement infused into it by the sudden and extraordinary rise in the price of Cod Liver Oil. There is no doubt now that it was only the usual periodical scare with a little more probability thrown in. Prices have been slowly coming down all the week and in another month it will probably be little dearer than before the boom. Cubebs, which for some time past have been falling, have taken an upward turn. Opium is very quiet and easier rates will prevail. Quinine is in no demand and even during the recrudesence of the influenza epidemic make hardly any appreciable advance, Scarcity of Maranham Copaiba is reported, and little of that offered at the auctions is guaranteed.

A NEW PILL-COATING.—Dr. Waldstein (N. Y. Med. Journ., 1894; LX, No. 1c).

The author has obtained a new pill coating for medicines which are to pass the stomach without being dissolved, from a mixture of shellac and salol dissolved in alcohol. With the view of determining the behavior of such pills, he has given methylene blue in the pills, and has found, on washing out the stomach, that they remained undissolved there; whereas the fæces and urine became colored. Small doses of intestinal cathartics acted more promptly when administered in this way than in the usual manner. Waldstein proposes, by administering antiseptic remedies in this way, to give them a thorough trial in cases of eczema and urticaria due to intoxication from ptomaines formed in the intestinal canal.—*Amer. Surg. Bull.*

Peanut Oil and Cake.

Washington, March, 1895.

Prof. R. B. Handy of the Department of Agriculture has made a valuable report on the use and culture of the peanut, with special reference to its oil product and the availability of peanut cake as food for cattle.

"Millions of bushels," says Prof. Handy, "are being used in the countries of the Old World for the production of oil, in which the nuts are very rich. This oil, is regarded as equal to olive oil, and may be employed for every purpose to which that is applied. The oil forms from 30 to 50 per cent. (by weight) of the shelled nut; it has an agreeable taste and smell, and is more limpid than olive oil. which it very much resembles. Examinations of peanut oil manufactured in Tennessee show it to be very similar in character to cotton-seed oil and olive oil. It is sweet, palatable and clear, and, in fact, great quantities are used, unknown to the consumer, instead of olive oil. To quote Consul Thomas of Marseilles, in a special report to the Department of State:

" 'Much of it is used for eating purposes, both as a salad oil and in the composition of margarin. When made from a superior class of nuts, not too finely ground, the oil is of fairly good flavor, and in the case of dearth of olives, might serve as an excellent substitute for the more popular though possibly not more widely consumed extraction. Indeed, the people of all others best able to give an expert opinion as to the merits of peanut oil for table purposes, and who annually consume considerable quantities uuder the name of, and perhaps too faintly diluted with, olive oil, reside in the United States.'

"In India, Europe, Brazil and this country it is used mechanically in the place of olive oil, and it is also employed by manufacturers as a substitute for the latter in fulling cloth. As a lighting fluid it lasts a long time, but does not give as clear a light as other burning oils. It is a durable, non-drying oil of a light straw color, and it is for its oil that the nut is imported into Europe, many gallons being used in the manufacture of soap and as a lubricant in machine shops. Consul-General Mason of Frankfort says:

" 'Cold-pressed oil of the first pressing of African or the best American peanuts is used in Germany as salad oil and for various culinary purposes. It ranges in price (wholesale) from $14.75 to $26 per 100 kilograms (220 pounds) or approximately from 56 cents to $1 per gallon, which is far cheaper than any edible qualtity of olive oil that can be imported and sold in that country. The American peanut is larger, sweeter, and, when roasted, better flavored than any of the others, but its oil is of medium quality and ranks below the African, being worth about $15.50 per 100 kilograms, or 59 cents per gallon.'

"Whether oil extraction from peanuts will ever become an established industry in this country depends upon (1), whether sufficient quantities can be secured to keep the mills at work, and (2), whether peanuts can be raised at a price low enough to compete with the other oil seeds which already have control of this market. To the average peanut planter who for the past few years has been told that the market is overstocked and the supply greater thau the demand, the intimation that the supply is not large enough for almost any purpose would meet with small credence but a moment's reflection and calculation of the amount of nuts necessary to supply the demands of a first-class oil mill would at once show how comparatively small is the average crop. At 50 tons per day, 300 tons a week, or 15,000 tons a year as a requisite amount to supply one mill, we find that nearly the whole American crop would be consumed in two mills. But under present conditions the mills could not pay the price demanded for primes or extra fine stock, therefore the part of the present crop which could be utilized in oil making would be limited to the amount of the third or fourth class stock produced, which would not supply one mill six months.

"The question of price is one which can be answered only by future improvement in the methods of culture, an increased production per acre, and the invention of more economical means of harvesting and handling the crop.

The most important secondary product of peanut-oil manufacture is the oil cake, or meal, which remains after the oil has been extracted by pressure. This sells for from $30 to $33 per ton in Germany, where it is used for feeding cattle and sheep. After all the oil which can be, expressed has been secured, there still remains considerable fatty matter in the cake which, together with its other contents makes a most valuable animal food.

"It is probable that on suitable soil the peanut will grow in any latitude where Indian corn will thrive but whether it will be a profitable crop depends upon other considerations than its ability to withstand the climate. The most favorable weather for the peanut is an early spring, followed by a warm summer of even temperature, with moderate moisture and free from drought, and an autumn, or harvesting time, with very little precipitation, as rain injures the newly gathered vines and nuts. These climatic conditions are to be found on the Atlantic seaboard from New Jersey southward, in the Mississippi Valley as far north as southern Wisconsin, and on the Pacific Coast south of the Columbia River. Again, it is probable that the quality of the nut depends upon climate conditions, as it is true that the nuts grown in tropical countries contain much more oil than those of the same variety grown in temperate latitudes, so that the proposition has been laid down that the oil content of the nut is in inverse proportion to the distance from the Equator."—*O. P. & D. Reporter.*

How to Join the American Pharmaceutical Association.—

President Simpson has announced the following members of the "Special Auxiliary Committee on Membership." Each member has charge of the work of obtaining applications in his own State. If you desire to join the association apply to your State representative on the committee.

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The Yellow Coloring Matter of Gentian.

BY E. V. HOWELL, ROCKY MOUNT, N. C.

It is well known that tincture of gentian and tincture of chlorid of iron are incompatible on account of a dark coloration produced when prescribed together. Whether there is tannin present or not is a question of dispute. Professor Maisch and Van Itallie claim the absence of tannin Professor Patch asserts its presence, while J. Ville thinks the gentisin is gentio-tannic acid, U. S. D. The question of vegetable colors, except in a few instances, is one that has not been thoroughly studied. Because of their comparative non-importance investigators either pass them by with the simple mention that "little gum, resin, and coloring matter were found," or else exercise their inventive genius by coining some new name for each coloring matter. Yet there seems to be some resemblance in the coloring matter of the various plants, and in those examples cited below, in which they occur along with tannic acid or some vegetable acid, there is a very striking similarity to quercitrim. However associated with the resin of gentian is a peculiar principle which with ferric chloride gives a dark green color. I separated this yellow coloring matter as follows:

1. A quantity of *Gentiana lutea* was treated with 95 per cent. alcohol until exhausted. This was concentrated to one-half original bulk; glacial acetic acid was added. The impurities were then precipitated by alcoholic solution of lead acetate, and filtered out. The filtrate was then treated with hydrogen sulphide until all traces of lead were removed by filtration. This filtrate was then evaporated to dryness to rid of acetic acid. This dry extract was taken up with alcohol, precipitated with cold water and recrystallized from hot water

2. A tincture was made with 95 per cent. alcohol, treated with gelatine and alum solution, the precipitate filtered out, and the filtrate evaporated nearly to dryness, hot water added and allowed to cool. This water extract was then shaken with ether in separating funnel. The ethereal extracts

were drawn off and the residue shaken with ether. These ethereal extracts were evaporated to dryness, and shaken up with absolute alcohol and allowed to crystallize. The yellow coloring matter in both cases was obtained in yellowish needles, arranged in star-shaped clusters. The alcoholic solution of these crystals was of neutral reaction The crystals were odorless, insoluble in cold water, sparingly so in hot water, slightly so in ether, readily in alcoholic and alkaline solutions. They melted at above 100 degrees C.

The following facts point to the conclusion that this coloring matter may be quercitrin, or one of its chemical decomposition products: 1. These crystals are those of a glucocide, because when boiled with dilute sulphuric acid they split up into a sugar, reducing Fehling's solution and a further decomposition product which gives an orange yellow precipitate with lead acetate. A solution of these crystals is neutral and gives the following reactions: (1). With lead acetate, a yellow precipitate, soluble in acetic acid. (2). The solution reduces a solution of nitrate of silver and chloride of gold. (3). With ferric chloride gives a dark green color. (4). Its ammonical solution turns brown on exposure to air.

Quercitrin occurs along with tannin in a large number of plants and trees. In *Quercus tinctoria* and other oaks and in *Rhus glabra* quercitrin occurs in yellow crystals, inodorous, tasteless, sparingly soluble in hot water, insoluble in cold water, soluble in alcohol, slightly so in ether, colored dark green by ferric chloride, soluble in alkalies, becoming dark brown on exposure. Treated with dilute sulphuric acid it splits into quercetin and an unfermentable sugar. It has been stated also to be present in red roses. In *Podophyllum peltatum* the yellow coloring matter is called podophyllo-quercetin.

In the following plants the coloring matter from their descriptions shows some resemblance to quercitrin, so much so that one might think the colors of flowers to be due to quercitrin, or some of its salts. In *Diospyros virginia* or persimmon we find a yellow coloring associatad with tannin, which is Insoluble in water, soluble in ether. In *Frasera carolinensis* or American gentian a coloring matter obtained in lemon-yellow tufts. In *Rhus cotinus* or Hungarian fustic a yellow coloring matter crystallizing from hot water in fine, silvery needles, easily soluble in alcohol and dilute alkalies, sparingly soluble in ether. By warming with dilute sulphuric acid decomposes into a glucoside and further decomposition products. This glucoside is found to be a tannic acid compound and in solubility corresponds to quercetin, the decomposition product of quercitrin. In *Hedra helix* or common ivy, along with tannic acid, a yellow glucoside is found, which gives a dark green color with ferric chloride. Vernet obtained it in silky needles insoluble in water, slightly so in ether, readily in hot alcohol and alkalies. Boiled with dilute sulphuric acid it yields sugar as a decomposition product. *Ilex aquafolium* or European holly, a yellow coloring matter along with a peculiar tannin in yellow needles, insoluble in cold water, soluble in hot water.

In the seed of *Lupinus albus*, a yellow coloring matter in yellow needles. In *Ruta graveolens*, along with malic acid, a yellow coloring matter, occurring in needle-shaped crystals, which with dilute sulphuric acid splits into sugar and quercitrin.—*Proceedings of the N. Carolina Pharm. Assoc. Asheville, Sept. 3, 1895.*

The Antitoxin Treatment of Diphtheria.

According to the *Lancet* of February 9th the death rate in London from diphtheria during the previous week had risen to 45, from being 34, 31 and 29 in the three weeks before that. Thus the interest in the newly adopted measure for treating the disease is by no means dimished. The reports of cases treated by antitoxin still continue to be decidely in favor of the treatment.

Two cases reported by Mr. Jessup, of the Ophthalmological Society, may be mentioned as examples of a rare form of the affection, a form in which the effect of the antitoxin had not previously been tried. One child, aged 19 months, had a membrane on the inner surface of the left lower eyelid and on the uvula; typical bacilli were found in the membrane, and albuminuria and glandular enlargement were among the symptoms. Thus the diagnosis of the case was established beyond doubt. Three half-drachm injections of Klein's antitoxin were given, and the membrane disappeared in five days, through no local treatment beyond the application of distilled water had been employed. In the second case both eyes were affected. The membrane disappeared in four days after the injection of two half-drachm doses of the same antitoxin. Dr. Haywood, who made the bacteriological investigation, considered that the complete and rapid disappearance of the membrane should be attributed to the antitoxin, and no other similiar case has been recorded in which the membrane had disappeared so rapidly and completely. Careful records of the the after-effects of the remedy also continue to be published. Urticaria and pains in the limbs are the the common effects, and these appear to be due to the employment of excessively large doses of the serum.—*Pharm. Journal and Transactions.*

Why is mist. ferri co. not given to horses?—Because it is not a stable preparation.—W. J. Adams.—*Chem. & Drug.*

What is the difference betweeen the chemist and the drunkard?—The chemist has three scruples in the drachm, but the drunkard takes his drams without any scruple.—X. O.—*Chem. & Drug.*

DR. PAUL GIBIER AND THE "NEW YORK PASTEUR INSTITUTE."

The following address was delivered by Prof. R. Ogden Doremus, at the opening of the New York Pasteur Institute, October 9th, 1893.

LADIES AND GENTLEMEN :

Last week I listened to words of eloquence, at the tomb of the great astronomer, Prof. Proctor. The marvellous discoveries of the Telescope were expounded.

The grandeur of the revelations of the Cyclopean instrument was unfolded in its magnificence and sublimity. It is my privilege, this evening to allude to the more wonderful and eminently more practical developments of the Microscope.

PAUL GIBIER, A.M., M.D.

The Telescope exhibits suns and systems of suns in all their magnitude; but it shows us *only inanimate matter*.

The Microscope presents to our astonished vision, *minitude* before undreamed of, *but it is life*. The circulation of the sap in plants, and of blood corpuscles in animals, from the humblest up to man !

The higher powers of the microscope enable the bacteriologist to study the bacilli which are productive of disease and have given us means for its prevention.

They have stimulated hundreds of scientific brains to search for other hidden causes of maladies, in hope of discovering their cures.

Nearly a century has elapsed since Edward Jenner introduced vaccination to prevent the spread of small pox. His visit to London, in 1798, to secure its general adoption by the Medical profession was disheartening. He was accused of an attempt to *bestialize humanity*. Vegetarians might have made the same charge against "beef eating Englishmen."

But one year elapsed, when three score and ten eminent practitioners in London expressed their confidence in his discovery.

In 1802 Parliament voted him a grant of £10,000.

In 1807 Parliament again voted him a grant of £20,000, and from India he received £8,000. making a total of £38,000, or $190,000.

Cuvier said, "If vaccination was the only discovery of the epoch, it would serve to render it illustrious forever."

In 1858 the statue of Jenner was erected in Trafalgar Square, London.

The world-renowned Louis Pasteur commenced his brilliant and useful career in the investigation of fermentation.

He with his faithful wife and daughter, aided by experts from the "Ecole Normale" devoted five years in the Cevennes to the study of the disease of the silk worm.

Hundreds of young women are now skilled in the use of the microscope, and employ the same for examining the germs which cause the malady.

The silk industry was saved from destruction, and millions of francs were added annually to the coffers of France.

Pasteur was the first to demonstrate the falsity of the doctrine of spontaneous generation.

He then devoted his energies to study the disease known as *Anthrax*, so fatal to oxen, sheep and sometimes to horses.

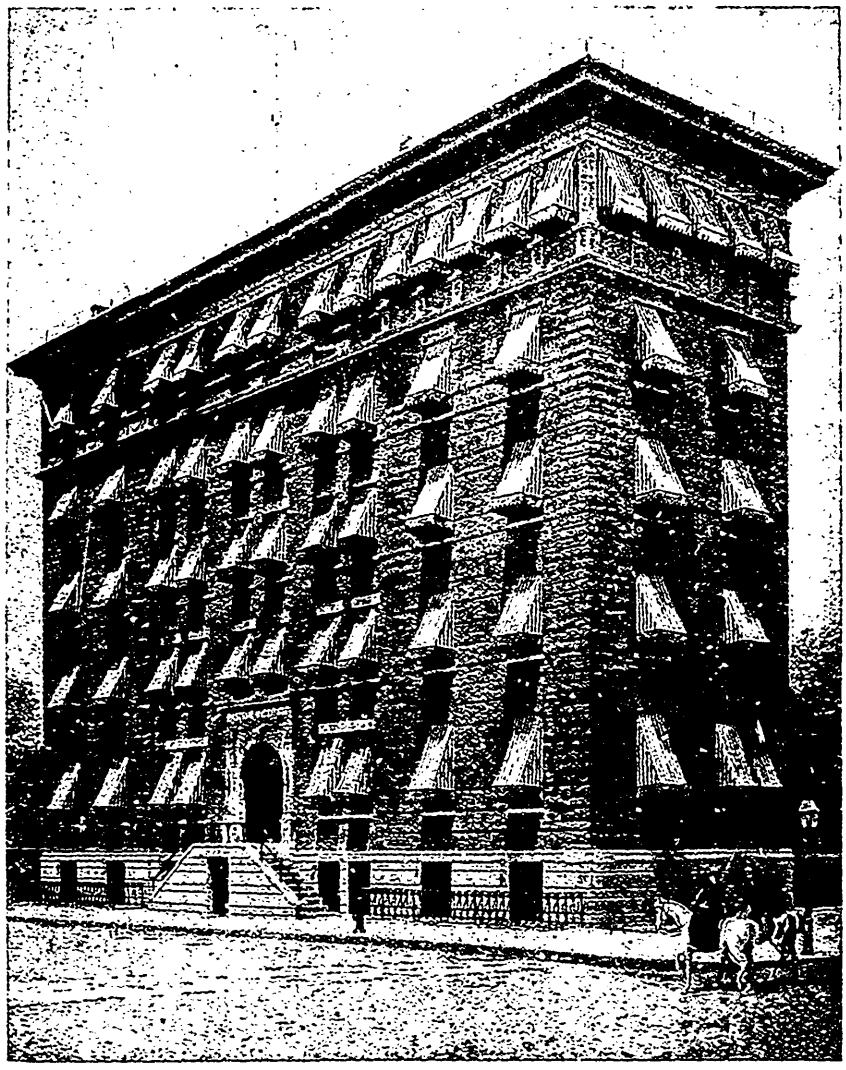
He was the first to make cultures of anthrax and to inoculate animals therewith.

The salvation of their lives has amounted to many millions of francs.

Chicken cholera, or hen cholera, next claimed his attention, and the cholera of swine. He attenuated the virus experimentally, and successfully employed it for inoculation.

In 1881 he commenced his work on the most frightful of maladies, hydrophobia.

In 1886 he applied his culture to dogs and other animals, then to humanity.



THE NEW YORK PASTEUR INSTITUTE BUILDING.

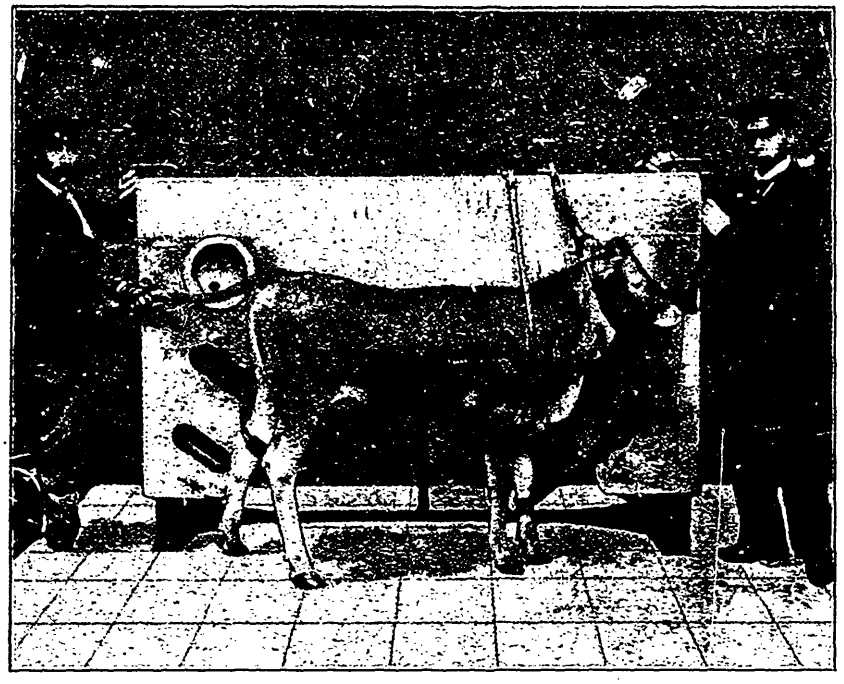
Here are some statistics:

Years.	Persons Treated.	Dead.	Death rate per cent.
1886	2,571	25	0.94
1887	1,770	14	0.79
1888	1,622	9	0.55
1889	1,830	7	0.38
1890	1,540	5	0.32
1891	1,559	4	0.25
1892	1,790	4	0 22
Total,	12,782	68	0.52

The great majority were bitten by dogs examined by veterinary surgeons and pronounced rabid, or in which hydrophobia was demonstrated by inoculation of small animals, or by the death of some other person, or animals bitten by them.

The French authorities, in recognition of his surpassingly wonderful services, have given to Pasteur a block of ground in the City of Paris, and have constructed the largest institution in the world for experimental medine and bacteriology, costing millions of francs.

Students from Europe, North and South America, from China and Japan, are here instructed in the processes so successfully employed for the prevention, relief and cure of maladies, hitherto beyond the Helenic art,



PREPARATION OF THE HEIFER FOR THE INOCULATION OF COW-POX.

Three years ago my distinguished friend, Doctor H. Holbrook Curtis, honored me by bringing to my residence a renowned French physician, a pupil of Charcot and Pasteur, who proposed establishing in this city a "Pasteur Institute."

This gentleman had been "Interne," or House Physician, in 1880 to the "Hopital Ricord," in 1881 to the "Hopital La Charité," in 1882 to the "Hopital Téton," in 1883 to the "Hopital La Pitié," in 1804 had been sent by the French Government to study the epidemic of cholera, and to Germany to examine the organization of bacteriological laboratories. In 1875 to Spain, to study the success of Dr. Ferran's method of treating cholera. In 1887 he was sent to the West Indies to investigate yellow fever, and in the following year to Florida for a similar purpose.

This physician had, in 1884, received first prize for his thesis on Hydrophobia by the School of Medicine in Paris. A gold medal of honor, with a letter of congratulation and thanks by the French government, after the epidemic of cholera in 1883. In 1885 he was made Chevalier de la Legion d'Honneur for his scientific works and discoveries. From 1881 he held the position of assistant professor of Comparative Medicine at the Museum in Paris.

I need not inform you that I extended to this distinguished physician, Dr. Paul Gibier, a most cordial greeting, as doubtless you will do now, as I have the honor of presenting him, on this his 42nd birthday, and a more genial welcome, because about a year since, feeling confidence in his success in this country, he resigned his position of member of the University of France, and became a citizen of our United States and a New Yorker. His family have joined him here lately, even his venerable mother.

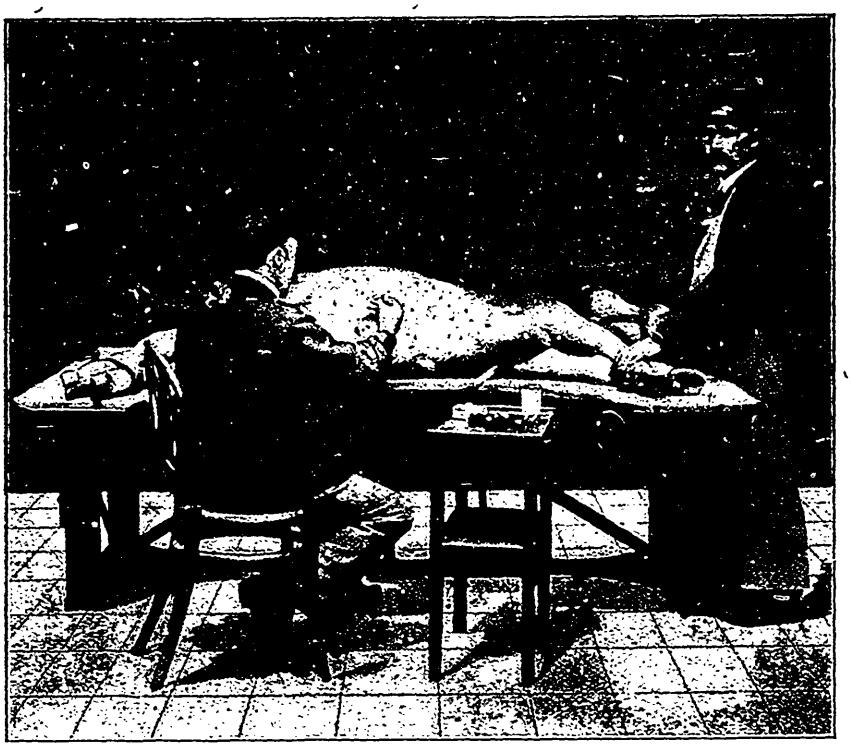
Dr. Gibier established temporarily the "N. Y. Pasteur Institute" in W. 10th street. A year ago, the corner stone of this edifice was laid, by His Honor Mayor Grant, in the presence of an assemblage of medical men and other friends. Mayor Grant gave an address of welcome, to which Dr. Gibier responded.

This building has been equipped with laboratories for experimental medicine and Hygiene, containing the most recent forms of scientific apparatus.

A small menagerie of dogs, rabbits, Guinea pigs, white rats, and chickens was added.

I must inform you, that the inoculation of these animals is conducted while they are under the influence of an anaesthetic, for I have witnessed the same.

Tastefully garnished, well aired and brilliantly lighted rooms (for there are fifty windows on the south side of this building, and a dozen on the Park frontage) have been provided for patients, and on the lower floor a



INOCULATING THE HEIFER.

small free hospital for those suffering from two terrible maladies of anæmia of *purse*, as well as of *pulse*.

The reception hall, ladies' parlor, and not least in importance the salle a manger, with its balcony, and its essential appendage, the kitchen, are open to your inspection.

Those who would bask in Apollo's beams, by day, and study the stars by night, may avail themselves of the roof garden, where in summer they may inhale pure, freshly prepared Central Park Oxygen from the green leaves of the forest trees, which adorn this pleasure resort.

Alas! in these autumnal days they assume their harlequin or dolly varden hues, like the hectic flush on the cheek of the consumptive, indicative of disease and death.

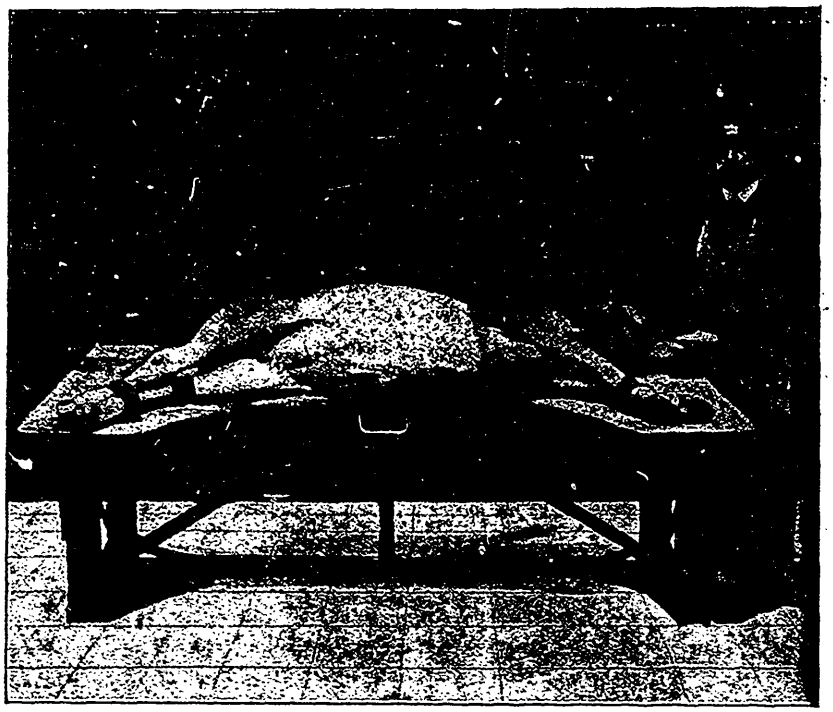
As an old New Yorker, I am humiliated in telling you that all this has been accomplished by the generosity of its founder, who has expended a goodly part of his patrimony in his persistent effort to establish this Institution. In his limited quarters in 10th street he has even given up his own bed for the poor and afflicted ones, as well as supplying them with food.

The continuous preparation of the hydrophobic virus and its application to prevent rabies, with its horrors, is but one of the beneficial undertakings of Dr. Gibier. Success in the treatment of many other maladies of the nervous system has marked his career.

Original investigations are constantly being made.

Although our medical schools are provided with laboratories for bacteriological research and instruction, and others are maintained by special workers, these culture fluids have not been applied for either the palliation or cure of diseases.

While witnessing an operation in the laboratory yesterday, I saw a bright young boy giving most intelligent and skilful assistance, and inquired who he was. I was told his history. I asked permission to show him to you this evening. His name is August Mouilloseaux, twelve years old, from Massachusetts. He was bitten by a rabid dog March 6th, 1892, on the right shoulder. He still retains the scars of his large cuts, and will do so for the rest of his life. A girl of nine years received a slight bite on her forehead from the same dog immediately after. This young lad was brought here March 8th, two days after being bitten, and now serves in the Institute.



THE HEIFER AFTER THE INOCULATION.

The girl died of hydrophobia, after three days of terrible agony, on the following June 6th. 1892, three months after being bitten.

The laity have sometimes asked, "Will Pasteur's treatmeut cure hydrophobia?"

I reply, "No more than vaccination will cure small pox." Both inoculations are only intended to act as preventatives of those diseases.

We should remember that we are all liable to attacks from vicious animals, not merely the half-starved "gutter pups," or "ash barrel mongrels, but from our pet dogs or cats.

Not only does this Institution appeal to our generous sentiments, but more selfishly to our own personalities, and to the beloved ones in our families.

A few years ago the son of a gentleman residing on Long Island returned from college, and while caressing his favorite dog was bitten by him and shortly after died in the horrid agonies of hydrophobia.

But a few weeks ago two policemen were bitten by a rabid dog, and fortunately were treated by our distinguished physician in his hospital for fifteen days. They doubtless are most grateful for their immunity from the terror of anxiety and most probably from any fatal consequences.

Our liberal hearted citizens have made princely donations to our city- Near to us, is the ancient Egyptain monolith of several thousand years. On its hieroglyphs, Moses of old probably gazed. Facing it, is the Museum, with its rare collection of antiquities, of works of art in paintings and sculptures. We can boast of our Astor and Lenox libraries; of our largely endowed Hospitals devoted to almost every variety of maladies and accidents "flesh is heir to."

Bacteriological laboratories similar to the large Pasteur Institute of Paris have been established and supported, either by the cities or their governments, in St. Petersburgh and Odessa, in Constantinople, Milan and Naples, Lisbon and Barcelona, Bucharest, Sagon in Cochin-China, Buenos Ayres, Rio de Janeiro, Mexico and Havana. Recently one in Chicago and now by the liberality of its founder, the "N. Y, Pasteur Institute" we inaugurate this evening.

Since 1889 over 400 patients have been inoculated by Dr. Gibier each one receiving the treatment during fifteen to twenty days and 1500 other persons have had wounds dressed for several weeks.

During the year 1892, 104 patients, from 18 different states, have been treated, and no death has as yet been reported, according to

the "New York Therapeutic Review," published quarterly by this indefatigable worker for humanity's benefit.

Having been for half a century connected with medical instruction as a pupil and teacher, and having in 1850, established the first chemical "*elaboratory*" (as it was anciently called), for the practical education of students of Medicine in toxicology, and such analyses as the practitioner requires, and as it has been truly said that "the study of disease is the study of toxicology," I hail with peculiar delight this bacteriological laboratory, with its attached hospital.

I have selected a scriptural prediction for the seal impressed on the certificates of my faithful students, which should be inscribed on these walls.

" There is nothing hidden that shall not be known."

The orator, to whose eloquent address I have referred, the Rev. Dr. Talmage, said, "The science of astronomy is the sublimest of all sciences. Geology is grand, but it treats of the rocks of only one world." Chemistry is grand, but it treats of the composition of the substances of only one star."* * "But artronomy takes in all worlds, discovering them, cataloguing them, mapping them, measuring them, following them in their circuits, standing by the cradle of their infancy, and watching the funeral pyre on which they burn." "Thank God for the observatories night after night bombarding the heavens. Thank God for the Galileos, the Kepplers, the Herschels, the Halleys and the Proctors, and all other apostles of science who have declared to us something of this inspired revelations of other worlds."

We, to-night thank God for the Institutes of Experimental Medicine and Hygiene, with their ample means for minute research and practical application to relieve human suffering. Thank God for the Jenners, the Rayers, the Pasteurs, Kochs, the Haeckels and the Gibiers, and all other ministers of mercy who oft-times jeopardize their lives in attempting to study diseases, even though contagious. Sad to narrate, many have fallen victims during their arduous and self-sacrificing labors.

Again, Dr. Gibier. I most heartily welcome you to our city. I trust you will have the cordial support of the medical fraternity, and the material aid of our large hearted citizens in the shape of parallelogrammatic pieces of cellular tissue, tinted with the hydrated sesquioxide of chromium, vulgus, "green-backs."

*Works entitled "The fuel of the Sun" and "Stellar chemistry" have recently appeared.

NEW ORGANIC REMEDIES.

By H. Helbing.

Author of *Modern Materia Medica.*

When, in 1885, a new edition of the British Pharmacopœia was published, no one anticipated that the two or three synthetical preparations it contained, of which chloral hydrate and salicylic acid were typical, would, in the comparatively brief space of a few years, become legion, and form quite a Pharmacopœia in themselves. The enormous progress made in the knowledge of organic chemistry has been contemporaneous with the production of a number of preparations, mostly synthetically prepared and all active principles of constant composition and uniform action, some of which it was impossible for the compilers of the B.P. addendum to overlook in 1890.

Thus amongst the additions we observe acetanilide, adeps lanæ, gluside, homatropine hydrobromate, paraldehyde, phenacetin, phenazone, and sulphonal. The introduction of these eight compounds into the Pharmacopœia shows what a prominent part these new remedies play as therapeutical agents, and indicates also that in any future Pharmacopœia the question of further recognition of this class of remedies must receive serious consideration. In introducing them it is necessary that the authorities rigidly define the pharmacopœial requirements and state the characters and tests in as perfect and unmistakable a manner as possible.

In the Pharmacopœia of 1885, as well as in the Addendum, the descriptions often leave much to be desired, and inconsistencies are particularly noticeable which by careful comparison and revision might be easily avoided, and be to the greatest advantage.

What Points

have now to be taken into consideration in formulating the respective monographs on "new organic remedies"? In this term I include all organic compounds which are not contained, as such, in the crude material, but which undergo chemical treatment or are prepared entirely by synthesis. By so doing I avoid the use of the title synthetic remedies, and thus include a number of compounds known as new remedies, which are not synthetically prepared in the strict sense of the word.

Which New Organic Remedies Shall Find a Place in the Pharmacopœia?

To select from amongst the great number of new remedies those which should be included in the Pharmacopœia is by no means an easy task. Only those which have been in use for a length of time and have been found successful and reliable in physiological and therapeutical action should be introduced. Although the fact that a remedy is often prescribed necessarily attracts much attention to it, such preparations should also be included

concerning which there exists a considerable amount of therapeutic evidence of a favourable character, and which it is not improbable will be extensively used as remedies shortly after the appearance of the Pharmacopœia.

From my own observations, and closely following the physiological and therapeutical literature of this country, the Continent, and the United States, I should like to see, amongst others, the following new remedies (some of which are already in the 1890 Addendum) contained in a future edition of the Pharmacopœia :—

Acetanilide	Naphtol
Antipyrin	Paraldehyde
Aristol	Phenacetin
Chloralamide	Phenocoll
Dermatol	Piperazine
Formic aldehyde	Resorcin
Guaiacol	Saccharin
Homatropine hydrobromide	Salipyrine
Ichthyol	Salol
Laloline	Sulphonal
Naphthalene	Trional

Without entering into details it may be remarked that by formic aldehyde a 40 per cent. aqueous solution is intended, by guaiacol crystalline guaiacol, by ichthyol the ammonium salt, and by phenocoll the hydrochloride.

Nomenclature.

The plan of introducing a new remedy into pharmacopœial usage under its chemical name has been adopted in the Supplement to the French Codex, and is certainly the only measure which is strictly correct. On the other hand, for practical purposes it is hardly possible to expect either prescriber or dispenser to speak of phenyl-dimethyl-pyrazolon, or of benzoyl-sulphonic-imide, or of diethylsulphon-methyl-ethylmethane, particularly if we remember that there are hundreds of other new remedies, mostly synthetical, which the medical man comes across. To him, and to all those who have not a complete knowledge of the latest advances in organic chemistry, these names mean nothing whatever, and are less enlightening than the fancy name, or perhaps more correctly "trade" name, under which a preparation is known.

The name under which a remedy is described in therapeutical literature should on rational grounds be adopted as the principal title by the Pharmacopœia, and the chemical nomenclature, with the constitutional formula, given under the synonyms. To coin names like phenazone and adeps lanæ in order to try to avoid names which are trade-marks or under patent-protection is incorrect for several reasons, viz :—The class of remedies under consideration chiefly originate in and are almost exclusively the result of German chemical skill and manufacturing enterprise. A remedy does not find its way into this country until a great amount of physiological and therapeutical experience with it has been gained on the Continent. Whilst on the Continent no one hesitates to describe a remedy in therapeutical literature under the name given it by the inventor, it is not just that in Great Britain everything is admitted and everything is adopted in relation to the remedy with the exception of the original name, with the notion of giving English manufacturers a chance of competing and not being barred by a trade-mark. That such procedure is of no avail is seen in many instances. Whilst in the case of acetanilide, where no patent exists, the trade-marked name of "antifebrin" did not prevent the adoption and use of acetanilide of different manufacturers long before the publication of the B.P. Addendum, on the other hand, the lanoline lawsuit has shown that the re-naming of lanoline "adeps lanæ," and admitting in a footnote to adeps lanæ hydrosus that "hydrous wool-fat is commonly known as 'lanoline,' which is a registered trade-mark in the United Kingdom," does not help the pharmacopœial authorities.

Therefore, let us have the name under which a preparation is known in international literature, and in all cases define this name, wherever possible, according to the chemical constitution and by the structural formula accepted by the Chemical Society, and not leave out, as in the case of phenacetin, the chemical synonym, and merely give the empirical formula. That a trade-marked name or an article which is the subject of letters-patent has an equal right to be introduced into the Pharmacopœia cannot be doubted, for if such a product is largely prescribed it is the duty of the pharmacopœial authorities to include it in their work. This insertion must not be regarded as a mere act of official recognition, which is always erroneously assumed to be the most important point, but as a public safeguard; for because neither pharmacopœial authorities nor private individuals other than the patentee and his licensees can manufacture such an article, it is all the more the duty, and only the duty, of the pharmacopœial authorities to define such a preparation and give such characters and tests for its composition and purity as will be a check and control over the manufacturer. This is the primary object and scope of a Pharmacopœia.

Method of Manufacture.

To say that phenacetin is "a crystalline substance produced by the action of glacial acetic acid on para-phenetidine, a body obtained from phenol," and to expect that any pharmacist and dispenser could from this compound his own preparation, is surely not the intention of the pharmacopœial authorities. As much as it is necessary to indicate the exact method by which a tincture should be prepared, such meagre descriptions of manufacturing processes for remedies which form the subject of these lines are absolutely valueless. Not only are the true manufacturing processes frequently not known, and even patent specifications merely a sort of blind, but it is well known to the initiated that the technical difficulties to be

overcome in the manufacture of some of these new remedies are very great, and that without the knowledge of the "manufacturing tricks," as they are termed in technical circles, not a grain of the synthetical product would be obtained.

But, if so, why then retain a skeleton description of a hypothetical manufacturing process? It has been over and over again asserted in authoritative quarters that the official Pharmacopœia is not intended as a book of instruction; and either as guides to the preparation of products corresponding to the superscriptions and answering to the physical and chemical tests given, or as aids in the recognition of the remedies, such an interpellation as that above quoted is mere shallow phraseology, without significance or value.

Characters and Tests.

This is the chapter in which the real importance and responsibility of the pharmacopœial authorities come in. Only one ruling idea can here guide the compiler, and I should like to lay stress upon it—viz, to define the preparation so exactly that the description will only apply to the substance identified by the chemical nomenclature and constitutional formula given; or in the case of lanoline and ichthyol to assign as exact qualifications as possible to the less exact terms "purified cholesterine fat of sheep's wool" and ichthyolsulphonate of ammonium. It is at this point that the description generally fails, for tests are given which, whilst excluding a certain number of adulterations, do not guarantee that an article is identical in composition with that expressed by its chemical name and formula.

To define a preparation it is not only necessary to give reactions for its identification, but also, when possible to give its melting and boiling points. It would be important that the Pharmacopœia should give in the introductory remarks an exact method for the determination of both melting and boiling points. The figures given in the Pharmacopœia must be the results of actual and repeated experiments undertaken for this specific purpose; for nothing can be more misleading than physical constants copied from papers, books, or even other Pharmacopœias, because very often soon after the first publication on a preparation improved manufacture produces a purer article, so that the factors given in the first publication require amendment.

Careful fractional distillation and fractional crystallisation can alone determine these points, which are of greatest importance in excluding preparations liable to give rise to secondary effects upon the system.

The tests given must also be precise; they must give the exact quantities and concentrations in which they have to be carried out, and the strength of the test-solutions must be stated. Qualified statements, such as "about," "nearly," &c., should be avoided; and when directed "to heat," the water-bath or a free flame should be specified, as well as the number of minutes, as in bodies so complicated as many of these preparations are, the slightest deviation frequently destroys the value of the test.

Dosage.

It is desirable that doses in the Pharmacopœia should be stated as single dose, daily dose, and as maximum dose, the last being the dose which must not be exceeded by the prescriber without appending an exclamation mark (!). This rule works well on the Continent, and I do not see why it should not be as successful in England if the General Medical Council once introduced it into the British Pharmacopœia.

If the points which I have noted are fully considered and strictly adhered to in respect to new organic compounds, there is no doubt that in the Pharmacopœia a guarantee will be given to the physician that the preparations prescribed are always of uniform action, and free from any secondary effects.—*Chemist & Druggist.*

CONSTRUCTIVE CRITICISM OF THE B. P.

From the Chemist & Druggist.

Some Fundamental Considerations.

By P. W. Squire, F.C.S. F.L.S.
Joint Editor of the "*Companion to the British Pharmacopœia.*"

The British Pharmacopœia has recently been subjected to many and varied criticisms bearing upon the general plan to be adopted in its revision, and it will be no easy task to combine in one volume all the stated requirements, some of which are in direct opposition.

On the other hand, the busy practitioner wants, in a compact and handy form, a list of the remedies in general use (also others less frequently required), with the doses appended and the best means of prescribing them.

On the other hand, it is demanded, and very properly so, that the Pharmacopœia, in addition to furnishing approved formulas for galenical preparations, shall be the recognized authority on the strength and purity of drugs and chemicals used in medicine, and therefore shall contain exact descriptions and appropriate tests for ascertaining the same. This part of the work receives more attention with each succeeding edition of the various national Pharmacopœias, including the most recent and in some quarters most highly extolled. But it is just that portion which occupies a large amount of space, and is of least direct interest to the busy practitioner: so far as he is concerned it might be placed in a separate volume.

It is only likely that the British Pharmacopœia, now ten years old, should require considerable alteration to adopt it to present ideas and requirements. But we are now passing through an

epidemic similar to that which prevailed about the time of the issue of the first edition (1864). No fault-finding is too severe, and no suggestion too extravagent to be made. The ordinary reader must sometimes wonder whether there be a single sentence or formu'a in the Pharmacopœia which should not at once be re-written. It is easy enough for individual writers to indicate what they themselves desire, but now, as formerly, a large number of suggested alterations will probably fall through, simply because no two of the committee will hold the same views on them. There are, however, certain broad lines on which many are agreed, and which no doubt could be arranged without much difficulty.

It has been suggested to the General Medical Council* that a decennial revision of the Pharmacopœia is desirable, and that the year 1900 or 1901 would be a good period to commence; but is it advisable than an edition already ten years old should eke out its existence for another five or six years?

At one time some Pharmacopœias, notably those of Great Britain, the United States, and Belgium, were divided into two sections—viz, (1) materia medica, (2) preparations — the U.S.P. having also a secondary list of medicines. Both this division and the secondary list (even now sometimes advocated) have disappeared, and the only two exceptions at the present time are:—The Freneh Codex, which is still divided into three sections—viz., (1) animal and vegetable products, (2) chemical pharmacy, (3) galenical pharmacy; the Spanish Pharmacopœia, which is divided into (1) materia medica, (2) preparations.

It is clear that the general opinion is against such divison. There is yet another system, never, I believe, suggested or carried out in a national Pharmacopœia, but which prevails in manuals which are very popular with medical men and pharmacists—that of arranging the materia medica in alphabetical order, and placing each preparation under and closely following the heading of its principal ingredient. It is perhaps not so convenient for finding any particular formula, but it facilitates comparison of the various preparations of any given drug. This end is only partly achieved by appending to each drug a list of the preparations into which it enters, and the proportion of active ingredient.

Weights and Measures.—Various systems have been employed for expressing the relative quantity of each ingredient to be used in a preparation, and opinions differ considerably on their respective merits.

1. Weights and measures of the British Pharmacopœia.

2. Weights and measures of the metric system.

3. Parts, all by weight.

4. Farts, "solids by weight, liquids by measure."

The British Pharmacopœia in all the editions—1864, 1867, and 1885—makes use of the terms grains, ounces, pounds, minims, fluid drachms, fluid ounces, pints, and gallons. These expressions of quantity have no connection whatever with a system of parts, which is so universally adopted in the Pharmacopœias of other nations. An attempt was made in the 1885 edition to express some of the formulas in parts alongside of the weights and measures, but it was very partial, and could have been extended considerably. In many cases where the word pint is now used 20 fl. oz. might have been substituted, which would have brought into the system that large class of preparations — the tinctures. Again, spiritus ætheris is rendered:—Ether 10 fl. oz., rectified spirit 1 pint. Why not 20 fl. oz.. or any figures bearing the relation 1 : 2?

No one can be more in favour than myself of expressing, where practicabie, the quantities in parts (solids by weight, liquids by measure) as I have been, to a greater or less extent, connected for thirty years with a book one feature of which has been to carry out this plan. A large number of the preparations can be so treated, but there are still a great many which cannot be so with advantage where the ordinary British weights and measures are employed. Take, for instance, unguentum hydrargyri iodidi rubri, a preparation likely to be made at the dispensing-counter as required. Which quantities are most convenient for a dispenser using avoirdupols weights—red iodide of mercury in fine powder 16 gr., simple ointment 1 oz; or the first ingredient 1 part, the second ditto 27¼ parts? There can be no hesitation about the answer, and the objection to the parts formula would be equally strong with any slight modification of the quantities, but not so if weights of the metric system be emyloyed. This system is here regarded only for its use in compounding, as, I believe, there are, at present, legal difficulties in the way of its use for selling.

British weights and measures can be, and are, to some extent, adapted to the metric system, as in grains and grain measures; but the figures required to express the same quantity are higher, and on the larger scale there are no weights or measures equivalent to the kilogramme and litre. The United States have passed the transition stage, but not without difficulty. In 1870, notwithstanding resolutions passed by the Convention for the guidance of the committee "that measures of capacity be abandoned in the Pharmacopœia, and that the quantities of all formulas be expressed in weights, and in parts by weight,', still, the Pharmacopœia that was issued contained the old weights (troy) and measures of the previous Pharmacopœia, the committee being of opinion that "to execute such directions entails the use of a

*In his 1890 repor Professer Attfield says, "If 1895 should be considered too early for entire revision, a second Addendum might then be issued, and entire republication posponed until, say, the first day of the new century"

metrical system not employed in this country (United States of Amerlca) or in England." In 1880 another attempt was made in the same direction, with the result that all measures of capacity were abandoned, and quantities expressed in parts by weight, except in the case of fluid extracts, where grammes and cubic centimetres were used. In 1890 the Committe of Revision was instructed to direct *solids to be weighed* and *liquids to be measured*, except in those cases in which the committee finds it advisable to use definite weights only, and it is ordered that the metric system be employed for that purpose. The change was made, and now the weights used in the United States Pharmacopœia are in accord with all European nations, ourselves excepted—the only other difference being that liquids are measured in the United States, as in Great Britain, whereas on the Continent of Europe they are weighed. This, however, is a matter of convenience, and the United States, having tried the weighing of liquids in 1880, have now reverted back to the old system of measuring. This should be very instructive to us, for, as the use of parts *all by weight* has been a failure in the United States, where, from the nature of things, they are more at home with this system than ourselves, it is not very likely to prove a success here. But if the General Medical Council could see its way to the adoption of the metric system as now used in the U.S.P., even if only as an alternative one alongside of the British weights and measures, it would be a step in the right direction.

Processes.— The description of processes for making definite chemical substances which are in general use, and which are manufactuted on a large scale, are much better omitted; they are not necessary, and they occupy space. A good description of each substance with appropriate tests will answer all requirements. The saving in room, however, will not be so great as some critics would imply. It will amount to about 30 pages in 472, and will not convert the Pharmacopœia into a pocket edition—an end only to be attained by an alteration in the size of the type; but there is no good reason against having a smaller copy printed in addition to the large one, as was done with the London Pharmacopœia of 1851. It would add considerably to the popularity of the work.

Tests.—A difference of opinion exists as to the best method of expressing the standard of purity to be demanded of the chemicals. The recent editions of the Pharmacopœias of Germany, Switzerland, and the United States are frequently held up as exmples of what a Pharmacopœia should be, and, although they differ considerably in the substances and preparations which they severally contain, they all agree in stating what tests a chemical substance shall or shall not stand, and are not satisfiied with the simple statement "free from" or "contains but traces of" chlorides and sulphides, as the case may be—as has been suggested. The weight attached to this argument will, of course. vary with the different views taken.

Degrec of purity.—The degree of purity which shall be demanded in a Pharmacopœla is an important item, and one on which opinions may and do differ, some wishing to keep the standard as high as possible compatible with reason, and others wishing it to be fixed decidedly low. It was probably in difference to this latter class that the melting point of acidum carbolicum B. P. 1867 (95° F.) was lowered in B.P. 1885 to 91.5° F. (33° C.), thus reducing it below that found in any other national Pharmacopœia. The standards of the British Pharmacopœia apply or should apply only to substances for use in medicine and surgery, and therefore should be as high as is compatible with first class products made by the manufacturing chemist. This general definition excludes such extreme purity as may possibly be obtaiued only in a laboratory devoted to experimental research; but for some years past many chemicals have been turned out on a large scale at a reasonable price of such good quality that there is very little difference between the commercial and the experimental product.

SUGGESTED B. P. EMULSIONS.

By Claude F. Henry.

The present day demand for elegant pharmacy and agreeable medicine warrants, at least, the consideration of the claim of emulsions to a place in the next Pharmacopoeia. The object of the present note is to suggest a few formulae for the emulsions most frequently in request. Speaking generally, a creamy emulsion is to be preferred to a paste, and as to flavour, those I have suggested are what are personally agreeable to myself; but tastes differ, and these can be changed. Gum acacia has been adopted as the emulsifying agent because of its being ready for use sooner than tragacanth, ghatti, Irish moss, &c., and requiring less preparation.

The following is the suggested formula forolei morrhuae

Take of

Gum acacia.....	1 oz.
Cod liver oil.....	4 ozs.
Elixir of saccharine.....	40 minims.
Oil of cassia.....	2 "
Hypophosphite of soda...	16 grs.
Hypophosphite of lime...	16 "
Distilled water.....	a sufficiency to make 8 fl. ozs

Make a mucilage by dissolving the gum acacia in 2 ozs. of the water. To this gradually add 2 ozs of cod liver oil, stirring constantly until a thick emulsion is formed, then add 1 oz. more water in which the hypophosphites have previously been dissolved, and stir in as before the remainder of the oil. Add next the saccharine elixir and the oil of acacia, mix thoroughly, and make up to eight fluid ounces with distilled water. A 50 per cent. white creamy emulsion is thus produced; 75 per cent. of oil can easily be incorparated. but such an emulsion requires more flavouring, and is not so well tolerated by the stomach.

In preparing the emulsion the whole gum, which can be broken up in a mortar to facilitate solution, should be used in preference to the powder and the mucilage should be prepared fresh when required, the tendency to acidity being thus prevented. The formula would necessitate the inclusion of elixir of saccharine and oil of cassia in the B.P. The former is a very useful preparation, and that suggested by the B. P. C. Unofficial Formulary Committee should be chosen. The emulsio olei morrhuae of the B. P. C. is not so good as the above. Its sickly colour is an objection, and eggs are not well suited for pharmaceutical manipulation even when they can be obtained fresh. A satisfactory castor oil emulsion is also, I think, a B. P. want. The mistura olei ricini of the present B. P. is, I think, objectionable because of its being prepared with liquor potassae, and because of the quantity directed to be used, the maximum dose, dose, 60 drops, being required for each 6 drachms of oil. Of course this may not do much harm in the form in which it is taken, but it is an emulsion that is wanted, not a soap.

From the following formula a perfect emulsion can be made, containing 50 per cent. of oil:—

Take of

Gum acacia	½ oz.
Castor oil	1 oz.
Elixir of aaccharine	20 minims.
Oil of almonds	2 "
Oil of cloves	3 "
Distilled water	a sufficiency to make 2 fl. ozs.

Malt and cod liver oil is now frequently prescribed. A good thick emulsion can be make from this formula:—

Take of

Gum acacia	1 oz.
Cod liver oil	4 ozs.
Liquid malt extract	4 "

Mlx the malt extract with the gum acacia, let the mixture stand for four hours, then gradually stir in the cod liver oil. No flavouring is required, but a few drops of saccharine elixir may be added. A more liquid preparation may be made by dissolving the gum in 2 ounces of water, adding 1 ounce of water, adding 1 ounce of liquid malt extract, and stirring in slowly 1 ounce of cod-liver oil.

The only other emulsion in much demand is cod-liver oil with eucalyptus, which might be termed emulsio eucalypti co., or emulsio olei morrhuae cum eucalypti co.

From the following formula a satisfactory preparation can be made:—

Take of

Gum acacia	¾ oz.
Cod-liver oil	4 oz.
Oil of eucalyptus	2 drms.
Elixir of saccharine	1 drm.
Oil of cassia	2 drops.
Distilled water	a quantity sufficient to make 8 fl. ozs.

Prepare in the same way as cod-liver oil emulsin, adding the eucalyptus oil after the cod-liver oil. The flavouring may be left out entirely; in fact, there is a danger of over-flavouring emulsions with the idea of making them very palatable, but disagreeable eructations are apt to occur after swallowing too highly-flavoured preparations.

In closing this fragmentary note I should like to say that some of the formulas given are not quite suitable for stock preparations, They are merely suggestions for B. P. preparations, which, when presribed, pharmacists can make up fresh, as ought always in these instances to be done.—*British & Colonial Druggist.*

Why is the sea-serpent like toluene?—Because it's never benzene (been seen).—E. J. Parry.

Why is phosphorus chloride like a Conservative candidate who beats a drunken opponent?—Because it is capable of turning out the alcoholic radicle:—

$$3(C_2H_5.OH) + PCl_3 = 3C_2H_5Cl + P(OH)_3.$$

Alcoholic radicle

—E. J. Parry.
Chem. & Drug.

Why does cyanogen represent what a drunken man sees when he looks at a hen?—Because he can see two hens (C_2NN).—E. J. Parry.

PRICES CURRENT.

APRIL, 1895.

Acetum cantharides	lb	$0 60	
" colchici corm	lb	50	
" ipecac	lb	40	
" opii	lb	1 20	
" scillæ	lb	12	
Acetanilid	lb	90	oz. 15
Acid. acetic glac	lb	45	demi 16 00 ea.
" " fort P.B.	lb	15	carboy 11
" benzoic German	oz	15	lb 1.75
" " " ozs. Hwds		25	Bulk 20
" boracic	lb	12	25 lb 11
" " pulv.	lb	14	25 lb 12
" butyric conc	oz	30	lb 3.75
" camphoris	oz	50	
" carbolic cryst 1 lb bot	lb	30	10 lbs 25
" " " 10 " tins	lb	22	
" " Calvert's No. 1	lb	2 25	
" " " " 2	lb	1 40	
" " " " 5 gal		1 50	
" " Crude " 5 gal		80	
" chromic	oz	10	lb 1.00
" chrysophanic	oz	30	
" citric	lb	45	10 lb. 42
" " pulv	lb	50	
" gallic	oz	10	lb 90
" hydro-bromic dil		45	
" hydrochloric	lb	5	carboy 2½
" " C P. s.g. 1.20	lb	25	Wins. 20
" " dil	lb	15	
" hydrocyanic P. B.	doz.	90	in 1 oz. 10c per oz.
" " Scheele's	doz.	1 00	do 10c do
" hypophosphor	lb	1 10	
" hydrofluoric (in patent ceresine bottles)			¼ lb bottles .50 ea. 1 lb " 1.25
" lactic dilutum	lb	1 00	
" " conc. pur	lb	1 75	
" nitric	lb	15	Wins. 12 carb 8½
" " C.P. s.g. 1.42	lb	30	Wins. 25
" " dil	lb	15	
" oleic pale frozen	lb	40	
" osmic	gm	1 25	
" oxalic	lb	12	50 lb 10
" perchloric	oz	35	
" phos. dilut	lb	17	Whr. qt. 14
" " conc S.G. 1.5	lb	45	
" " glac. pur stick	lb	1 00	
" " syr s.g. 1.750	lb	50	Whr. 45
" picric	lb	75	
" pyrogallic Schering's	oz	35	8 oz. 30
" " Merck's	oz	33	8 oz. 28
" pyroligneous	lb	10	gall 50
" salicylic	lb	1 00	
" sulphuric	lb	5	carboy 2½
" " C.P. s.g. 1.84	lb	25	Wins. 20
" " pur Eng		20	Wins. 18
" " aromat	lb	65	
" sulphuros	lb	12	
" tannic	lb	70	5 lb 65
" tartaric pulv	lb	35	10 lbs 30
" trichlor. acet. pure	oz	40	
" valerianic	oz	40	
Aconitina exot	gr	4	60 gn. 3
Adeps benzoatus	lb	35	
Æther S. G. 735	lb	40	Whr. qt. 35
" acetic	lb	55	do 50
" butyric	oz	15	lb 1.50
" chloric	lb	65	Whr. qt. 60
" Anæsthetic tin 500 gms		1 50	each. } Squibbs.
" " 250 "		80	" }
" " 100 "		40	" }
" " L. S. & Co	1 lb tins	1.00	each
	½ lb tins	0.55	"
	¼ lb tins	0.30	

Alcohol brl.....cash	3 85	{ 10 gall 4.15 5 gall 4.20 1 4.25 in a/c	
" absolut.....lb	1 00	Wr. 90	
" methylated .....gal	2 00	5 gals 1.90 Brl. 1 70	
Aloes Barb opt.....lb	30	10 lb 25	cash
" " pulv..... ....lb	35	do 32	
" Cape..... .....lb	15	10 lbs 18	
" " pulv.....lb	25	do 23	
" Socotrina..... ....lb	60	do 55	
" " pulv.....lb	70	do 65	
Aloin..... .....oz	30		
Alumen lump..... .....lb	3	brl 1¾	
" pulv..... .....lb	4	brl 2½	
" chrom. .....lb	15		
" exsiccat.... .....lb	20		
Alumnol.....25 gm	50	each	
Ammonii acet. pure cryst..oz	15		
" benzoas, ex gum..oz	25	lb 3.00	
" bichromate pure cryst.lb	1 00		
" bromid.... .....lb	65		
" carb..... .....lb	15	7 lb tins 16	
" " kegs .....lb	11		
" " pulv.....lb	20		
" " resub.....lb	50	c. b.	
" chlorid.... .....lb	12	100 lb 10½	
" " gran .....lb	12	100 lb 11	
" " pulv .....lb	13		
" " pur .....lb	25		
" hydrosulph sol ...lb	40		
" hypophosph.....oz	25	lb 3.00	
" iodid.....oz	45	lb 5.50	
" molybdas.....oz	25		
" monocarb.....lb	35		
" nitras gran.....lb	32	25 lb 30	
" " cryst.....lb	35	25 lb 30	
" " pure cryst. lb	50		
" oxalas pur.....lb	75		
" phosph.....lb	1 25		
" salicylat.....oz	40	lb 4.75	
" sulphas com.....lb	9	pur 25	
" sulphocyanid.....lb	75		
" valerian..... ...oz	40		
Amygdala amara.....lb	35		
Amyl nitras..... .....oz	15		
" nitrite ....oz	15		
" valerian. .....oz	35		
Amylum pulv.....lb	9		
Annatto Hispan opt .....lb	40		
" Fullwood ½ oz & 1 oz lb	1 00		
Antim crocus pulv.....lb	20		
" nigrum pulv.....lb	10		
" oxid.....lb	65		
" sulphurat precip....lb	50		
" tartarat pulv.....lb	40		
Antikamnia.....oz	1 30		
Antipyrin Knorrs'.....oz	1 10	5 oz 1.05, 10 oz 1.00	
" Swiss .....oz	85	10 ozs. .80	
" " .....lb	12 50		
Antitoxine, 7 c. c	1.50	nett.	
" 25 c. c	3.00	"	
Apiol green .....oz	65		
Apomorph hydroch.....gr	2	5 and 10 grain tubes.	
Aqua anethi.....lb	10		
" anisi.....lb	10		
" aurantii flor trip....lb	25	Win qt 20	
" camph.....lb	10		
" carui..... .....lb	10		
" cassia.....lb	10		
" cinnam.....lb	20		
" destillata..... ....gl	12	carboy 10	
" floridæ ....gl	5 00		
" lauro-cerasi.....lb	25	Whr qt 20	
" menthæ pip.....lb	10		
" rosæ trip.....lb	25	Whr qt 20	
" sambuci flor.....lb	25		

Argenti chloridum	1 50	
" iodide	2 50	
" nitras cryst. L. B. & Co. oz	75	8.50 lb sh
" " fus (4 to oz) oz	90	
" oxidum	2 40	
" sulphate	1 50	
Aristol oz cartoons	1 85	
Arsenicum alb. pulv lb	10	
" rub " lb	15	
Arsenici bromid oz	40	
" iodid oz	60	
" tersulph pulv lb	25	
Asphaltum Egyptian lb	18	
Atropina pure ⅛ oz	60	each oz. 4 00
Atropinæ sulphas "	60	" oz. 4.00
" salicylas ⅛ "	80	"
" hydrobromate gr	5	
Auri chloridum (15 gr) doz	4.00, 3 doz 3.75, 6 doz 3.50	
" " L. B. & Co. doz	4.25	
Baccæ aurantii lb	25	
" capsici lb	25	pulv. 30
" cassiæ lb	35	pulv. 40
" cubebæ lb	35	
" " pulv lb	40	
" juniper lb	8	10 lb 7
" " pulv lb	12	10 lb 11
" pimentæ lb	10	
" " pulv lb	12	25 lb boxes 11
" xanthoxylon lb	40	
Balsam canad lb	40	Winch. 35
" copaibæ lb	60	Whr. qt. 55
" peruvian oz	25	lb 3.00
" tolut lb	55	
Barii carb pur lb	39	
" chlorid pur lb	25	
" hypophos oz	25	
" nitras exsic lb	20	
" nitrate C. P. lb	35	
" perox anhyd lb	60	
" sulphate pur lb	50	
" sulphide " oz	10	
Bath Pipe lb	40	
Bay rum St. D gal	3 75	sec. 2.75
Beberinæ hydroch dr	50	
" sulphas oz	90	
Benzine refined gal	40	
Benzoyl. Guaiacol oz	2 00	
Bismuthi Benzoas oz	40	
" carb lb	2 40	
" citras oz	20	
" et ammon-cit oz	30	lb 4.25
" oxide oz	20	
" salicylas oz	25	lb 3.50
" subgallas oz	20	lb. 3.00
" subiodid oz	45	
" subnitras lb	1 75	
" valerian oz	50	
Bismuthum (metal) lb	2 25	
Bole armen lb	6	
Borax lb	9	keg 7
" pulv lb	10	do 8
Bromine oz	20	
Bromoform oz	30	
Cadmium oz	15	lb 1.75
Cadmii bromid oz	20	lb 2.25
" iodid oz	50	
" nitrate oz	20	
" sulphas oz	20	
Caffeina pur oz	75	
" citras oz	65	
Calamina præparata lb	7	
Calcii bromid oz	15	lb 2.00
Calcii carb. præcip lb		V. Crata precip.
" chlorid. cryst lb	25	
" " fusum pure lb	80	
" chlorid fused crude lb	15	
" hypophosphis lb	1 40	
" iodid oz	50	
" lactophosph oz	15	lb 2.00
" nitras lb	75	
" phosphas præcip lb	20	
" sulphas lb	3	
" sulpho-carbolas lb	2 50	
" sulphid lb	50	
" sulphis lb	18	pulv. 20
Calx chlorinata lb	5	keg 3½ brl. 2½
" " in packets 1 lb	7, ½ 8, ¼ 9	
Camphora Ang. Hd's lb	60	
" " " ozs lb	65	
" " " flowers, lb	75	
" Dutch lb	55	
" " ozs lb	60	
Camphor monobromid oz	20	
Cantharides Russian lb	1 40	pulv. 1 50
" Chinese lb	—	pulv. 65
Cantharidine grain	8	
Cap papav. alb 100	1 00	
Carbo animalis pur. pulv lb	12	
" ligni lb	6	
" ligni pulv lb	10	brls 5.50 each
Carbon bisulphidum lb	16	Whr qt 13
" " C. P. lb	50	
Carmine oz	40	lb 5.25
Caryophyllum, Zanzibar lb	15	16 Pulv.
" Amboyna lb	25	
" Penang lb	50	
Cassia fistula lb	30	
Castoreum oz	1 40	
Celloidine Schering's, 40 gm bx	1 50	each
Cera alba lb	65	sec 40
" " paraffin, lb	18	50 lb 15
" flav opt lb	40	secs 35
" " lithographers lb	50	
Cerii nitras oz	40	
" oxalas oz	10	lb 1.20
Cetaceaum lb	55	10 lb 50
Cetraria Iceland lb	16	
Chirata Incis lb	30	
Chloralamid oz.	35	
Chloralose oz.	2 50	½ or 1 oz. vials.
Chlorodyne Lyman's lb	2 00	
Chloral Hydrate recryst lb	1 20	
Chlorof pure Smiths 1 lb g.s. bs. lb	90	10 lb 80 Whr. qt 65
" D. F. & Co's pur lb	2 00	
" " meth lb	90	5 lb 85
" " blue label lb	90	
" Merck 1 s lb	65	5 lb bottle 60
" " 56-lb tins lb	50	28 lb tins 55
Chromium metal gm	60	
" oxid anhydric oz	10	
" sesquichloride oz	1 00	
" sulphate oz	20	
Cinchonidin sulph oz	15	Hds. 20
Cinchoninæ murias Hds oz	13	
" sulphas " oz	18	
Civet dr	1 50	
Cobalt chlor oz	25	
" nitras oz	25	
Cocaine hydrochlor crys, oz	7 50	⅛ oz 1.00 each
" phenate 5 grain tubes	07	grain.
Cocculus Indicus lb	10	pulv 20
Coccus cacti S. G lb	40	pulv 45
Codeina pure ⅛ oz.	80	ea. oz. 6.00
" phosphate ⅛ oz.	90	ea.
" sulph ⅛ oz.	60	ea. oz 4.50
Colchici corm lb	30	
Collodium lb	65	
" vesicans, P. B. lb	2 25	

Collodium flexile	"	65	
Colocynthis Turc select	lb	60	pulv 85
Confectio rosæ Gallic	lb	50	
" sennæ	lb	40	
Cortex aurantii Ang	lb	70	
" " coml	lb	15	
" " opt. ⅛s	lb	20	
" canellæ	lb	20	pulv 25
" cascara sagrada	lb	25	
" cascarillæ	lb	25	
" cassiæ	lb	15	pulv 18, 25 lb box 16
" cinchon flav	lb	90	pulv. 1.00
" " " coml.	lb	30	pulv. 35
" " rubquill	"	60	pulv. 70
" granat fruct	"	20	
" " radicis	"	40	
" limonis ang opt	"	65	
" " com	"	16	
" mezerei	"	25	
" myricæ (bayberry)	lb	20	
" pruni virginianæ	"	15	20 lbs 12
" quillaiæ	"	15	grd. 20 pulv. 25
" sassafras	"	15	pulv. 22
" ulmi	"	16	pulv. 16 grd 14
Creolin, Pearson's	"	70	litre bot. 1 25 each.
Creosot. Ang (Morson's)	oz	20	lb 2.00
" (Beechwood) Merck's	lb	1 50	Whr. 1 35
" (Beechwood) French	lb	2 75	
" white, from coal tar	lb	75	
" Carb	oz	80	lb 12 00
Creta gallic	lb	18	
" " pulv	lb	5	bgs 3½.
" præcip	lb	10	keg 8
" præparata	lb	6	25 lbs 5
Crocus stigmat amer	lb	60	
" " Valent	oz.	75	Alicante 60c oz.
Croton chloral-hydrate	oz	45	
Cudbear	lb	20	
Cupri ammonio-sulphas	lb	1 00	
" chloridum pur	lb	60	
" nitras pur	lb	60	
" oxidum nigr. pur	lb	1 75	
" " coml	lb	50	
" sulph	lb	7	keg 5 brl 4½
" " recryst	lb	25	
Cuprum scales	lb	40	
Curare	grain	4	
Currie powder	lb	35	
Cusso "	oz.	10	
Damiana	lb	40	
Daturine, pure xtls	gr	10	
" sulph 1 grm. tube		1 15	each
Dextrine, white	lb	10	50 lb 8
" yellow	lb	8	" 7
Diapente	lb	30	
Diastase	oz	1 00	
Digitaline	½ oz	50	each
Diuretin 'Knoll"	oz	1 75	
Dolichos pruriens pubes	oz	60	
Duboisin, pure Amp 5 gr. tube		60	each
" sulphate	gr	10	
Eikonogen	25 gm. tins	40	each
Elaterine xtls P.B 15 gr vials		1 25	each
Elaterium	dr	35	
Ergota	lb	50	pulv. 60
Ergotinum Bonjean	oz	75	
Ergotine Bonjean Gen.	30 gm	2 00	each
Eserine sulph 5 or 10gr. tube	gr	9	
" salycilate, 5gr. tube	gr	10	each
Ethyl, Benzoate	oz	40	
" Bromide	oz	35	
" Butyric	oz	15	

Ethyl, Chloride ....tubes	35 each	
" Iodid.....oz	65	
" Œnanthylate.....oz	1 00	
" Succinate.....oz	60	
" Valerian.....oz	50	
Eucalyptol.....oz	30	lb 3.20
Eugenol pure.....oz	35	
Europhen .....oz	2 00	
Exalgine .....oz	1 25	
Extract. acon. (rad alco.)..oz	35	lb 4.80
" aloes barb..... lb	75	
" " " pulv.... oz	10	lb 1.25
" " socot..... "	15	lb 1.75
" anthemides ..... "	20	lb 2.50
" " alcoh ....oz	25	lb 3.00
" belladon P. B.... "	25	lb 3.00
" " pulv .... "	30	lb 3.50
" " aqueos...oz	15	lb 1.50
" calumb.....oz	25	lb 3.25
" cannabis indicæ...oz	25	lb 3.00
" cascara sagrada....oz	25	lb 3.00
" cinchonæ flav.....oz	25	lb 3.50
" colchici.....oz	20	lb 2.60
" " acet.....oz	15	lb 2.00
" colocynth co.....oz	25	lb 3.00
" colocynth co. pulv.oz	20	lb 2.50
" conii P.B..... ..oz	20	lb 2.00
" " pulv.....oz	25	lb 3.50
" copaibæ resin ....oz	15	lb 1.50
" damiana.....oz	40	
" digitalis.....oz	20	lb 2.50
" " pulv.....oz	30	lb 3.50
" ergotæ pulv.....oz	60	
" gentianæ.....lb	45	
" filicis maris ether..oz	25	
" hamamelis dest ...gr	1 25	
" glycyrrh mol.....lb	0 75	
" " pulv.....lb	0 75	
" hellebor nig..... oz	25	
" hæmatoxylin.....lb	80	
" hyoscyamine ....oz	20	lb 2.5. 0
" hyoscyam aquos ...oz	15	lb 1.25
" " pulv ....oz	25	
" " aug ....oz	25	lb 3.50
" ignatia amara.....oz	60	
" ipecac acetic.....oz	1 50	
" jaborandi.....oz	60	
" jalapæ.....oz	25	lb 3.50
" " pulv.....oz	35	
" krameria.....oz	25	lb 3.50
" lactucæ.....oz	20	lb 2.20
" logwood.....lb	11	(15 & 30 lb boxes)
" " 1 lb pkts..lb	14	(30 lb boxes)
" " ½ lb pkts..lb	15	"
" " ¼ lb pkts..lb	17	"
" " asst. pkts..lb	16	"
" lupuli.....oz	25	lb 3.00
" mezerei æther.....oz	60	
" nucis vomic.....oz	40	lb 5.40
" " " pulv...oz	40	
" opii.....oz	90	lb 13.50
" " pulv.....oz	1 10	
" " liquid.....lb	1 00	
" papaveris .....oz	16	lb 2.25
" physostigmatis....oz	2 00	
" podophylli.....oz	25	lb 3.00
" quassiæ.....oz	20	lb 2.40
" rhamni frang.....oz	50	lb 5.00
" ramni pulv.....oz	40	
" rhei E. I.....oz	2?	lb 3.50
" sarsæ jam.....oz	30	lb 4.00
" sarsæ co..... ....oz	20	lb 2.75
" stramonii fol.....oz	20	lb 2.50
" " pulv ....oz	25	lb 3.00
" taraxaci.....lb	50	
" valerian.....oz	15	lb 2.00
Extract. veratri viride.....oz	45	
Fabæ ignatia amara .....lb	1 00	
" physostigmatis... ...lb	1 25	
" tonca para.....lb	75	
" " surinam.....lb	1 25	
" " angostura.....lb	2 25	
" vanillæ, short .....lb	3 00	
" " medium.....lb	6 00	Bourbon
" " 7½ in..... lb	7 50	
Fehling's solution.....lb	1 00	
Fel bovinum purificat.....oz	20	2.00 lb
Ferratine.....oz	1 25	
Ferri albumen.....oz	25	
" ammon chlorid.....lb	60	
" " persulph(iron alum) lb	40	
" " protosulph.....lb	25	
" " tartras.....lb	75	
" arsenias.....oz	15	lb 1.60
" bromidum .....oz	20	lb 2.00
" carb. precip.....lb	15	
" carbonas sacch.....lb	30	
" chloride.....lb	50	
" citras soluble .....lb	65	
" et ammonii citras....lb	65	
" et quin. cit., 4%.....oz	15	
" " 4 p.c. ..lb	1 75	
" " 10%.....oz	17	
" " " .....lb	2 40	
" " P. B....oz	20	
" " " .....lb	2 75	
" " Hd's....oz	25	
" " amorph....oz	15	
" " " .....lb	1 75	
" " et strych. cit., oz	35	
" " Hd's, oz.	40	
" et strychn. citras 1%.oz	15	10 oz 13 lb 1.75
" hypophosphis..... .oz	20	lb 2.50
" iodide..... .....oz	40	
" lactas..... ... .lb	75	
" perchlorid..... ....lb	35	
" phosphas.... .....lb	85	
" pyrophosph.....lb	80	
" succinate ....oz	35	
" sulphas commercl....lb	2	brl 90 gross
" " exsic .....lb	6	
" " pur ..... lb	7	10 lb 6
" sulphid..... .....lb	15	
" valerian.....oz	25	
Ferrum dialyzatum.....lb	40	
" redactum.....lb	75	
" tartaratum .....lb	70	
Flor. anthem. opt, French..lb	35	
" " Roman.....lb	30	
" " German.....lb	30	
" arnicæ.....lb	25	
" lavand.....lb	15	pulv. 25
" rosæ gall rub.....lb	75	
" " white.....lb	40	
Folia aconiti..... .....lb	25	pulv. 35
" belladon .....lb	25	pulv. 35
" buchu, ...lb	20	
" cocæ green.... .....lb	50	
" conii.....lb	20	pulv. 35
" digitalis.....lb	20	pulv. 35
" eucalypti glob.....lb	18	
" hyoscy. exot.....lb	20	powd. 40
" jaborandi.....lb	65	
" maticæ.....lb	40	
" pulegii .....lb	20	
" sennæ alex .....lb	60	
" " tenny.....lb	20	15, bale 16
" " " pulv....lb	25	
" uvæ ursi.... .....lb	12	
Fruct. anethi.....lb	30	

Fruct. anisi German	lb	15	
" " pulv	lb	20	
" " Star	lb	45	
" capsici	lb	18	25 lbs 16
" " pulv	lb	20	" 18
" carui	lb	12	
" " canad	lb	10	
" " pulv	lb	18	
" conii	lb	30	
" coriandri	lb	16	
" " pulv	lb	18	
" foniculi	lb	15	pulv 20
Fuller's earth	lb	4	100 lb 3
" " pulv	lb	6	100 lb 5
Gaduol	os	40	
Gallæ cœrulæ	lb	28	bag 25
" " pulv	lb	30	grd 28
Gallanol	oz	1 00	
Gallabromal	oz	1 00	
Gasoline, 76°	gal	60	
Gelatine, black label	lb	35	10 lb 30
" bronze label	lb	40	" 35
" silver "	lb	45	" 40
" gold "	lb	60	" 55
" pink gold label	lb	75	
Glue, black	lb	12	
" amber	lb	15	
" white	lb	20	
" cooper's	lb	39	
Glycerine (double dest) 1260 deg.	lb	20	56 lb tin 15 case 14
" Price's	lb	70	W. qt. 65
Grana paradis	lb	20	
" " pulv	lb	30	
Guaiacol absolute	oz	60	lb 7.00
" benzoate	oz	1 50	
" carb	oz	1 60	
Guarana pulv	lb	2 40	
Gum acacia, No. 1	lb	60	
" " " 2	lb	40	
" " " 3	lb	35	
" " " 4	lb	30	
" " " 5	lb	25	
" " pulv	lb	65	
" ammon guttæ	lb	40	
" asafœtid. opt	lb	45	
" " pulv	lb	50	
" benzoin opt	lb	75	
" catechu nig	lb	12	20 lb 11 pulv 25
" catechu pallid cubes	lb	16	10 lb 15
" copal	lb	50	
" damar	lb	30	
" elemi	lb	30	
" euphorb. pulv	lb	40	
" galban opt	lb	1 25	
" gambogiæ	lb	1 00	pulv 1.15
" guaiaci	lb	65	Sec. 40 pulv 50
" juniper	lb	35	
" kino	lb	2 50	pulv 2 60
" mastiche select	lb	90	
" myrrh. turc opt	lb	70	
" " " sorts	lb	45	pulv 65
" olibani	lb	25	
" sang. draconis	lb	50	reed 1 00
" " " pulv	lb	75	
" scammon. aleppo / " opt. (pulv)	lb	6 50	
" scammon resin	lb	3 50	
" seedlac	lb	35	
" shellac, orange	lb	40	10 lb 35
" " bleached	lb	40	
" spruce	lb	30	10 lb 25
" storax liquid		50	
" " dry	lb	50	
" thus	lb	15	

Gum tragacanth Ribbons	lb	90	
" " Allsppo opt	lb	65	
" " " No.2.	lb	50	
" " pulv. opt.	lb	90	
Gun cotton		70	1 oz box
Hæmogallol, 10 gm. vials		50	each
Hæmol " " "		35	" 25 gm. vials 80 ea
Homatropine Hydrobrom	gr	30	
" hydrochloric	gr	30	
Humulus lupulus	lb	20	assorted packages
Hydrarg. ammon chlor	lb	1 20	
" bisulphate	lb	90	
" c. creta	lb	60	
" cyanid	oz	30	
" iodid rub	oz	35	lb 4.50
" " virid	oz	25	lb 3.50
" nitrate pure	oz	15	lb 1.50
" oleas 5%	lb	55	
" " 10%	lb	65	
" " 20%	lb	80	
" " 28.3%	lb	1 50	
" oxide flav.	oz	15	lb 1.50
" " nig	oz	25	
" " rub	lb	1 10	
" " " liv.	lb	1 20	
" perchlor	lb	90	
" " pulv	lb	95	
" pill mass	lb	70	
" salicylate	oz	45	
" subchlor	lb	1 00	
" " a la vapeur	lb	1 50	
" sulph	oz	15	lb 1.50
" " c. sulph	lb	1 00	
" tannas	oz	35	
Hydrargyrum	lb	75	10 lb 70
Hydrastine alcaloid C.P.	dr	50	
" hydrochlor C.P.	dr	90	oz. 6.00
Hydrastinine mur. Merck's 15 grain tubes		90	oz. 22.00
Hydrochinone	oz	30	1 oz cartons
Hydrogen peroxid, Peuchot's	1 lb		doz. 8.00
" " "	½lb		" 6.00
" " "	¼lb		" 4.50
" " Coml	lb	35	
Hyoscine, hydrobrom, 5 gr. tub.	1	75	each
Hyoscyamine "	gr	25	sulph gr 35
Hypnal	25 gms	1	25 each
Hypnon, pure	oz	1	50
Iatrol	oz	1	50
Isinglass Brazil	lb	2	00
" Gridley's	oz doz	1	80
" Russian	lb	4	75
Ichthyol, Merck's	oz	45	½lb 5.75 lb; ½lb 5.60 lb; 1lb 5.50 lb
Indigo Madras opt	lb	75	
" " pulv	lb	90	
" Paste	lb	20	
Insect powder Dalmatian	lb	35	25 lb 26 56 lb 25
" " Persian.	lb	30	25 lb 21 56 lb 20
Iodoformum	oz	40	lb 5.90
" præcip	oz	40	lb 5.90
Iodol	oz	1	40
Iodum crude	oz	30	lb 4.50
" resub	oz	40	lb 5.25
Jalapin ang	oz	1	00 lb 13.50
Kamala	lb	60	
Kousso	oz	10	
Kava Kava	lb	90	
Lactopeptin ozs	doz	8	50
" ½ lbs	lb	10	50
Lactophenine	oz	1	10
Lactucarium ang	oz	70	
Lanolin	lb	35	
Lapis calam. præp	lb	7	
" pumicis select	lb	8	ordinary 6
" " pulv	lb	7	100 lb 5
Leptandrin	oz	45	Keiths 50
Lichen Hibern opt	lb	18	Sec 12
Licorice Corig	lb	35	
" Solazzi	lb	50	
" Zuvia	lb	30	
" Windsor, 4,8 or 16 1-5	lb	35	25 lbs 30
" Y. & S. stick	lb	35	
" Pellets Y. & S.	lb	40	
" " M. & R.	lb	40	
Lignum guaiaci rass.	lb	7	
" quassiæ incis	lb	10	50 lb 9
" sant. flav. grd	lb	65	Rub 10
Liniment aconiti	lb	90	Whr. qt. 85
" belladon	lb	95	" 90
" camph	lb	55	
" camph comp	lb	60	Whr. qt. 55
" crotonis	lb	1 25	
" iodi	lb	1 50	
" opii	lb	90	
" saponis co	lb	45	
" " c pot iod.	lb	90	
" sinapis co	lb	1 50	
" terebinth	lb	30	
Liquor ammon. acet conc	lb	35	
" " fort s. g. 880	lb	12	case 10
" antim. chlor	lb	20	W. qt. 18
" arsenicallis	lb	10	pt., Whr. qt. 8
" arsenii et hyd. iod.	lb	25	W. qt. 20 (Donovans)
" atropia sulph	oz	25	
" bismuth et am. cit.	lb	45	Wich. 40
" ferri Acet	lb	35	
" " " Ft	lb	60	
" " perchlor fort.	lb	12	Whr. qt. 11
" " pernit	lb	15	
" " persulph.	lb	15	
" plumbi subacet	lb	12	Whr. qt. 10
" potassæ	lb	7	
" santal flav comp	lb	1 50	
" sodii chlor	lb	16	
" strychnine	lb	50	Whr. qt. 45
Lithii bromid	oz	25	
" carbonas	oz	25	lb 3.00
" citras	oz	20	lb 2.75
" hippurate	oz	1 50	
" iodid	oz	50	
" salicylat	oz	30	
Litmus	lb	60	
Losophan	oz	2 25	
Lucilline 1 lb tins		20	each
" 5 lb "		90	"
" 10 lb "		1 60	"
" 25 lb tubs		13	lb.
" 50 lb tubs		12	"
Lupulinum	lb	60	
Lycetol Bayer, ½ ozs	oz	4	00
Lycopodium	lb	1	00
Lysol ½ kilo bottles		1	00 each
Macis	lb	1	10 pulv 1 20
Madder compound	lb	10	carboy 9
" Dutch	lb	12	brl 10
Magnes citr. gran. Bishop	lb	80	7 lb 75

IMPORTANT INFORMATION FOR RETAIL DRUGGISTS.

"CARTER vs. CARR."

This is a case of the Carter Medicine Co. or to use a title more familiar, "The Carter's Little Liver-Pill Co." against the man named Carr, who was putting up Carr's Little Liver Pills.

It can be readily seen, that from the similarity of names, it was easy to deceive a purchaser, and substitute these for "Carter's Little Liver-Pills, and this he was doing.

The Court granted a perpetual injunction—with costs.

The proprietors of the Carter's Little Liver Pills desire by this notice to reach the retail druggists of Canada, and most respectfully call their attention to the importance of this decision.

A good man may be guilty of an unlawful act simply because he is not aware that his act is unlawful, and hence we are trying to inform you that

SUBSTITUTION IS UNLAWFUL.

Do not be guilty of it.

It is nothing more than fair that we should have the business which we have made. Give us "fair play." But at the same time we wish it distinctly understood that we shall protect our rights, and in this determination, we are quite sure every fair minded retail druggist will uphold us.

Yours very respectfully,

CARTER MEDICINE CO.
Murray Street,
NEW YORK.

SMALL PILL.
—o—
SMALL DOSE.
—o—
SMALL PRICE.

CARTER'S LITTLE LIVER PILLS.

A POSITIVE CURE FOR SICK HEADACHE.

STRENGTH.

STRICTLY PURE.

PEROXIDE

— OF —

A P

HYDROGEN

MANUFACTURED BY

A. PEUCHOT,

By a special process, for Medicinal and Surgical purposes.

Peuchot's Peroxide of Hydrogen has been recognized by the most eminent **Chemists, Physicians** and **Surgeons** as the **purest** and **most reliable** product on the market. Adopted in more than twenty Hospitals of New York, including **Belevue Hospital.**

A. Peuchot

IMPORTANT NOTICE.

If the Ozone test is applied to A. Peuchot's Peroxide of Hydrogen, viz.: Starch and Iodide of Potassium paper, it will show a blue reaction, much deeper than any similar preparation.

A. PEUCHOT,
Manufacturing Chemist,
112-114 WOOSTER ST., NEW YORK.

WHOLESALE AGENTS:
Established 1800.
LYMAN, SONS & CO., Wholesale Druggists. } MONTREAL.

STABILITY.

NON-IRRITANT.

Magnes citr. gran Lyman. lb		35	
" calcined ....1 lb tins		50	bulk 40
" " .... " bots		55	
" carb levis 1 oz pkt. lb		20	10 lb 18
" " " 2 " .lb		18	" 16
" " " powd...lb		25	1 lb tins
" chloride .....lb		30	
" sulphas.....lb		3	Brl. 1.50
" " hd's .....lb		5	" 4
Magnesium, wire or ribbon oz		75	Powder 50
Maltopepsin ½ lb bots.... .lb	5	85	
" bots.... .... doz	6	35	
Maltose xtls.....oz	1	50	
Manganese chlorid.....lb		50	
" hyphosphite .....oz		20	
Manganese oxyd. nigr ....lb		10	
" sulph. pur.....lb		60	
Manna flak select.....lb	1	40	
Maranta Bermuda.....lb		45	10 lb 42
" Jamaica .....lb		15	
Mel. canadensis.... .....lb		13	10 lb 12
Menthol.....oz		50	lb 7.00
Morphinæ acetas.....oz	1	90	10 ozs. 1.80
" hydrochloras....oz	1	90	" 1.80
" sulphas..... ..oz	2	00	" 1.90
Moschus, in grain, No 1....dr	6	00	
" " No 2....dr	4	50	
" " No 3....dr	3	50	
Mollin, pure .....lb	1	00	
Myrtol..... .. oz	1	00	
Naphtha mineral .....lb		50	
" vegetable .....lb		60	
Napthaline resublimed.....lb		30	
Naphthol Beta.... .....oz		10	lb 1 .40
" " Benzoate ...oz		35	
Nickel sulph cryst.....lb		75	
" ammon. sulp.....lb		30	
Nux. areca select.....lb		20	pulv 35
" kola.....lb		50	
" myristicæ (limed)....lb		85	pulv 1.00
" " opt.(unlimed)lb		90	
" vomica.....lb		12	pulv 22
Olio Resin Capsici.....oz		75	
" " Copaiba .....oz		25	
" " Cubeb .....oz		40	
" " Zingib.....oz		90	
Ol. absinth.....oz		30	lb 4.00
" amygd. dulc.....lb		45	Whr. qt. 40
" " essent. sine acid pruss.....oz		50	
" anethi Ang .....oz		30	lb 4.00
" anisi.....lb	2	75	
" anthem Ang.....oz	1	50	
" aurantii..... .....lb	2	00	
" bergam super.....lb	3	00	
" buchu .....oz	1	60	
" cadi.....lb		30	Whr. qt. 25
" cajeputi..... .....oz		10	lb 1.00
" carui.... ....lb	2	25	
" caryoph .....lb	1	00	
" cassiæ.....lb	1	75	
" cedri opt .....lb		70	Whr. qt 65
" " coml .....lb		50	" 45
" chaulmoogra..... ..oz		25	
" cinnamomi ver.....oz	1	70	
" citronellæ.....lb		80	bot. 65 lb
" cocoanut.....lb		15	
" cognac..... ...oz	2	25	
" cologne..... .....oz		60	
" conii....spruce.....lb		70	Whr. qt. 65
" copaibæ.....lb	1	25	

Ol. coriandri	oz	1 50	
" crotonis	oz	12	bot. 1.50 lb
" cubebæ	oz	20	2.75 lb
" cymini	oz	50	
" erigerontis	lb	3 25	
" eucalypti	lb	1 40	
" fœniculæ dulc	lb	1 50	
" gaulther	oz	20	lb 2.50
" " synthetic	lb	2 00	
" geranii rose	oz	50	
" " super	oz	1 00	
" juniperi bacc	oz	15	lb 2.00
" " lig	lb	60	Whr. qt. 55
" lauri	lb	40	
" lauri essent Bay	oz	40	lb 4.50
" lavand ang	oz	2 00	
" " French	lb	3 50	sec 2.50 1.50
" limonis super	lb	1 50	copper 1.35
" macis	oz	25	lb 3.50
" menth. pip. Amer	lb	3 00	Whr. qt. 2.75
" " " English	oz	1 00	lb 14.00
" " " Japan	lb	4 00	
" " virid	oz	25	lb 3.50
" morrhuæ Norweg	gl	2 25	brl. 2.00
" " Munn's Nfld. by Norweg. process		1 50	kegs 20 gals 1 25
" myrbane	lb	35	Whr. qt. 30
" myristicæ	oz	25	
" neatsfoot, pale	gl	1 00	
" neroli, opt	oz	3 00	
" olive sublime salad 1 gal		original tins 2 25 each.	
" " green	gl	1 40	brl. 1.20
" " " opt	gl	1 50	brl. 1.35
" " yellow	gl	1 40	brl. 1.15
" " " opt	gl	1 50	brl. 1.25
" " (Salad American)	gl	90	brl. 80
" origani	lb	85	
" " Sec	lb	50	Winch 45
" palmæ select	lb	15	
" patchouli opt	oz	75	
" petit. gran	oz	50	
" picis	lb	12	Whr. qt. 10
" pimentæ	oz	25	lb 3.20
" pini silvestris	lb	1 50	
" pulegii hed	lb	1 75	
" rapii	lb	15	
" rhodii	oz	80	
" ricini E. I	lb	10	case 7 tins 7½
" " Gal water pale	lb	10	brls 7
" " Virgin		13	tins 11
" " Ital	lb	16	tins 15
" rosmarini exot	lb	90	W. qt. 65
" rutæ	oz	25	
" sabinæ	lb	1 30	
" santali ang	oz	50	lb 7.50
" " W. I	oz	40	lb 4.00
" sassafras	lb	65	Whr. qt. 60
" sesame	gl.	1 35	
" sinapis essent	oz	65	lb 8.50
" sperm	gl.	1 60	
" spike	lb	25	
" succin. rect	lb	65	Whr. qt. 60
" tanaceti opt	oz	25	lb. 3.50
" terebinthinæ	lb	45	
" " coml	gl	65	
" theobromatis	lb	60	
" valerian	oz	1 00	
" verbenæ	oz	12	
" vini	oz	25	lb 3.50
" ylang-ylang	oz	7 50	
Opium Turc	lb	4 50	
" " pulv	oz	40	lb 5.50
Oss sepiæ	lb	25	pulv 30
Otto rosæ coml.	oz	6 50	
" virgin	oz	9 00	opt 11.00
" Turkish ounces	dr	1 00	bottles of 9-11 drms

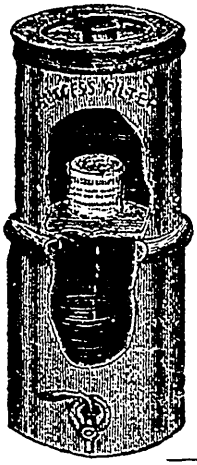
Pancreatine, Morson's..... oz	1 00	
" Merck's .....oz	50	
" " absolute oz	75	
Papoid.....oz	3 25	
Paraffinum durum.....lb	15	50 lb 13
Paradehyde .....oz	20	lb 2.00
Paris Green.....100 lb irons	15	
" ..... 25 lb "	16	
" ..... 1 lb tins	20	
Pelleterine Tannate..... gm	45	
Pepsin .....lb	225	
" pur.sol pulv.Merck's.lb	3 00	
" Merck's scales .....lb	5 00	
" ang. coml.....oz	30	lb 3.50
" Boudault's.....oz	1 20	
" medicinal Morson's.oz	85	
" porci Morson's.....oz	2 25	
" sacchar.....oz	25	lb 3.50
" Jensen's scales " .oz	1 25	
" Armour's.....oz	90	lb 12.00
Petrol Barbadens..... ...lb	15	
Petroleum, see Lucilline		
Phenacetine Bayer.....oz	35	lb 4.50
" schering ....lb	4 00	
Phenetol pure.....oz	60	
Phenocoll.....gm	25	
" Hydroch.....25 gms	1 50	
Phenolphthalein..... ...oz	75	
Phenyl hydrazin hydroch..oz	60	
Phloroglucin puriss..... dr	75	
Phosphorous...11 lb tins..lb	85	1 lb bots 1.00
Pil. hydrarg.....lb	70	
Pilocarpin hydrochlor ....gr	35	5 or 10 gr tubes
" nitras..... ....gr	35	5 or 10 gr. tubes
Pipe clay.....lb	5	100 lb 4
Piperinæ .....oz	1 00	
Piperazin Bayer, ½ oz bottle.oz	3 50	
" tablets... 10x16 gr	2 00	each
" Schering, 5 gm vials	75	each oz. 3.50
Piper alba.....lb	16	pulv 18
" cayenne .....lb	25	10 lb 20
" nigrum.....lb	12	pulv 14, 25 lb 13
Pix Burgund bladders.....lb	10	20 lb 9
Platinum Bichlor.....oz	8 00	
" " 10% solut oz	1 25	
" Foil .....grm	60	
" Wire .....gum	45	
Plumbi acetas brown .....lb	10	50 lb 9
" " Xtls .....lb	12	50 lb 10
" " C. P .....lb	25	
" iodid.....oz	35	lb 4.50
" nitras coml.....lb	16	
" oleas.....lb	1 00	
" oxyd pulv.....lb.	9	keg 7½ (litharge)
" " rub.... .....lb	8	keg 6 (red lead)
Podophyllin resin.....oz	35	
Potassa caustica sticks.....lb	50	
" sulphurata.....lb	35	
Potassii acetas.....lb	45	gran 50 bot. inc.
" bicarbonas .....lb	14	
" " pulv.....lb	15	
" bichromas.... .. lb	15	keg 12½
" binoxalas.....lb	23	10 lb 22
" " pulv.... .lb	25	10 lb23
" bitart .....lb	30	keg 24 brl 23
" bromid.....lb	60	5 lb 55
" carbonas.....lb	14	10 lb 12
" carbonas pearl ashes lb	10	100 lb 9
" chloras.....lb	17	keg 15
" " pulv.....lb	18	keg 16
" chlorid. pur.....lb	30	
" chromas .....lb	45	
" citras neutral.....lb	65	
" cyanid. C. P.....lb	1 00	
" " fused 30 p.c.lb	40	
Potassii cyanid fused 60 p.c.lb	55	gold platers.
" hypophosph.....lb	1 50	
" iodid.....lb	4 00	5 lbs $3.75
" nitras.....lb	10	112 lb keg 6½
" " gran.....lb	10	" " 6½
" " C.P. Mercks...lb	30	
" nitrate pure stick ..lb	1 20	
" oxalas, neutral ....lb	25	
" permangan pur....lb	30	
" pruss. flav.....lb	35	
" " rubr.... .. lb	65	
" silicas.....lb	30	
" " Liq.....lb	20	
" sulphas.....lb	12	pulv 13
" sulpho-cyanid.... .oz	15	
" sulphocarb.....lb	1 60	
" sulphuret .....lb	35	
Potassi tartras .....lb	80	
Potassium.....oz	2 00	dr. 40
Propylamine..... .....oz	50	
Pulv. aloes c. canella.... ..lb	40	
" amygdalæ co .....lb	1 35	
" antimonialis P. L....lb	60	
" catechu comp.....lb	70	
" cinnam comp.....lb	75	
" cretæ aromat P.B.....lb	1 20	
" " " c. opiô P B.lb	1 50	
" " comp Ph. Ed...lb	50	
" " " c. opiô..lb	75	
" " c. camph.....lb	20	10 lb 18
" glycyrrh comp.....lb	30	
" ipecac comp.....lb	1 10	
" jalap comp.....lb	75	
" kino comp..... ....lb	2 25	
" rhei comp.....lb	75	
" sapo cast.....lb	25	
" " " alb.... ....lb	30	
" scammon comp..... oz	30	
" seidlitz Howards....lb	22	7 & 14 lb
Pyoktannin.....25gms	1 25	
Pyridin Puriss.....oz	25	
Quassine, ⅛ oz vials.. .....oz	4 00	
Quininæ bisulph.....oz	65	
" bromid.....oz	90	
" citras.....oz	80	
" hydrobrom.....oz	90	
" hydrochlor .....oz	75	
" hypophos.....oz	1 20	
" iodid.... .....oz	90	
" phosphas.....oz	1 00	
" salicylas.... ....oz	65	
" sulph German.....oz	40	100oz tin 30 25 oz 32
" " Howards...oz	45	
" " " .4 oz	40	
" sulphocarbolas....oz	1 50	
" tannate .....oz	50	
" valerian.....oz	85	
Rad. aconiti... .....lb	20	
" " contus.....lb	25	pulv 30
" anchusæ.....lb	20	
" angelicæ.....lb	30	pulv 35
" arctii (burdock).....lb	15	
" belladon.....lb	18	pulv. 30
" calam. aromat.....lb	20	
" calumb.....lb	18	pulv. 20
" curcumæ Madras.....lb	10	" 12
" enulæ .....lb	20	
" galangal .....lb	12	
" " pulv.....lb	20	
" gentian, select.....lb	10	
" " ground.....lb	11	
" " pulv .....lb	15	
" ginseng..... ....lb	4 50	

Rad. glycyrrh decort....	lb	25	
" " incis			
" " dec't pulv....lb		15	
" " bundles ....lb		12	
" " small bundles super.....lb		18	
" " grd.....lb		12	brl. 11
" helleb alb.....lb		12	
" " " pulv.....lb		16	keg 14 br. 13
" ipecac.....lb	1	50	
" " pulv.....lb	2	00	
" iridis Florentine.....lb		40	
" " pulv .lb		50	
" " verona .....lb		25	pulv. 30
" jalapæ .....lb		50	
" " pulv.....lb		60	
" krameriæ opt.....lb		30	
" pareiræ brava.....lb		40	
" pyrethri.....lb		35	
" rhei E. I. opt.....lb	1	25	cubes 1.00
" " " sec.....lb		75	
" " " elect opt...lb	2	25	fingers 1.50
" " pulv elect opt...lb	2	50	
" " " E. I. opt...lb	1	25	
" " " " sec...lb		80	
" sanguinariæ.....lb		14	pulv 16
" sarsæ Hond.....lb		40	incis 50
" " Jam .....lb		60	" 70
" " Mexican.. ..lb		18	20 lb 16
" scillæ sicc.....lb		12	
" " pulv.....lb		30	
" senegæ.....lb		60	
" spigeliæ.....lb		45	pulv 60
" sumbul.....lb		70	
" taraxac sicc.....lb		18	10 lb 15
" tormentillæ.....lb		35	
" " pulv ....lb		45	
" zingib. Afric. u. b....lb		16	25 lb 15
" " " pulv..lb		18	25 lb 17
" " Jam. u.b.....lb		22	10 lbs 20
" " " bleached.lb		28	10 lb 27
" " " pulv opt.lb		30	10 lb 28
" " " " sec.lb		25	
Resin flav.....lb		4	
" " pulv.....lb		5	50 lb 4
Resorcin xtls.....oz		20	lb 2.75
" resublim .....oz		50	
Rhizoma arnicæ.....lb		30	contus 40
" cimicifugæ.....lb		15	
" podophylli.....lb		14	
" serpentariæ.....lb		60	pulv. 85
" valerianæ.....lb		15	pulv. 22
Rouge—Jewellers.....lb		65	
Rubidium chloride.....gm		40	
Saccharine.....dram		20	oz 1.20
Sacch. lactis pulv.....lb		25	
Sago perlat. parv.....lb		5	
Sal prunellæ glob. .....lb		20	
Salicinum.....oz		20	lb 3.00
Salipyrine.....50 gms	2	50	each
Salol.....oz		30	lb 3 50
Salophen Bayer.....oz	1	50	
Santoninum.....oz		20	lb 2.75
Sapo Castile Alb Contis....lb		16	box 15
" " " Shell.....lb		12	" 10
" " " Virgin....lb		12	" 10
" " " " cakes box	5	00	
" " Mottled opt....lb		12	box 11
" " " com..lb		10	" 9
" " " cakes gross	4	75	
" mollis ang.....lb		10	20 lb 8
" " German Green.lb		35	
" " Green opt.....lb		55	

Scammoniæ resin pulv	lb	3 75	
Scoparii cacumin	lb	25	
Secale Cornut	lb	75	
Seidlits Mixture hds	lb	22	
Sem. canary	lb	5	bag 4½
" cardam	lb	1 25	1.00 & 75
" " decort	lb	1 00	
" " pulv	lb	1 20	
" celery	lb	25	
" chenepodii	lb	20	
" colchici	lb	30	pulv. 40
" cydoniæ	lb	50	
" cymini	lb	20	pulv. 25
" fœnugræci	lb	5	
" " pulv	lb	7	ground 6 brl 5
" hemp	lb	5	bag 4
" hyoscyam	lb	30	
" jambul	oz	10	
" lini sifted	lb	4	brl. 3½
" " crushed	lb	5	brl. 4
" " " No. 2	lb	4½	brl 3½
" " " No. 3	lb	4	brl. 3¼
" lobeliæ inflaæ	lb	35	pulv 40
" maw	lb	15	10 lb 14
" millet	lb	5	bag 4
" pumkin	lb	25	
" rapii	lb	7	
" sabadilla	lb	50	
" sinapis alb	lb	10	
" staphisagriæ	lb	35	
" stramonii	lb	25	
Soda caustica stick	lb	50	
" " cake	lb	40	
" crystals	lb	2	brl 1.25 per 100 lbs
" tartarata	lb	25	
Sodii acetas pura	lb	25	
" arsenias	oz	10	lb 1.20
" benzoas	oz	15	lb 1.50
" bicarb. pulv Morson's	lb	10	
" " " Hd's	lb	16	14 lb 15
" " " coml.	lb	4	keg 2.75
" bisulphis	lb	25	
" bisulphas pure	lb	30	
" bromid	lb	70	5 lbs 65
" carb. recryst	lb	15	
" carbolas pur	lb	3 50	
" chlorate xtls	lb	50	
" citras	lb	90	
" hypophosphis	lb	1 40	
" hyposulphis	lb	5	keg 3
" iodid	oz	40	lb 5.25
" nitras pur	lb	25	coml. 8
" oxalas	lb	50	
" phosph pur	lb	12	
" " pulv	lb	20	
" " C.P. xtls	lb	20	
" potass tart pulv	lb	25	
" salicylas	lb	1 10	
" silicas xtls	lb	15	
" " solut conc	lb	10	
" sulphas	lb	3	brl. 1¾ Hds 5 [brl.
" " exsicc. pulv	lb	15	
" " pur recryst	lb	30	
" sulphid	lb	60	
" sulphis	lb	7	pulv. 8
" sulphis C.P	lb	30	1 lb bottles.
" sulpho carbolas	lb	1 10	
" tungstas	lb	40	
" valerian	oz	50	
Sodium	oz	30	
" molybdate	oz	40	
" succinate	oz	35	
Sol. acid osmic 1%	oz	1 50	
" cocain 4%	oz	60	
" nitro glycerin 1%	lb	1 75	
Somatose—Bayer, 2 oz. tins.	oz	70	

Somnal.....25 gm. vials	75	each	
Spartein sulph .....⅛ oz	30	ea. 1 oz. 2·00	
Spice pickling.....lb	35		
Spt. ætheris comp.....lb	60		
" " nit S. G. 845.lb	65	Whr. qt. 60	
" ammon. arom.....lb	60	" 55	
" " fœtid.... ...lb	85		
" camphor.....lb	70	" 65	
" chlorof. S. G. 871....lb	70	" 65	
" cinnam.....lb	2 00		
" menthæ pip.... ....lb	1 00		
" myristicæ.... .....lb	90		
" rectificatus 65 o/p....gl	4 25	5 gl. 4.20 in a/c.	
" " " .. Brl	3 85	cash.	
" vini gall.....gl	4 75	opt. 6.50	
Spongia usta.....lb	2 50		
Stanni chlorid. crist.....lb	40		
" oxid (putty-powder).lb	45		
Stannum gran.....lb	50		
Stearin.....lb	15		
Strontii bromid.....oz	20		
" chlorid.....lb	30		
" iodid .....oz	70		
" lactas .....oz	25		
" nitras exsic.....lb	18		
" salicylate.....oz	50		
" sulphate precip....oz	35		
Strophanthin pure.....gr	10		
Strychnina cryst.....oz	1 00	10 oz 85	
" sulph..... ....oz	1 00	in ⅛ oz bots	
Styrax liquid.... .....lb	50	25 extra	
Succus conii..... .....lb	75		
" limæ fruct W. I....gl	90	brl. 80	
" rhamni..... .....lb	20		
" scoparii.... .....lb	70		
" taraxaci.... .....lb	65		
Sulphonal—Bayer.... ....oz	45	lb 6.00	
Sulphur Lac.....	12	10 lb 11	
" præcip (B. P.) ....lb	20	10 lb 18	
" rotund.... .....lb	8	brl 2	
" sublim.... .....lb	4	bag 110 lbs 2¼	
" vivum.....lb	6	10 lbs 5	
Sulphuris iodid.....oz	40		
Svapnia, ½ oz bottles.....oz	5 00		
Tamarindus, W. I.... ....lb	12		
Tapioca flake .....lb	6		
" pearl.....lb	6		
Terebene.....lb	60		
Terebinth canadensis.....lb	45		
" chian .....oz	30		
" Venet.....lb	15		
Terpine Hydrat .....oz	20		
Terpineol .....oz	50		
Terpinol.....oz	30		
Terra Japonica (Gambier)..lb	10		
Thallin Sulphate pure ...drm	40		
Trikresol, Schering's .....lb	1 20		
Theobromin .....oz	3 00		
Thiol liquid.....oz	60	100 gm. tins 1 25	
Thymol.... .....oz	35		
Toluol pure..... .....oz	60		
Trional-Bayer..... .....oz	1 20		
Tripoli..... .....doz.	90		
Triticum repens.... .....lb	20		
Troch. acid carbolic G'sT.H.lb	75		
" " tannic " lb	1 25		
" aconite .....lb	90		
" bath pipe .....lb	45		
" black currant, Gibsons lb	90		
" boracic acid .. T. H.lb	90		
" Bronchial P D. & Co..		5 lb can 1.75 each	

Troch. cachou dwf bouquet.lb	50		
" " floral gems...lb	50		
" camphor .....lb	75		
" capsici Gibson's ....lb	65	Domestic 35	
" catechu " ....lb	80		
" chlorodyne.....lb	65	Gibson's 90	
" coltsfoot.....lb	40		
" cubeb T. H. .....lb	90		
" gelatine..... .....lb	50		
" glycerin [jujubes]. . .lb	75		
" guaiaci T. H.....lb	1 10		
" ipecac..... .....lb	75		
" kramariæ T. H.. ....lb	1 25		
" lactusæ,....T. H ...lb	1 25		
" licorice (pipe).....lb	35		
" mentha pip C.S Gibson's lb	65	1lb bottles 75	
" " " [XXX] .lb	50		
" morphinæ..... ....lb	1 00		
" " et ipecac. .lb	1 00		
" mosch Gibson's ....lb	30		
" opii..... ....lb	75		
" paregoric.....lb	70		
" pontefract.... .....lb	30		
" potass. chlor..... .lb	50	Tablets 60	
" pyrethri T. H.....lb	90		
" rosæ Gibson .....lb	80		
" sedative T. H.....lb	90		
" tolu..... .....lb	70		
" tussi [cough]..... ..bot	1 15	Gibson's	
" " " .....lb	50	[Preston's]	
" " " Watsons.tin	1 15	each	
" vermifuge.....lb	50	worm	
" voice [jujubes].... .lb	85		
Uranii acetas .....oz	75		
" nitras .....oz	60		
Urethane .....oz	60		
Veratrina pure .....oz	2 00		
Verdigris..... .....lb	35	powd 40	
Vinum rubrum [port].....gl	3 00	qr. cask 2.90	
" " opt " .... .gl	3 50	" 3 25	
" xericum [sherry]gl	1 75	" 1.65	
" " opt. " gl	3 00	" 2.75	
" " " fine... gl	3 50	" 3.25	
Witch Hazel extract.... ..gl	1 50	5gals 1.25	
Whiting..... .....lb	1	brl 60c per 100 lb	
Xylol ....lb	60		
Zinci acetas P.B pure .....lb	45		
" bromid.....oz	25		
" carb..... ...lb	35		
" chlorid. sticks.....oz	15	lb 75, bt. free	
" " cake .....lb	65	bot. free	
" iodid..... .....oz	60		
" lactas ..... oz	20		
" oleas..... .....lb	1 20		
" oxidum Howard's P.B lb	70		
" " Coml .....lb	15	10 lb 12	
" permanganate .....oz	75		
" phosphas pur.....lb	1 25		
" phosphid.... .....oz	40		
" sozoiodol .....oz	1 50		
" sulphas com.... ....lb	6	10 lbs 5	
" " pur Merck's ..lb	10	10 lbs 9c.	
" sulphocarb.....oz	10	lb 1 00	
" valerian..... .....oz	30	b 4.00	
Zincum granulatum.....lb	30		



This cut shows a sectional view of the

Stoneware Filter

Styles 1 and 2,

Set up ready for use. There are two crocks, each of four gallons capacity—an upper one holding the Filter Block as shown, and a lower one, which can be used as a water cooler, if desired.

This block is four inches in diameter by the same in height, and is hollowed out on inside. This fits on a metal tube, which fastens by means of the nut, shown in separate cut, to bottom of Filter Jar. Block can be lifted off tube, cleaned and replaced in two minutes, and with no trouble at all. Water passes from outside of block, through the walls, into the hollow chamber and from thence, by means of the Drip Tube, into the lower receptacle.

PRICE LIST.

All Best Glazed Stoneware, Matches Mahogany Rosewood or Walnut Furniture.

No 1.	Family or Office size, as shown,	4 gallon capacity,	$5 00
No. 2.	"	2 blocks, 6 " "	7 50
No. 3.	Hotel or Restaurant size.	3 blocks 8 " "	10 00

THOS. L. PATON, - Agent,

MONTREAL.

BEST POLISH IN THE WORLD.

RISING SUN STOVE POLISH

DO NOT BE DECEIVED with Pastes, Enamels, and Paints which stain the hands, injure the iron, and burn red. The Rising Sun Stove Polish is Brilliant, Odorless, and Durable. Each package contains six ounces; when moistened will make several boxes of Paste Polish.

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"SUN PASTE STOVE POLISH"

Applied and Polished with a Cloth.

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CANADIAN AGENTS:

LYMAN, SONS & CO., Montreal.

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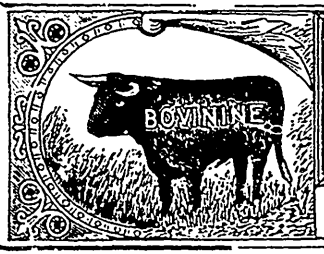

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Creates new and vitalized blood faster than any other food preparation in the world.

For overworked and insufficiently nourished people; over-taxed professional and aboring men

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Nursing mothers, teething infants and puny children thrive surprisingly by its use, a change for the better being perceptible often within 24 hours.

It is the only thing that will permanently cure nervous prostration, dyspepsia, cholera infantum and excessive irritability of the stomach from any cause.

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October 1st, 1885. FRED. D. GRANT."

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Put up in 6 and 12 oz. size, at **60** cts. and **$1.00** per bottle. 12 ozs. contains the strength of 10 pounds of beef.

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