Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- [x] Coloured covers/ Couverture de couleur
- [ ] Covers damaged/ Couverture endommagée
- [ ] Covers restored and/or laminated/ Couverture restaurée et/ou pelliculée
- [ ] Cover title missing/ Le titre de couverture manque
- [ ] Coloured maps/ Cartes géographiques en couleur
- [ ] Coloured ink (i.e. other than blue or black)/ Encre de couleur (i.e. autre que bleue ou noire)
- [ ] Coloured plates and/or illustrations/ Planches et/ou illustrations en couleur
- [ ] Bound with other material/ Relié avec d'autres documents
- [ ] Tight binding may cause shadows or distortion along interior margin/ La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure
- [ ] Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/ Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

- [ ] Coloured pages/ Pages de couleur
- [ ] Pages damaged/ Pages endommagées
- [ ] Pages restored and/or laminated/ Pages restaurées et/ou pelliculées
- [x] Pages discoloured, stained or foxed/ Pages décolorées, tachetées ou piquées
- [ ] Pages detached/ Pages détachées
- [x] Showthrough/ Transparence
- [ ] Quality of print varies/ Qualité inégale de l'impression
- [x] Continuous pagination/ Pagination continue
- [ ] Includes index(es)/ Comprend un (des) index

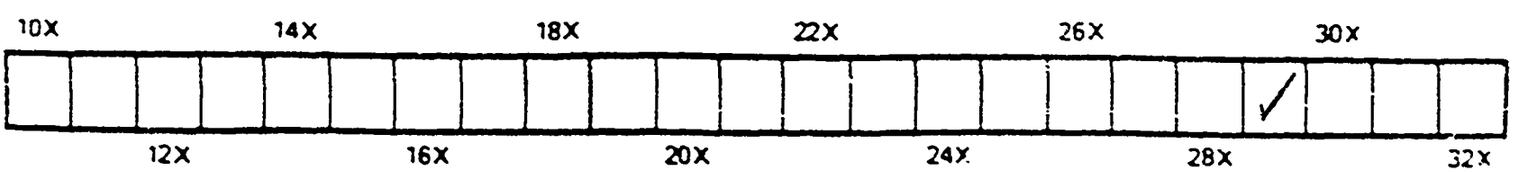
  Title on header taken from:/ Le titre de l'en-tête provient:

- [ ] Title page of issue/ Page de titre de la livraison
- [x] Caption of issue/ Titre de départ de la livraison
- [ ] Masthead/ Générique (périodiques) de la livraison

- [x] Additional comments:/ Commentaires supplémentaires:

Pagination is as follows: p. [2], [193]-204B, [i]-viii, 204C-216.
Page 208 is incorrectly numbered page 08.

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.



CANADIAN DRUGGIST

VOL. IX. TORONTO, CANADA, SEPTEMBER, 1897. No. 9.

Canadian Druggist

Devoted to the interests of the General Drug Trade and to the Advancement of Pharmacy.

VOL. IX. TORONTO, SEPTEMBER, 1897. No. 9

Canadian Druggist

WILLIAM J. DYAS, PUBLISHER

Subscription $1 per year in advance.

Advertising rates on application.

The CANADIAN DRUGGIST is issued on the 15th of each month, and all matter for insertion should reach us by the 5th of the month.

New advertisements or changes to be addressed

Canadian Druggist,
15 TORONTO STREET,
TORONTO, ONT.

EUROPEAN AGENCIES:
London, England: 145 Fleet Street, E.C.
Paris, France: 18 Rue de la Grange Bateliere.

CONTENTS.

"I predict that at the close of this century we are to have three years of such prosperity as the oldest of those here present has not before witnessed." —Mr. Edward Gurney, ex-President of the Toronto Board of Trade, Sept. 6th, 1897.

That we are on the eve of a genuine business revival, no one who is at all conversant with the condition of affairs throughout the length and breadth of Canada can deny. For some years a depression has existed not only in commercial centres but everywhere throughout the land, permeating all ranks, and making its effects felt by the man of business, the professional man and the husbandman. The financially weak have had to succumb, while even the wealthier portion of the community have suddenly found themselves in a position calling for additional capital and more extended credits. Happily these times appear now to be coming to an end, and a feeling of confidence and hopefulness pervades the community.

For Canada the prospects appear to be particularly bright. Our crops are very abundant, the farmer is receiving higher prices for the products of the farm, which prices are more than likely to be maintained, owing in some part, to the fact that other countries have not been so highly favored, and the influx of foreign capital is making itself felt, not only in the mining districts of Canada, but in all business operations.

This bright outlook is one that should and will gladden the hearts of all, and tend still further to confirm the faith of citizens in the grand future of the Dominion.

The unusual prominence which Canada has attained during the past year, by the announcement of her wonderful mineral wealth, the attaining the foremost place as the leading colony of Great Britain, and the almost universal attention give to our fiscal affairs by foreign nations as well as by the motherland, owing to the bold

stand taken in framing our tariff laws, have all conduced to a still further feeling of confidence and buoyancy as to the future. Good times, increased business and general prosperity are now in our grasp, and it behoves us all to make the best use of them without delay.

Hold Together.

The average druggist is still at a loss to know what policy he should pursue in trade matters. The conditions which affect the dealer are such as to make it somewhat difficult to decide, yet at no time could he point his finger at a confrere and say: "You are responsible for the origin of a portion of this." We believe that, with the exception of those who have prostituted their profession by lending their names and abilities to soulless capitalists, every druggist in Canada desires to maintain for himself and his associates a fair and remunerative price for each and every article he sells. Those who doubt the unanimity of sentiment which prevails in the ranks of the druggists of this country would do well to interview them personally, particularly in a town or city where a number are established. The druggists have maintained a united policy of aggressive watchfulness without as a body aiming to do so. It did not take long for each one to learn that a new condition of trade was being established, that the cause of its origin was the presence of traitors in the camp, that the effect was financially a serious one, and that the cure would ultimately rest with themselves. Trade difficulties always have a cementing effect with those most deeply interested, and we question if there has ever been a period in the history of the drug trade when a desire to hold together was more clearly manifested. The various meetings which have been held have done more or less good in that they served to maintain a degree of hopeful confidence until matters gradually assumed a righting condition. Nothing is more sure than that time and patient effort on the part of each druggist to protect himself will prove in the end the true remedy. The aggressive efforts so far put forth have shown the power which can be wielded, and each druggist is beginning to realize that he is becoming master of the situation. With improvement in general trade and the advent of good times, the outlook will become still brighter, and an era of renewed prosperity will again be felt.

The present difficulty has been a very instructive one, and has shown the wisdom of collectively maintaining the principle of self defence and of individually asserting it.

We congratulate our confreres upon the outlook and the generous forbearance they have shown to one another during a period of trial which, under similar circumstances in other places, has proved so destructive to the peace and harmony of the trade.

An Act Further to Improve the License Laws.

At the last session of the Ontario Legislature an Act was passed to which the above title was given, which we have already referred to in these columns. It would be very difficult, we think, for any one of ordinary intelligence to discover the "improvement" in the clauses relating to the sale of liquor by druggists; in fact, the provisions in this respect seem so utterly absurd that one cannot understand how they ever passed the legislature, or how any good could have been expected to result therefrom.

A perusal of these provisions of the Act shows the following somewhat extraordinary position of affairs:

Formerly druggists were permitted to sell pure liquors in quantities of not more than six ounces at any one time, such sales to be registered in accordance with the provisions of the Act, and there was no restriction whatever on the sale of mixtures containing liquors, but since the Act was "amended" and "improved" druggists are forbidden to sell not only pure liquors, but mixtures containing liquors, in any quantity or under any circumstances except "under a bona fide prescription of such liquor or mixture duly signed by a legally qualified medical practitioner."

A medical practitioner may, in case of necessity, prescribe liquor, but the legislature in its wisdom has seen fit to place a limit upon the quantity which may be prescribed, namely, six ounces of pure liquor or one pint of mixture containing liquor; in other words, the doctor may name the medicine but the legislature fixes the dose. If a doctor deems it necessary to prescribe more than the above quantities, and the druggist fills the order, he is liable to the penalties of the Act for so doing.

But the evil effects of this "improved Act" do not appear to end here. The term "mixture containing liquors" would cover all tinctures and medicinal preparations in the manufacture of which liquor is used, as well as a very large number of patent medicines and proprietary articles. Heretofore a druggist was at perfect liberty to sell tinctures, patent medicines, and proprietary articles containing liquors without any restrictions, but under the present condition of the law he incurs the liability to the penalty imposed by the Act if he makes any such sale without a bona fide prescription duly signed, etc.

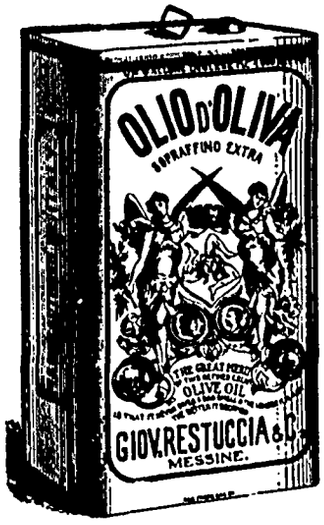
Moreover, some of these patent medicines are put up in bottles containing more than one pint, and apparently the provisions of this Act would require that a druggist making a sale thereof, even under a doctor's prescription, should measure and sell not more than one pint, unless he is willing to incur the penalty.

Alcohol, which is obtainable only from druggists, is put to almost innumerable uses in the household, in the arts, etc., and why should anyone requiring this spirit be compelled to procure a prescription for it?

The attention of the Government has been called to the far-reaching effects of this Act since it came into force, and in May last a circular of instruction was issued to License Inspectors throughout the Province, a copy of which we published recently, stating that it was not the intention under Section 52 of the Ontario License Law to prohibit the sales of established and well-known patent or proprietary articles containing liquors without the prescription of a qualified medical practitioner. Notwithstanding the issue of this circular, a prosecution under the Act has taken place, as will be seen by reference to the report in another column of this issue, of the case of Queen vs. Holgate.

This subject should engage the earnest attention of the drug trade throughout the Province, and steps should at once be taken to have the obnoxious provisions of the Liquor License Act repealed at the earliest possible moment during the next session of the Legislature, and no efforts should be spared to procure legislation favorable to the trade in regard to the sale of liquors. This might well be taken up by the Council of the Ontario College of Pharmacy.

The legislation enacted was evidently done to the entire ignorance of that body or its committee on legislation, and in order to prevent anything of the kind happening in the future, we should sug-



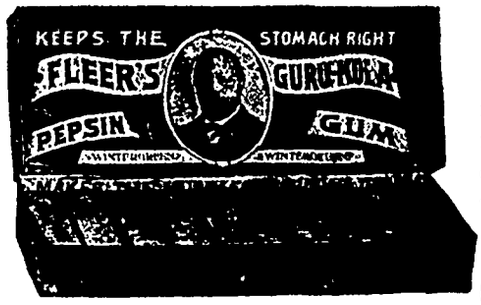
We are noted for selling the Finest

Cream Salad OLIVE OIL...

Put up in 1 Imp. Gallon Tins

If you have not tried it yet, send in your sample order

Guaranteed Chemically Pure



This is the original and only true

Kola Gum

In boxes, 20 5c. packages.	$0 63
In glass jars, 500 5c. packages..	3 40
Queen (new), 20 5c. packages..	0 60
Tiger (new), 20 5c. packages..	0 50

And the Best line of **Chewing Gums**

CANADIAN SPECIALTY CO., - TORONTO

Hold To The Light

AND

SEE THE DEEP RED COLOR OF

Welch's Grape Juice

It is a Blood Maker and a Waste Restorer—a nutrient tonic. Always clear and bright, showing the true Grape color of the full ripe Concord Grape

It is without a drop of water or a particle of alcohol. Being pressed, sterilized, and hermetically sealed in new glass bottles, by the cleanest possible methods.

It is a ready seller by the bottle, for Medicinal, Beverage, and Communion purposes.

It is the most desirable, healthful, and satisfying drink that can be dispensed at the Soda Fountain.

Lyman Bros. & Co. Toronto
Lyman Sons Co. Montreal
} Distributors for ONTARIO, QUEBEC.

THE WELCH GRAPE JUICE CO., WATKINS, N.Y.

TRADE E MARK

This registered mark, or our name upon any goods is a guarantee of excellence.

WE have recently issued a new handbook of our preparations containing many additions to lines comprised in former lists, and an entirely new line of medicinal elixirs. In inviting attention to our list, and comparison of its contents with those of other manufacturers, we beg to state that our productions are worthy of the utmost confidence; a statement which we base upon the skill and care expended upon their preparation at every stage of the varying processes, and one which we trust, by reason of the high reputation we have already so long enjoyed, will be accepted with readiness by physicians and chemists everywhere.

Our goods are more profitable to you than those of any other maker. Your particular attention is invited to the following:

Pil. Anti-Diarrhœa, E. & Co., 3 gr. (100s)
℞—P. Opii, Camphoræ, Catechu, Cardamomi, aa ¼ gr., P. Rhei., Bismuth, Trisnit, aa 1 gr.

Cathartic and Liver Granules (pink) (1000's)
℞ - Aloin 1/10 gr., Podoph. 1/5 gr., Jalapin 1/10 gr., Ext. Hyoscyami 1/20 gr., Ext. Nuc. Vom 1/20 gr., Ol. Res. Capsic 1/20 gr.

Pil. Chalybeate (Ferringincus Blaud's), 3 gr. and 5. gr.
Pil. Chalybeate, *Modified with Arsenious Acid,* 5 gr.
Pil. Chalybeate Compound, 3½ gr.

Elixir Adjuvans. Intended as a vehicle for acrid or saline remedies.
Elixir Aromaticus (Simple Elixir). Pink and white.
Elixir Alteris Co. Uterine Tonic and Restorative.
Elixir Cascara Sag. Dose 15 to 60 minims.
Elixir Kola Co. Kola, Celery, and Coca. Etc., etc.

Fl. Extract Bay Laurel, for making Bay Rum.
Fl. Extract Buchu, miscible with water.
Fl. Extract Cascara Aromat. Dose 30 to 120 minims.
Fl. Extract Celery Seed. Nervine.
Fl. Extract Glycyrrhiza. Demulcent.
Distilled Witch Hazel, with 15 per cent. alcohol.
Fl. Extract Hydrastis Aqueous.
Fl. Extract Hydrastis, Colorless, does not stain.
Fl. Extract Kola Co. Nervine, stimulant, for exhaustion.
Fl. Extract Saw Palmetto. Nutrient tonic, sedative.
Fl. Extract Tolu (soluble) for making syrup.

Syrup Acid Hydriodic, 1 per cent., alterative, antipyretic.
Syrup White Pine Compound, Obstinate coughs, etc.
Syrup White Pine and Tar Compound, Obstinate coughs.
And full line of others.

HEADACHE TABLETS, AND OTHER TABLETS WINES, OINTMENTS, ETC.

Magnesia Citrate

Excellent Quality

Copies of "Handbook" have been mailed to every address obtainable. If yours has miscarried, please advise us, and we will send another at once. Hoping for a careful inspection, and for your specifications of our preparations, we remain,

Yours faithfully,

ELLIOT & CO.

5 Front St. E. - Toronto

gest that counsel should be employed whose duty it would be to watch all legislation that in any wise affects the drug trade. We also think that in the present prosecution (Queen vs. Holgate) the Council should take the responsibility of the defence, as it is clearly an act aimed at the whole drug trade of this Province. Should conviction be obtained, the prosecutions will be numerous, and seeing that the fault is not that of the individual druggist but of unfair legislation it should certainly be in the province of the Council to appoint some one to watch proceedings on behalf of the trade of the province. Too much credit cannot be given the counsel for the defence in the case mentioned for the way in which he managed it, and we think the Council of the O. C. P. would act wisely in securing Mr. Le Vesconte to look after their interests also in this matter.

Editorial Notes.

One of the latest ventures in Philadelphia is said to be that of a new corporation entitled the "Puritan Drug Company," with a capital of $150,000. The company propose buying in large quantities and selling at a slight advance through a number of small drug stores to be opened throughout the city, and also furnishing gratuitous medical advice, having a resident physician in each store.

"The J. A. Pozzoni Medicated Complexion Powder Company," of St. Louis, Mo., has secured an injunction against August F. Herrmann *et al.* restraining them from selling or offering for sale any box or package upon which is stamped, engraved or printed the name of the "J. A. Pozzoni Medicated Complexion Powder Company"; or the name "Pozzoni," or the phrase "Medicated Complexion Powder." Costs were also given to the plaintiffs in the case.

Dr. Lucas Championiere, of Paris, who has devoted a good deal of time to the medical aspect of cycling, gives an opinion relative to the diet of cyclists, and in speaking of the recent Paris-Bordeaux contest says that the competitors were right in not eating food containing nitrogen.

But though they did not eat, they drank enormous quantities of liquid—tea, beef-tea and milk—to replace the liquid or weight lost by the perspiration. It is useless, he says, to eat during violent exercise, but it is important to drink, and if the body is in good working order the only result of the effort is a decrease in weight.

"Prof." Chamberlin, who has advertised himself largely as an Optician, and has been in the habit of using some of the drug stores of this province as a rendezvous and headquarters while in the locality, was before the police magistrate, of Toronto, recently, on a charge of fraud. The complainant, James Cook, an employee of the Gutta Percha Rubber Company, charged Chamberlain with selling him a pair of spectacles, which he stated to be "pebbles" and for which he paid him $3—but they were ordinary glass. The Crown attorney said he had received many complaints of a similar nature against Chamberlain. The case was adjourned until Aug. 23rd, but at that date Mr. Chamberlain could not be found, and his bonds were estreated.

A duty of fifty cents a pound on Tonka beans is a feature of the new United States tariff. The Tonka bean comes from South America, particularly Venezuela. It is used as an ingredient of perfumery and largely to flavor tobacco. The annual consumption in this country (*N. E. Druggist*) is about a hundred and twenty thousand pounds. The article has always been on the free list. It was left there by the Dingley Bill and was not disturbed by the Senate Bill, as it was reported by the Finance Committee. But the few importers who handle it are said to have quietly laid in a three years' supply, amounting to 360,000 pounds, and then as quietly and unostentatiously labored to get the large duty put on. If this is a correct statement of the case, the Government will get no revenue for three years to come, but the public will pay more for the article and the real beneficiaries will be the shrewd and successful gentlemen who have cornered the Tonka bean market.

Ontario Society of Retail Druggists.

The annual meeting of the O. S. of R. D. was held in the Ontario College of Pharmacy building, Toronto, Sept. 8th. The attendance was fair, and thoroughly representative of all parts of the Province.

The President, G. E. Gibbard, delivered an address, dealing with the work of the Society during the past year. In the course of his remarks he said that although he could not report as favorable progress as he wished, still the work done had, he believed, strengthened the hands of the retail trade and had laid the foundation for a successful issue. That issue depended a good deal upon the individual exertions of each retail druggist, for co-operation was necessary, and active, aggressive work must be done to obtain what they were all working for, viz. the improvement of present conditions in business affairs.

The plan which the executive committee had placed before the Association respecting the Wholesale Druggists and the Proprietary Medicine manufacturers had been accepted by the former but rejected by the latter. The latter body had now submitted a proposition which would be read by the Secretary, and which he hoped the Society would consider carefully. The Secretary read the proposition, which created a good deal of discussion amongst those present, particularly when it was thought that reflections were made on the retail druggists which were quite uncalled for. The principal clauses in the proposition were considerably altered on resolution of the members, and the adoption of the plan, as amended, was carried.

We have been requested by the officers not to publish the proposed plan as yet, awaiting the action of the Proprietary Medicine Association—as its announcement at the present time might be injudicious.

The Secretary's report shewed the following:

RECEIPTS.

Fees from retail druggists	$667 50
Donation from Wholesale Druggists	100 00
Donation from Northrop Lyman Co.	25 00
Donation from T Milburn Co.	25 00
Balance from last year	67 35
	$884 85

EXPENDITURE.

Organizer	$538 20
Secretary-Treasurer	200 00
Executive	98 54
Postage and Printing	47 75
Cash on hand	36
	$884 85

During the progress of discussion one fact was prominently brought out, viz., the distinct repudiation of the "substitution" idea, and it was stated most positively that such a thing in its real sense did not exist except in a very small percentage of cases.

The meeting was most harmonious, and apparently determined that no effort would be spared to protect the interests of the trade in every particular.

The following officers were elected for the ensuing year:

President, G. E. Gibbard, Toronto; Vice Pres., R. Ferrah, Galt; Sec. Treas., J. T. Pepper, Woodstock; Executive Committee, District No. 1, W. A. Lloyd, Ottawa; No. 2, D. M. Waters, Belleville; No. 3, H. S. MacDonald, Peterborough; No. 4, I. Curry, Toronto; No. 5, F. W. Flett, Toronto; No. 6, George Monkman, Barrie; No. 7, T Stevenson, Orangeville; No. 8, W. W. Greenwood, St. Catharines; No. 9, D. S. Sager, Brantford; No. 10, C. A. Austin, Simcoe; No. 11, J. E. Richards, Aylmer; No. 12, R. Wightman, Owen Sound.

A motion was adopted requesting the council of the Ontario College of Pharmacy be recommended to collect the $4 annual fee as formerly, and give the rebate of $2 to the Ontario Society of Retail Druggists. All druggists are requested to remit $1 to the Secretary-Treasurer at once.

A resolution was passed appointing a committee to draft a resolution of condolence to Mrs. L. W. Yeomans, on the death of her husband, who was the former Vice-President of the Society.

Trade Notes.

J. H. Vanstom has opened a new drug store at Nelson, B.C.

W. H. Hamilton is opening a new drug store at Neepawa, Man.

W. Colcleugh is opening a new drug store at Wabigoon, Ont.

M. E. Shaw & Co., druggists, Rockwood, Ont., have made an assignment

Dr. McKay has purchased the drug business of J. Stewart, Cookstown, Ont.

B. I Sharp has purchased the drug business of G. F. Johnson, Sussex, N.B.

F. J. Abey has moved his drug business from Revelstoke, B.C., to Ferguson, B.C.

J. W. Dougherty has purchased the drug business of D. D. Reid, Port Elgin, Ont.

J. R. Bond has moved his drug business from 448 to 453 Yonge street, Toronto.

Jos. Dilworth has opened a new drug store on Jarvis street, north of King street, Toronto, Ont.

McAnally & Coleman, druggists, Trail, B.C, have dissolved partnership. Mr. McAnally continues the business.

Fire caused damage to the extent of $50,000 in the laboratory of H. K. Wampole & Co., Philadelphia, August 20th.

H. S. Monkman, Phm.B., O. C. P. class '97, is now manager of the drug business of Witmer & Derby, Hamilton, North Dakota.

Dr. Smith, of 338 Spadina avenue, Toronto, is removing his drug stock to London, Ont. He will open a new store in London East.

The drug store of Dr. Scott, Newmarket, Ont., was entered by burglars, August 28th. The only articles stolen were about twenty pairs of gold-rimmed spectacles.

The F. G. Wheaton Company, proprietary medicine manufacturers, Folly Village, N.S., and the Champion Medicine Company of Tusket, N.S., have been incorporated.

J. C. Hedley, recently manager of the Toronto house of Evans and Sons, has purchased the drug business of Hugh Brown, corner of Wilton ave. and Parliament street, Toronto.

G. A. McCann, of 208 Dundas street, this city, has sold his business to Mr. Bald. This sale was conducted quietly through the Druggists' Exchange, of which Dr. Hamill is in charge.

W. J. Ross, who has represented the J. Stevens & Son Co., Limited, Toronto, in the cities of Canada, has now taken charge of the sundries department for this firm. His long experience on the road and knowledge of the requirements of the trade will do much to increase the output of this department.

The warehouse of Messrs. Brayley & Sons Co., wholesale druggists, 43 and 45 William street, Montreal, was completely destroyed by fire on the morning of August 29th. Loss, about $25,000. Insurance on building and stock, $17,500. We believe it is the intention of the firm to secure new premises and resume business at once.

Wholesale Drug and Proprietary Medicine Dealers' Association.

The annual meeting of the wholesale Drug and Proprietary Medicine Dealers' Association of Canada was held at the Queen's Hotel, Toronto, on Tuesday, September the 7th, at 10.30 a. m., President Hay in the chair. The following officers were re elected:—Chas. McD. Hay, Managing Director out of the Lyman Bros. & Co., limited, Toronto, President; David Watson, of Kerry, Watson & Co., Montreal, and George Rutherford, of J. Winer & Co., Hamilton, Vice-Presidents; W. S. Elliot, of Elliot & Co, Toronto, Secretary-Treasurer. Special notice was taken of the loss the association sustained during the year by the death of Mr. John Kerry and Mr. Henry Lyman, of Montreal, both pioneers of the drug business in Canada, and by the retirement from the drug business of Mr. John Henderson, Toronto, who was the first President of the association. Routine business was transacted and the association adjourned to meet at the Windsor Hotel, Montreal, on Tuesday, December 28th.

International Pharmaceutical Congress.

The eighth International Congress of Pharmacy took place at Brussels, Belgium, beginning August 14th. Over 200 delegates were present—amongst other topics discussed was that of an International Pharmacopœia, and a motion by M. Petit to enlarge the scope of the "Pharmacopœia of patent remedies" as adopted at the Chicago Congress, and make it a complete Pharmacopœia, was carried by a substantial majority.

American Pharmaceutical Association.

The forty-fifth annual meeting of the American Pharmaceutical Association was held at Lake Minnetonka, Minn., commencing August 24th. There was a fair attendance of members.

The officers elected for the ensuing year were as follows:

President, H. M. Whitney, Lawrence, Mass.

First Vice President, Geo. C Bartells, Camp Point, Ill.

Second Vice President, W. S Thompson, Washington, D. C.

Third Vice-President, J. A. Miller, Harrisburg, Pa.

Treasurer, S. A. D. Sheppard, Boston, Mass.

General Secretary, Chas. Caspari, Jr. Baltimore, Md.

Reporter on Progress of Pharmacy, C. Lewis Diehl, Louisville, Ky.

Council members (for three years), C. A. Mayo, New York City; Geo. F. Payne, Atlanta, Ga.; W. A. Frost, St. Paul, Minn.

The next meeting of the association will be held in Baltimore, Md., the date being the last Monday in August, 1898.

The next annual meeting (1898) of the British Pharmaceutical Conference will be held at Belfast, Ireland.

The Association of Manufacturers and Dealers in Proprietary Articles (U.S.) will hold their fifteenth annual meeting in Richmond, Va., October 11-15.

Correspondence.

The Editor does not hold himself responsible for the opinions of correspondents.

Correspondents must in all cases send name and address, not necessarily for publication.

A Prompt Remittance Requested.

Editor CANADIAN DRUGGIST:

DEAR SIR,—I would like to call the attention of all retail druggists to the following motion: "It was moved by W. Hargreaves, Toronto, and seconded by T. P. Smith, Elora, that all members be requested to remit $1 to the secretary and treasurer, J. T. Pepper, Woodstock, at once." Carried.

If the membership would take note of this, and act on it at once, it would help me very much in my work and would save the expense of the society. The fee is a very small one, but we would like to have every druggist respond promptly. As soon as you become aware of the fee required sit down and put the dollar bill in a letter at once and send it to me and I will send you postal card receipt at once. The Society expects every druggist to do his duty.

Very truly yours,

J. T. PEPPER,
Secy-Treas. Ontario
Society Retail Druggists.

Woodstock, Sept. 10th, 1897.

Noxinol.—This is the commercial name of sodium rosolate. It is a photographic developer. A small quantity of sulphur added to chloroform will preserve it.

Anisidin Citric Acid.—This is a substance possessed of therapeutic properties similar to those of phenetidincitric acid, but, as an analgetic, it is said to be superior.

A COACHMAN'S STORY.

"Rheumatism," said a leading physician not long since, "may attack anybody, but is especially the disease of age and poverty. The immediate cause is an irritant poison in the blood, which, becoming lodged in those parts of the system where the circulation has the least force, sets up a more or less violent inflammation. This poison is always associated with impaired digestion on the part of the stomach and liver, and the amount of it in the system is increased by the inactivity of the excretive organs, particularly the skin, bowels and kidneys."

Assuming the correctness of this view, the following conclusion is clearly deducible from it, namely, that to relieve or cure a case of rheumatism we should seek, *first*, to prevent the formation of the poison by correcting the impaired digestion, and *second*, to stimulate the skin, bowels and kidneys, that they may throw it off: or, in other words, we must try to purify the blood. Outward applications, although they may, and do, mollify pain at certain inflamed spots, cannot, in the nature of things, eradicate the cause of the disease.

The following case illustrates the truth of this theory, and should be attentively studied by all who are afflicted with gout and rheumatism —the two ailments being, under different names – practically the same thing.

"Sixteen years ago I had an attack of rheumatic gout which affected all my joints, giving me intense pain. My hands, feet and shoulders were puffed up and swollen, and for many weeks I suffered martyrdom. After this I was from time to time subject to rheumatism, which moved about my system, sometimes appearing in one part and then another. For five years I suffered like this

"In the autumn of 1885, whilst in the employment of a doctor at Bayswater as coachman, my eyes became affected and I was almost blind, not being able to see either the numbers or names of the streets I drove along My eyes were like a piece of liver, and the doctor I was with sent me first to an eye specialist, and afterwards gave me a note, and I went to St. Mary's Hospital, Paddington, where I attended as an outdoor patient for nine months.

"I was so bad I had to give up my employment. The doctors at the hospital made a thorough examination of my eyes, and said they were sound, and that my affection was caused by rheumatic gout. They gave me medicines and drops for the eyes, also placed blisters behind the ears and on the temples, but I was little better for anything.

"Some days I was better and then worse, and I feared I should lose my sight altogether. In July, 1886, my brother came to London on a visit, and urged me to try Mother Seigel's Syrup, as he thought it would drive the rheumatism out of my system. I got a bottle of this medicine from Whiteley's, in Westbourne Grove, and after taking two bottles I was wonderfully better. My *sight returned*, and I felt better of myself. *When I had taken six bottles I was well as ever*, and have since been well. You can publish this letter, and refer anyone to me. (Signed) Joseph Parker, 21 Blomfield Street, Westbourne Square, Bayswater, July 1st, 1896."

Mr. Parker is a respectable man and worthy of implicit confidence. He is now in the employment of Mr Whiteley, the famous purveyor, of whom he bought Mother Seigel's Syrup in the time of his necessity. The cure is certainly remarkable, and demonstrates the truth of the proposition, now admitted by the highest medical authorities, that rheumatism is a disease of the blood, caused, at the root of it, by chronic dyspepsia and indigestion. Mother Seigel's Syrup, being the most successful medicine in the world for all ailments of the digestion, consequently prevents the further formation of the rheumatic poison, expels it from all places where it has produced inflamation in the body, and *hence cures rheumatism*. The reader will note that it is now *ten years* since Mr. Parker's recovery, during which period he has had no relapse. Therefore, the cure was real and radical.

The Important Constituents of Taraxacum Root.

By L. E. Sayre.

According to the promise made at the meeting of this section last year the investigation upon taraxacum has been continued. It was begun, not without considerable misgiving, but with the hope that some process for crystallizing the bitter principle would be found, so that a more accurate study of its chemical and physical properties could be accomplished, and that a method of accurately standardizing this much-used drug could be furnished.

Briefly summarizing the work of which this is a continuation, it will be seen, by referring to the papers previously published in the association proceedings,* that the following constituents, among others less important, have been identified: (1) A resin soluble in chloroform and ether, insoluble in alcohol; (2) A resin soluble in alcohol; (3) Taraxacerin, a white, waxy, substance, separating from alcoholic solution in cauliflower-like forms; (4) A bitter principle which, in somewhat concentrated solution, is precipitated by a number of alkaloidal reagents. Solutions containing the seemingly pure principle, when evaporated, produce a film which, under the microscope, revealed oftentimes crystals of acicular form mixed with globules of oleo-resinous appearance. When this mixture was treated with oxidizing agents—even by hydrogen peroxide—it was gradually converted into a crystalline mass, which proved to be oxalic acid. Attempts to separate the crystals found in the unoxidized evaporate were unsuccessful. To decide whether these crystals or the oily globules were the bitter principle, or whether the one was derived from the other, was little more than a conjecture. Slow evaporations of chloroformic, ethereal, alcoholic, and aqueous solution failed to produce crystals free from oleo-resinous globules. Evaporation of aqueous solution in vacuo was no more successful.

The work was begun this year by making an ultimate analysis of taraxacerin. Slowly evaporating its impure alcoholic solution, the cauliflower-like crystals separated as stated in paper of last year. The taraxacerin thus freed from extraneous matter was collected, dried over sulphuric acid, and a number of combustions made. The result of these combustions will be subjoined to this paper. A quantitative analysis of the inorganic constituents of taraxacum root will also be appended.

For the further investigation of the bitter principle an extraction of taraxacum root was made for me by J. U. Lloyd, as follows: Forty pounds of the powdered root were percolated with chloroform, and the dregs were then exhausted with alcohol. The chloroformic and alcoholic tinctures were separately distilled, leaving behind in each case a residue of thick, syrupy consistence.

*See Proc. A. Ph. A. 1896, p. 160.

These syrupy extractives were used as a starting-point for the further investigation of taraxacin and other constituents.

Taraxacin, bitter principle.—Further efforts have been made to bring the bitter principle to the crystalline form. Thus far these efforts have been only partially successful; a detailed description of this work is unnecessary. Suffice it to say for the present, acetone as a solvent seems to promise some aid in its isolation. An acetone solution of the yellowish, amorphous, viscid, and extremely bitter extractive (corresponding to crude taraxacin) was made. On slowly evaporating this solution, a thin, syrupy, transparent film was left which contained imperfectly-formed stellar crystals—tufts imbedded in viscid media. On adding a drop of water, the film and crystals immediately broke down into yellowish oleo-resinous-like globules. The most satisfactory method thus far employed for purifying this principle is to dissolve crude principle (extractive) in twenty per cent. alcohol; treat this with specially-purified animal charcoal until the solution loses its bitterness; carefully wash the carbon with water; dry, and treat it with boiling alcohol; evaporate the alcoholic solution at a low temperature, and dry the residue over sulphuric acid. This has, however, the disadvantage of being a wasteful process. The dried product dissolved in acetone behaves as stated above.

Although the crystallization of taraxacin at present seems almost impossible, it has not been given up as hopeless.

Analysis of Taraxacerin.—The result of the combustion of this principle may be here stated. Several combustions were made, but only three recorded: of these three, the second and third seemed to be the most reliable. A tabular statement of the percentages is as follows:

	1.	2.	3.
Carbon	77.36	77.16	77.32
Hydrogen	11.55	11.13	11.13
Oxygen	11.09	11.71	11.55

Mean of 1, 2, 3:		Mean of 2 and 3:	
C	77.28	C	77.24
H	11.27	H	11.13
O	11.45	O	11.63

Reducing the percentages of the last table, the following amounts appear:

$$C = \frac{77.24}{11.92} = 6.4803 \qquad \frac{6.4803}{.7324} = 8.85$$

$$H = \frac{11.13}{1} = 11.13 \qquad \frac{11.13}{.7324} = 15.20$$

$$O = \frac{11.63}{15.88} = .7324 \qquad \frac{.7324}{.7324} = 1.00$$

Taraxacerin would, therefore, correspond to the empirical formula $C_9H_{15}O$, or a multiple thereof.

The melting point of this substance was about 45° C. Its chemistry will probably be worked out in detail in the future. For aid in this work in combustion I am especially indebted to Mr. W. M. Whitten, Assistant in Chemistry of the Kansas University, who promises in the future to aid in its further study.

Inorganic Constituents of Taraxacum Root.—Ash in dried root (dried at 100° C.), 11.13 per cent.

CONSTITUENTS OF ASH.

SiO_2 and sand	43.27 per cent.
Al_2O_3	18.07 "
Fe_2O_3	0.80 "
CaO	5.75 "
MgO	6.60 "
K_2O	13.83 "
SO_4	4.22 "
P_2O_5	trace.
CO_2	6.53 "
Cl	1.20 "
Total	100.27

This latter work was performed by Mr. C. M. Palmer, a senior student of the School of Pharmacy.

The examination of the chloroformic and alcoholic extractions was carried beyond the report made in this communication, but the interesting work is not yet completed, and will be made the subject of another paper at the coming meeting of the society.

Patents Recently Granted of Interest to Pharmacists.

Solomin Ganelin, Philadelphia, Pa., making oxysalts of lead from lead sulfate and lead chlorid, 587808.

Peter Jermain, School Hill, Wis., invalid bed, 587736.

Michael McCormick, San Francisco, Cal., surgical appliance, 587994.

Ignaz Rosenberg and F. Krecke, Biebrich, Germany, naphthylenediamin-sulfoacid and making it, 587757.

Hercules Sanche, Detroit, Mich., therapeutic apparatus, 588091.

Albert A. Stoll, Louisville, Ky., combined water pillow and douche, 587767.

Gustav Tresenreuter, Berlin, Germany, apparatus for producing carbonic acid, 588037.

James C. Walker, Waco, Tex., resuscitating apparatus, 587891.

Harry B. Weaver, Macungie, Pa., atomizer, 587890.

Zenjiro Yamabe, San Francisco, Cal., hot water bag, 588043.

Geo. F. Zacher, Hamburg, Germany, obtaining oxalic acid, 587777.

Auguste Roedel, New York City, electric herb pad, 588479.

Hercules Sanche, Detroit, Mich., apparatus for treatment of disease, 588483.

Martin Ekenburg, Stockholm, Sweden, making perfumes, 588766.

James J. Hicks, London, England, clinical thermometer, 588796.

Otto Hoffmann, Manchester, England, humidifying apparatus, 588643.

Samuel Ide, Medina, New York, truss, 588578.

Trade marks:

Angene & Vene, Clarksville, West Va., certain named mineral water, 30488.

Fahlberg, List & Co., Salbke-Westerhusen, Germany, impure and pure, or refined benzoic sulfinid, or benzoic sulfinid combined with sodium oxid, 30524.

A Review of Chemistry for Sixty Years.

By C. Flexon, Winnipeg.

In contemplating the subject of a paper to read before the members of the Pharmaceutical Association of Manitoba, it was with many misgivings that I undertook to outline a review of chemistry embracing the sixty years of Her Majesty's reign—a reign as renowned for its illustrious men of British blood and magnificent deeds, as it has been for its remarkable length. Should there be any wonder that the recent congratulations of the civilized world were so richly bestowed on the commemoration of the greatest historical event of our times?

A search for the causes of the high standard of chemistry among the sciences of to-day, or to trace the progress of science generally throughout the Victorian era, would occupy too much of our time. We shall, however, be aided in the estimate of our subject at the outset by a rapid glance at the social conditions of Her Majesty's subjects in 1837, and contrasting them with the well-known comforts of the people in the present year. Are we not forced to admit the foremost and most important factors to be the marvellous improvements in the panorama of locomotion, and the binding together of the nations by electricity? Those are the factors, as a great writer has said, which "diminish local ignorance and prejudice, and create common interests among the most widely separated people." Modern progress, indeed, is but a history of contrasts. We cannot talk of comparisons with the past. Think for a moment of the old methods of travelling either by land or water fifty or sixty years ago. In fact, nobody would be so bold as to deny the astonishing achievements of mankind in these days to be the products of rapid transit, and of that unknown agent which we have named electricity. Daily and hourly intercommunication of thought throughout the world has resulted in competition among the nations, and markedly so among the eminent minds of the nations. No sooner is a discovery made than it is heralded abroad before the setting of the sun. Our imaginations fail in predicting what will follow from all the vast enterprise known to us. One thing certain is, that chemistry has kept pace in the struggle with the other sciences, and there are reasons to suppose will ultimately secure the most prominent position in the ranks of the world's triumphant march towards the goal of earthly bliss

To form anything like a conception of the present status of chemistry we should start by peeping into a document in the Chinese historical records, dated 4,000 years ago, which mentions the elements as earth, fire, metal, and wood. Then, skipping over the next 2,000 years we reach the school of Aristotle, which considered the elements as dry or humid, warm or cold, light or heavy. The modern view of the elements is not exactly like that of our immortal sage. The properties of substances in those times were solely physical; chemical properties did not dawn upon men's minds. The Hindoo considered the elements as earth, fire, water, and ether, and those ideas soon invaded Europe. The next stage of our journey finds us perhaps in the more chaotic age of alchemy, when astronomy and magic held the unmolested reins of power; but whether for good or evil, it is none the less true that in the contentions and confusions of the alchemists there were born the problems "which science is still engaged in solving." Time will not permit us to speak of the cosmogonies and philosophies, the sacred art of the alchemy of the middle ages, and of Paracelsus and his influence, and the subsequent overthrow of the Paracelsian doctrine by Van Helmont, and the inauguration of the great work of Robert Boyle. We must pass on to consider the more decided and more illustrious work of a few men within our scope. In its introduction during the latter part of the 18th century, and the first ten years of the present, modern chemistry was applied to no practical purpose, and it cannot be said of the great scientists of that period that they had in view the betterment of mankind, in the sense that we would speak of our chemists and their synthetic work of to-day. Priestley, who was born in the small hamlet of Fieldhead in the year 1733, "a man so various, that he seemed to be, not one, but all mankind's epitome," published over 100 works, embracing politics, theology, philosophy, chemistry, and other subjects. One of his well-known works is the "Doctrine of Phlogiston Established." His laborious investigations of gaseous bodies earned him the title of the father of pneumatic chemistry—he having devised the well-known pneumatic trough, and with it experimented with fixed air known to us as carbon dioxide or carbonic acid. He observed that the gas conferred "a pleasant acidulous taste on water." Priestley, you see, "suggests the idea of the manufacture of soda water," a beverage, says Mr. Huxley, "so naturally and still more to artificially thirsty souls, which those whose parched throats and hot heads are cooled by morning draughts of that beverage, cannot too gratefully acknowledge." He was much absorbed in experimenting with inflammable air, as it was then called, but now known as hydrogen, and he says that "phlogiston is the same thing as inflammable air, and is contained in a combined state in metals, just as fixed air is contained in chalk and the other calcareous substances, both being equally capable of being expelled again in the form of air." We are indebted to him for nitric oxide, to which he gave the name of nitrous air, and for vitriolic acid air, now called sulphur dioxide. Also fluoride of silicon, nitrous oxide, and last, but not least, for the discovery of dephlogisticated air. It required, however, the eminent French chemist, Lavoisier, whose powerful arguments dealt a death blow to the Phlogiston doctrine, to assign the name oxygen to that gas. It is remarkable that at a time when this same Frenchman reigned supreme in the realm of chemistry in his own country, Cavendish, of equal renown, held full sway in England, though they represented two distinct schools. Both were men of great wealth. To the honor of England be it said that though her great countryman lived as a hermit in the pursuit of his immortal work, cold and indifferent as he ever was to the social progress of his fellow people, the close of his long life of 80 years was deeply regretted, and his burial was marked with the utmost respect. But alas, for our popular and generous Lavoisier, the founder of modern chemistry. At the age of 51, in the days of the "Great Terror," his country led him to the guillotine. A greater martyr or a more illustrious man has not been found. The world became indebted to him as the inventor of the gasometer, and to a great extent for the calorimeter, though in this he received the assistance of his coadjutor, Laplace. His experiments were numerous and marvellous. History will not support the claim of Bertholet, the eminent French chemist, that Lavoisier was the discoverer of the composition of water. Long and bitter as the water controversy was, there is no doubt in the minds of English historians that Cavendish was the first to prove the non-elemental nature of water. Professor Thorpe says, in 1781 Cavendish discovered that "a mixture of two vols. of inflammable air (the gas now called hydrogen) with one vol. of the dephogisticated air of Priestley, combined together under the influence of the electric spark to form the same weight of water," and the professor further on nobly remarks "that the honor of our ancestors is in our keeping, and we should be unworthy of our heritage and false to our heart if we were slow to resent or slack to repel any attempt to rob them of that glory which is their just right, and our proud boast." We shall always cherish a warm regard for the Swedish chemist Scheele, a contemporary of Priestley and Cavendish and the discoverer of tartaric, benzoic, molybedic, lactic, muric, oxalic, malic, and gallic acids, chlorine and glycerine. The first decade of this century was indeed an auspicious one for chemistry. In 1804, when Emperor Napoleon and Josephine were crowned by the Pope, and Spain declared war against Great Britain, Dalton communicated his atomic theory, and four years later, when he published his "New System of Chemical Philosophy," Gay Lussac came forward with the laws of the combinations of gases by volume, and three years still later Avogudro with his hypothesis that equal volumes of any gas contain the same number of atoms. The names of Dalton and Avogudro are as familiar to the pharmaceutical students of the world as are their own fathers. Fast

BOVRIL

Union is Strength

And the union of the Best Beef Extracts with the Albumen and Fibrine produces **BOVRIL**, which is therefore infinitely more Strengthening and Nourishing than ordinary Meat Extracts or Home-Made Beef Tea, in which these Flesh-forming and Muscle-making properties are almost entirely absent.

This Albumen and Fibrine is obtained by a patented process, by which the lean of the finest Beef is in a sense mechanically digested or reduced to so fine a state of sub-divisions that it is at once assimilated by the system, with the smallest possible expenditure of vital energy; and herein lies the superiority of

BOVRIL

Sold by all First Class Druggists and Grocers.

Bovril, Limited,

27 St. Peter Street, MONTREAL.

LITTLE'S PATENT FLUID NON-POISONOUS SHEEP DIP AND CATTLE WASH.

For the Destruction of Ticks, Lice, Mange, and all Insects upon Sheep, Horses, Cattle, Pigs, Dogs, etc.

Superior to Carbolic Acid for Ulcers, Wounds, Sores, etc.

Removes Scurf, Roughness, and Irritation of the Skin, making the coat soft, glossy, and healthy.

Removes the unpleasant smell from Dogs and other animals.

"Little's Sheep Dip and Cattle Wash" is used at the Dominion Experimental Farms at Ottawa and Brandon, at the Ontario Industrial Farm, Guelph, and by all the principal Breeders in the Dominion; and is pronounced to be the cheapest and most effective remedy on the market.

☞ 17 Gold, Silver, and other Prize Medals have been awarded to "Little's Sheep and Cattle Wash" *in all parts of the world.*

Sold in large Tins at **75c.** Is wanted by every Farmer and Breeder in the Dominion.

ROBERT WIGHTMAN, Druggist, OWEN SOUND, ONT.

Sole Agent for the Dominion.

To be had from all wholesale druggists in Toronto, Hamilton, and London.

VIN MARIANI

(MARIANI WINE)

THE IDEAL FRENCH TONIC.

Nourishes, Strengthens, Stimulates, Fortifies and Refreshes the Entire System.

For invalids, *fatigued brain and body*, loss of appetite, stomach and lung troubles, and impoverished blood.

Effect Immediate and Lasting.

Prescribed by the medical profession for 30 years throughout Europe and America. The most popular tonic stimulant in hospitals, public, private and religious institutions.

As palatable as the choicest old wines.

Sold at Druggists and Grocers. Avoid substitutions.

ASK FOR VIN MARIANI.

LAWRENCE A. WILSON & CO., MONTREAL

Sole Agents for Canada for

GOLD LACK SEC CHAMPAGNE. ◆ OLD EMPIRE RYE WHISKEY
BOUTELLEAU FILS, DOCTORS' SPECIAL BRANDY.

TRADE C H MARK

Little's Soluble Phenyle

DEODORISER & ANTISEPTIC

NEW DISINFECTANT.

FOR UNIVERSAL USE

Cheap, Harmless, and Effective

A Highly Concentrated Fluid for Checking and Preventing Contagion from Infectious Diseases.

NON-POISONOUS AND NON-CORROSIVE.

In a test of Disinfectants, undertaken on behalf of the American Government "Little's Soluble Phenyle" was proved to be the best Disinfectant, being successfully active at 2 per cent., whilst that which ranked second required 7 per cent., and many Disinfectants, at 50 per cent., proved worthless.

"Little's Soluble Phenyle" will destroy the infection of all Fevers and all Contagious and Infectious Diseases, and will neutralize any bad smell whatever, not by disguising it, but by destroying it.

Used in the London and Provincial Hospitals and *approved of by the* Highest Sanitary Authorities of the day.

The Phenyle has been awarded Gold Medals and Diplomas in all parts of the world.

Sold by all Druggists in 25c. and 50c. Bottles, and $1.00 Tins.

A 25c. bottle will make four gallons strongest Disinfectant. Is wanted by every Physician, Householder, and Public Institution in the Dominion.

ROBERT WIGHTMAN, Druggist, OWEN SOUND ONT.

Sole Agent for the Dominion.

To be had from all Wholesale Druggists in Montreal, Toronto, Hamilton, and London, Ont., and Winnipeg, Man.

and important friends as those philosophers have always been, and will continue to be to the weary student, I believe they have been the cause of much profanity. Another immense service rendered by Dalton, in the words of Huxley, "as a corollary of the new atomic doctrine, was the creation of a system of symbolic notation, which not only made the nature of chemical compounds and processes easily intelligible and easy of recollection, but by its very form suggested new lines of enquiry. The atomic notation was as serviceable to chemistry as the binomial nomenclature of Linneus was to zoology and botany." On Dalton's foundation chemistry has erected a mighty monument of possibilities. To that docrine, indeed, is due the great advance of chemical knowledge in recent times. But for that doctrine synthetical chemistry would have been denied us. The artificial production of substances or active principles which were formerly regarded as belonging only to plants and animals, and in the changes produced after death are truly the productions of the Victorian era. Methods now are numerous for the synthesis of urea and uric acid. We find chemistry engaged on an extended scale in supplying the human race, for instance, with caffeine, tartaric and citric acids, conine, atropine, oil of bitter almonds, oil of mustard, salicylic acid, vanillan, and the sugars dextrose and levulose. The non poisonous animal alkaloid "choline," originally found in bile and in the yolk of an egg, can now be made, as can also the poisonous "neurine," a derivative of brain substance. One of the great bases for synthetical work is coal tar. The artificial production of "alizarin," a derivative from coal tar, was due to two Germans; but the dye stuff "aniline violet" was patented in 1858 by Perkins, a Britisher, and from that year we must date the rise of the production of coal tar colors, which is now an enormous chemical industry, giving employment to hundreds of thousands of our fellow-creatures. Indigo has also been produced by synthesis; but the process is too expensive to manufacture that important dye commercially. Chemists, however, do not despair of simplifying the process, and so the world is awaiting the inception of another industry. Intensely interesting as organic chemistry is in its wonderful complexity, and has ever been since the work of Berzelius in 1814, and Liebig and Wohler in 1832, and Dumas in 1837, much more delightful must it be to work at the boundless problems of organic synthesis, and at which the chemists of to-day are devoting their energies. To quote a passage from a valuable article on the theory of Professor Bertholet by Henry Dam, in *McClure's Magazine* of September, 1894: "Wheat fields and corn fields are to disappear from the face of the earth, because flour and meal will no longer be grown, but made. Herds of cattle, flocks of sheep, and droves of swine will cease to be bred, because beef, mutton, and pork will be manufactured direct from the elements. Fruits and flowers will doubtless continue to be grown as cheap decorative luxuries; but no longer as necessities of food or ornament. Coal will no longer be dug, except perhaps with the object of transforming it into bread or meat. The engines of the great food factories will be driven not by artificial combustion, but by the underlying heat of the globe. In order to clearly conceive these impending changes, it must be remembered that milk, eggs, flour, meat, and indeed all edibles, consist almost entirely of carbon, hydrogen, oxygen, and nitrogen. Oxygen and hydrogen are the two gases which, when combined, form water. Oxygen and nitrogen mixed are the air we breathe. Carbon forms the charcoal of wood, is the main constituent of coal, and as carbonic acid gas in the air is the chief food of the vegetable world. These four elements, universally existing, are destined to furnish all the food now grown by nature, through the rapid and steady advance of synthetic chemistry." To make proper reference to the brilliant and monumental researches of Mendeleeff, the Sibirian philosopher and the living idol of chemists throughout the world, would make this paper too lengthy. We know him through his great work on the "Principles of Chemistry," in which he has given us the Periodic Law. In his famous lecture, delivered before the Fellows of the Chemical Society in the theatre of the Royal Institution, on Tuesday, June 4th, 1889, he announced the propositions of that law as follows: (1) The elements if arranged according to their atomic weights, exhibit an even periodicity of properties; (2) elements which are similar as regards their chemical properties, have atomic weights which are either of nearly the same value (*e.g.* platinum, iridium, osinium), or which increase regularly (*e.g.* potassium, rubidium, caesium); (3) the arrangement of the elements, or of groups of elements, in the order of their atomic weights, corresponds to their so-called valencies as well as to some extent to their distinctive chemical properties, as is apparent among other series in that of lithium, beryllium, barium, carbon, nitrogen, oxygen and iron; (4) the elements which are the most widely diffused have small atomic weights; (5) the magnitude of the atomic weights determines the character of the element, just as the magnitude of the molecule determines the character of a compound; (6) we must expect the discovery of many yet unknown elements, for example, elements analogous to aluminium and silicon, whose atomic weight would be between 65 and 70; (7) The atomic weight of an element may sometimes be amended by a knowledge of those of the contiguous elements. Thus, the atomic weight of tellurium must lie between 123 and 126, and cannot be 128. (8) certain characteristic properties of the elements can be foretold from their atomic weights.

In the words of Britain's great philosopher, Herbert Spencer, "a knowledge of chemistry concerns every one, who is directly or indirectly connected with our industries. Glance through a work on technology, and it becomes at once apparent that there is now scarcely any process in the arts or manufactures over some part of which chemistry does not preside."

A cursory review, such as this paper contains, can give but a superficial knowledge of what has been effected in the world of chemistry. Regarding the accomplishments herein mentioned of a few, out of a multitude of great men, past and present, we can but wonder what the ultimate results will be. Men of the pharmaceutical profession, no matter where they be found, and trained as they are in this grand science, cannot be expected to hope for much recognition. Much as pharmaceutical chemists may try to emulate such men of whom we have read, they are debarred, just so long as seclusion is denied them from the petty worries and trials of the drug trade, in which they are engaged. As much abuse as you like can be levied against the professors of pharmaceutical colleges, in spite of some bright stars of budding brilliancy which they turn out, still the unwelcome feature of vain plodding for a brighter future dominates every business of a chemist and druggist, and must continue thus, until an esprit de corps shall pervade and take deep root within the Pharmaceutical Associations, not only of this continent, but of the entire world.

The Problems of Pharmacy.

By John F. Howard, Winnipeg, Man.

To judge from the articles in pharmaceutical journals, the papers read at conventions, and complaints of druggists themselves, an alarming state of affairs exists in the East as far as the drug businesss is concerned. And really there seems to be grave grounds for these fears. With dry goods stores handling toilet articles and general sundries, grocers selling patent medicines and a large variety of drugs, medical men dispensing their own medicines, dispensaries giving away drugs without any enquiry as to the circumstances of the applicant, there will soon be no place left for the legitimate pharmacist. The place that knew him once, will know him no more, unless it be that he remain faithful to his post, performing the shadow of his former functions by furnishing a directory and a telephone for the free use of the public.

But while these are the problems with which the Eastern druggist is confronted, I am happy to state that, as yet, the Western druggist has scarcely yet been called upon to face them. However, while we have every reason to congratulate ourselves that our business has suffered few reverses in the past, this should not blind us to the necessity of taking immediate steps to prevent in this West-

ern country a condition of affairs which unfortunately exists in the East. That we have not been troubled in the past, is no guarantee that we shall be entirely left to ourselves in the future. It may be that when the same conditions exist in Manitoba as exist in the East at the present time, we shall be called upon to grapple with the same problems with which they are now striving. The object of this paper is to draw attention to these points in order that we may be able to consider them, and take measures to obviate these difficulties, if not entirely prevent them.

It seems to me that the best augury for the future is that up to the present time we have had very little cause for complaint. We have good reason to congratulate ourselves on the present standing of our profession and to be thankful for the continued prosperity we have enjoyed. There are several reasons for this, to some of which I would like to call your attention. In the first place let me refer to the cordial relations existing among the druggists themselves—relations of personal good-will and business confidence. In the past there has been no ruinous competition, no cutting of prices to secure an advantage over a fellow druggist, but on all hands a feeling of sincere good-will and trust. Our profession has not been called upon to suffer on account of the action of any of its members. This I look upon as one of the most important factors in our continued prosperity. "United we stand, divided we fall," is an old saying and a trite one, but for all that none the less true. It will be an evil day for the druggists of the country should the elements of discord and mistrust be found within the ranks.

Another cause for congratulation in the past, as well as a hopeful sign for the future, is the high standard maintained by the profession in Manitoba. Our profession is one which demands the highest order of intelligence, while we have not unduly sought to be a close corporation, we have insisted on high qualifications on the part of those whom we admit to our ranks. The stand which we have taken has been justified by the results. It is an easy matter to get apprentices—and those the very best apprentices—young men, gentlemanly and well-educated, whom we shall be pleased to welcome into our ranks when they have completed their apprenticeship. This cannot but operate for our good by increasing public respect and confidence.

But there is still another cause for congratulation and an even more hopeful sign for the future in the continuous cordial relations between the physicians and pharmacists of the province. That these two professions are dependent, the one upon the other, goes without saying. That the prosperity of the one means the prosperity of the other is also true. I am happy to say that I am not aware that there is at any point in the province any friction between the pharmacists and the members of the medical profession. Ar ' here I would like to bear testimony to the good work accomplished in this direction by the institution of the pharmacy lectures in connection with the Manitoba Medical College. The association of the students in pharmacy and medicine cannot but have a beneficial effect, both in the formation of acquaintances and in the mutual respect which such associations are sure to engender.

Before proceeding to the consideration of the graver problem before us, let us consider for a moment the sale of sundries, patent medicines, etc., by grocers, drygoods merchants, and departmental stores. This, of course, is a very difficult question to deal with, and requires very careful consideration. In regard to the sale of toilet articles, etc., about the only remedy that can be recommended is to manage business on the strictest business principles. It may be tha in the past the percentage of profit has been too large. If so, a reduction must be made to compete with ot' 'r businesses carrying this line. Another method is to watch the wholesale houses and refuse to patronize those houses that deal with other businesses than the drug trade. This is extensively done in Eastern cities, and with measurable success.

In regard to the sale of patent medicines, there is one method of prevention which it seems to me might be healthy in its effect. I have long considered this question, and in the proposed solution I am quite certain we would have the support of the most influential men in that influential body—the medical men. It is not necessary for me here to say anything about the evils of the indiscriminate use of patent medicines, the harm they do when taken into a system not in need of them, the bad effects wrought in numberless cases. Interested as the druggist is in the preservation of the public health and the prevention of disease, I do not think that we, as druggists, could do better than urge upon the government the necessity of passing an Act compelling the manufacturers of patent medicines to print on the label the formula from which the medicine is made. This is done in England in the case of all medicines containing poisonous drugs. Its advantages both to the community at large and to the druggist are obvious. Why, then, should not the operation of such an Act be extended to patent medicines and put in force in Canada?

Within the last few years there has been growing a new industry, one scarcely heard of a decade ago, but which at the present time is assuming enormous proportions. I refer to the manufacture of elegant pharmaceutical preparations and tablet-triturates. It is to the interest of the vendors of these articles to create a mutual distrust between the doctors and the druggists, to endeavor to make the doctor believe that the druggist is working against his interests and in addition reaping profits which might as well be in the pocket of the doctor himself. This brings us back to the question of the relations between the doctor and the druggist.

Here let me deal with several charges made against the druggist as a profession by men interested in creating a breach between the pharmacist and the physician, in undermining the confidence of the latter in the former. The principal of these charges are the substitution of drugs, counter prescribing, and the making known to the public of a large number of ready-made preparations.

In regard to the question of substitution, it is urged by interested individuals that the druggist is in most cases, if not in all, a substitutioner, that he cannot be depended upon to dispense the drugs ordered. This charge would be absurd were it not so serious. It is a downright falsehood in every particular and a personal insult to every member of the profession. It does not become us to laud ourselves, but the interest of self-preservation must make us pause and reflect on the character of the men in our profession. I think I am safe in saying that as a class the druggists are men of more than average education, ability, and integrity, men who can be depended upon to conduct their business fairly and honestly, men who enjoy the confidence of their customers and fellow-citizens as largely as any other business class in the community. Even were this not so, were the druggists men who could not be depended upon to act honestly, a little common sense and consideration would show that the interests of the pharmacist and the physician are so closely related that the druggist in substituting would simply be defeating his own end. It is to the interest of the druggist that the physician should get the results he looks for when writing a prescription. If not he begins to ask the reason why. In my own experience I know that doctors appreciate the time spent and care taken in selecting and preparing the purest, freshest, and most active drugs and pharmaceutical preparations. I am very glad, however, to state that never in Manitoba have I heard these charges made by a physician against a druggist. Our good friends the doctors may be depended upon to stand up in our favor when this contemptible charge is made against us.

The next charge is that of counter prescribing, and in this we must admit that there is some truth. There is no doubt that counter prescribing is done in drug stores, but I am safe in saying that when done it is against the wishes of the druggist and forced upon him by the exigencies of the case. That it can be done away with entirely I very much doubt. The efforts of the druggist will have to be directed towards minimizing the number of prescriptions so given. There is no doubt in the world that the druggist is not the man to prescribe. The doctor by his special knowledge is the

only competent person to diagnose a disease and prescribe the proper remedy. The druggist cheerfully admits this, but what is he to do when a customer comes into the store and complains about a headache or a slight indisposition and asks the druggist to suggest a remedy? The customer would not think of consulting a doctor for such a slight attack, he is able to pay a doctor, has no wish to save a fee, and he asks the question without any more thought than he would have in asking a grocer to recommend some particular brand of tea, or a tailor a particular kind of cloth. In a case like this, a case in constant occurrence, what is the druggist to do? He cannot refuse to give the required information. If he does so it is set down either to ignorance or to boorishness and a good customer is lost. It would be just as reasonable to charge the physician with breach of faith in carrying a hypodermic syringe as to make a similar charge against the druggist for being compelled to answer in such a case. There will always be more or less counter prescribing, but I would urge that the amount done be as little as possible, and discouraged in every way consistent with business interests.

Another serious charge against the druggist is that of a breach of confidence in making known to the public a large number of ready-made prescriptions. These are often bought in bulk, thus depriving the physician of his consultation fee. A few moments' reflection will show that this charge has no foundation. There is no use denying that this knowledge is in possession of the public, but that they obtained it through the medium of the druggist I deny. There are several ways in which this knowledge may have been distributed. In the first place all the more popular weekly newspapers, such as the *Family Herald*, *Montreal Witness*, etc., have medical columns, and prescribe these remedies. These papers have thousands of readers. The persons prescribed for may be benefited; he tells his friends, and so the news is spread. Again, an indiscreet physician may tell a friendly patient to purchase some Fellow's syrup or a couple of ounces of Listerine. He does so, and finding it does him good, advises his friends to use the remedy, stating that Dr. Blank recommends it. Again a very large number of these preparations are openly advertised in the newspapers, in fact, the medical journals themselves are simply swarming with such advertisements. By these means and various others, the remedies become known and the druggist is blamed therefore without being in the least guilty.

As I said before, the manufacture of special preparations and tablet-triturates is assuming alarming proportions. These manufacturers are either wealthy men or large corporations. They have unlimited capital at their command, which they use to trade upon the weakness of humanity. By means of their immense wealth they are able to obtain the control not only over a large number of doctors who in turn influence others, but even to subsidize, if not purchase outright, medical journals. Their preparations are advertized by means of these journals and through the public journals. Lazy and careless physicians are induced to prescribe their medicines. The intelligent customer soon finds out that he is buying a ready-made compound. He repeats the prescription and recommends it to his friends. The mischief is done. Both physician and druggist suffer, the one in his fee, the other in percentage of profit.

I cannot understand the action of physicians in prescribing patent medicines and other specially prepared compounds. The medical man must surely see that he is doing himself an irreparable injury. The proprietor of these medicines is not working for the good of the physician, not even for his convenience. It is the public the manufacturer is interested in, and once his medicines are well-known to the public to the public he will go direct, and the doctor is left lamenting. It might be well also to note that the increase in the number of special preparations increases the temptation to counter dispensing.

There is a side, however, both to the tablet-triturate trade, and to that in elegant pharmaceutical specialties which is never mentioned by the vendors of these wares. The rapidity with which the tablets deteriorate and become inert is remarkable. You will notice in many instances, in comparing the tablets next the glass, with those in the centre of the bottle, that there is a material difference in the color. In addition to this many tablets become broken or rubbed, so that they vary considerably in weight. It is also contended by analytical chemists that many of the tablets do not contain the amount of active ingredients they are supposed to represent. Again, in the case of the elegant pharmaceutical preparations, very frequently the principal elegance is in the wrapper. Manufactured by machinery, mixed by inexperienced labor and produced by the hundreds of gallons, the medicine cannot be of a satisfactory nature. I have in my possession at present preparations so manufactured, that would be a disgrace to a second year apprentice. Of what use is our special preparation for the profession, of what benefit is the long and careful training we give our apprentices, if such stuff is allowed to sway? The medical man, if he wishes to obtain a result from the drugs prescribed, will never depend upon these forms of medication. If he continues to place faith in them, I am satisfied that in the hour when he is anxiously waiting the results from the medicine prescribed, he will be doomed to bitter disappointment, perhaps losing the patient, whose life he otherwise might have saved. It is the moral duty of every physician to give this subject the serious consideration its importance deserves.

The whole effort of the tablet-triturate manufacturers seems to be directed towards destroying the confidence of the physician in the druggist. The suave and gentlemanly agent approaches the doctor, and opens his stock before him. He sympathizes with the doctor in his efforts to relieve human suffering, and shows him how, by patronizing the house he represents, he may be even more successful in his calling. He also proceeds to sympathize with him, always in the same agreeable manner, in the way in which his efforts for the good of his patients are thwarted by the unfortunate tendency towards substitution on the part of the druggist, urges upon him the convenience of carrying his own stock of drugs and the time saved thereby, and finally draws an alluring picture of the profit he will make by acting as his own druggist. Convinced of the perfidy and untruthfulness of the pharmacist, the physician buys from the tender-hearted drummer, the result being a direct injury to himself as well as to the druggist.

This kind of talk, however, has very little effect on the intelligent physician. Medicine is advancing with such gigantic strides, there is so much to know that men who were specialists ten years ago have been forced to become now what might be called sub-specialists. The Manitoba physician, striving as he does to keep abreast of the times, to keep in touch with the latest and best in the medical world, has no time to add a thorough working knowledge of pharmacy to his already over-burdened curriculum. Pharmacy is advancing in its line almost as rapidly as medicine. "Pharmaceutical processes are being constantly improved, and these improvements are largely dependent on a better knowledge of organic chemistry and of the constitution of drugs." "If the pharmacist finds it difficult to keep up with the latest discoveries in his own special subject, how then shall a busy physician keep himself up in these strides?" Pharmacy is a distinct and separate business and our Manitoba physicians are wise enough to recognize this.

In summing up what I have said in this paper, let me repeat that I have not attempted to solve any of the problems specified. I have merely tried to lay these questions before you, that we may see the difficulties which may start up before us at any moment. The main point is that the physician and pharmacist must support one another. Let once the confidence existing between these two professions be impaired, and both will suffer. Each must help the other. If one branch have a grievance against the other an effort should be made by joint consultation to remedy that grievance. Each profession has a separate function. The physician may help the pharmacist by frowning upon the prescribing of pharmaceutical specialties. The druggist must do his best to avoid usurping the legitimate province of the physician by discouraging by every means in his power counter prescribing. But let me insist again that the most thorough confidence must exist. The moment that mutual confidence is shattered, trouble is in store for both physician and pharmacist.

Pharmaceutical Training and Education.

By W. A. B. Hutton, Winnipeg.

Sixteen years is probably about the average (and in my opinion should be the minimum) age at which a boy enters a drug store for the purpose of learning a combination of a business and a profession, the qualifications which make for success in which are, in very many respects, decidedly unique. He is expected as a rule to do the work of a character required to be done by a grocer's or a butcher's boy; yet he is supposed to have an education above the average and has to enter badly handicapped on a lengthy course of study. His hours are necessarily long—the early closing by-laws are not for him — even on Sundays and holidays his stint is demanded of him. I have said he is supposed to have an education above the average, and so he would if a thorough knowledge of the work laid down in the curriculum of the association were demanded of him. If a high standard of pharmaceutical education is to obtain in Manitoba the beginning must be made by requiring proper qualification on the part of the candidate before registering him as a certified apprentice.

If before being allowed to start his pharmaceutical training he is compelled to pass his examination, and such a one as shall prove that he really has been studying, not merely cramming for a few weeks, it will go far towards securing a student possessed of a grounded habit of study. Unless he does possess this habit we all know what happens when his evening off comes. Then his mind naturally does not turn to study, and if from a sense of duty he overcomes his desire to go out and amuse himself, and instead takes down his books, the chances are that he will do a little desultory reading and after becoming thoroughly muddled, either go to sleep or start in on something more congenial to his taste. The total result being unmethodical and spasmodic efforts not to learn but to get together sufficient scraps of knowledge to enable him to get through his examination somehow.

That in the past our certified apprentice has not had the qualifications which he should possess I am quite confident and I am sure that examiners of the association will agree with me that there has been abundant evidence in the papers they have examined in the shape of spelling, which sometimes could not even be classified as phonetic—the lack of ability to express himself intelligently, and as for his arithmetic, a question involving only a rudimentary knowledge of mathematics, has seemed to produce profound cerebral inertia.

The council of the association require that he shall pass a satisfactory examination on physics. During my experience as a teacher I have repeatedly found that his ideas about the simplest natural phenomena were of the vaguest character—even the rise and fall of the barometer has been as Greek to him.

The question is how to remedy this state of affairs. I have already indicated the cause and I am satisfied that if the members of the association refused to have a boy in the store until he had passed his examination it would in the end be better for all concerned.

I have heard it urged that if the standard of entrance were raised there would be a difficulty, particularly in country districts, in obtaining apprentices. Surely this must be a mistake. If for a moment you consider the very large number of students attending the high school and university to-day and the overcrowding of the professions, you cannot believe it possible that difficulty will be met with in obtaining boys with fair education to recruit your ranks.

I will not dwell longer on this part of the subject for I have a few words to say with reference to the course of the apprentice after starting on his work proper. Supposing him to be equipped with a good preliminary education, how best can he make use of his time? At the start his work is anything but interesting and often decidedly menial, but necessary that he may be taught obedience, care and cleanliness. Here at the very beginning his employer can do much to make or mar his future success. If he is treated as an errand boy and as rather a necessary nuisance, and provided he accomplishes more or less satisfactorily the tasks set before him, is let severely alone, then indeed, he is to be pitied, and a very crude product will be the result.

If, on the contrary, he shows a willingness to work and and to learn, and his employer takes an interest in him and sees that he is enabled to devote say an hour a day in directed study. If he is fortunate enough to be in a store where the tinctures are not all made from fluid extracts and where as many as possible of the galenical preparations are made on the premises, and where the various steps in their manufacture are explained to him. If the prescriptions received at that store are written by medical men who think for themselves when they prescribe and are dispensed by the mixture of preparations he has seen made, then will that apprentice render an account of himself of which all concerned may well feel proud, when he goes up to attend his lectures and pass (for he will) his examinations.

There are certain studies to be taken up before attending lectures, such as reading and dispensing prescriptions and more or less practical pharmacy. English weights and measures should of course be mastered, and if in addition he is familiar with the metric system he will find it of great help to him when taking his course of lectures. Until the Association is able to build and equip a suitable college, students must depend chiefly on their employers for instruction in practical pharmacy and it is strongly to be hoped that members will bear this in mind.

Whether the student decides to take his lectures one course at a time or follow the minor immediately by the major, he should arrange to devote his whole time to his studies and not attempt to work in a store while preparing for examination.

The question of the advisability of leaving the lectures to the last or taking the minor course early, say just before the time he is permitted to go up for his minor examination, is open to a difference of opinion. In the latter case he should certainly be able to make better use of his time in the store, and should have a better idea what to read for his method of study will have been increasingly systematized.

Chemistry is one of the subjects giving most difficulty to the beginner, but if he has diligently studied his text book on Physics not a few of the rough places will have been made smooth for him. He should read carefully the first portions of Attfield, particularly the pages dealing with chemical philosophy, then the names, symbols and atomic weights of the chief elements used in a pharmacy should occupy his attention and if his employer will occasionally question him in the time set apart for study, so that the student's progress may be judged, the results will amply justify the time and trouble spent.

There are some things which I think we are all apt to lose sight of, and one of these is, I am afraid that we have not been just as progressive as we might have been. In the East, Canada as well as the States, higher pharmaceutical education has made rapid strides of late and I am inclined to think that the inducement of a well-earned university degree is proving very attractive to a superior class of student, and the progressive influence wielded by these men will be more and more apparent, and I should not be surprised if it should prove to be not little of an off-set to the encroachment on legitimate business by department stores and grocery-store-patent medicine competition.

Why should not the Pharmaceutical Association of Manitoba give to her students the opportunity of obtaining a university degree, I know not. Our university has by its charter the power to grant such a degree.

There is only one real obstacle in the way that I know of—the standard of matriculation. The university entrance examination is really but a slight advance on the one required by the Association (comparison of requirements).

If it be thought too much to compel all students to obtain a degree in order to procure a license, why not try for some arrangement similar to that which the Ontario College has? This would give two classes—Association Licentiates and University Graduates.

Frederick Stearns & Co.

Short Talks on Pharmacal Subjects—No. 23.

Cod Liver Oil

"AUTHORITIES AGREE that long before they came in contact with civilization, the Greenlanders, Laplanders and Esquimaux employed Cod Liver Oil as a medicine. The method used by these primitive people in catching the fish and obtaining the oil was exceedingly crude. The livers after being taken from the fish were exposed to the sun until the liver substance was gradually disintegrated and the oil exuded. The introduction of iron vessels, which occurred later, rendered the application of heat possible, and a larger amount of oil was obtained. The improvement in the process was one of quantity, but it is a question whether it was one of quality. In 1853 a new process for the manufacturing of Cod Liver Oil was introduced known as the steam process. The colorless oil produced by it was so completely different from the light brown oils hitherto in use and manufactured by the old process, that, according to its inventor, it was difficult to get people to believe that it was Cod Liver Oil at all. With the advent of the steam process there has not only been a great change in the color of the medicinal Cod Liver Oil from light brown to a very pale straw color, but something has been left out of the oil, namely, what is known by chemists as extractive matter. Richter, Schenck, De Jongh, Trousseau and Pidoux, Walsche, Oberghaus, Bouchardat, and a great number of other French, Dutch and German medical men consider the light brown Cod Liver Oil to be the most efficacious, and while it is admitted that the pale oil is more sightly in appearance, some of the best European physicians of to-day are protesting against it, and urging with good show of reason, that the active curative constituents which distinguish Cod Liver Oil from other oils and fats, such as butter, cream, the fat of meat, etc., etc., reside in the extractive matter left out of the oil by the modern steam process. They are accordingly prescribing the light brown oils of De Jongh, Isdahlt, *et al*, and claim to obtain much better therapeutic effects therefrom.

"Now, when it is considered that the reputation of Cod Liver Oil was made several hundred years before the advent of the steam process, and that during all these years it maintained its high position as a medicinal agent, it must be admitted that the old time Cod Liver Oil possessed great value. Many of the virtues ascribed to Cod Liver Oil cannot be accounted for on the plea that it is simply a valuable fatty food, because no other fat has produced the same effects on the system as the oil derived from the liver of the cod. Since 1822 leading scientific men in various parts of the world have been investigating the subject of Cod Liver Oil chemistry for the purpose of ascertaining if possible to what principle, or principles, the peculiar alterative or stimulating properties of the oil were due. These researches have finally established the fact that the source of the extractive matter found in the oil is the liver parenchyma, and its occurrence in the oil is purely incidental. The fatty matter consists of nothing but fat, while the extractives contain the peculiar principles which have given Cod Liver Oil its great reputation as a therapeutic agent for so many centuries."

The above is an excerpt from our brochure "From Source to Finish," which gives a detailed description of the preparation of Wine of Cod Liver Oil. This little book we will gladly mail to any pharmacist who may be interested enough in the subject to write us for a copy.

Frederick Stearns & Co., Manufacturing Pharmacists,

WINDSOR, ONT.

Detroit, Mich. London, Eng. New York City.

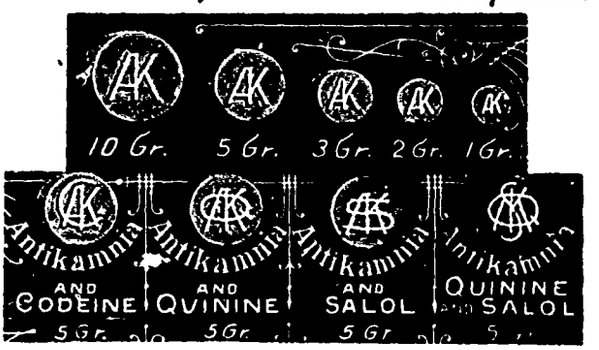
EASTERN OFFICE AND DEPOT: Frederick Stearns & Co., No. 1 Platt St., N.Y. City.

ANTIKAMNIA SUBSTITUTION

SPECIAL NOTICE

All cases of suspected substitution called to our attention will be investigated, and upon incriminating evidence, the substitutor will be reported to every physician and druggist in the surrounding territory.

Honest Pharmacy Must Have Honest Competition.



Antikamnia Powdered, Antikamnia Tablets and Combination Tablets are made solely by us and are put up in 1-oz. packages only.

NEVER IN BULK.

Information Respecting Substitution Thankfully Received

All Correspondence Confidential.

ADDRESS:

THE ANTIKAMNIA CHEMICAL COMPANY, St. Louis, Mo., U. S. A.

Wampole's

BEEF, WINE, AND IRON.

In Pint Bottles..... .....$5 00 per doz.
Winchester (½ Imp. Gal.)..... 2 00 each.
Imp. Gallon, in 5 gal. lots, and over 3 50 per gal.

With handsome lithographed labels. Buyer's name prominently Printed on same, at the following prices:

¼ Gross lots, and over.....$60 00 per gross.
(Packed in One-Dozen Cases.)

We use a Pure Sherry Wine in the manufacture of this article, assuring a delicate flavor, and we guarantee the quality to be equal to any in the market.

We invite comparison with other manufacturers, and will cheerfully furnish samples for that purpose.

Your early orders and enquiries solicited through Wholesale Jobbers, or direct from us.

Henry K. Wampole & Co.,

MANUFACTURING PHARMACISTS,

Philadelphia, Pa.

Canadian Branch:

36 and 38 Lombard Street, TORONTO.

Trade Varieties of a Few Drugs and How to Distinguish Them.

By C. F. Nixon, Ph. G., President Massachusetts State Pharmaceutical Association.

What I shall have to say in this paper will be in relation to distinctive trade varieties of crude drugs, with special reference to their distinguishing features. I have specimens of nearly all that will be mentioned.

Cardamons.—There is much confusion in the market relative to cardamons. The common trade varieties are Mangalore, Malabar and Aleppy. These are distinctive enough in character, and when the supply came from natural sources there was no difficulty in obtaining them true to name; but now they are largely cultivated in India, Ceylon and the East Indies, and more or less mixed before reaching us. The finest in appearance, and the most expensive, is the Mangalore. They are of a light buff color, but slightly striated, large and plump, but are not well filled. The seeds proper are more or less shriveled, varying greatly in color, from light red to dark brown, and of inferior flavor. The light color of the capsules, and the inferior condition of the seeds, is due to a process of bleaching. The present price is $1.50. They yield 68 per cent. of seeds. The Malabar comes next in market value. They come from the same district as the Mangalore, and have the appearance of being the same cardamon, partly bleached. They are darker in color, more striated, and not quite so plump. They yield 72 per cent. of seeds and cost $1.25. The Aleppy is smaller, still darker in color, decidedly striated, and the capsules are well filled. They yield 78 per cent. of seed of a dark brown color and superior flavor. They cost $1.00. Although cheapest in price, and least attractive in appearance, I believe the Aleppy the most desirable for manufacturing purposes, and for sale over the counter as well.

Coca is a native of South America. There are two distinct types, the Bolivian and the Peruvian. The former does not reach our market. We have, however two distinct varieties, both coming from Peru, known as truxillo and huanuco. The truxillo, grown in the northern portion of Peru, is a thin, fragile green leaf, one to two inches long, usually much broken. It yields a fine colored green powder. The huanuco is rather larger, thicker, somewhat coriaceous, and not much broken. It is brownish-green, and yields a less handsome powder than the truxillo. It is probable that the huanuco comes from the same coca plant as the Bolivian, but grows in Peru. It yields a larger percentage of cocaine than the truxillo, and is preferred for all purposes.

Buchu.—The two official varieties are barosma betulina and barosma crenulata. The betulina is the short, broad leaf, notched at the apex, and the one in general use. Crenulata is practically out of the market. It is a short, ovate leaf, tapering both ways. The long buchu, barosma serratifalia, is not official. It is long and very narrow, 1 inch long by 1-5 inch wide. It yields but one-third of the active principles that are found in the betulina, and costs one-half more.

We have two official varieties of senna, cassa acutifolia (Alexandria), and cassia augustifolia (India or Tinnevilly). The latter is usually found in the shops, being preferred for its fine appearance. It consists of long, narrow, unbroken leaves ¾ to 1½ inch long, and is usually very clean. Alexandria senna is much smaller, thinner, very much broken up and more or less dirty. It is, however, the more desirable, as it contains a larger percentage of active principle. It costs about 40 cents, the India 18 cents.

The official ipecac is from cephaelis ipecacuanria, Brazilian or Rio ipecac. It is grayish brown, or blackish, 1-12 to 1-6 inch in diameter, with thick, strongly annulated bark, transversely fissured. The wood cord is small, white, tough and fibrous. There is in our market a closely allied species, cepaelis acuminata, carthagena ipecac. It is distinguished from the Rio by being thicker, of a light brown color, and less distinctly annulate. The relative medicinal value has not been satisfactorily determined. It costs about 10 per cent. less than the Rio.

Cinchona.—There is no difficulty at this time in obtaining both red and yellow barks of proper alkaloidal strength, but there is difficulty in obtaining barks of distinctive botanical species. Twenty-five years ago our supply came wholly from natural forests in South America, while at this time very little comes from that source. Immense forests of cinchonas have been planted in India, Ceylon, Java and other eastern countries, and most of our barks come from these countries. It was early found that by hybridizing various species, barks yielding much larger percentages of alkaloids were obtained, so that most of the cinchonas come from these hybrids. By this process much bark is produced, yielding as high as 12 per cent. of quinine, while the official requirement for calisaya is but 25 per cent. of quinine, or 5 per cent. of total alkaloids. These high percentage barks do not, however, come into the general market, all being taken by the large quinine manufacturers.

The calisaya barks are cinnamon brown merging into the red, and finely striated on the inner surface. The red barks are darker and more decidedly striated.

There are three official species of cinnamon, all quite distinctive. Cinnamonum zeylanicum, Ceylon cinnamon, is the very thin papery variety, rolled several layers in the quills. It consists wholly of the inner bark, is of a light yellowish brown color, and good flavor. Cinnamonum, cassia the common Chinese cinnamon, is the very thin papery variety, rolled several thicknesses, about 1-12 inch, of brown color, with the outer bark imperfectly removed, of inferior flavor. Cinnamonum saigonicum is the new official saigon cinnamon. It is very thick, about 1-6 inch, of dark brown color, consisting of the whole bark. It is of the purest cinnamon flavor. The relative cost is: Cassia, 12 cents; Ceylon, 40 cents; Saigon, 45 cents.

At the present price of vanilla bean it is worth while to know something of the market varieties. The official vanilla planifolia is a native of Mexico, and is cultivated in several tropical countries. Other species are natives of South America. The Mexican bean hardly needs description except to compare the other varieties with it. The pods are 8 to 12 inches long, one-third inch thick, tapering at both ends, the base being hooked, color blackish brown, wrinkled and slightly roughish to the feel, having the distinctive delicate vanilla odor. The present price is $16. The Bourbon vanilla most closely resembles the Mexican in odor, but differs in having a waxy feel, is a trifle shorter, has more crystals on the surface, contains more vanilla, makes a stronger extract, and costs $12. It is said to resemble tonka in odor, but I am unable to detect it. The bean known as South American resembles the Mexican in having a roughish feel, but is shorter—4 to 8 inches—of lighter color and inferior odor. It costs $6. Tahiti vanilla is much like the Bourbon, but shorter and thicker, with inferior odor. Costs $5. The last two are used principally in cut vanillas, so that unless we have implicit confidence in our dealer, we should buy whole vanilla, or look out for the price. Brazilian vanilla is very different from the other varieties. It is 3 or 4 inches long, very plump, one-half inch or more thick. I have never seen it in the general market, but it may be used by essence manufacturers. It is of very inferior odor, and costs $5.

There are too many varieties of acacia to go over them here. I refer to them to emphasize the fact that the true Kardofan gum should be used in preparations. It costs more per pound, but is the cheapest to use, as mucilage or syrups made of it will keep much longer without souring. It is distinguished by being whiter than other varieties, opaque rather than clear, due to many fissures. It is in smallish tears, or more commonly in fragments.

It is rather easy to get mixed up with the different kinds of aloe, especially in the powdered form. We have three principal commercial varieties in the market, two of which, the Socrotrine and Barbadoes, are official. Socotrine aloe is the best in all ways, and is the only one allowable in official preparations. It is commonly of an orange-brown color, with a resinous fracture, and a rather pleasant saffron-like odor. Barbadoes aloe also resembles Socotrine in color and appearance, but has a rank, nauseous odor. It is used principally as a source for aloin. Cape aloe is not official. It is of a greenish-black color, very glossy, and has a bean-like odor. It is the least active of the aloes. Socotrine costs 40 cents; Barbadoes, 20 cents; Cape, 16 cents. Of course, the Socotrine is most likely to be

adulterated, specially when powdered. Small percentages are difficult to find, but larger amounts may be distinguished by the odor.

Guaiac occurs in the market in three forms. The most common is in irregular masses, of a blackish-green color, containing fragments of bark and wood. Inferior lots sometimes contain as high as 30 per cent. of such impurities. It is occasionally found in rounded tears of various size, from one-quarter to one inch in diameter. This is nearly pure resin, and is of superior quality. It is found, also, in large, homogeneous, clear cakes or masses, prepared by melting and straining. If pure, this is, of course, of superior quality, but in this form is sometimes adulterated with various pine resins. Such adulteration may be detected by treating with hot oil of turpentine, which dissolves pine resins, but does not effect guaiac resin.

The official rhubarb is the Chinese, from rheum officinalis, and probably other species yielding roots practically identical. It comes in round or flattish sections, of a yellowish or reddish-brown color, internally mottled with streaks of red and white, but without distinct rays. When chewed it is quite gritty. It is shipped direct from China, or by way of India, when it is known as India rhubarb. The matter of selection depends upon the quality, rather than the exact geographical source. The European rhubarb, raised largely in Austria, is of inferior quality. It is derived from rheum rhaponticum, the common garden rhubarb, and other species. It is distinguished from the Chinese by being lighter in color, not so decidedly mottled, is radiate, and but slightly gritty. It costs about a-third less than the Chinese.—*N. E. Druggist.*

Old Corks.

The following extract from a recently published interview with an old cork merchant shows that old corks are anything but useless:

"These," said the interviewed, leading the way to a long, high room, lined on each side with immense wooden bins, "are all old corks. This first bin you see is filled with mixed or broken cork articles. I pay something like fourpence or sixpence a pound for this refuse, and, after being washed in hot water and then dried, it is ground fine and sold to Enoleum manufacturers at two shillings a pound.

"These are what we call 'screws,'" he said, leading the way to a bin of old ginger beer and wine bottle corks. "By 'screws' we mean that the corks have been pierced by a corkscrew, which, of course, renders them unfit for remaking into new corks. So we put them through a 'coring' machine, which cuts the inside out of them and leaves a hollow tube. The tubes are then sliced into rings for use in beer and ginger beer bottles. The best quality of wine corks, bought by us for less than a twelfth of their original cost, we obtain from the big west end clubs and restaurants. It is very seldom that the corkscrew goes into the corks in high-priced wine; therefore, it is an easy matter for us to make them into apparently brand new corks.

"The waiters at fashionable clubs and other places where expensive wine is drunk, find that collecting old corks is a very valuable perquisite. Wine corks are our most valuable commodity, and most of the beer bottle corks now in use are old wine corks which have been remade. If it were not for our trade corks would be twice the price they are at present. We remake an enormous number in a year. I employ six men to gather them, and each man has a list of hotels where he must call every week.

"Yes, it is a fairly good business, but when I first started it was better than it is now. Other people soon found out that I had a good thing and followed my example. One man has already made a snug fortune out of old corks, and is now fitting up new machinery, which will enable him to turn hundreds of old corks into new ones in less than an hour."—*Washington Star.*

Do One Thing Well.

Stick to your legitimate business. Do not go into outside operations. Few men have brains enough for more than one business. To dabble in stocks, to put a few thousand dollars into a mine and a few more into an invention is enough to ruin any man. Be content with fair returns. Do not become greedy. Do not think that men are happy in proportion as they are rich, and, therefore, do not aim too high. Be content with moderate wealth. Make friends. A time will come when all the money in the world will not be worth so much as one good, staunch friend.

The moral of this is emphasized by recent events. The reputed richest man in the world, Barney Barnato, of South Africa, and millionaire Creede, of gold-mining fame, committed suicide.—*Ex.*

Suppress the Store Lounger.

Always have a hearty welcome for every one, customer or not, and endeavor to make folks feel at home; at the same time be politic enough to keep your shop free from loungers. Do not encourage your men behind the counter in making a practice of entertaining their personal friends with an hour's "chin." There's no condition so distasteful to a customer as to find several men standing around your shop with no evident business other than to kill time. Have a thoroughly business air about the place and show no disposition to entertain loungers—they will soon realize that their visits are not appreciated.

Sulphur Precipitatum.

T. D. Reed, M. D.

Query 24. Precipitated sulphur seems to be grossly adulterated. Is it possible to obtain it pure in the open market?

This query is somewhat ambiguous, and its meaning must be assumed. In the first place the expression "grossly adulterated" may be taken as the equivalent of "not up to the standard of the Pharmacopœia."

The processes of manufacture of the British Pharmacopœia and United States Pharmacopœia are similar, up to the point of the addition of hydrochloric acid. The U. S. P. requires the acidulation to be stopped while the calcareous solution is still alkaline. The B. Phar. allows the addition of acid up to slight acidity; the product in the former case being greenish-yellow, in the latter almost white.

In the quantities used the resulting compound in solution is CaS; as, however, this tetrasulphide is not well known, text book writers assume that the combination is $(CaS_2)_2 + CaS_2O_3$. This assumption is plausible, but the equation given in some text-books, as representing the result of the Pharmacopœial process $= (CaS_2)_2 \div CaS_2O_3$, is not tenable, as in it less than half of the sulphur is accounted for.

The product known as "Lac Sulphur," was formerly official, and from recent inquiries made is still extensively sold, and frequently dispensed for sulphur precipitatum. This product, the result of a former pharmacopœial process, in which sulphuric acid is used as the precipitant, contains the whole of the calcium that was in the solution, amounting in the finished product to 58 per cent.—as gypsum - $CaSo_4D$, being practically insoluble.

This undesirable mixture, though not to be classified as willful adulteration, clearly comes under the legal classification of "sophistication" or "adulteration" and "not according to the Pharmacopœia." It is in reference to this mixture, doubtless, that this query is framed.

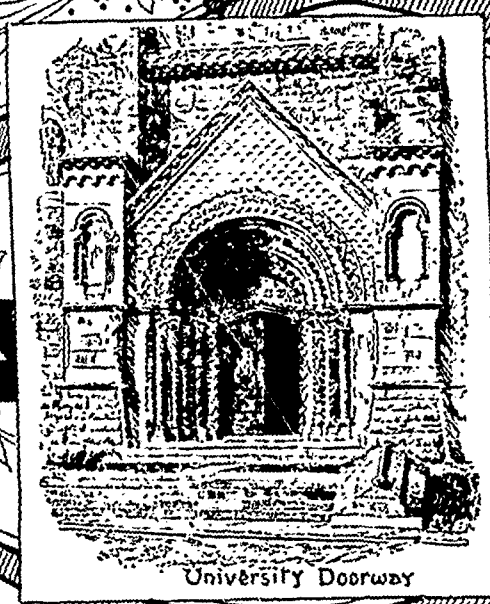
The second sentence of the query, "Is it possible to obtain it pure in the open market?" is susceptible of answers in two directions. It may be answered in the matter of the pharmacist, as a buyer from the wholesaler, or in the matter of the public buying from the retail pharmacist. An answer is attempted to meet each supposition.

That the pharmacist may procure a proper article of sulphur precipitatum in the large commercial centres is evident, for pure samples were obtained from wholesalers in Montreal, New York and Philadelphia.

The retail drug trade of the Province of Quebec gets its supplies almost entirely from seven large houses in Montreal. The stocks of these were examined: Two had both the calcareous and pure in stock, three had only the impure, one only the pure, and one "hadn't any in stock" at the time of inquiry.

British Association in Toronto

UNIVERSITY BY MOONLIGHT.



University Doorway

In 1884 the British Association for the Advancement of Science held its annual meeting in Montreal, and this year, for the second time in the history of the association, it has met outside of Great Britain.

The meeting this year in Toronto has been an unqualified success in point of attendance, the interest taken in the meetings by the members and associate members, and the social features which formed a portion of the programme for the entertainment of our visitors.

The reception given by the representatives of the Dominion, the Province of Ontario, and City of Toronto were enthusiastic and well received.

Their visit has certainly been an enlightenment to many who had hitherto very ill-formed ideas as to the nature and extent of this country, and its advancement in matters of scientific progress.

We have pleasure in presenting in this issue some excellent portraits of some of the leading members amongst our visitors, foremost amongst which is that of Sir John Evans, the newly-elected President of the Association, also short notices of some of the valuable papers discussed.

The first day of the meeting (Aug. 18th) was devoted mainly to committee meetings, and a reception tendered by the city, at which addresses of welcome were delivered by the Governor-General, Lord Aberdeen, and Mayor Shaw. The first regular meeting of the association was held in the Massey Hall, and was open not only to the members, but also to the citizens generally who had previously secured tickets of admission. The address of Sir John Evans, the President, was a scholarly one, and was thoroughly enjoyed and heartily appreciated.

The theme upon which he dilated at some length was "The Recognition of Archæology," and on this subject no one amongst the British scientists is, we believe, more capable and better authorized to speak.

Space would not permit of our giving even an outline of the masterly address which was fully reported in the daily press.

SIR JOHN EVANS.

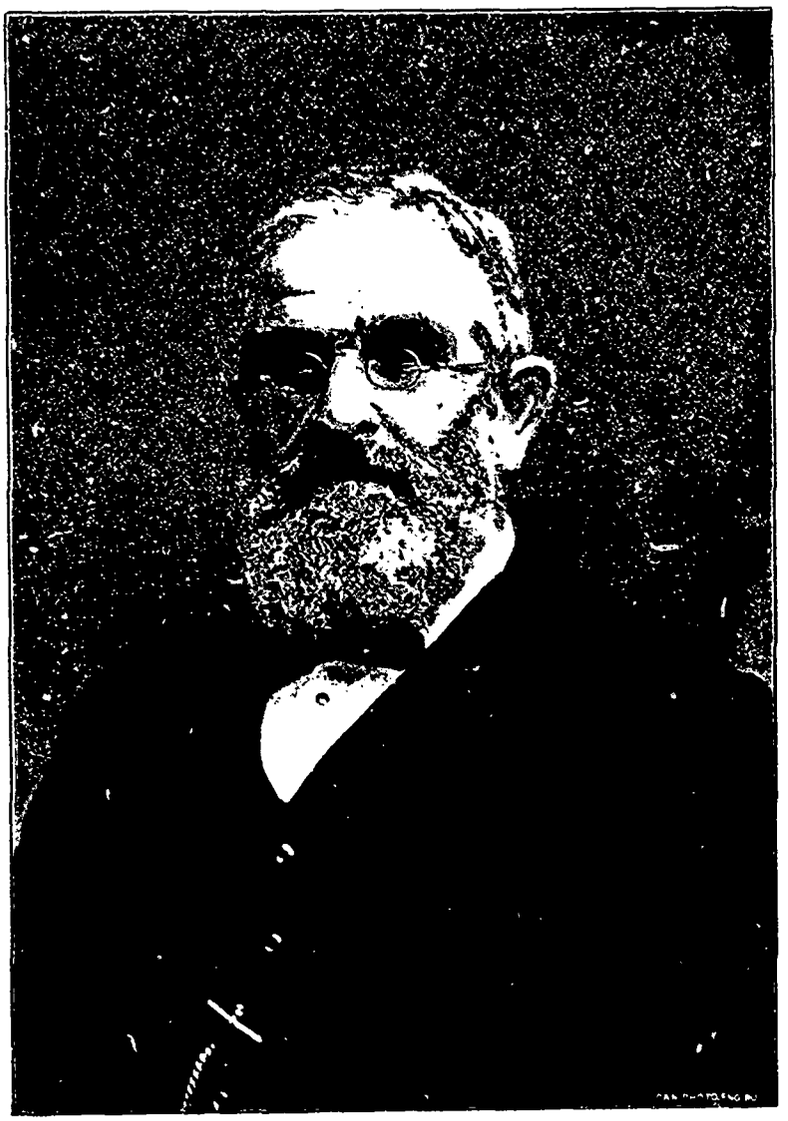
His full title is Sir John Evans, K.C.B., D.C.L., LL.D, D.Sc., Treas. R.S., F.S.A., F.L.S., F.G.S. He is the son of Rev. Arthur Benoni Evans, who was head master of Market Bosworth Free Grammar School, in Leicestershire. Sir John was born in 1823, in Burnham, Buckinghamshire, and was educated at a boarding-school at Dachet, near Windsor, at Market Bosworth, and in Germany.

As a boy Sir John had a great predilection for geology, archæology, heraldry, natural history, and especially numismatics. He has belonged to the Numismatic Society of London which, in 1887, voted him its gold medal; the Society of Antiquaries, as President of which, in 1885, he became an ex-officio trustee of the British Museum, and was promptly appointed a member of the Standing Committee of that body; the Geological Society which, in 1880, awarded him the Lyell medal: the Royal Society, in which he holds high office; the Anthropological Institute, of which he has been President; the Society of Chemical Industry, of which he has been President: the Institute of Civil Engineering, and many other learned societies.

His connection with the British Association for the Advancement of Science is of long standing, as he became a member in 1861. He presided over the ethnological department of the biological section at Liverpool in 1870: over the geological section at Dublin in 1878, and over the anthropological section at Leeds in 1890. At the Southampton meeting in 1882 he delivered the lecture to the operative classes, the subject being "Unwritten History, and How to Read It." In 1877 he was given the honorary degree of D.C.L. by Oxford, in 1890 that of Sc.D. by Cambridge, and in 1878 that of LL.D. by Dublin. He was created a K.C.B. in

1892, and in 1881 the rank of Commander of the Ancient Order of St. Thiago was conferred upon him by the King of Portugal.

The following is a list of the societies to which Sir John Evans belongs: Numismatic Society of London, 1849, President since 1874; Society of Antiquaries of London, President 1885-1892, now Vice-President; Geological Society of London, President 1874-1876, now Foreign Secretary; British Association, member since 1861; Royal Society, Fellow 1864, Vice President 1876, Treasurer 1878 to present time; J. P. for Herts and St. Albans 1870, Deputy Lieutenant since 1876, High Sheriff for Herts 1881, Deputy Chairman of Quarter sessions 1887 Chairman 1880 to present time; D. C. L. Oxford, 1877; LL. D. Dublin, 1878; Sc.D. Cambridge, 1890; Deputy Chairman Herts County Council 1889-1897; President Society Chemical Industry, 1892-1893; Trustee of British Museum, 1885 to present time; K.C.B., May, 1892; Commander Order of Saint Thiago of Portugal, 1880; hon. member Numismatic and Antiquarian Society of Philadelphia, 1879; correspondent of the Institute of France, 1887; American Academy of Arts and Sciences, hon. member, 1870; member of the Numismatic Societies of France, Switzerland, and Belgium: hon. member Anthropological Society of Washington, U.S.A., 1883; member of the Swedish Academy, 1875; corresponding member of the Academy of Sciences, Bologna, 1897, etc., etc.



Sir John Evans, K.C.B., D.C.L., LL.D., D.Sc., F.S.A.
PRESIDENT.

LORD LISTER.

Lord Lister, the retiring President, is one perhaps with whose name our readers are more familiar than any other member of the association as the discoverer of the antiseptic methods, which have revolutionized surgery. He was born in 1827, and was educated at a private school and at University College, London, taking his B.A. in 1847. Entering on medical studies at University College, he graduated M.B. in 1852, going then to Edinburgh to see the surgical practice there. He was soon appointed assistant surgeon to the Royal Infirmary and extra-academical lecturer on surgery, rapidly coming to the front as a brilliant young surgeon. He commenced writing on scientific subjects while still a student, and between 1857 and 1860 he wrote a number of papers on important physiological subjects. In 1860 he was appointed Regius Professor of Surgery in the University of Glasgow, and he was so shocked by the prevalence and fatality of so-called hospital diseases that he plunged into pathological studies, which resulted in his epoch-making discovery of the antiseptic system. Since then his writings have been chiefly devoted to one branch or another of the germ theory of disease. The antiseptic system was fairly launched about 1867, and in 1869 Lister was appointed successor to his father-in-law, Professor Syme, in the chair of chemical surgery at Edinburgh. In 1877 he was appointed Professor of Clinical Surgery at King's College, London, a position which he held until three years ago.

LORD KELVIN.

Lord Kelvin, long known as Sir William Thomson, is one of the most eminent scientists in the world. The list of his distinctions is G.C.V.O., M.A., LL.D., D.C.L., F.R.S., F.R.S.E., D.L.; Professor of Natural Philosophy, Glasgow University since 1846; Fellow of St. Peter's College, Cambridge; President Royal Society, Edinburgh (3rd time). He was born in Ireland in 1824, and was educated at the University of Glasgow, in which his father was a professor. He displayed his wonderful ability from a very early age, mastering and defending, for instance, Fourier's theory of the flow of heat, when a lad of 14 or 15. From Glasgow he went to St. Peter's College, Cambridge, where he graduated in 1845, as Second Wrangler, and First Smith's Prizeman, also winning the Colquhoun Sculls. From 1846 to 1852 he was Fellow in his college, and in 1846 he received his professorate at Glasgow. From that day to this the history of his lifework has been in no small measure the history of the progress of physical science. There is no department of physical science which he has not enriched and extended by his discoveries. There is hardly any theory in dynamics, heat, or electricity of which his theorems, experimental discoveries and views do not form a great and fundamental part, and in the domain of physical optics he has recently shed much light on some of the most recondite and disputed questions by his lectures and papers on the subject of the dynamics of systems of molecules, and the constitution of the ether. To telegraphy his services have been of peculiar value. He acted as electrician for the Atlantic cable, 1857-58 and 1865-66; he invented the mirror galvanometer and siphon recorder in connection with submarine telegraphy; he acted as electrical engineer for the French Atlantic cable, 1869; the Brazilian and River Plate, 1873; the West Indian cables, 1875, and the Mackay-Bennett Atlantic cables, 1879; and he has invented a mariner's compass and navigational sounding machine, and many electrical measuring machines. The successful completion of the Atlantic cable in 1866 brought him knighthood, and in 1892 he was created a baron.

PROFESSOR H. MARSHALL WARD.

Professor H. Marshall Ward, D.Sc., F.R.S., F.L.S., F.R.H.S., has been Professor of Botany in the University of Cambridge since 1895. Born in 1854,

he was educated at Owens College, Manchester, and Christ's College, Cambridge. He has had a distinguished career, having been awarded the Royal Medal in 1893; is Hon. Fellow of the Manchester Literary and Philosophical Society, the Institute of Brewing, and the Botanical Society of Edinburgh, Fellow of Sydney Sussex College of Cambridge and Hon. Fellow of Christ's College, Cambridge. He was Cryptogamic Botanist to the Ceylon Government, 1880-82; Berkeley Fellow, Owens College, 1882; Fellow of Christ's College, 1883, and Professor of Botany in the Forest School, Cooper's Hill, 1885-95. His publications have been:—"Timber and Some of Its Diseases," "The Oak," "Sach's Lectures on the Physiology of Plants," "Laslett's Timber and Timber Trees," "Diseases of Plants," and numerous memoirs on bacteriology, fungi and plant diseases, etc., in the transactions and proceedings of the Royal Society, Linnæan Society and elsewhere.

PROF. W. R. DUNSTAN.

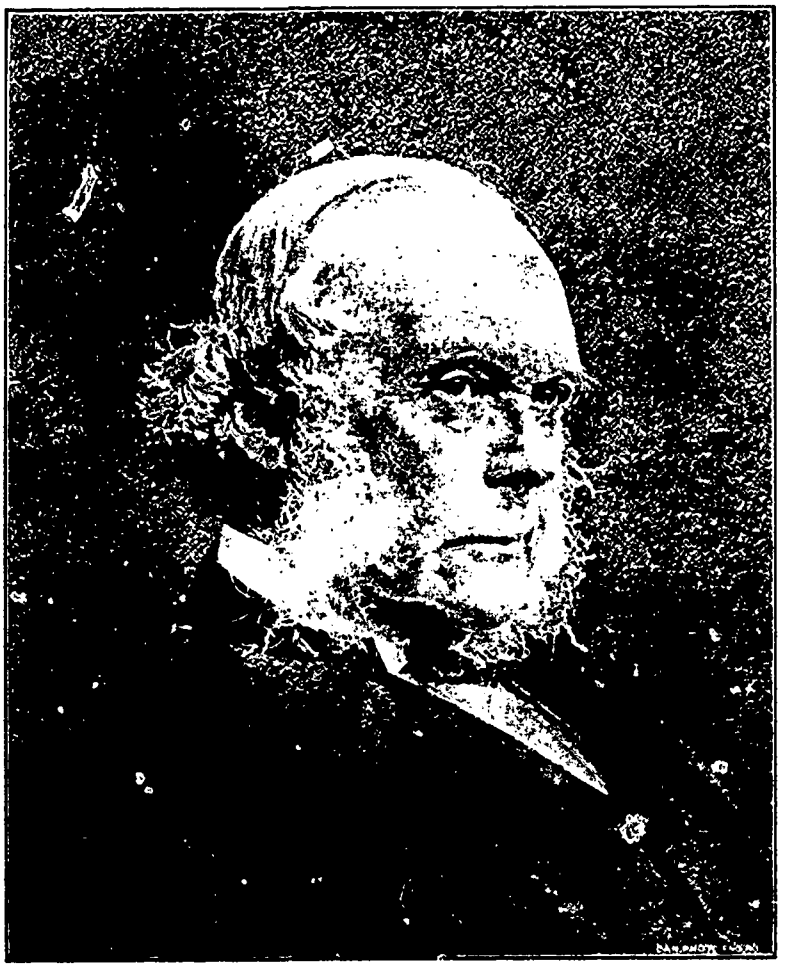
Prof. Windham Roland Dunstan, M.A., F.R.S., is Director of the Scientific Department of the Imperial Institute. He was born on May 24, 1861, at Chester, his father being Governor of Chester Castle, and was educated at Bedford School. In 1884 he was demonstrator of chemistry in the University laboratories, Oxford, and in 1885 was University lecturer in chemistry in its relations to medicine. In 1886 he was appointed Professor of Chemistry, Pharmaceutical Society. In 1892 he became lecturer on chemistry, St. Thomas' Hospital, and he took his present position in 1896. He was in 1897 Secretary of the British Association Committee of Science Teaching; he, in 1896, became a member of the Standing Committee on Physics and Chemistry, Royal Society. He has published numerous scientific memoirs, chiefly chemical, which have been published in the "Proceedings of the Royal Society" and other publications.

PROF. L. C. MIALL.

Louis C. Miall, F.R.S., F.L.S., F.G.S., Professor of Biology in the Yorkshire College, Leeds, was born in Bradford in 1842. His own description of his life is "quite uneventful." He has described the structure of a good many animals, recently the fossil, large and small, among others labyrinthodonts, elephant, and many insects. He has paid special attention to life histories, and to the external circumstances which affect the life of animals, and, among the rest, has tried to show how important is the surface tension of water to many aquatic animals and plants. Among more popular writings he has published "Object Lessons From Nature," "The Natural History of Aquatic Animals," etc. He has paid attention to methods of teaching and has just published a book on this subject, "Thirty Years of Teaching." He has lived almost all his life in Yorkshire.

AN UNDISCOVERED GAS.

Professor Wm. Ramsay, Ph.D., LL.D., D.Sc., F.R.S., president of the chemical section, spoke in his annual address of "an undiscovered gas." This gas he described as having a most peculiar property. While it had an existence it was as yet undiscovered, and therefore unnamed.



Lord Lister, D.C.L.,
The Retiring President.

The learned speaker brought before his hearers, at some considerable length, the evidence at present known to the scientific world of the existence of this undiscovered element. The various arrangements of elements were reviewed, starting with Dobereiner's triadic grouping in 1817, and coming to the methods depending on the atomic weights of elements as suggested by Pettenkofer, and afterwards elaborated on by Kremers, Gladstone, and Cooke. These methods consisted mainly in the seeking for some expression which would represent the difference between the atomic weights of certain allied elements.

The upshot of all these efforts was the arrangement by Mr. John Newlands in 1864 of the elements in eight groups, according to the order of their atomic weights. This idea was further developed by Meyer, of Tubingen, and Professor Mendeleiff, of St. Petersburg. It was now known as the periodic law. In each of the eight groups, placed in vertical columns, were the elements forming a natural class, possessing similar qualities and various other properties.

The search for the elements of this undiscovered gas was traced by the speaker through the properties of argon and helium. By means of a table illustrating the differences between the manganese-fluorine, chromium-oxygen, vanadium-nitrogen, and tatanium-carbon groups, he drew the approximate deduction between the atomic weights of helium and argon as 36.

The speaker then related the many experiments made by himself, Mr. Travers, and others, with gases of undoubted chemical unity. One of these proved that it was impossible to separate a gas of undoubted chemical unity into portions of different density by diffusion.

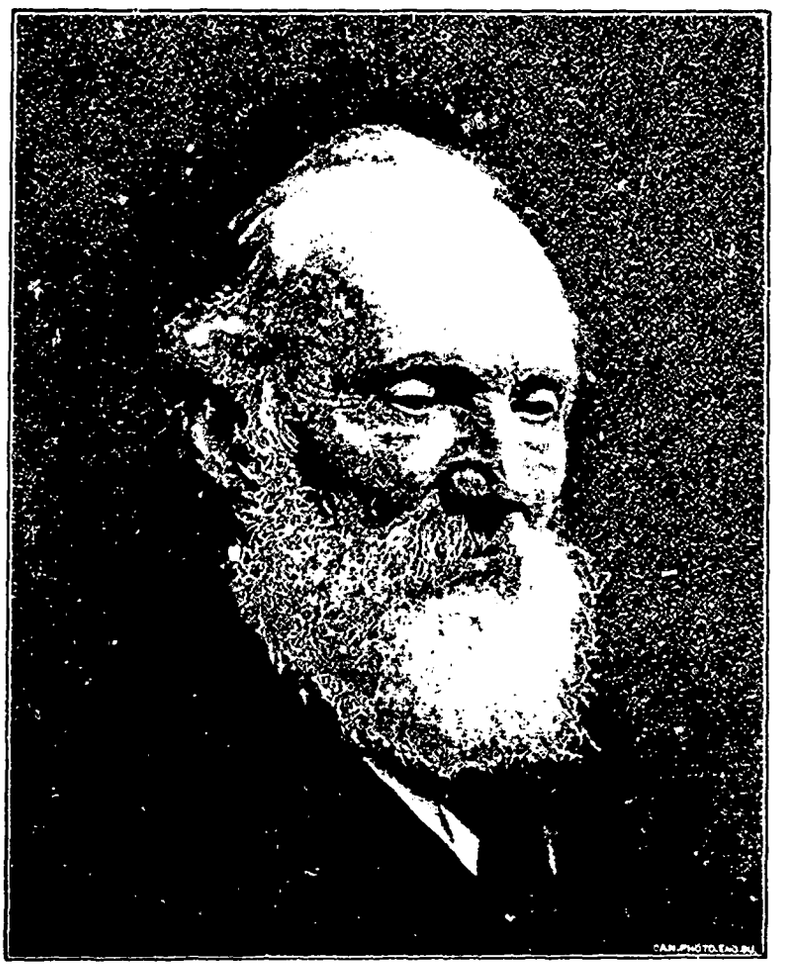
STUDY OF ZOOLOGY.

Prof. L. C. Miall, F.R.S., president of the zoological section, occupied the chair at the meeting of that section. In his annual address he dealt with the advancement made in late years in the study of zoology and the work of the early pioneers in this field. He dealt exhaustively with the study of fish and animal life, and in this connection gave many valuable hints to young students. One of the most important helps to the student, he said, were the zoological stations now maintained by most of the great nations. In his concluding remarks he said: "This hasty review of animal transformations reminds me how great is the part of adaptation in nature. To many naturalists the study of adaptations is the popular and superficial side of things; that which they take to be truly scientific is some kind of index-making. But we

should recognize that comparatively modern adaptations may be of vital importance to the species, and particularly luminous to the student because at times they show us nature at work."

PHYSIOLOGISTS MEET.

The president of the physiological section, Professor Michael Foster, M.A., M.D., D.C.L., LL.D., sec. R.S., delivering his annual address dwelt upon the labors, through which physiology owes much of its present high standing, of Darwin, Claude Bernard, Bowman, Brown Sequard, Brucke, Du Bois Reymond, Donders, Helmholtz, Ludwig, Huxley, and other great scientists. In conclusion, he said: "We physiologists are sorely tempted towards self righteousness, for we enjoy that blessedness which comes when men revile you and persecute you, and say all manner of evil against you falsely. In the mother country our hands are tied by an Act which was defined by one of the highest legal authorities as a 'penal' Act; and though with us, as with others, difficulties may have awakened activity, our science suffers from the action of the State. And some there are who would go still farther than the State has gone, though that is far; who would take from us even that which we have, and bid us make bricks wholly without straw. To go back is always a hard thing, and we in England can hardly look to any great betterment for at least many years to come. But unless what I ventured to put before you to day be a mocking phantasm, unworthy of this great association and this great occasion, England, in this respect, at least, offers an example to be shunned alike by her offspring and her fellows."



Lord Kelvin, M.A., D.C.L., F.R.S., F.R.S.E.

Lord Kelvin's paper on

THE FUEL AND AIR SUPPLY OF THE WORLD

was a most interesting one, and attracted much attention not only from the well known fame and ability of the speaker, but also from the fact that the subject appeared to appeal to his hearers.

The great scientist spoke for about half an hour, and his remarks were listened to with the closest attention. There was much quiet humor in his speech, particularly in the quite savage attack he made upon the English system of weights and measures, whose early downfall he looks forward to with delight. His Lordship said that, as his audience knew, all known fuel is the residue of ancient vegetation. Some of it is the residue of extinct animal life, fish oil for example. He did not intend to consider how much of it was due to animal life, as it was all due to vegetable life in the end. All animals either live on vegetable food or on other animals which lived on vegetable food, or on other animals which lived on other animals whose food was vegetable life. The total potential energy of all animal life, alive or dead, is primarily due to the action of sunlight on vegetation. Is it probable that there is unknown fuel of primeval origin that existed on the earth before plant or animal life was created? There are the strongest possible reasons for believing that there was no fuel on the earth at the time when life came upon it.

Lord Kelvin then made a slight digression upon the process of the formation of the earth, in which he stated that it was quite possible that at the centre of the earth there is molten gold or native iron.

When sunlight does its work in extracting from plants their substance of carbon and oxygen, generally from water vapor, it rejects oxygen, so that for every kilogram of vegetable substance there must be a certain quantity of oxygen delivered into the atmosphere. Taking an average fuel, it takes three tons of oxygen to burn one ton of coal. Some fuels require more than this and some less, but they may be all reduced to this average. The total fuel supply of the world cannot be more than the total oxygen of the world. Every square metre of the earth's surface bears ten tons of air, of which two tons is oxygen. The total oxygen of the whole earth will have to be reckoned. The area of the earth in acres is 124,000,000, or 510 million million square metres.

What is the total fuel of the earth? There are three tons of oxygen to each one of fuel; 510 million million square metres correspond to twice 510 million million tons of oxygen, and the third part of that is 340 million million tons; 40 million million tons of fuel is equal to, or greater than, all the fuel of the earth, wood, plants, vegetable mould containing a certain amount of fuel; the coal measures, shale, oil, etc., have all to be taken into account, and the unknown fuel under the ocean, and it is to be hoped that the geologists will tell us something more than we now know of the geology of the solid matter of the depths of the ocean. This is probably the exact amount, because probably all the oxygen of our atmosphere came from primeval vegetation—not within 1 or 2 per cent., but very nearly.

It is interesting to compare that with the portion of the earth with which we are well acquainted. Taking England and Scotland, with which he was most familiar, the coal supply commission appointed in 1831, which included among its members Sir Roderick Murchison and Sir Andrew Murchison, estimated the purely available coal supply of the world as being 146 thousand million tons. The area of the world is about two thousand times that of Great Britain, and the total fuel supply is just 2,000 times that of Great Britain.

In speaking of the area of Great Britain Lord Kelvin had occasion to speak of the square mile, and this was one of several portions of his address where he attacked that venerable institution. "I have," he said, "a great admiration for everything British—British colonies, this Dominion here—but I do hate and detest the British square mile." (Laughter.) A few moments later he entered a plea for the kilometre, which, he said, was quite as convenient for everyone, bicyclists included, as the square mile, and he hoped that every bicycle made in Canada from now on would have its cyclometer in kilometres.

This 146,000 tons is at the rate of six-tenths of a ton per square metre. Three times this would give one and one-eighth tenths of the oxygen required to burn all the readily available fuel supply. The com-

Prof. W. R. Dunstan, M.A., F.R.S.
Vice-President Section B—Chemistry.

missioners estimated 56 thousand million tons more of coal as probably existent at lower and less easily accessible strata. Therefore, if you were to build a wall around the coast of Great Britain and get all the coal on fire at once the coal could not be burned, as the oxygen would be all exhausted. It is asphyxiation or want of coal that we are to face! As Great Britain could not burn all its coal supply, it follows that the coal of Britain is considerably in excess of the fuel supply of the rest of the world, reckoned per equal areas, whether of land or sea.

Prof. L. C. Miall, F.R.S. F.L.S.
President Section D—Zoology.

In discussing the formation of the atmosphere Lord Kelvin declared that life must have existed on the earth for at least 20,000,000 years.

Of the water power of the world Lord Kelvin said that it was of little importance. Of Niagara he pointed out that the 120,000 horse power which would soon be produced there would only be sufficient for four ocean liners, while the whole power of Niagara, estimated at 4,000,000 horse-power, was only sufficient for 100 ocean liners.

The future supply of oxygen which we will have to breathe will have to come from vegetation, and as the coal is burned were it not for increasing vegetation we would die not from want of coal but from want of air to breathe.

BOTANICAL SECTION.

Prof. Marshall Ward, Sc.D., F.R.S., delivered a most excellent and valuable paper on soils and fertilizers. Prof. Ward's address was exhaustive, but deeply interesting. In opening, he briefly alluded to the progress made in the various departments of botany, which were resulting in the specialization of this branch of science—a fact now tacitly, but soon to be

Sir. W. Turner, M.B., LL.D., F.R.S.
President Section H—Anthropology.

openly, recognized. Already the establishment of bacteriological laboratories and a huge special literature, of zymotechnical laboratories and courses on the study of yeasts and mould fungi, of agricultural stations, forestry, and dairy schools, and so on, were signs of the inexorable results of progress.

THE SUN AS A SCAVENGER.

After referring to the growth of specialism in botanical study, and its reward in the form of a wealth of additional discovery, Professor Ward entered upon a short review of some advances in the knowledge of fungi made during the last three decades, dealing particularly with the agency of fungi in alcoholic fermentations. This subject he elaborated on at some length.

Speaking of the destruction of bacteria, he said: "There is one connection in which recent observations on enzymes in the plant-cell promise to be of importance in explaining the remarkable destructive action of certain rays of the solar light on bacteria. As you are aware, the English observers, Downes and Blunt, showed long ago that if bacteria in a nutrient

Mr. W. H. Gaskell, M.D., F.R.S.
Vice-President Section I—Physiology.

liquid are exposed to sunlight they are rapidly killed. Further researches, in which I have had some part, gradually brought out the facts that it is really the light rays and not high temperatures which exert this bactericidal action. That these matters are of importance in limiting the life of bacteria in our streets and rivers, and that the sun is our most powerful scavenger, has been shown by others as well as myself."

The speaker emphasized the need of recognizing that bacteriology only touches animal pathology at a few points, and of

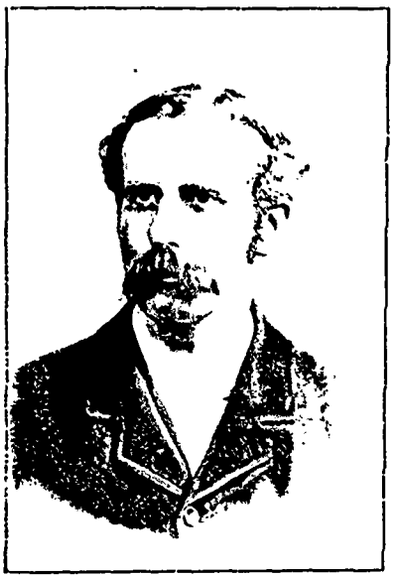
Dr. G. M. Dawson, C.M.G., F.R.S., F.G.S.
President C—Geology.

the public learning that, so far from bacteria being synonymous with disease, the majority of these organisms appeared to be beneficial rather than inimical to man.

Cases were cited as pointing to the conviction that a school of bacteriology which had nothing to do with medical questions, but investigated problems raised by the forester, agriculturist, and gardener, the dairyman, brewer, dyer, and tanner, etc., would yet be established in connection with one or other of the great botanical centres.

Prof H. Marshall Ward, D.Sc., F.R.S., F.L.S.
President Section K—Botany.

Prof F. O. Bowker, D.Sc., F.R.S.
Vice-President Section K—Botany.



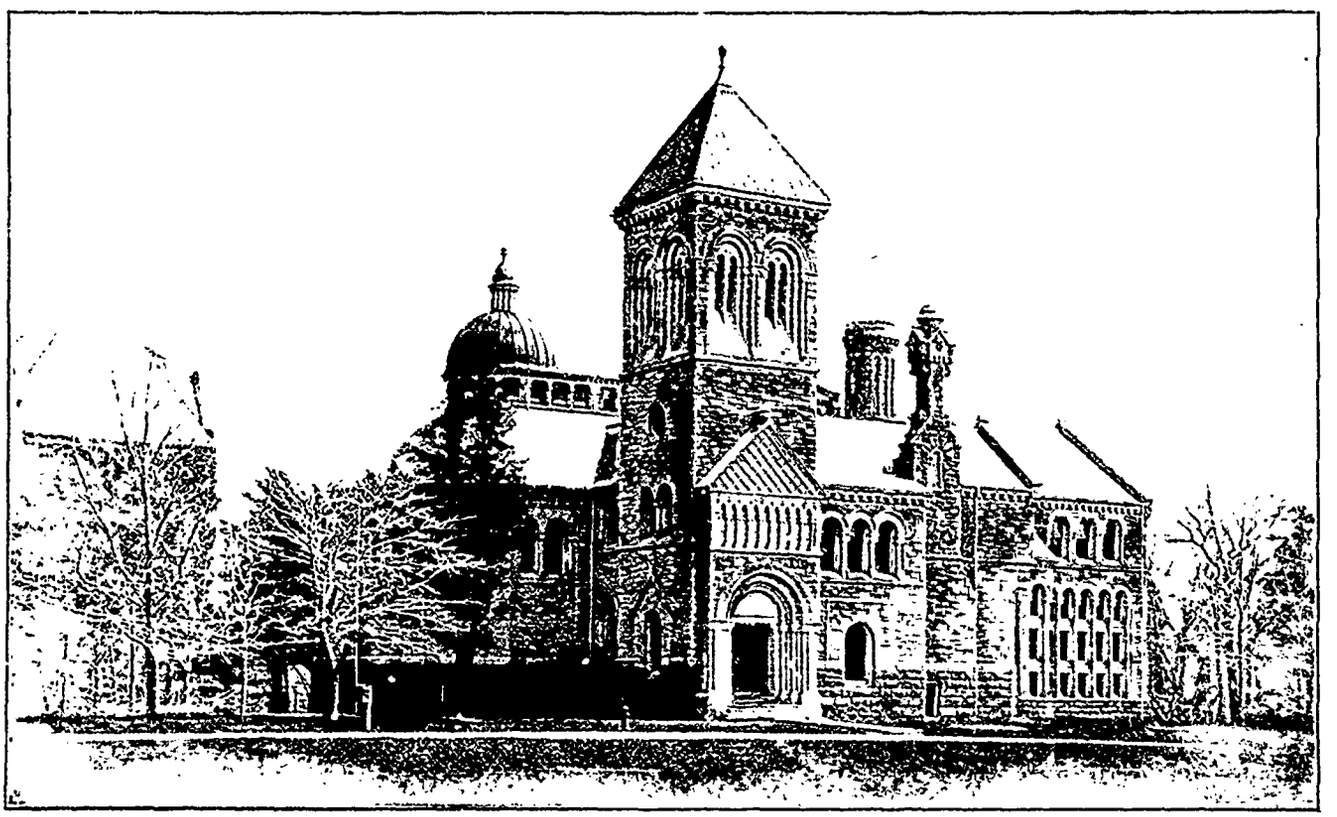
Prof. H. Dixon, M.A., F.R.S.
Vice-President Section B—Chemistry.

Professor Ward dealt with the action of fungi upon the roots of forest trees, and then explained the nature of researches with respect to the urea bacteria and the nitrifying organisms found in manure and soils. With respect to these it was shown that there now exists a sketch of the whole of the down-grade of the cycle of organic nitrogen in nature; it only needs supplementing by the history of the fixation of free nitrogen from the atmosphere by leguminous plants and certain soil organisms to complete the sketch.

FLUORINE GAS

Fluorine gas was made for the first time in America, before the assembled members of the chemistry section. It was a portion of the programme of interesting demonstrations that occupied the day, and its announcement attracted the majority of the distinguished scientists.

The feat was accomplished by Prof. Meslans, head assistant to the famous Prof. Moissan, of Paris, whose researches with fluorine have been one of the features of the recent chemical progress of the world. Prof. Meslans journeyed all the way to Canada to make the demonstration, and succeeded most admirably. His running talk which accompanied the



University of Toronto—Library Building.

experment was in French, and was merely a description of the apparatus and method employed.

Prof. Meslans' apparatus consisted of a bucket filled with snow and salt, in which

Prof. A. R. Forsyth, M.A., D.Sc., F.R.S.
President Section A.—Mathematical and Physical Science.

was immersed a "U" shaped tube containing hydrofluoric acid. Two electric wires dipped down into the liquid and small copper tubes carried away the liberated gases. These tubes first ran into a curious little copper vessel which was filled with solidified carbonic acid and alcohol to keep the temperature sufficiently low to prevent the destruction of the apparatus.

When Prof. Meslans had arranged everything to his satisfaction the current was turned on and the gas began to form. Then a number of experiments were carried on, showing that the curious element attacked practically everything presented to it, bursting into flame the moment it touched charcoal, silicon, alcohol, benzine, sulphur, potassium, iodide, and many other substances. The demonstrations were greeted with many bursts of applause.

Prof. Wm. Ramsay, Ph.D., F.R.S.
President Section B.—Chemistry.

After the conclusion of Prof. Meslans' experiments a paper was read by Prof. Mendola, giving the latest results of Prof. Moissan and Prof. Dewar in their experiments with fluorine. The essay stated that the two great French chemists had at length succeeded in liquefying fluorine and determining its properties in that state.

EARTHQUAKES AND VOLCANOES.

Prof. Milne lectured on the fascinating and interesting subject of "Volcanoes and Earthquakes."

He humorously referred to the president's remarks as to his command of the subject, and disclaimed the extensive knowledge credited to him. His subject he divided into the causes of earthquakes and volcanoes, their use as a subject of study, their scientific value, and also their commercial value. The present idea of the theory of earthquakes, he said, was that 99.9 per cent. of earthquakes were

Rt. Hon. James Bryce, M.P.

caused by the sudden release of elastic strain in our rocks, which had bent, bent until they could bend no longer, and have broken, then oscillated for some time, causing an earthquake, and then have come to a state of rest again. The remaining percentage of earthquakes were caused by volcanic eruption.

In explanation of this theory, Prof. Milne spoke of the gradual cooling of the earth, and therefore of its contraction. The crust of the earth was like a huge arch. He considered earthquakes to be a cause for rejoicing. The tendency of the earth, owing to the action of rain and rivers, was to become level, and earthquakes were needed to controvert this tendency.

On a table on the platform the lecturer had a seismograph, or horizontal pendulum, just brought into Toronto recently. This is an instrument whereby an earthquake disturbance in any part of the earth can be recorded in Toronto. By means of a similar instrument Prof. Milne announced in England on the day it occurred the terrible earthquake that caused such great loss of life in Japan.

At the conclusion of a most interesting talk a vote of thanks was proposed by Prof. Rupert and seconded by Prof.

Prof. M. Foster, F.R.S., D.C.L., D.Sc., LL.D.

Perry, and heartily concurred in by the audience.

Price Generally Indicates Quality.

A medical journal asks the question: "Why do the public consult druggists on *medical matters?*" and answers it as follows: "Such people go to the druggist's because he is accessible; because, as a general rule, he knows sufficient to do no harm, even if he can do no good; and because some medicine is immediately prescribed, given and paid for, and so the transaction is completed. It

Mr. G. F. Deacon, M.I.C.E.

is, therefore, obvious that there exists a distinct public want in the way of first aid and medicine for the thousand and one trivial ailments to which even the

healthy are exposed, and that a number of people do not desire to have a formal medical consultation for such ailments."

There is much truth in this—the pharmacist is frequently burdened with such demands for medical aid. If he deems the requests should be referred to a physician and proposes that course to the person, frequently the seeker for advice will seemingly acquiesce and leave the store—to seek some other pharmacist who is less scrupulous. It may be that it was to meet the demands of such people that doctors conceived the idea of doing a dispensing practice. The experts who stick to prescription writing are asking larger fees because their patients are fewer in number—the majority of people going to the doctor who hands out the biggest bottle of medicine in connection with his fee for advice.

The doctor has the right to dispense medicines, but are the mixtures he gives out always *medicines?* This may seem a queer question, but the fact is that the average dispensing physician is not a competent judge of what is good and reliable. In the old days when prescriptions went to the druggist, the doctor insisted on his using the best of everything in filling them. Now, what does the average dispensing doctor do?—he uses drugs in ready-for-use combinations purchased from the agent who named the lowest price. This is no imaginary condition of things. *The druggist who used* to fill prescriptions for doctors can not now supply them with pharmaceuticals made by first-class firms they used to favor, even when offered at cost in order to retain their good-will. No, they can buy goods with the same ingredients *on the label* much cheaper, and they do it.

What do patients get? Practically nothing. According to the medical journal, which we quoted, most of the ailments doctors have to treat are of a trivial kind, and scarcely need medicine; a little good advice and a box or bottle of inferior stuff from a cheap medicine-mixer's laboratory do the work, and the doctor rests easy. But all cases are not trivial—a patient may need some drug in an active and perfect form—then if the doctor relies on his cheap-bought purchases, his patient must suffer.

How do we know that some medicines sold to doctors are inferior or not true to label? Inference alone suggests it. When a pound of some fluid extract can be bought for the price of the alcohol, drug and bottle, allowing nothing for profit, workmen's salaries, rent of manufactory, etc., it is pardonable to think that some unusual process has been employed in the making. The economy of conducting operations largely, cannot entirely annihilate expense. When the necessary ingredients for an elixir cannot be bought in a large way for the price asked for the finished preparation, what can be expected of the goods furnished? *If facts are called for, it is not so hard to* find preparations which will not stand chemical tests. There are elixirs of phosphates of iron, quinine and strychnine made which the chemist can show to be made from quinine sulphate, strychnine sulphate and citro chloride of iron—in which the phosphoric radical is entirely absent; Hoffmann's anodyne, which contains no ethereal oil, but which has a drop or two of castor oil in it that gives a greasy stain to paper; fluid extracts of potent drugs, which have been made with odorless wood alcohol are not unknown.

If the doctor was such a stickler for purity and quality when he prescribed, he owes it to his patients that he shall be as particular when he dispenses. But, as has been said, ordinarily he is no pharmacist—no judge of quality, except by results—consequently one who may be easily imposed upon by the unscrupulous. Under some favoring circumstances he may be able to buy medicines as cheap as the druggist, but when he finds that he can buy them cheaper, let him beware! Something for nothing is impossible; reduced strength at a reduced price, or substitution; plain and simple is what he will get.—*Western Drug Record.*

Business Maxims.

The following maxims are taken from the *Iron Age*, being contributions from successful business men (*Nat. Druggist*):

Shun strong drink.

Be strict in keeping engagements.

Do nothing carelessly or in a hurry.

Advertise first, last and all the time.

Be sure you are right, then go ahead.

To preserve credit, do not use it much.

A pound of pluck is worth a ton of luck.

Do not wait for trade; hustle—go after it.

Maintain your integrity as a sacred thing.

Watch the leaks—they grow to well holes.

Always be at the head of your own business.

The secret of success is constancy of purpose.

Be honest from principle, as well as from policy.

Push in busy seasons; in dull seasons, still push.

Pay promptly, and collect as promptly as you pay.

Let the other man sell at a loss; you sell at a profit.

Buy advertising as you buy goods—never overstocked.

Employ nobody to do what you can easily do yourself.

Have a place for everything and everything in its place.

Be cautious how you become the security for any person.

Be ambitious without limit, other than the ability to pay.

Keep courteous clerks; be kindly and courteous yourself.

Keep the best stock, the cleanest stock and turn it often.

Whatsoever thy hand findeth to do, do it with thy might.

A pleasant word will often bring back a straying customer.

Never misrepresent goods, nor allow it to be done; it is fatal.

Have enough system to aid your business, not to cripple it.

Be clear and explicit in bargains, and put everything in writing.

Keep your plans and business to yourself, yet be candid with all.

Make your advertisements absolute truths; they will reap golden dollars.

Don't let your business be a stranger in your house; know it thoroughly.

It is worth a thousand pounds a year to have the habit of looking on the bright side of things.

Fear God, be industrious, know your business, spend a little less than you earn, and success is sure.

Prefer short credit to long, cash to credit, either in buying or selling, and small profits with little risk to the chance of better gains with more hazards.

Learn to treat a shabbily-dressed customer with as much civility as you manifest toward the richest of your patrons; the dollar you get from each is of the same value.

Vanillin.

A patent has been granted in France to M. Siegfried, for the subjoined process of manufacture: One part of essence of cloves, three parts of potassium carbonate, and nine parts of water are heated in an open iron pan, fitted with a stirrer and thermometer, the mass being raised to 220° C. as quickly as possible. The vapors evolved during the operation carry away with them the hydrocarbons in the essence, so the work should be carried on in a draught cupboard to avoid inconvenience. At 220° C. the mass is poured into five parts of cold water, one part of crystallized copper sulphate being added, and the whole is heated for eight to ten hours on the water bath; the liquid portion, containing the potassium compound of vanillin, being poured off from the black oxide of copper formed, which is washed in water several times over. The liquids being united, acid is added to liberate the vanillin, which is then extracted by means of ether, and purified in the usual manner. Instead of copper sulphate and alkali, ammoniacal copper oxide or oxide of lead or mercury may be employed in presence of an alkali; but this alternative method is neither so easy to work nor so economical as that making use of copper sulphate or oxide, besides giving an inferior yield.—*Perfumer.*

ERGOTINAL.—Is the trade name for *liquor ammonii ergotinici*, Vosswinkel, which, it is claimed, possesses all of the virtues of ergot without its toxic properties

Investigation of retail stocks was then made. Samples were obtained from 55 reputable pharmacies in Montreal, Brooklyn, Baltimore, New York, St. Louis and Chicago; 26 of these were pure, 29 were calcareous.

SAMPLE OF SULPHUR PRECIPITATUM.

	Montreal	Brooklyn	Baltimore	New York	Chicago	St. Louis	Montreal Hospitals	
Pure.	6	1	6	9		43	1	26
Calcareous.	14	1	1		7	45	1	29

Total samples examined 55.

In Montreal it was generally stated that the article was in small demand, a pound serving for several years in some cases. It was also held that occasionally preference was expressed for the "sparkling" powder when "lac sulphur" was wanted.

The willingness of the public to accept an impure article, the result of early experience, is, however, no excuse for the pharmacist carrying only the impure article in stock. In buying, the pharmacist should specify: Sulphur precipitatum pur., and examine every lot with a lens. All that is necessary is to rub a little smooth on paper, with a spatula, and examine with a good light. Any sample showing shining particles with a lens, or even to the naked eye, is to be rejected. It is not really necessary for the buyer to estimate the quantity of calcareous matter. In the cases in which the quantitative estimate was made, the lime was "all there." For the U. S. P. article the simplest method is to extract with carbonic disulphide and weigh residue as impurity. For the B. P. article, which may contain some gamma sulphur, I prefer to extract the sample with water, dry and weigh residue, burn this and deduct ash, (sand, etc.,)

To make anything like a survey of the stocks throughout the United States would be a work of time, labor and expense: this answer could only be taken "*pro tanto*," but may serve by the publicity given the subject through the American Pharmaceutical Association to call the attention of pharmacists to the desirability of every retailer over-hauling his stock of "sulphur precipitatum."

I am indebted to Messrs. Alpers, Bacon, Gallagher, Whelpley and Hallberg for obtaining for me samples for tabulation.

Montreal, July 24, 1897.

Selenium in Commercial Sulphur.*

T. D. Reed, M.D.

Query 25. To what extent is Selenium found in Flowers of Sulphur?

This query is somewhat indefinite, to the "extent" that the "extent" may be taken as the equivalent of "quantity" or "frequency."

The sulphur coming into Canada is wholly from the Mediterranean, and known in the trade as Sicily Sulphur Six samples, from as many different dealers, were examined by the Cyanide process of the U S.P., all failed to give coloration within the limitations. Two samples of American sulphur authenticated by Dr. Remington were tested, and also failed to give any indication of selenium.

To test the U.S P. processs and also to obtain a colorimetric standard, a sample of fused selenium, Merck, was obtained and treated with cyanid according to the official process. The test was found to be delicate and available to $\frac{1}{500}$ of a grain. This test depends on the formation of seleno-cyanide of potassium, and the precipitation from the solution of red selenium, on the addition of hydrochloric acid.

To make a more thorough test, double the quantity of the Phar. test, 1 gramme, was taken and the quantity of cyanide increased to two grammes, the boiling was continued one hour, some of the sulphur was still undissolved, a further addition of cyanide (Merck's 98 p. c.) of half a gramme was then made and the boiling continued half an hour. A few particles of sulphur still remained undissolved. On cooling, the clear liquid was strongly acidulated with hydrocholic acid, C.P., but no trace of selenium was obtained. The reason for increasing the quantity of cyanide was a desire to dissolve the whole of the sulphur if possible into sulpho cyanide, The quantities being practically 2 to 1, thus KCN = 65, S = 32.

The U. S. P. test is as follows: If .5 gram. of sulphur be boiled with .5 grain potassium cyanide, in 5 CM_3 of water, and the clear liquid be acidulated with hydrochloric acid it should not assume a reddish color, even after standing for an hour (absence of selenium.)

On boiling the cyanide and sulphur together, in pure water, a colorless solution is obtained; on the addition of hydrochloric acid, slight effervescence occurs, and a faint yellow cloud appears, this is due to the persulphocyanic acid.

The operator must be on his guard against iron, as the sulpho-cyanide formed is extremely sensitive to this metal, and iron is an element very difficult to completely get away from. In some of the experiments made a red color was promptly obtained, this reaction was finally traced, in one case, to the filter paper, in another to dust, and the sulphur also was found to give faint traces of iron.

The answer that I feel disposed to make, to the query, admittedly an incomplete one is:

There is no difficulty in obtaining sulphur, which will meet the requirements of the U.S.P. in absence of selenium.

In preparing this communication, some facts have been learned which it may be permitted here to state. The nomenclature "flowers" vs. "flour" has been discussed. "Flowers" is the term quite properly applied to substances like sublimed sulphur, as is indicated by the Latin and German equivalent. In commerce much of the powder of sulphur is ground lump, and to this the term "flour" would properly apply.

For disinfection, and agricultural purposes, dealers send out the ground, as it a little cheaper than the sublimed. The lighter tint of the ground is noticeable, when the two are compared.

A curious mis-print was noticed in the U.S.P. Under sulphur, the statement is made: "Carbon disulphide dissolves a a portion of it, but leaves a residue of *crystalline* sulphur."

It should read *amorphous*. The various crystalline forms of sulphur, are all soluble in CS., only the gamma or amorphous sulphur is insoluble. The attention of the text-book writers who have reproduced, only too carefully the wording of the national authority, is respectfully called to the statement made in this para graph.

The coloring power of precipitated selenium is very great, one grain making a a pint of water look like arterial blood. (Sample shown) The tint also is to be noted, as different from that of sulphocyanide and iron.

Chicashige describes in *Chemical News* April 1897, a red sulphur occurring in Japan and containing 1 16 per cent. of selenium. This fact is here noted, to allow the remark that even in the case of a native sulphur, sufficiently rich in selenium to be distinguishable at sight, the quantity present—less than 5 grains per pound—might well be considered therapeutically negligible.

The spectroscope was tried but did not furnish any aid to the recognition of selenium.

* Read at Minnetonka meeting of American Phar. Association, August 26, 1897.]

Turpentine.

From a paper by Frank H. Russell in the *Charlotte Medical Journal.*

Turpentine is obtained from the pine tree (pinus, Gr. pitos). This name was given it by the ancients. A genus of trees of the natural order coniferæ, distinguished by monœcious flowers and woody cones, with numerous two seeded scales, the scales having an angular truncated apex. The leaves are narrow, long, dark green in color, growing in clusters or pairs, bound together at the base.

The long leaf pine (pinus Australis), when growing in moist places called (pinus palustris) yields an abundance of turpentine. It grows from 60 to 80 feet high, 18 to 22 inches in diameter; leaves are 10 to 15 inches long, of a bright green tint, and spring from white sheaths. The wood is close grained and resinous.

Its products are four in number. (1) Rosin, (2) turpentine, (3) tar, (4) pitch. It is productive for about nine years.

Spirits of turpentine is obtained from crude turpentine, which is the sap of the tree, and is known as (1) virgin dip, the product of the tree for the first year after being tapped. It is of straw color at first, and grows opaque after exposure to the air. One hundred pounds yields about

2½ gallons of spirits. For the next four years the product is called (2) yellow dip. This does not yield quite so much spirits as the "virgin dip." (3) Scrape is the name of the product obtained during the last years of the tree's productiveness. It is a wax-like substance, and yields a very small quantity of spirits.

These products are collected as follows. A cut several inches deep is made near the root of the tree. This is called a box, and holds about two quarts of the sap. Sometimes several boxes are cut in one tree. When the boxes are full they are dipped out by a man with a flat spoon like instrument About ten times through the season the boxes are hacked, that is, a chip is taken out just above the box, making bare a large surface on the tree. When the last year of a tree's usefulness comes, it is chipped up about fifteen feet.

To obtain the spirits the sap must go through a process of distillation, this is done by placing it in large copper kettles, set in brick work, the fire being applied directly to the bottom of the kettle. These are made to hold from ten to thirty barrels: the tap connects by an arm with the worm around which water runs. After being melted it is allowed to cool slightly, and the surface is skimmed off, chips and pieces of bark being found on it. The spirit is condensed in the worm and runs out with some water into a large tub, being of less specific gravity than water, and not being miscible it comes to the top, and is skimmed off and put into tight barrels. It is rectified by distillation with water and alkaline carbonates, and the water which the oil carries over with it is removed by further distillation with calcium chloride. Its formula is C^{20} H^{16}, sp. gr., 0.864, boiling point 3.20 deg. F.; a colorless liquid, of oily consistence, strong characteristic odor, hot disagreeable taste. It is readibly soluble in alcohol ether, the fixed and essential oils. On exposure to the air it dries to a solid resin, and when oxidized in the presence of water gives off peroxide of hydrogen. It is also a producer of ozone.

Side Lines that Pay.

By A. T Andrews, Gladstone Man.

Surrounded as we are in the present day by an ever-growing army of competitors, which a few years ago was unknown to our profession, we find the grocer selling toilet soaps, infants' foods, castor oil, Epsom salts, saltpetre and patent medicens; the dry goods merchant handling hair brushes, tooth brushes, combs and perfumes; the jeweler practically doing the business of the optician, and the department store—that enemy of all lines of legitimate business not content with ruining the prices of patent medicines, has actually put in the dispensing counter. Does it not behoove us, therefore, to study carefully what lines in our calling best repay our special attention, to look about us to see what fresh fields we may discover in which to plant our dimes and cultivate them, till we too may reap the crop of dollars?

I will not take up your valuable time this evening in discussing the ordinary departments usually found in the retail drug store. I wish, rather, to bring before your notice some of the outside lines which it will pay us to handle. I will merely touch on two lines found in every drug store perfumes and toilet soaps.

Perfumes. In view of the fact that the public can just as easily buy perfumes at the dry goods store as at the drug store, it is necessary to offer some special inducements to keep this trade. Those inducements are cheapness and good value. I would advise every druggist to carry three grades of perfumes.

1st. The same cheap lines usually found in the dry goods stores at the same or lower prices. The same markets are open to us that are open to them, and, while the profits are small, it will pay us to have these goods for sale.

2nd. A cheap line put up by ourselves in 1-oz. bottles to retail at 25c., at a cost of about $1.10 per dozen, thus giving us a fair profit. Do not put our firm name on this line of perfume. I add this advisedly. Never allow a bottle to leave our store bearing our firm name, whether filled with perfume, distilled water or goose oil, which can possibly give dissatisfaction.

3rd. The best quality of perfumes. *(a)* Standard lines manufactured by reliable firms, who sell to druggists only. On these goods we may look for our best profits. *(b)* The best bulk perfume we can buy, put up in ½-oz. and 1-oz. bottles, with neat, attractive labels bearing our firm name. These are the goods to push—they warrant our recommending them, and we will have no difficulty in getting 50c. per oz. for them.

Toilet Soaps.—The day is past when the druggist can sell any large quantity of expensive toilet soaps. We must take the trade as we find it. Let us sell the cheap as well as the dear. Is it not better to sell a large quantity of cheap soaps and a small quantity of expensive soaps, than to sell only a small quantity of the latter, and allow the grocer to supply the bulk of the people with the former? What matters it if this cheap soap ruins the complexion? What if it reddens and chaps the skin? Does it not create a demand for our "Complexion Balm" and "Winter Lotion"? We can get a big attractive cake to sell for 5 cents. Fill the window with them, advertise them, placard them with plainly printed price cards, and our sales of toilet soaps will be doubled

Passing now to the second part of my subject—those lines not usually carried by the chemist and druggist—you will notice that my paper takes the form, more or less, of a personal experience. Living, as I do, in a country town, I will naturally speak of those lines which may with propriety and profit be offered for sale by the country druggist. I suppose that three fourths of the druggists in the province of Manitoba are known, not so much by the title of "chemist and druggist" as by "druggist and stationer." The drug trade in itself being so limited in our rural districts, it is necessary to combine with it the stationery business. In my own case I devote fully as much of the space in my store, and of my attention, to the stationary as the drug department. While I cannot advise all druggists to put in a line of stationery, yet I believe it well repays those whose time and space is not altogether taken up with the strict drug trade.

It is not my purpose to inflict upon you a treatise on the stationery business, but there are a few pointers which it is well to notice.

1. Let the stationery stock be kept neat and attractive. Have a place for everything, and have everything in its place. You will find that moveable tables are much better than counters upon which to display your stationery stock. You can change the display frequently, and also change the arrangement of your store occasionally.

2. Keep the stock well assorted without going into those specialties which only large stationers have call for. Study the local demand and cater to it.

3. Do not buy too much of any one line, especially in fancy goods. At Christmas time be careful not to stock too large a range of doubtful and perishable goods. Nothing deteriorates in value so quickly as this class of merchandise.

4 If you carry novels at all, carry a good assortment. Buy in one hundred lots and get the best prices. Keep up with the times. Take a journal devoted to the book and stationery business. You cannot invest a dollar that will multiply as quickly as the one you pay for such a paper. Study it carefully and buy the latest novels by popular authors. Buy one for a sample; if the trade warrants it, you can re-order. Should you not sell your sample you will at least have the reading of all the good things in the current literature of the day. Occasionally fill the window with novels, and once in a while advertise that such a book, by such an author, is for sale at your store. I have found it pay to establish a "circulating library" under these regulations, member to buy first book at retail price. He will then be entitled to exchange it for another for 10 cents, and so on, each reading will cost him 10 cents. I find that nearly all of the books will stand four readings. Try this plan: it will pay you.

Other side lines which I have found successful are: Smokers' articles, wall papers, jewellery, silverware, and house plants.

1. Smokers' Supplies.—I have found it pay to handle only cut tobaccos, pipes, pouches, cigars, and cigarettes. The great temptation in smokers' supplies is to overstock. Nearly every commercial traveller has a side line of cigars. The first thing you know you will have four times as many cigars as you need for your trade. Two brands of cigars to sell at three for a quarter is just as good as ten.

The Optical Institute of Canada.

For five years the Optical Institute of Canada has been doing thorough and careful work, with the result that graduates therefrom are scattered throughout the length and breadth of Canada, reaping a rich reward for their enterprise and their course at the Institute. The time has certainly long ago arrived when it is absolutely necessary that every merchant who pretends to do any spectacle fitting ought to understand how to do so scientifically and properly, if he wishes to hold his patronage, for the public have been and are constantly being made more fully aware of the necessity of an optical training and demand evidence in the shape of a Diploma from a reputable Institution. In like manner a young man now obtaining a situation increases his chances 10 to 1 if he possesses an Optical Diploma in addition to his other qualifications.

When it is recognized that a short time—as that the study of Optics is easy, interesting, infatuating, and the profits from their Optical department make it the best paying part of the business.

The following advantages are claimed for the Optical Institute of Canada:

1. Now the only recognized Institution of the kind in Canada and at least the equal of any on the continent.

2. Proficiency complete, the outcome of five years of actual teaching and adoption of new methods.

3. Full equipment of instruments of all kinds for Optical training and demonstrations.

4. Practical work on patients until the instructor and student are both satisfied the subject is thoroughly understood.

5. A student can (if he so wishes) attend any subsequent course of instruction free.

6. An instructor who is master of the subject of Optics and possesses the happy faculty of imparting the knowledge to others.

7. The course of instruction is conducted at a *minimum of expense to the* student both in time and money, consistent with honest work and desirable results.

8. Our diploma is handsome, and always indicates merit and ability in its possessor, for it can only be obtained by passing a satisfactory examination.

9. The bending and adjustment of spectacle frames and eye glasses; the method of grinding lenses: the quality and value of both frames and lenses is thoroughly taught.

10. Every possible assistance is rendered students by mail, in difficult cases which may present after going to their homes.

in study under an efficient teacher is sufficient for any one, with even an average education and ordinary intelligence to secure the knowledge of **"How to Fit Spectacles"** it is little less than criminal to attempt to do it blindfold. The eye is too delicate an organ for a novice to tamper with for a moment, as spectacles wrongly chosen may do irreparable injury thereto, and yet many falsely styled opticians offer a ready-made pair of spectacles, much in the same manner as the merchant offers a ready-made suit of clothes, thereby becoming a party to a moral responsibility, the gravity of which is immense—to use a familiar quotation, "Fools rush in where angels fear to tread." A short course of instruction will soon dispel this delusion and teach the Optician, not only to know when he is right, but also where he should step out and let the Oculist step in.

Some authors claim that fully 75 per cent. of all persistent headaches are due to the want of properly adjusted spectacles *and the "woods are full" of people* who are willing to pay any reasonable price for relief. Heretofore three fourths of Oculist's work consisted simply in fitting glasses, but the expense of consulting a specialist has taught people to look round for a cheaper, yet effective, remedy, with the result that the efficient Optician has suddenly come into great demand.

Every village should have its Graduate Optician just the same as its Dentist or its Veterinary Surgeon and many, recognizing the truth of this, are profiting handsomely thereby—and in your town if you do not do so someone or more will.

The universal testimony of students attending the Optical Institute of Canada

11. Age makes no difference, although the younger a student, the more easily the subject is grasped. The study is essentially one of facts; of fixed rules, with reasons therefor; and is as readily learned as the multiplication table.

12. The course is easy, thorough, interesting, practical, comprehensive, non-classical, profitable.

13. Advanced classes are given twice a year to former graduates desiring to go deeply into the subject and keep abreast of the times.

Classes are formed each month and are limited as to the number of students, so that personal attention, if needed, may be given to each by the instructor, hence it is wise to intimate at your earliest possible opportunity which class you wish to attend so a seat may be reserved for you.

For dates of classes and other information address J. S. LEO, 60 Yonge Street, TORONTO.

Buy no cigars as cheap as $40 or $50 a thousand. A line at $60 will prove to be the most satisfactory for a three for 25c. cigar. Be sure to handle a line of imported cigars. Select a good brand to retail at two for 25c. Stick to that brand. You will find that travellers will get to know and like that brand and connect it with your store. In this way every time they visit your town they will remember that they can get a good cigar at your store, and will be sure to give you a call.

2. Wall Papers.—My experience has been that it is best to start with a good large range of papers, display and advertise it well. Have a 5 cent leader. After once putting in a good line of papers, it is not necessary each spring and fall to buy so much. You will always have remnants left which will make your stock appear very extensive. A sample book is of great assistance in making sales. Have a good large-sized book, with the borders to match each book attached to the same. Mark the cost and selling price on the back of each sample. Also label each sample A, B, C, D, etc., and your stock the same. In this way you can find the pattern you want without unrolling the pieces, which soon gives the paper a dog-eared appearance. During the season have your sample book placed in a convenient place in your front store, so that while a customer is waiting to have a prescription filled, she may turn over the leaves for entertainment. Being in a prominent place, too, you can often, without offence, ask a lady customer if she would care to look over your samples of wall papers.

3. Jewellery.—In this line it is safe to buy only from well established firms. Do not get too much at one time, but buy often. People get tired of looking at the same articles constantly. Handle few, if any, watches. You are not a practical watchmaker, and can give no guarantee with a watch. The people expect that, and you are thus handicapped in the competition.

4. Silverware.—I come now to perhaps the most pleasant and profitable of side lines. The country druggist is often situated in a town where there is no jeweller. In that case he may just as well sell silverware as allow the hardware or some other merchant to reap this profit. In putting in a stock of silverware, buy enough to make a good display. It will make a wonderful difference to the appearance of your store. Buy no low-priced, cheap goods, but quadruple plated silverware from a reliable firm. Stick to that firm and feel safe in recommending the goods. Let those who will go elsewhere to buy goods that tarnish and shew the iron. You cannot afford to have anyone dissatisfied with any article of silverware coming from your store. I was surprised at the amount of silverware that went off at Christmas time. For wedding presents, too, there is a demand off and on the year round, thus placing silverware more desirable to handle than some other classes of fancy goods.

5. House Plants.—Arrangements can now be made with city greenhouses whereby the druggist can handle house plants and bedding plants to clear from 25 to 35 per cent. While not up to our usual percentage of profit, you will find that no line will draw the public like plants in your window. No one can resist a beautiful flower in full bloom. In our little town in four weeks I sold about $40 worth of these goods. If you have a taste for gardening, you may just as well raise your own bedding plants, both vegetable and flower. This is nearly all profit. Have a good-sized hotbed and raise early healthy plants, and you will be surprised at the revenue from that source.

The last side line I will mention, and the best paying, is advertising. Keep your business prominently before the public. Advertise in all the ways you can, in all the places you can, whenever you can, to all the people you can. Everyone knows enough to come in when it is raining, or to go to the drug store for a pill to remove the jamb, but everyone doesn't know that they can get toilet soaps as cheap at the drug store as anywhere else, that you have a "lightning renovator" to remove that grease spot, nor that you have an elegant display of silverware for the Christmas trade.

Let us rouse ourselves, and be alive to our possibilities. The successful druggist of to-day is not the man who headed the list at his examination ten years ago, nor the one who can tell you all about the latest discovery in organic chemistry. These are all right, too, but the successful druggist of to-day is the successful merchant.

Chewing Gum Manufacture.

Four million pounds of gum chicle, the product of the Mexican sapota tree, entered the United States during 1895. This entire product, valued at nearly $1,500,000, became the basis of chewing gum. A walk through a leading chewing gum factory is interesting.

In this one factory over 1,000,000,000 pieces of gum are annually produced and shipped to every portion of the world. Three hundred employees are engaged in the manufacture of the gum, the first step of which is the importation of the raw chicle, which is gathered by the peons in Mexico and exported in bales containing about 150 pounds each.

The gum is taken from the bales and chopped into small pieces These are freed from tree bark and chips by steaming and picking; then it is ground in mills making 3,400 revolutions every minute.

The ground gum is subject to a continuous heat of 140 degrees Fahrenheit in drying-rooms. From here the gum is sent to the "white-aproned cook," who adds the purest sugar and the freshest cream, granulated pepsin, powdered guru or kola or other desired ingredient to it, and cooks it in a steam-jacketed cauldron, where it is turned and mixed by an ingenious double-acting heater or rotating paddle until it has assumed the consistency of bread dough.

Now the "dough-boys" take hold of it and knead it in finely powdered sugar, passing it to the "rollers," where it is rolled between steel rollers until it is of the proper thickness, when it is whisked away to ths "markers."

The markers are steel-knived rollers, which leave their impress upon the long sheets of appetizing gum before it goes to the "seasoning room," after which it is broken on the lines left by the markers. Now the gum finds its way to the "wrapping room." The nimble fingers of 150 dainty maidens are here at play.

Under their deft touch waxed paper, tin foil, and pretty wrappers envelop the gum as quick as a wink, and in another moment the "packers" have the gum to place in jars or boxes, wherein it is shipped for sale to the general public.—*Confectioners' Journal.*

Against Department Stores.

The following petition is being circulated for signatures throughout Ontario. The only faulty part we see is that contained in the second clause of the preamble, which asserts that this monopolization "creates fortunes" and pauperizes the community:

PETITION TO THE LEGISLATIVE ASSEMBLY.

To the Honorable the Legislative Assembly of the Province of Ontario in Parliament Assembled:

The petitions of the undersigned residents of the Province of Ontario humbly sheweth:

That the concentration of the bulk of the business of the province by one or two departmental stores is seriously detrimental to the interests of the province at large.

That to monopolize twenty-five to thirty trades by single firms under one roof creates one or two fortunes and pauperizes the rest of the community.

That much of the distress and lack of employment and many of the failures in business are directly caused by the operations of departmental stores.

That it is better to have a thousand storekeepers fairly prosperous than two or three millionaires and nine hundred and ninety-seven bankrupt tradesmen.

That under the present system of taxation the departmental stores pay much less than was done by the smaller stores they displace.

Your petitioners therefore pray for permissive legislation allowing municipalities to impose a progressive tax on any firm or business house carrying on more than one business, to wit:

For second department,		$100	per annum.
" third	"	$200	"
" fourth	"	$400	"
" fifth	"	$800	"
" sixth	"	$1,600	"
" seventh	"	$3,200	"
" eighth	"	$6,400	"
" ninth	"	$12,800	"

And so progressively doubling the previous amount each additional department.

And your petitioners will ever pray.

Pharmacy in England.

British Pharmaceutical Conference -American "Mitcham" Peppermint The Chemists' Exhibition--An "All Round" Camera.

(By our London Correspondent.)

The meeting of the British Pharmaceutical Conference in Glasgow was a great success, both in the number of members that attended and the quality of the papers read. Dr. Symes, of the firm of Symes and Co., of Liverpool, was the president and admirably performed his duties. He is a typical Lancashire man, rugged in sincerity, rather brusque in manner and speech, but a thorough pharmacist and good business man. Interest in the various papers was not allowed to flag, whilst the president steered clear of discussions on medical and ethical questions. His address was devoted to reviewing former presidential addresses and the financial and numerical progress in membership during the thirty-three years that the conference has been in existence. I am glad to see that a suggestion I have made for some years is supported by the president and the *Pharmaceutical Journal*, viz., that an extra day should be devoted to the discussion of political and trade questions, at present strictly tabooed. Nothing very novel was advanced in any of the papers, but it is interesting to note that the seventeen papers were contributed by nine pharmacists, four analytical chemists, three medical men, and one manufacturing chemist. Perhaps the most startling paper was that by Dr. McWalter on the almost played-out subject of organic animal remedies—organotherapy, as he was pleased to describe it—in which he formally indicted the popular tablet form of medicine, at all events for the administration of thyroid. Dr. John Attfield has settled the spelling of asafetida with Dr. Murray's assistance. Farr and Wright attempted to settle the standardization of conium (hemlock) by means of Professor Cash's assistance, but the net results only went to show that a solution of mixed alkaloids from the dried fruits were about as toxic as conine itself. Muncy and Swinton reported further observations on the chemistry of oil of citronella. Dunlop opened an interesting subject with his paper on benzoin, as there is no doubt that it is coming more and more into the market highly adulterated with stones, bark, etc. It was unfortunate that the ash was not determined, but it is obvious that unsatisfactory tinctures would result from using gums containing twenty eight to thirty per cent. insoluble matter. Bird's paper on Liquid Paraffin and the presence of sulphur was a useful contribution, as petroleum emulsion has gained some popularity, and if there be traces of sulphur present, unpleasant odors will arise. Stratton's communication on Liquid Bismuthi confirmed the general impression that manufacturers frequently try to insure the satisfactory keeping properties by a large addition of citrate of ammonia. It is interesting to note that Schacht's celebrated liquid bismuthi has S. G. 1 029, and 1.944 percentage of bismuth, and 2.663 percentage of citric acid, whilst the B. P. formula requires S. G. 1.070, 4 375 per cent of Bi., and 3.956 per cent. of citrate. The remaining papers were chiefly of academic interest. The invitation from the pharmacists of Belfast for the conference meeting of 1898 was cordially accepted. Scotch weather was reserved to the last, when rain attempted to damp the ardour of those who went by steamboat through the Kyles of Bute, but the trip was thoroughly enjoyable nevertheless.

Following my strictures on bergamot at seventy-eight cents per pound, I have this month to point out that English oil of peppermint is threatened with American competition in the shape of American "Mitcham" oil. It is suggested that the oil is distilled from Mitcham peppermint that has been translated to American soil. We already have "blended" and "rectified" English peppermint oil, so that it becomes difficult to discriminate between the numerous varieties of what should be one article.

In connection with essential oils it is interesting to note that the International Congress of Pharmacy held this year at Brussels has awarded a gold medal to an English pharmacist, Mr. W. A. Wrenn, F. C. S., for a paper, "Should essential oils be valued by chemical standards?" So far as one can judge by the brief telegraphic summary, Mr. Wrenn's answer is distinctly in the negative. Most of his labor has been spent in the superfluous task of asserting that so-called turpene-less oils are not of the character claimed for them by their manufacturers. Anyone who has examined the terpene-less oil of lemon, that is frequently stated to be something like 50 times as powerful in odor and flavor as the ordinary oil, must have been convinced that the claim was unsubstantiated. I recently had a sample that consisted of impure citral, smelling very strongly of verbena (oil of lemon grass) and it was really a very poor substitute for oil of lemon at any price, and yet the quotation was $7.50 per pound.

The Chemists' Exhibition held last week in the Covent Garden Theatre, was undoubtedly the largest and most successfull ever held in this country. Over 150 of the leading firms exhibited, and some 26,000 people visited the exhibition. No wonder that the organizers, the *British and Colonial Druggist*, have ventured to take the world-renowned Agricultural Hall for the 1898 Chemists' Exhibition. Practically speaking, there were some 70 proprietary manufacturers represented, about 30 sundry houses and perfumers, and only about 15 wholesale and retail druggists among the exhibitors. Messrs. *Evans, Sons & Co., of Liverpool, carried* off the palm, by general assent, as well as with great enterprise, they had fitted up a chemist's shop in the exhibition, and still more satisfactory to relate, had sold it entire to a Johannesberg chemist. Orders were not given so freely this year as last, but most of the exhibitors were satisfied. Very little notice was paid to the more valuable exhibits, that of Johnson & Sons, Limited, which contained a pan full of crystallised chloride of gold, alone worth $37,000, and sufficient to fill 10,000 of the well-known 15 grain tubes. An adjoining pan contained 1370 ozs. of pure nitrate of silver and the striking freedom from color, in spite of its exposure for a week, is due to the purity of the article. Amongst novelties may be mentioned the "lance" perfumes, consisting of very thin glass bulbs with a thin neck, secured by a brass cap and spring rubber joint. The warmth of the hand is quite sufficient to eject the scent from the capillary neck in an exceedingly fine spray. "Kaputine" is the name of a new head-ache cure, and the manufacturers are proud of the fact that it does not consist of antifebrin, pure and simple, but is a compounded article—composition not stated. By no means pharmaceutical, but a novelty none the less, is the patent "Instra" warmer. They are compact little flat boxes, made of German silver or block tin, and contain a glowing fuel, like the old "touchwood" that imparts warmth and gives off warm air. They are recommended for ladies to carry in their muffs, bicyclists as hand warmers and so on. The small sizes only weigh 4 ozs., with the refills of fuel, and will last 12 hours.

A friend of mine, a dental surgeon, has patented an improved camera, one that is capable of taking a view all around. The camera is perched on the usual tripod but the top has a circular tramway and as soon as the clock-work machinery is started, the camera starts rotating. At the same time a strip of gelatino-film rotates across the lens inside the camera at appropriate speed, with the result that a picture is obtained about 2 feet long, with a reproduction of the scenery one would see on slowly turning round. The views taken from the top of church towers and other lofty places are most interesting and even that of a garden, gives quite novel effects. The fact that the patent has been admitted in the United States speaks well for its novelty. There is a decided improvement in photographic business, so the manufacturers state, as the amateurs are pegging away at 3 colour photography, and other difficult but absorbing problems.

PHOSPHORISED OIL is said to be a good remedy for bunions, rubbed in twice daily.

SCOTT'S EMULSION

The ancients tell us there are four classes of men,

"He who knows not, and knows not that he knows not;
He who knows not and knows he knows not,
He who knows and knows not he knows, and
He who knows and knows he knows."

We are all in this last class, for there is one thing we all know and know we know, that is that Scott's Emulsion is the best. Say what we may about other Emulsions being just as good, we know there are no better than Scott's, and from what we have just seen, doubt if they are anything like as good.

Why this is the case can easily be understood after a few moments spent in the Scott's Emulsion Establishment. There it is proven conclusively that an Emulsion is not a mixture, and to make a perfect Emulsion requires the greatest amount of care, skill, and experience, to say nothing of the best materials at first hand.

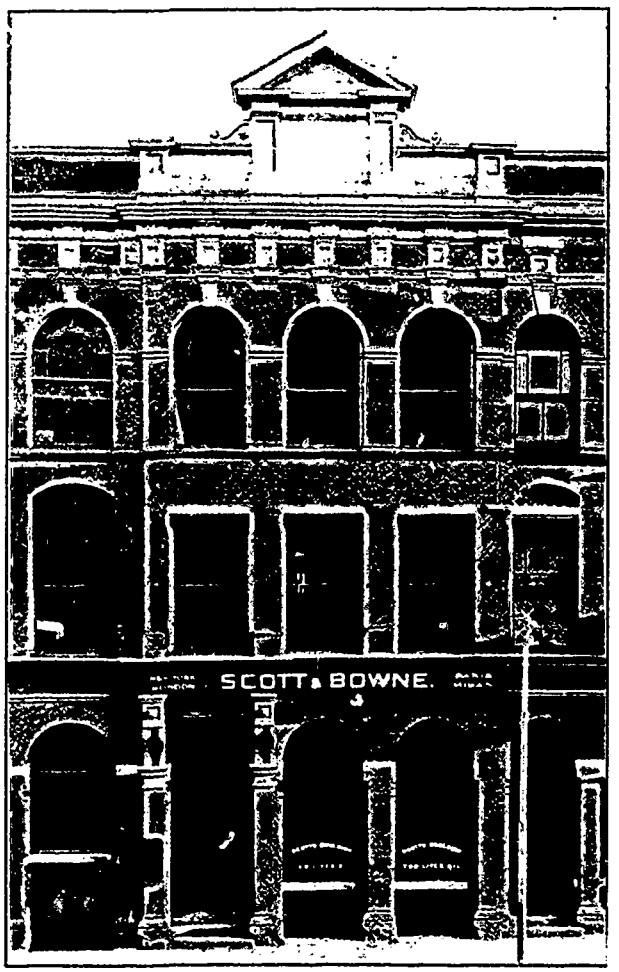
We have just seen, nicely arranged in a row, at least twenty different makes of Cod Liver Oil Emulsions. No two of them are alike, not one of them perfect, and as all of them had been recently purchased from either the maker or retailer, none of them could be very old. Some were separated, some discolored, some thick, some thin, in fact, all colors and conditions.

If that is the way Emulsions generally look when they get into the hands of the consumer, we cannot wonder that people think Emulsion little better than the plain Oil. We believe Emulsion one of the most difficult things to make, and if it cannot be made right so that it will stay right and give every satisfaction, it not only injures the maker, but pharmacy in general.

The retailer is differently situated from the manufacturer, as the latter has the whole country to draw upon for his business, but the former depends almost entirely upon his neighbors for his trade, and one little mistake will very greatly affect his reputation. We cannot, therefore, be too careful what we say about our own preparations or the preparations of others. We must look beyond the present moment into the future a little and consider what the results will be should our assertions be proven incorrect.

It is in a measure true that a retailer of good reputation can sell almost anything, because his customers know and trust him; but he would never have gotten his good reputation if he had sold preparations of his own that were not as he recommended them to be. If other preparations turn out bad, that is not his fault, he is not responsible; and we believe many retailers have injured themselves by forcing sales of their own preparations on people who intended to buy something else. In many such cases, even though the preparation they sold is all that they claim for it, it will not give satisfaction, then you can count one customer lost.

Convince a man against his will,
And he is of the same opinion still.



There is hardly a preparation on our shelves so risky as the Cod Liver Oil Emulsion, and we are very glad to see that many of our best retailers have given up making one, not only because they found it unsatisfactory but unprofitable, considering the labor and time required and the risk they run of displeasing some of their customers.

There are enough other preparations that the retailer can put up without any risk whatever and with half the expense and trouble, preparations that are often just as good or better than the advertised article.

Messrs. Scott & Bowne's new premises, at 55 Front street west, contain the latest improved machinery, and the Emulsion they are making to-day is better than it has ever been, which accounts for its continually increasing popularity despite the keenest competition.

We believe, therefore, all retailers will find it to their advantage in the long run to leave the making of Emulsion to people who have done nothing else for more than a quarter of a century, who have brought into it the best skill, and people whose reputation is assured, who are honestly endeavoring to further the interests of the retail trade by giving them a staple preparation, assuming all the responsibility and making the demand.

Messrs. Scott & Bowne are just now issuing a very handsome pamphlet, which will go into every home in the Dominion. They are offering to print the names of retailers on these pamphlets, which is an advertisement well worth considering. They are also preparing a very pretty calendar for next year, on which they will also print the names of retailers and supply free of expense enough for every family of your customers. This is a daily reminder, and we believe worth far more to the retailer than all he can make out of his own Emulsion, or one he sells as his own.

It is only justice to Messrs. Scott & Bowne that they should reap the full benefit of the demand they are making, and that is all they expect. They only ask the retailer to give the purchaser what he asks for.

PhotographicNotes

"STEPPING-STONES."—A series of articles, "Stepping-Stones to Photography," is running in the *Photo American*, having commenced with the February, '97, number, They are written by Edward W. Newcomb and are especially valuable for beginners. The subscription price of the *Photo-American* is only $1 a year, and everyone interested in photography should be a subscriber to this excellent monthly.

FORMULÆ WANTED—A correspondent, Deseronto, Ont., asks for the formula for "Carlton's Hydrogen Developer," also "Carlton's Hydrohicnone Developer." Can any of our readers furnish it?

COMBINED FIXING AND TONING BATH.—A subscriber, R. J., asks for a formula for the above. The following is taken from *The Photogram*—the editor of which remarks that "it is the *least bad* one" of which he knows. He condemns the use of any which contain acetate of lead, and does not recommend any *combined* toning and fixing bath:

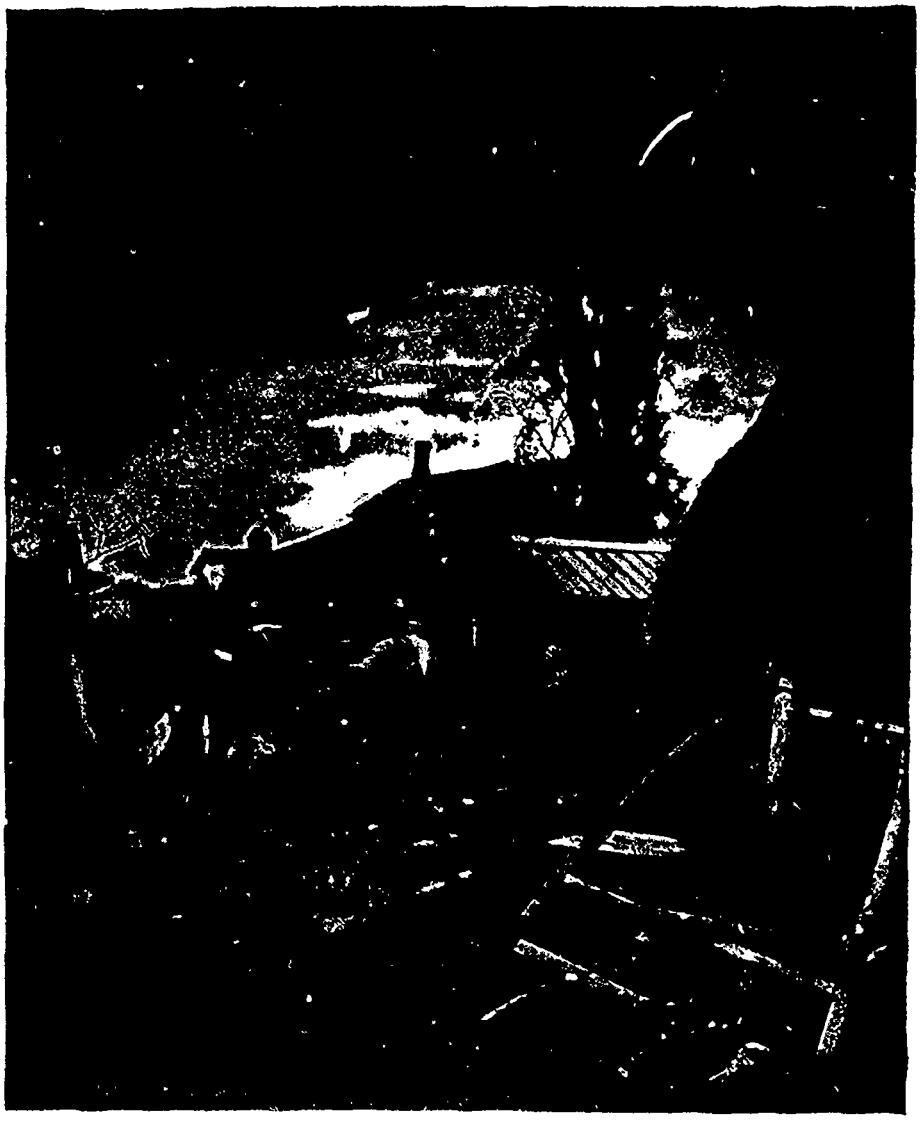
A.

Sodium tungstate.	150grs.
Ammonium sulphocyanide...	300 grs.
Hypo.....	6 oz.
Water.....	20 oz.

B.

Gold chloride	15 grs.
Water	4 oz.

Pour B into A with frequent shaking. More water may be added if the bath works too quickly. Quick toning gives purple tones; slow gives brown ones. If toning is complete within fifteen minutes, it is advisable to use an extra fixing bath.



A Rural Scene.

VARNISHING NEGATIVES.—Negatives may be protected from damp and, at the same time, have imparted to them sufficient tooth to take the pencil, by being submitted to the ordinary spray-diffuser (rubber or simple blow-through), supplied with what charcoal draughtsmen call "fixative." Spread a sheet of smooth paper on a table, lay the negatives on this, films upward, and throw a gentle spray all over them from about two feet away. Avoid using too much of the fixative, or it will run into drops. An even matt surface, like that of finely-ground glass, should be the result. It will dry in a minute or so. The fixative is white shellac dissolved in methylated spirit in a bottle, using excess of shellac, with frequent shaking for a day or two, in a warm place, as on the kitchen mantelshelf. Then, after rest, decant the clear liquid. Do *not* put on the hob or near the fire, especially with the cork in. More spirit may be added to the clouded liquid in the bottle to utilize what remains of the shellac, proceeding as before. What is necessary is that the spirit shall hold in solution as much of the shellac as it can.—*Henry Irving, in the Photogram.*

THE DEVELOPMENT OF P. O. P.—R. Ed. Liesegang, in the *Revue Suisse*, recommends the following developer for gelatino chloride, collodio-chloride, or celloidin printing out papers:

Concentrated solution of gallic acid..	20 parts.
Sodium acetate	1 "
Fish glue...	3 "
Water	20 "

The fish glue prevents the decomposition of the developer. The paper can be toned with gold after development, which can be performed in diffused daylight, to tones ranging from brown to greenish black. The less the paper is printed before development, the more greenish is the tone of the result, and the author recommends that the printing be carried to about half the depth usual in printing out. The paper should be placed in the developer film side up and be completely covered by the liquid, the time required for development being about two minutes, when it is washed, fixed and toned in the ordinary way.—*Photogram.*

SOLUTION FOR MAKING SLIDES.—Great inconvenience is often caused, says the *Photographer*, by having to take out a note book after every exposure to mark the particulars. The following method of marking the slides themselves has proved very useful: Make a solution of emulsion of

Gelatine.....	180 grs.
Kaolin	30 "
Bichromate of potass	10 "
Water	1 oz.

Coat ordinary writing paper, previously damped in water, with this, and when dry cut into slips the length, or half the length, of the slide and paste a piece on each side. These slips can be written on with lead pencil, and rubbed off as often as required. It is as well to attach the pencil to some part of the camera.

TO PRODUCE CONTRAST IN FLAT NEGATIVES.—The proper timing of exposures, especially in scientific photography, is a matter of some uncertainty, and the result of wrong exposures is often a flat negative. Either the lights are dense enough but the shadows not sufficiently clear or the high lights are not dense enough and the shadows fogged; this latter kind of negative is usually called flat and may be caused by over or under exposure, more often by the former. Intensification of such a negative will not increase the contrasts. Over-exposed negatives should be developed—notwithstanding the fog in the shadows—until the high lights are sufficiently dense; of course the amount of over-exposure must

not reach actual solarisation, and the development should be interrupted as soon as there ceases to be sensible increase in the light density. There are two ways open to improve such negatives. The first, when the high lights are dense enough and the shadows too much fogged: reduction in a solution consisting of 20 c.c. ferricyanide of potassium (10 per cent.) to 100 c.c. hyposulphite of soda solution (25 per cent.) This process is very energetic and has to be interrupted before the desired amount of reduction has taken place, as the reduction action goes on during washing. After washing and drying the negative may be intensified with bromide of copper and nitrate of silver: the contrasts may be increased at will by repeating the above process. Second case, when the negative shows insufficient density in the lights and fog in the shadows. After drying, the plate is intensified in

Sulphate of copper	2.5 grams
Bromide of potassium....	2.5 "
Water	100 "

washed for three minutes (not more or less) under a tap and then blackened in 5 per cent. nitrate of silver solution. After another short but thorough washing the negative is reduced in

Fixing solution (25 per cent.). ...	100 c.c.
Ferricyanide of potassium (10 p. c.)	5 c.c.

until the lights show proper density: as during the process of reduction the negative assumes a yellowish brown black color it prints with even more contrast. The above process is of great value especially when dealing with radiograms, which show always the character of over exposures. — (Abstract by Schriftfuhrer from the *Atelier des Photographen*) — *The Photogram.*

Amidol Developer.—(Stock solution).—

Water	1 liter
Sulphite of soda	100 grams
Ten per cent. solution bromide of potassium.....	5 c.c.m.

For use, add one gram amidol to every 00 c.c.m. of stock solution

Eiko-Hydro Developer. — For transparency and lantern slides. A good developer to give brilliancy from flat negatives, and also from somewhat warmer tones than our Metol-hydrochinon formula gives:

(a) Distilled water.....	20 oz.
Sulphite soda (crystals)...	1 oz.
Citric acid.....	20 grains.
Eikonogen.....	120 grains.
Hydrochinon.....	60 grains.
(b) Distilled water.....	20 oz.
Caustic potash (fresh and dry)	120 grains.
Bromide potash.....	120 grains.

Use two of (a) to one of (b).

Can be used repeatedly. Expose somewhat longer than for the Metol Hydrochinon developer. Temperature of developer should be from 70° to 75° F.

Always develop to a good intensity, as plates developed with hydrochinon fix out somewhat. Rinse and fix.

Optical Department.

In charge of W. E. Hamill, M.D., Toronto

Correspondents should note that for an intelligent answer to be given to their inquiries, it is necessary in every case to give the following information relative to their patient: (1) Sex, (2) age, (3) occupation, (4) near point of distinct vision for small type with each eye alone, (5) how their eyes trouble them, *i.e.*, their asthenopic symptoms, (6) vision of each eye at twenty feet alone without glasses, (7) best vision obtainable with glasses, naming correction.

Example.—J. S., male; age 18; bookkeeper, can read small type to within five inches of each eye; complains of much headache through the day and evening; eyes feel sore and water a good deal, look red and inflamed, etc., etc.

R.E.V. $\frac{20}{40}$ with + 1.50 = $\frac{20}{20}$
L.E.V. $\frac{20}{40}$ with + 1.50 = $\frac{20}{20}$

The above example is taken to illustrate about how we desire inquiries to be made.

H. E. W. — Is there any way to bring out all the latent hyperopia in any case without the use of atropine?

Answer. — To answer broadly, we must emphatically say "no," unless you use some other drug that has a similar mydriatic action as atropine. But the latent hyperopia can be somewhat made manifest by the system of "fogging" as advanced by Dr. Prentice, of New York, which is better accomplished by the lenses of the trial case than by any other method or instrument — supplemented of course by wearing glasses of over correction for a few days or weeks.

Advancing age renders the latent hyperopia more and more manifest, but it is in the young where this latent hyperopia causes so much trouble, and in order to relieve the asthenopia of young hyperopes, this latent hyperopia must be carefully considered. We know from past experiments the fact that the younger the patient the more (relatively speaking) will be the latent than the manifest hyperopia. This fact has been scientifically and positively determined from thousands of examinations of hyperopic eyes before and after the use of atropine, and one author publishes a table showing that at and given age a manifest hyperopia always has back of it a certain very constant amount of latent hyperopia. We, therefore, in the young, are quite correct in giving a stronger convex glass than that which represents their manifest hyperopia. Knowing that the fogging at first produced by these glasses will gradually disappear as the crystalline lens assumes less curvature. A number of optical inventors put forth strong claims that their instruments overcome the latent hyperopia, and shows the total amount of hyperopia. These claims are "all bosh," and simply made in ignorance, or else to make a sale of their instrument at an enormous profit.

T. A. C.—What instruments should an "up to date" optician have to do correct and honest work?

Answer.—Perhaps no more important question could be asked than the above for enterprising inventors, manufacturers, and salesmen are constantly springing some new thing on the trade, and with brilliant explanations and reports of wonderful results induce the unwary to purchase it, which in a very short time will be relegated to the back shop as of no practical use and looked upon as a bad investment for a scientific toy which at first enamored, but subsequently disappointed. The above is true of all optometers—refractometers, prisoptometers, and a horde of such things, but to answer the question more explicitly the first requisite of any optician is an optical course in an institution which is known and proved to be first class in every respect, and if you do not know of one of these there are over 200 opticians in Canada who have taken such an optical course in Canada and will direct you thereto. 2. A set of trial lenses with sufficent range of glasses to meet any case which may present. 3. An ophthalomemeter which is indispensable, and I have no hesitation in saying that Hardy's ophthalmometer is head and shoulders above any other—easily learned, beautiful in appearance, scientific in construction, useful in all cases of astigmatism, and a constantly increasing joy to its possessor. 4. An ophthalmoscope which will also do for retinoscopy, by means of which, with a little practice optics become more and more interesting and cases of amblyopia detected readily. 5. A dark room with a good student's lamp, gas or electric light. 6. A growing library of books on optics.

The above are all that is needed and nothing of the above can well be dispensed with, all of which will be found in any occulist's outfit for his optical work.

A New Medicine Glass.—A glass has been invented with a partition in the middle, by means of which disagreeable-tasting medicine is separated from some highly-flavored liquid or wine which bathes the lips and mouth before the dose is swallowed.

Glycerine as a Medicine.—This simple and agreeable remedy is receiving more attention from the profession as an internal medicine. It exerts a beneficial influence on nutrition, and may with advantage be administered in the place of cod liver oil. Certainly, reports of its action in phthisical cases as palliating many distressing symptoms are of importance. It reduces night sweats, improves weight and appetite, and contributes to refreshing sleep.—*Mag. Pharmacy.*

How Druggists May Increase Their Income.*

NATURAL SALICYLIC ACID.

Some months ago I was asked by a prominent pharmacist whether it would be profitable for a pharmacist to prepare his own salicylic acid from oil of sweetbirch, or oil of wintergreen, saying that the different manufacturers charged such prices for their products that they were entirely out of proportion with the regular price of a prime quality of the oil. Never having given the matter much attention I set to work to investigate and found that prime oil of sweet birch could be bought for $1.30 per pound, and that at this rate there seemed to be no reason why the pharmacist should not be able to make what salicylic acid he might want and save more than 100 per cent. by so doing.

It is an easy matter to prepare the acid from the oil. The process I use is to add a known excess of solution of caustic soda (the solution should be concentrated) to the oil in a porcelain evaporating dish, and after stirring thoroughly, raise nearly to the boiling point, and maintain this temperature for five minutes; then add more water and boil a few minutes; then allow to cool and add hydrochloric acid in excess; allow to stand a few minutes after thoroughly stirring; then transfer to a filter free from iron and wash with water until free from sodium chlorid, and finally dry without heat. This process yields an unexceptional product, equal in every respect to the salicylic acid of manufacturing chemists.

It is maintained by many very observant physicians that the natural acid is in every way superior to the synthetical product as a medicinal agent. This being so, and in view of the abundant evidence at hand we are bound to accept, it is best that only the natural product should be used in medicine.

But it is objected that it is not possible to obtain oil of known natural origin in the market. While I am aware of the fact that a very large part of the oil of wintergreen sold is of synthetic origin, there need be no trouble experienced in obtaining oil of undoubted natural origin, and there is no trouble in making the acid from this. This is only one of the many articles where the pharmacist can largely increase his profits by making them himself.

PHOTOGRAPHIC SUPPLIES.

In almost every city of any size there are quite a number of amateur photographers and their number is constantly growing. This trade the pharmacist can make a source of some profit in the sale of ready-made developers and photographic chemicals. In some places the pharmacist can make photographic supplies a profitable side line, but I think he should carefully canvass the ground before venturing into this field. It might be taken for granted that he can sell some of these goods, but can he sell enough to make it profitable and pay him for his investment? But if the pharmacist lets it be known that he puts up an excellent developer he can easily secure sale for it, and this, too, at good profits and at no considerable expense to himself. Among developing agents I have found hydroquinone the best suited for making one solution developers. These, if kept tightly corked, keep indefinitely and, beside, are easily and cheaply made. This developer is very popular, is easily handled, gives a considerable range of exposure, yields negatives of good density, and is a favorite where once used. I have found the following formula to yield an excellent preparation that keeps nicely and gives excellent satisfaction wherever used:

PAR EXCELLENCE DEVELOPER.

Hydroquinone	1 1-10 drs. to 2 drs.
Sodium sulphite, cryst.	3 ozs.
Potassium carbonate	1 1-10 ozs. to 2 ozs.
Potassium bromide	3 grs.
Water, enough to make	32 fl. ozs.

Add the potassium bromide to the solution of the hydroquinone and potassium carbonate, then filter. Put up in bottles and seal.

This developer can be used over and over again as long as it will work; however, the developer once used should be put in a different container and used only on plates that have been fully or slightly over-exposed. To restrain its action in cases of over-exposure dilute with water. This solution has a kind of tanning action on the gelatin and thus effectively prevents frilling. This, if put up in 8 ounce bottles and labeled neatly, can easily be sold for 25 cents a bottle, while costing less than 6 cents to put up.

While I would highly recommend this formula, I would also recommend another, using dry pyrogalic acid and a solution containing the other chemicals. The pyro can be put up in 5-grain powders or made into two-and-a-half grain tablets, and used as directed. This developer is the one I use in my own work; it does not stain the hands where ordinary care is used, and the pyro being always fresh is much to be preferred to a two-solution developer where but a limited amount of work is done. Of course, where work is being done steadily, necessitating the constant use of a developer, the two-solution developers are to be preferred. The formula reads as follows:

Sodium sulphite	4 ozs.
Sodium carbonate	2 ozs.
Potassium ferrocyanide	2 ozs.
Water, enough to make	64 fl. ozs.

To each two ounces of the solution use five grains of pyro. This is enough for a 4x5 or 5x7 plate. Use potassium bromide as a restrainer or dilute with water.

Either of the above developers are easily and cheaply made and will not only yield large profits on their sale, but they will give satisfaction and recommend themselves where once used.

The aim of the pharmacist should be to regain the trade on flavoring extracts and spices that once belonged to druggists, but which of late years has gone to the grocers. The pharmacist has it in his power to do this, for, making the flavorings himself, he is in position to meet any kind of competition and to furnish better goods for the money. By giving out a few samples among the best trade he can easily demonstrate the superior quality of his goods. Not only is this so, but I believe that he can do a good business with baking powders of his own make. These goods are easily made and yield good profits, and their sale belongs legitimately to the pharmacist.

*Frank Edel in *Western Druggist*.

An Old Friend.

Toronto's bill-boards and fences are at present decorated with a striking and attractive two-sheet poster containing the announcement, "St. Jacobs Oil Conquers Pain," a necessarily brief introduction to an old and well-known remedy.

The kindly countenance of old Saint Jacobs has been well known to the Canadian drug trade for many years, and it is no guess to hazard the assertion that every druggist, from the Atlantic to the Pacific, always has on hand a stock of this popular preparation, to supply the demands of his patrons.

The Charles A. Vogeler Co., an old and well-known drug house, located at Baltimore, Maryland, U.S.A., and with branch houses in various countries, are sole proprietors of St. Jacobs Oil, Hamburg Drops, Hamburg Tea, etc. Their branch house for Canada is located in commodious quarters at 44 and 46 Lombard street, Toronto.

Mr. Edward H. Woolley is the Canadian representative, he having founded the branch for Canada in 1880, and, with the exception of a brief interval, looked after its interests ever since, being well and favorably known by a majority of the trade.

Visiting druggists to Toronto will find it both pleasant and profitable to pay a visit to this well-known house, and leave an order for a supply of attractive advertising matter.

Naphthosalicine as an Antiseptic in Laundries.

A patent has been taken out in France for a preparation called naphthosalicine, which consists of naphthol and salicylic acid rendered soluble in boiling water by means of borax. The solution so obtained is not thrown out on rinsing with cold water. For heavy articles pure alkali may be used in place of borax.—*Rev. Méd. Pharm.*

The Science of Optics.

By LIONEL LAURANCE

Myopia.

(Continued.)

The object aimed at with these CC lenses is not only to improve the sight for distance but also to prevent the eyes being used at too near a distance.

A myope of low degree (up to 2.50 D) has generally extra good sight for anything brought within the limits of his PR. He is able to read very fine print at a greater distance than the Emmetrope, because the image is formed on the retina of a myope eye under a great angle. He can also see smaller objects for the same reason, and also because having more Ac. in reserve he can bring them closer if necessary.

When he is fitted with glasses V $\frac{5}{5}$ or $\frac{6}{6}$ that is as good as or better than it is in Em. If he suffers some inconveniences, he has also some advantages, such as sight particularly well adapted for close work, great visual acuteness, and the postponement of manifest Presbyopia until a very advanced age, especially if the Ac. be kept actively employed during early and middle life, by the use of CC glasses and not allowed to become lost from non-use.

In M of medium degree between 2.75 and 5 D there is very bad sight for distance, and although vision for close work is good, fine print being easily legible, it can only be done very near to the eyes. The complaints are usually only as regards the distant vision, but sometimes also as to asthenopia, headaches, etc.

On testing it is found that V = $\frac{5}{30}$ or less, but there is no difficulty in determining the defect and improving it very considerably making it $\frac{5}{15}$ or nearly 30. As a rule the same power is required for both eyes.

The measure of the defect is the very weakest —sph. lens with which each eye separately attains V = $\frac{5}{15}$ or the best obtainable, these lenses being reduced in strength as much as possible, binocularly with − sph. lenses placed in front of the monocular correction.

The sight is then to be tested at the reading distance. These myopes read or write at their PR, which being at some distance between 14 and 8 in. is too near to the eyes. If the client be young there is a certainty of an increase of the defect, owing to the strain of the internal recti on the sclerotic, and the stooping that is necessary in order to read or write. There is also likely to be asthenopia in a young or matured person on account of the excessive convergence exerted without Ac., and there is almost invariably insufficiency of the internal recti. In some cases, also, there may be occasional strabismus.

It is therefore very necessary that the lenses be fitted and prescribed for close work. This is of greater importance than for the distant V although no doubt the client will not agree with the optician on that point, he thinking his near V very good. The glasses will most likely not improve the sight for close work, but they will remove the reading place to a proper distance, and cause Ac and Con. to be exerted more harmoniously.

If with the lenses suited for distance No. 1 be easily legible, they must be reduced in strength 0.25 to 0.50 D, and given for constant use *i.e.* for both far and near V.

The lenses selected for distance do not allow of easy V for close work, because the sphincter of the ciliary has become weak and deficient from want of use, then Cx. power to the CC lenses selected must be added until there is found the weakest − spherical that allow of No. 1 being easily and comfortably read at the proper reading distance. Thus the CC lenses are reduced in strength as little as possible so as to allow of Ac being exerted. Nothing is gained by making the reduction large, because by so doing the harmony between Ac. and Con. would not be achieved, and the ciliary would be left with little or no necessity for action. The lenses are to be worn constantly in these cases of medium M where Ac. cannot be exerted sufficiently to read No. 1 with the distance lenses, the sight should be retested some months later, and if a fuller correction for near work can be borne, it should be given and the increase continued until the ciliary having regained its normal strength, the full correction less $\frac{1}{4}$ or $\frac{1}{2}$ D can be used for both near and distant V.

The client who has M of medium degree should not be given a pair of glasses for near and another for distant V. He must wear constantly those that best correct the sight for close work, even if with them V is only $\frac{5}{15}$ or $\frac{5}{20}$, but if sharp distant V be a necessity, he may be given another pair, being those that make V = $\frac{5}{15}$, or the best obtainable for occasional use.

The importance of the use of lenses for near work in M of medium degree cannot be too strongly insisted upon, notwithstanding that the sight is good without them. A myope of 4 D reads at 10 in. without exerting any Ac., there is very likely asthenopia owing to the want of harmony between Ac. and Con. The distance being too short there is too much strain on the internal recti and the sclerotic. The former causing insufficiency of the muscles, the latter and the habit of stooping, which is an absolute necessity when writing, must cause in young people an augmentation of the defect.

Armed with the best corrective lenses for close work the myope has, like the myope of low degree without glasses, neither inclination nor necessity to bring work too close to the eyes, nor to stoop, he will read and write at 14 or 16 in., using thus less Con. and more Ac., and so the two functions more or less in harmony. This distant V is very good, or at least sufficiently so, and if engaged in business he can turn freely from desk work to distant objects. If a school child he can read on the blackboard and in the copy or lesson book with equal facility. His eyes will have been endowed with practical normality, so far as this applies to at various distances, and without pain, although, of course, distant V is somewhat below the standard.

In M of high degree (over 5 D) there is extremely defective distant V, so that often even the test card itself cannot be seen, and near V is also bad, although as a rule this is not acknowledged, the myope rather boasting of the power he has of seeing fine print, and in fact, as compared with his sight for objects afar, that for near objects is in M very good. In the higher cases—those over 8 D—it frequently happens that No. 1 cannot be read at all, no matter how near it be brought to the eyes.

On testing, if a weak + sph. be first used the sight might not be apparently made worse, it being already so bad, so also a weak − sph. fails to make any improvement and stronger lenses have to be used to determine the error of refraction. The measure of the defect is the weakest − sph with which each eye obtains the best possible V, the lenses being reduced in strength by adding binocular + sph. lenses, when both eyes are engaged in V usually the power required by each eye is different (Anisometropia).

The visual acuteness in the higher cases may be found below the normal, *i. e.*, V = $\frac{5}{60}$, $\frac{5}{30}$ or $\frac{5}{20}$ owing to the changes that have taken place in the eye, through stretching so that the retinal image covers fewer rods and cones at the macula than in other conditions of refraction. Up to say 8 D. and sometimes when greater V = $\frac{5}{15}$, but whatever is the smallest line legible with any glass, is the best obtainable V and the measure of the defect is that weakest − sph. which makes it still visible.

For instance, if with − 13 D the No. 80 line is read, and on trying stronger lenses there is no better sight, then weaker are to be tried, until there is found that weakest one, that still allows of No. 80 being read.

As the reading place of a myope of high degree is so near to the eyes, there may be asthenopia, headaches, weakness of the internal recti, periodic strabismus and diplopia, and finally fixed divergent strabismus.

These cases of M require most careful correction, and in young people they must be regarded as dangerous conditions. It is plain that, as all the attendant evils of M arise from the near V, the correction of this is of so much necessity that the improvement of the distant V is in comparison a mere luxury, this is true of

"I predict that at the close of this century we are to have three years of such prosperity as the oldest of those here present ..as not before witnessed."--Mr. EDWARD GURNEY, ex-President of the Toronto Board of Trade, Sept. 6th, 1897.

...MANUFACTURERS and dealers in all lines of goods sold by druggists should see to it that their announcements appear promptly, in order to secure a portion of the increased trade that is certain to be had this fall and winter.

An Advertisement in the "Canadian Druggist" will do it all

This one medium reaches the entire drug trade of the Dominion of Canada.

Who should Advertise in the

...Canadian Druggist

Rubber Goods Manufacturers
Wholesale Druggists and Jobbers
Dealers in Lamps, Glassware, Etc.
Cigar and Tobacco Manufacturers
Stationery and Wall Paper Jobbers
Patent Medicine Manufacturers and Jobbers
Photographic Instrument and Supply Dealers
Surgical and Scientific Apparatus Manufacturers
Dealers in Optical Goods and Opticians' Supplies
Drug and Chemical Manufacturers and Grinders
Manufacturers of Shop Fittings, Showcases, Etc.
Fancy and Toilet Goods Manufacturers and Dealers
Manufacturers of Proprietary and Physicians' Remedies

And dozens of other articles which are handled by the trade.

every highly myopic person, but especially so of children.

It is rather difficult sometimes to make the client grasp this fact, as he comes to the optician rather for an amelioration of his V of distant objects.

It is unusual for the distance correction to allow of No. 1 being easily read. If, however, this should occur, the power of the lenses is to be reduced 0.50 to 1 D or even 2 D in very high cases, and these prescribed for constant use.

The P.A.T.A. of Canada.

The annual meeting of the P.A.T.A. of Canada was held on September 7th at the Queen's Hotel, Toronto, and, although this association is still in its infancy in Canada, the large manufacturers realize that in becoming members of this association great good can be done the different branches of trade.

The president, Mr. T. Milburn, occupied the chair. In calling the meeting to order, the president spoke as follows:

GENTLEMEN,—It is my privilege to call the first official meeting of the Proprietary Articles Trade Association to order. In doing so permit me to express my pleasure at the large attendance and the growing interest manifested in the grave and important issues affecting the three branches of the drug and medicine interests of the Dominion.

Let me also thank you most heartily for the high and unexpected honor conferred upon me at your inaugural meeting in June last, in electing me to the presidency of this association. Coming as it did, in my absence from home, your kindness is all the more highly appreciated. As president, I shall endeavor to discharge my duties faithfully and earnestly, hoping good results will accrue to all the branches of this important trade with which we are mutually identified. I feel confident that I shall receive from you, both personally, and collectively, every assistance that you can possibly render me; for without united effort and strong, harmonious work, it is useless to attempt to remedy the evils which are destroying legitimate commerce, not only in the drug trade, but in every other line that seems attractive to the cutter.

Before calling upon our secretary for the reading of the minutes, let me say, that in the copy with which I have been favored I note that the plan presented for your consideration by the wholesale and retail druggists, at your inauguration meeting, was deemed impracticable and rejected at that time, probably, as I take it, because your association being then in its infancy, and without the aid and counsel of many prominent representatives of the trade, who were absent, you thought it wise to consider well, and weigh carefully, in the presence of a larger meeting, all the phases of this all-important question.

Therefore, I think that the plan, as then presented by the wholesale and retail druggists, may be profitably considered at this meeting, and I strongly recommend its adoption, providing no better plan can be thought of.

We have experienced a revolution in trade methods, accomplished by the concentration of capital in large concerns, to the damage of smaller concerns and to the injury of the retail trade generally.

What is required is a combination or working together of all branches of the trade to resist the unjust encroachments and unfair methods of those who have brought about the present state of affairs, and to again restore this great branch of commerce to a fair and equitable basis.

Let us bear in mind that whatever injures our wholesale or our retail friends injures ourselves equally, and that our fullest sympathy and earnest co-operation should be extended to them; while we expect, in return, their hearty support and united effort in the work of restoration which the three organized branches of the trade have in hand. Mutual confidence, loyal union, and vigorous effort will surely result in success. While other plans have failed, we may profit by their experience, and can better guard against weakness and failure in the future. But the joint action of all branches and the honest endeavor of every member of the trade is absolutely necessary to attain the desired object.

For myself, I can only say that I have vigorously opposed the "cutting evil" at all times, and I believe other members of this body have, even at considerable sacrifice, earnestly striven to stem the tide of destruction which threatens so large a part of our trade.

Let me hope that you will give full consideration and your best judgment to all plans or suggestions; and whatever action is taken will be for the best interest of all concerned.

Again thanking you for the unexpected honour you have conferred on me, I will conclude with the wish that harmony and progress may characterize this, our first official meeting.

At the conclusion of the president's address a large amount of business was transacted.

The following firms are members of the association:—

J. C. Ayer & Co., Lowell, Mass.; Brayley, Sons & Co., Montreal, Que.; G. C. Briggs & Co., Hamilton, Ont.; Common Sense Mfg. Co., D. Densmore & Co., Dodd's Medicine Co., S. G. Detchon, Edmanson & Bates, Toronto; H. B. Foulds New York City; G. F. Fulford, & Co., Brockville; Gilmour Bros. & Co., Montreal, Que.; R. L. Gibson, G. A. Gibbons, Holgate, Fielding & Co., Frances Kahle & Co., E. W. LePage & Co., Toronto; Leeming, Miles & Co., Montreal, Que.; Milburn & Co., Toronto; Munyon's H. H. Remedy Co., Philadelphia, Pa.; Northrop & Lyman C., Toronto; C. C. Richards & Co., Yarmouth, N. S.; Radway & Co., Montreal, Que.; Quick Cure Co., Quebec, Que.; J. H. Sanderson, V. S., Richmond Hill; Scott & Bowne, Toronto; Slocum Chemical Co., Toronto; Sloan Medicine Co., Hamilton, Ont.; Chas. A. Vogeler Co., Toronto; H. K. Wampole & Co., Toronto; Woodward Medicine Co., Toronto; Warner's Safe Cure Co., Rochester. N. Y.; The World's Dispensary Medical Asso., Buffalo; Lydia E. Pinkham, Lynn, Mass.; Sterling Remedy Co., Attica, Ind.; Pabst Brewing Co., Montreal, Que.; Effervescent Salt Co., Montreal, Que.; California Fig Syrup Co., San Francisco, Cal.; Dr. Ward Medicine Co., Toronto.

W. L. LEVEE, Secretary.

Legal.

Queen vs. Holgate.

On the 27th of July last past, a charge was laid against F. H. Holgate (Hooper & Co.), druggist, of this city, for selling liquor without a license, contrary to the provisions of an Act passed at the last session of the Ontario Legislature entitled "An Act further to Improve the License Laws." The ground of complaint was the sale by Mr. Holgate of a bottle of "Vin Mariani." The case was tried before His Worship, Police Magistrate Kingsford, at the Police Court here on the 12th of August, when three witnesses were called on behalf of the Crown, and ten on behalf of the defence, and among the latter were six prominent doctors, all of whom testified to the valuable medicinal properties of Vin Mariani and its extensive use by the medical profession in their practice as a tonic, or medicine, and in prescriptions, and that it is not a beverage in any sense of the term. It appeared from the evidence that this wine contains 13.45 per cent. of alcohol, and there is about one-fifth of a grain of cocaine or tincture of coca to each wine glass.

Mr. Lawrence A. Wilson, the Canadian representative of the Vin Mariani Company, gave evidence as to the method of preparing this wine, and showed that it contains coca erythroxylon and pure grape juice, and that the alcohol in the preparation is the natural product of the grape juice, and is not procured by the addition of any spirit. He also showed the absolute necessity of the use of alcohol in procuring and preserving the erythroxylon or tincture of coca. His evidence was supported by several doctors and druggists, as well as by Professor Shuttleworth, who explained in detail the manufacture of tinctures, etc. Evidence was also put in by the defence showing that this wine is a proprietary article put up for sale in bottles, and that it is handled by druggists all over the world in the same way as patent medicine, and is by many classed as such.

As a part of the defence evidence was given of certain instructions issued by the License Department of the Ontario Government to the license inspectors throughout the Province, and also a letter from the

Deputy Attorney General to the editor of the CANADIAN DRUGGIST to the effect that it was not the intention of the Government to prohibit the sale of established and well known patent or proprietary articles containing liquors without the prescription of a qualified medical practitioner.

Upon the conclusion of the evidence His Worship, the Police Magistrate, was of opinion that he was bound by the Act, and could not give effect to the instructions issued to the license inspectors, and that he would on the evidence be obliged to make a conviction; but, in order that the matter might be fairly brought before the Government, he enlarged the case for a week to enable the defence to procure copies of the evidence, which had all been taken in shorthand by an official reporter, and lay the same before the Attorney-General and the License Department for their consideration, and to be dealt with as they may think proper. Owing to pressure of business in the Attorney-General's Department, and the absence of several of the officials on vacation, the matter has not yet been fully dealt with, and in the meantime the case stands enlarged in the Police Court from week to week.

Amongst Our Advertisers.

The optical department by Dr. Hamill this issue is of unusual importance to those interested in optics—read it.

The Canadian Specialty Co., 38 Front street east, Toronto, have just issued a new price list of their druggists specialties, which they have mailed to all the druggists in Canada. Any druggist who may have been overlooked may obtain one by dropping them a postal card.

Messrs. Giov. Restuccia & Co., Messina, Italy, are among the oldest and best manufacturers of olive and essential oils. They invite chemical analyses of their Cream Salad Olive Oil as to its purity, and druggists throughout Europe and America can attest to its excellent quality. Their Canadian agents, the Canadian Specialty Co., of 38 Front street east, Toronto, Ont., have just received a fresh shipment in one gallon tins, and druggists who have not yet tried the oil should send for sample order to them. They also have Oil of Lemon, Sweet and Bitter Orange, Bergamot and Terpeneless Oil of Lemon in one pound coppers.

Confidence.

Read what Gilmour Bros. Co. say under this heading in their advertisement this month. They make a proposition to increase your trade, and it is worth taking advantage of.

Dr. Coderre's Pills, etc.

The Franco-American Chemical Co. publish their price list in this issue. Their preparations are quickly coming to the fore. Note what they say, "We will not sell to price cutters."

Two Staple Remedies.

McCollum's Rheumatic Repellant and McCollum's Kidney Relief are proprietary articles which have gradually and surely won their way into public favor. W. A. McCollum, druggist, of Tilsonburg, Ont., is the proprietor, and the goods are sold by the wholesale trade generally.

Garfield Fig Syrup.

This preparation, although but a short time before the public in Canada, is meeting with encouraging success. The proprietors are pushing the sale vigorously, and offer plenty of free advertising matter to druggists. See advertisement.

Lamps and Lamp Goods.

Messrs. Gowans, Kent & Co., of Toronto, Ont., and Winnipeg, Man., offer the trade a large variety of lamps and lamp goods. These are good paying accessories to the druggist's stock in many places, and this well-known firm can offer good inducements to buyers.

CANADIAN DRUGGIST PRICES CURRENT

Corrected to September 10th, 1897.

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

Alcohol, gal	$4 75	$5 00
Methyl	1 90	2 00
Allspice, lb	13	15
Powdered, lb	15	17
Aloin, oz	40	45
Anodyne, Hoffman's bot., lbs	50	55
Arrowroot, Bermuda, lb	40	45
St. Vincent, lb	15	18
Balsam, Fir, lb	40	45
Copaiba, lb	85	1 10
Peru, lb	3 25	3 50
Tolu, can or less, lb	90	95
Bark, Barberry, lb	22	25
Bayberry, lb	15	18
Buckthorn, lb	15	17
Canella, lb	15	17
Cascara Sagrada	25	30
Cascarilla, select, lb	18	20
Cassia, in mats, lb	18	20
Cinchona, red, lb	60	65
Powdered, lb	65	70
Yellow, lb	35	40
Pale, lb	40	45
Elm, selected, lb	18	20
Ground, lb	17	20
Powdered, lb	20	28
Hemlock, crushed, lb	18	20
Oak, white, crushed lb	15	17
Orange peel, bitter, lb	15	16
Prickly ash, lb	35	40
Sassafras, lb	15	16
Soap (quillaya), lb	13	15
Wild cherry, lb	13	15
Beans, Calabar, lb	45	50
Tonka, lb	1 50	2 75
Vanilla, lb	11 00	12 00
Berries, Cubeb, sifted, lb	25	30
powdered, lb	30	35
Juniper, lb	7	10
Ground, lb	12	14
Prickly ash, lb	40	45
Buds, Balm of Gilead, lb	55	60
Cassia, lb	25	30
Butter, Cacao, lb	75	80
Camphor, lb	68	70
Cantharides, Russian, lb	1 40	1 50
Powdered, lb	1 50	1 60
Capsicum, lb	25	30
Powdered, lb	$ 30	$ 35
Carbon, Bisulphide, lb	17	18
Carmine, No. 40, oz	40	50
Castor, Fibre, lb	20 00	20 00
Chalk, French, powdered, lb	10	12
Precip., see Calcium, lb	10	12
Prepared, lb	5	
Charcoal, Animal, powd., lb	4	5
Willow, powdered, lb	20	25
Clove, lb	16	17
Powdered, lb	17	18
Cochineal, S.G., lb	40	45
Collodion, lb	75	80
Cantharidal, lb	2 50	2 75
Confection, Senna, lb	40	45
Creosote, Wood, lb	2 00	2 50
Cuttlefish Bone, lb	25	30
Dextrine, lb	10	12
Dover's Powder, lb	1 50	1 60
Ergot, Spanish, lb	75	80
Powdered, lb	90	1 00
Ergotin, Keith's, oz	2 00	2 10
Extract Logwood, bulk, lb	13	14
Pounds, lb	14	17
Flowers, Arnica, lb	15	20
Calendula, lb	55	60
Camomile, Roman, lb	25	30
German, lb	40	45
Elder, lb	20	22
Lavender, lb	12	15
Rose, red, French, lb	1 60	2 00
Rosemary, lb	25	30
Saffron, American, lb	65	70
Spanish, Val'a, oz	1 00	1 25
Gelatine, Cooper's, lb	75	80
French, white, lb	35	40
Glycerine, lb	20	25
Guarana	1 75	2 00
Powdered, lb	2 00	2 25
Gum Aloes, Cape, lb	18	20
Barbadoes, lb	30	50
Socotrine, lb	65	70
Asafœtida, lb	40	45
Arabic, 1st, lb	70	75
Powdered, lb	80	95
Sifted sorts, lb	45	50
Sorts, lb	30	35
Benzoin, lb	50	1 00
Catechu, Black, lb	9	20
Gamboge, powdered, lb	1 20	1 25
Guaiac, lb	50	1 00
Powdered, lb	90	95
Kino, true, lb	4 25	4 50
Myrrh, lb	$ 45	$ 48
Powdered, lb	55	60
Opium, lb	4 10	4 25
Powdered, lb	5 50	5 75
Scammony, pure Resin, lb	12 80	13 00
Shellac, lb	40	45
Bleached, lb	45	50
Spruce, true, lb	30	35
Tragacanth, flake, 1st, lb	85	90
Powdered, lb	1 10	1 25
Sorts, lb	55	70
Thus, lb	8	10
Herb, Althea, lb	27	35
Bitterwort, lb	36	40
Burdock, lb	16	18
Boneset, oz., lb	15	17
Catnip, oz., lb	17	20
Chiretta, lb	25	30
Coltsfoot, lb	20	38
Feverfew, oz., lb	53	55
Grindelia robusta, lb	45	50
Horehound, oz., lb	18	20
Jaborandi, lb	45	50
Lemon Balm, lb	38	40
Liverwort, German, lb	38	40
Lobelia, oz., lb	15	20
Motherwort, oz., lb	20	22
Mullein, German, lb	17	20
Pennyroyal, oz., lb	18	20
Peppermint, oz., lb	21	22
Rue, oz., lb	30	35
Sage, oz., lb	18	20
Spearmint, lb	21	25
Thyme, oz., lb	18	20
Tansy, oz., lb	15	18
Wormwood, oz	20	22
Yerba Santa, lb	38	44
Honey, lb	13	15
Hops, fresh, lb	20	25
Indigo, Madras, lb	75	80
Insect Powder, lb	38	40
Isinglass, Brazil, lb	2 00	2 10
Russian, true, lb	6 00	6 50
Leaf, Aconite, lb	25	30
Bay, lb	18	20
Belladonna lb	25	30
Buchu, long, lb	50	55
Short, lb	25	27
Coca, lb	35	40
Digitalis, lb	15	20
Eucalyptus, lb	18	25
Hyoscyamus	20	25
Matico, lb	70	70

Senna, Alexandria, lb	$ 25	$ 30
Tinnevelly, lb	15	25
Stramonium, lb	20	25
Uva Ursi, lb	15	18
LEECHES, Swedish, doz	1 00	1 10
LICORICE, Solazzi	45	50
Pignatelli	35	40
Grasso	30	35
Y & S—Sticks, 6 to 1 lb., per lb.	27	30
" Purity, 100 sticks in box	75	75
" Purity, 200 sticks in box	1 50	1 50
" Acme Pellets, 5 lb. tins	2 00	2 00
" Lozenges, 5 lb. tins	2 00	2 00
" Tar, Licorice, and Tolu, 5 lb. tins	2 00	2 00
LUPULIN, oz	30	35
LYCOPODIUM, lb	70	80
MACE, lb	1 20	1 25
MANNA, lb	1 60	1 75
Moss, Iceland, lb	9	10
Irish, lb	12	13
MUSK, Tonquin, oz	46 00	50 00
NUTGALLS, lb	21	25
Powdered, lb	25	30
NUTMEGS, lb	1 00	1 10
NUX VOMICA, lb	10	12
Powdered, lb	25	27
OAKUM, lb	12	15
OINTMENT, Merc., lb. ½ and ½	70	75
Citrine, lb	45	50
PARALDEHYDE, oz	20	22
PEPPER, black, lb	12	13
Powdered, lb	15	16
PITCH, black, lb	3	4
Bergundy, true, lb	10	12
PLASTER, Calcined, bbl. cash	25	3 25
Adhesive, yd	12	13
Belladonna, lb	65	70
Galbanum Comp., lb	80	85
Lead, lb	25	30
POPPY HEADS, per 100	1 00	1 10
ROSIN, Common, lb	2½	3
White, lb	3½	4
RESORCIN, white, oz	25	30
ROCHELLE SALT, lb	25	28
ROOT, Aconite, lb	22	25
Althea, cut, lb	30	35
Belladonna, lb	25	30
Blood, lb	18	25
Bitter, lb	27	30
Blackberry, lb	15	18
Burdock, crushed, lb	18	20
Calamus, sliced, white, lb	20	25
Canada Snake, lb	30	35
Cohosh, black, lb	15	20
Colchicum, lb	40	45
Columbo, lb	20	22
Powdered, lb	25	30
Coltsfoot, lb	38	40
Comfrey, crushed, lb	20	25
Curcuma, powdered, lb	13	14
Dandelion, lb	15	18
Elecampane, lb	15	20
Galangal, lb	15	18
Gelsemium, lb	22	25
Gentian or Genitan, lb	12	13
Ground, lb	13	14
Powdered, lb	13	15
Ginger, African, lb	18	20
Po., lb	20	22
Jamaica, blchd., lb	27	30
Po., lb	30	35
Ginseng, lb	4 50	4 75
Golden Seal, lb	75	80
Gold Thread, lb	90	95
Hellebore, white, powd., lb	12	15
Indian Hemp	18	20
Ipecac, lb	1 75	2 00
Powdered, lb	2 00	2 25
Jalap, lb	55	60
Powdered, lb	60	65
Kava Kava, lb	40	90
Licorice, lb	12	15
Powdered, lb	13	15
Mandrake, lb	13	18
Masterwort, lb	16	40
Orris, Florentine, lb	30	35
Powdered, lb	40	45
Pareira Brava, true, lb	40	45
Pink, lb	40	45
Parsley, lb	30	35
Pleurisy, lb	20	25
Poke, lb	15	18
Queen of the Meadow, lb	$ 18	$ 20
Rhatany, lb	20	30
Rhubarb, lb	75	2 50
Sarsaparilla, Hond, lb	40	45
Cut, lb	50	55
Senega, lb	55	65
Squill, lb	13	15
Stillingia, lb	22	25
Powdered, lb	25	27
Unicorn, lb	38	40
Valerian, English, lb. true	20	25
Virginia, Snake, lb	40	45
Yellow Dock, lb	15	18
RUM, Bay, gal	2 50	2 75
Essence, lb	3 00	3 25
SACCHARIN, oz	1 25	1 50
SEED, Anise, Italian, sifted, lb	13	15
Star, lb	35	40
Burdock, lb	30	35
Canary, bag or less, lb	4	5
Caraway, lb	10	13
Cardamom, lb	1 25	1 50
Celery	25	30
Colchicum	50	60
Coriander, lb	10	12
Cumin, lb	15	20
Fennel, lb	15	17
Fenugreek, powdered, lb	7	9
Flax, cleaned, lb	3½	4
Ground, lb	4	5
Hemp, lb	3½	4
Mustard, white, lb	11	12
Powdered, lb	15	20
Pumpkin	25	30
Quince, lb	65	70
Rape, lb	5	6
Strophanthus, oz	50	55
Worm, lb	22	25
SEIDLITZ MIXTURE, lb	25	30
SOAP, Castile, Mottled, pure, lb	10	12
White, Conti's, lb	15	16
Powdered, lb	25	40
Green (Sapo Viridis), lb	25	40
SPERMACETI, lb	60	65
TURPENTINE, Chian, oz	75	80
Venice, lb	10	12
WAX, White, lb	50	75
Yellow	40	45
WOOD, Guaiac, rasped	5	6
Quassia chips, lb	10	12
Red Saunders, ground, lb	5	6
Santal, ground, lb	5	6

CHEMICALS.

ACID, Acetic, lb	12	13
Glacial, lb	45	50
Benzoic, English, oz	20	25
German, oz	10	12
Boracic, lb	13	14
Carbolic Crystals, lb	30	35
Calvert's No. 1, lb	2 10	2 15
No. 2, lb	1 35	1 40
Citric, lb	50	55
Gallic, oz	10	12
Hydrobromic, diluted, lb	30	35
Hydrocyanic, diluted, oz. bottles doz	1 50	1 60
Lactic, concentrated, oz	*8*	*10*
Muriatic, lb	3	5
Chem. pure, lb	18	20
Nitric, lb	10½	13
Chem. pure, lb	25	30
Oleic, purified, lb	75	80
Oxalic, lb	12	13
Phosphoric, glacial, lb	1 00	1 10
Dilute, lb	13	17
Pyrogallic, oz	30	35
Salicylic, white, lb	75	80
Sulphuric, carboy, lb	2	2½
Bottles, lb	4	5
Chem. pure, lb	18	20
Tannic, lb	80	85
Tartaric, powdered, lb	40	45
ACETANILID, lb	70	75
ACONITINE, grain	4	5
ALUM, cryst., lb	1½	3
Powdered, lb	3	4
AMMONIA, Liquor, lb., .880	10	12
AMMONIUM, Bromide, lb	80	85
Carbonate, lb	14	15
Iodide, oz	35	40
Nitrate crystals, lb	40	45
Muriate, lb	*12*	*16*
Valerianate, oz	$ 55	$ 60
AMYL, Nitrite, oz	16	18
ANTINERVIN, oz	85	00
ANTIKAMNIA	1 30	1 35
ANTIPYRIN, oz	*1 10*	*1 20*
ARISTOL, oz	1 85	2 00
ARSENIC, Donovan's sol., lb	25	30
Fowler's sol., lb	10	13
Iodide, oz	50	55
White, lb	6	7
ATROPINE, Sulp. in ¼ ozs. 80c., oz	6 00	6 25
BISMUTH, Ammonia-citrate, oz	40	45
Iodide, oz	55	60
Salicylate, oz	25	30
Subcarbonate, lb	2 00	2 25
Subnitrate, lb	1 80	2 00
BORAX, lb	7	8
Powdered, lb	8	9
BROMINE, oz	8	13
CADMIUM, Bromide, oz	20	25
Iodide, oz	45	50
CAFFEINE, oz	55	60
Citrate, oz	45	50
CALCIUM, Hypophosphite, lb	1 50	1 60
Iodide, oz	95	1 00
Phosphate, precip., lb	35	38
Sulphide, oz	5	6
CERIUM, Oxalate, oz	10	12
CHINOIDINE, oz	15	18
CHLORAL, Hydrate, lb	1 25	1 30
Croton, oz	75	80
CHLOROFORM, lb	60	1 90
CINCHONINE, sulphate, oz	25	30
CINCHONIDINE, Sulph., oz	15	20
COCAINE, Mur., oz	3 50	4 00
CODEIA, ¼ oz	75	80
COLLODION, lb	65	70
COPPER, Sulph., (Blue Vitriol) lb.	6	7
Iodide, oz	65	70
COPPERAS, lb	1	3
DIURETIN, oz	1 60	1 65
ETHER, Acetic, lb	75	80
Sulphuric, lb	40	50
EXALGINE, oz	1 00	1 10
HYOSCYAMINE, Sulp., crystals, gr.	25	30
IODINE, lb	4 50	5 00
IODOFORM, lb	5 25	5 50
IODOL, oz	1 40	1 50
IRON, by Hydrogen	80	85
Carbonate, Precip., lb	15	16
Sacch., lb	30	35
Chloride, lb	45	55
Sol., lb	13	16
Citrate, U.S.P., lb	90	1 00
And Ammon., lb	70	75
And Quinine, lb	1 50	3 00
Quin. and Stry., oz	18	30
And Strychnine, oz	13	15
Dialyzed, Solution, lb	50	50
Ferrocyanide, lb	55	60
Hypophosphites, oz	25	35
Iodide, oz	40	45
Syrup, lb	40	45
Lactate, oz	5	6
Pernitrate, solution, lb	15	16
Phosphate scales, lb	1 25	1 30
Sulphate, pure, lb	*7*	*9*
Exsiccated, lb	8	10
And Potass. Tartrate, lb	80	85
And Ammon Tartrate, lb	80	85
LEAD, Acetate, white, lb	13	15
Carbonate, lb	7	8
Iodide, oz	35	40
Red, lb	7	9
LIME, Chlorinated, bulk, lb	4	5
In packages, lb	6	7
LITHIUM, Bromide, oz	30	35
Carbonate, oz	30	35
Citrate, oz	25	30
Iodide, oz	50	55
Salicylate, oz	35	40
MAGNESIUM, Calc., lb	55	60
Carbonate, lb	18	20
Citrate, gran., lb	35	40
Sulph. (Epsom salt), lb	1½	3
MANGANESE, Black Oxide, lb	5	7
MENTHOL, oz	35	40
MERCURY, lb	75	80
Ammon (White Precip.)	1 25	1 30
Chloride, Corrosive, lb	85	90
Calomel, lb	90	1 00
With Chalk, lb	60	65

Choice Cigars.

This has come to be a recognized leader amongst the "extra" lines carried by druggists. The National Cigar Co., of Toronto, are offering some special lines to the trade, and their goods are conceded to be "right" in make and material.

Welch's Grape Juice.

This article, which has enjoyed a large sale in the United States, is now advertised to the Canadian trade. Messrs. Lyman, Sons & Co., Montreal, and Lyman Bros. Co., Toronto, are the selling agents for Quebec and Ontario. The preparation is an elegant one, handsomely put up, and should prove a ready seller.

Gibson's Sweets.

These well-known confections are advertised by the London (Ont.) house of Kerry, Watson & Co. They have them in all flavors, also a full assortment of Gibson's Tablets, Cough Drops, etc.

James A. Kennedy & Co.

Are offering to the trade full lines in drugs, chemicals, proprietary medicines, etc. This representative western firm are also selling agents for a number of specialties, viz., Moxon's Liniment, Southern Asthma Cure, Story's Headache Cure, etc. Visitors to London, Ont., during the exhibition should call.

Popular Everywhere.

Perhaps one of the best selling and most popular twenty-five cent remedies sold in Canada is Thomas' Eclectric Oil. Messrs. Northrop & Lyman Co., the manufacturers, inform us that their output is over $1,000 per day, or $360,000 per annum. This speaks well for a remedy which receives comparatively little booming in the way of general advertising. Another of this firm's preparations which commands a remarkable sale not only in Canada, but abroad, is Kellogg's Asthma Remedy. Only recently an order was received from the "Rigshospitalets Apothek, of Kristiana, Norway"—the State hospital of the kingdom—for a supply of this remedy, and also from a customer in Surinan, Dutch Guiana, for the same.

British Medical Association.

The annual meeting of the British Medical Association was held at Montreal, Que., commencing August 31st.

There was a large attendance of members from Great Britain as well as members of the profession from the United States and Canada. The meeting was a very successful one, not only in point of attendance, but also in the interest exhibited, the valuable papers read and discussed, and the reception of the visitors by the local committee.

Dr. T. G. Roddick, M. P., president of the association, is to be congratulated on the success attained under his presidency. That association was formed at Worcester, England, sixty-five years ago, and was at that time called the Provincial Medical and Surgical Association. In 1856, when its meeting was held at Birmingham, the association having passed quite beyond the provincial stage and become a national affair, beyond the dispute of even the metropolitan societies, its name was changed as at present. Within the United Kingdom alone the association is divided into thirty-nine or forty branches, and has now a membership of sixteen or seventeen thousand.

It would be somewhat out of our province to give even a synopsis of the papers read, and we leave that to the medical press. One interesting feature in connection with the meeting, and which is of special interest to our readers, was the "medical museum," or exhibition of goods by firms catering to the requirements of the physician. This exhibit, we are informed, was the best ever held under the auspices of the association, the only unfortunate feature being that the time of the physicians in attendance was so completely taken up with meetings of the several sections of the association, and with social entertainments which were numerous and of a brilliant character, that the exhibit was not as well patronized as it should have been. The museum was held in Victoria Rink, which was completely filled with the manufactures of the various exhibitors.

On entering the rink, the first exhibit to the right was that of Pabst Malt Extract, which has already gained a strong foot-hold amongst members of the medical profession, and also amongst the general public.

The Apollinaris Company, Limited, of London, England, had an exhibit of their Apenta Water, with their agents, Wonham & Sons of Montreal.

Park, Davis & Co., Walkerville and Detroit, had, perhaps, the most extensive exhibit in the building. It was in three sections, and was very tastefully and prominently displayed. Their display consisted of a large number of the valuable productions of their laboratory, and attracted a large share of attention from the visitors.

F. Stearns & Co., Windsor and Detroit, had a very interesting exhibit of some of their specialties. Mr. F. K. Stearns was assisted by an excellent staff in the welcoming of their numerous callers.

Sharp & Dohme, of New York and Baltimore, showed a collection of Solid and Fluid Extracts, Effervescent Salts, etc.

H. K. Mulford & Co., Philadelphia, had a very neat display, which attracted a good deal of attention, consisting of their specialties, chiefly Antitoxins, also Compressed Tablets, etc.

Gilmour Bros. & Co., 485 St. Paul street, Montreal, had an excellent exhibit of the goods for which they are agents. Notably amongst others were the manufactures of Johnson and Johnson, in full variety of plain and medicated gauzes, lints, etc., also their lines of plasters, absorbent cotton, anæsthetics, etc. Horlicks Diastoid, a diastatic dry extract of malt, and Horlicks Malted Milk, occupied a prominent position in this display.

Evans & Sons, Montreal, exhibited a large line of pharmaceutical preparations and specialities, also the celebrated Montserrat Lime Fruit Juice.

The Welch Grape Juice Co. of Vineland, N.J., made a rich display of their preparation which has found remarkable favor with the faculty, and is bound to be a staple selling article.

Bovril, Limited, whose Canadian headquarters are at St. Peter street, Montreal, had a large showing of their famous preparation.

The Vimbos Company, Limited, of Edinburgh and London had a stand devoted to their unique Meat Extract, which is very palatable.

J. Stevens & Sons, Toronto, had an excellent exhibit of surgical instruments, etc., and the Galvanic Battery Works Co. a display of their appliances, batteries, etc.

S. Kutnow & Co., 41 Farringdon road, London, Eng., showed their Anti-asthmatic Powder, and also Kutnow's Effervescent Carlsbad powder, both of which are evidently articles of merit.

The Alpha Rubber Co., Montreal, shewed a large line of rubber goods.

The Ball and Nozzle Syringe Co., of Toronto, had their goods on exhibit, and the display created considerable interest with practitioners.

H. K. Wampole & Co., Toronto and Philadelphia, showed a full line of pharmaceutical preparations, wines, elixirs, cordials, etc. They are a very prominent feature.

The California Fig Syrup Co., had also a large exhibit of their preparation, including the "export" size which retails in England at 1s. 1½d.

Amongst other exhibitors we noticed W. R. Warner's & Co.'s preparations, shown by Kerry, Watson & Co., Montreal; John Wyeth & Bros. preparations, by Davis, Lawrence Co.

Also Lyman, Sons & Co., Montreal; Kerry, Watson Co.; Montreal, Doliber Goodale Co., Boston; Down Bros., surgical instruments, London, Eng.; Liverpool Lint Co., Liverpool, Eng., Fairchild Bros. & Foster, digestive ferments, New York; American Biscuit Manufacturing Co., somatose biscuits, New York; Arthur P. Tippet & Co., Lime Juice, etc., Montreal; Chas. Gurd & Co., mineral waters, Montreal; W. Lloyd Wood, representing the Lambert Pharmacal Co, St. Louis; Leeming, Miles & Co., Montreal; the J. B. Lippincott Co., P. Blakiston, Son & Co., Lea Bros. & Co., and Young and Pentland, medical publishers, all of Philadelphia; Duncan, Flockhart & Co., Edinburgh; B. Lindman, Toronto, and a number of others.

Iodide, oz	$ 35	$ 40
Bin., oz	25	30
Oxide, Red, lb	1 15	1 20
Pill (Blue Mass), lb	70	75
MILK SUGAR, powdered, lb	30	35
MORPHINE, Acetate, oz	1 75	1 80
Muriate, oz	1 75	1 80
Sulphate, oz	1 80	1 85
PEPSIN, Saccharated, oz	35	40
PHENACETINE, oz	38	40
PILOCARPINE, Muriate, grain	12	15
PIPERIN, oz	1 00	1 10
PHOSPHORUS, lb	90	1 10
POTASSA, Caustic, white, lb	60	65
POTASSIUM, Acetate, lb	35	40
Bicarbonate, lb	15	17
Bichromate, lb	14	15
Bitrat (Cream Tart.), lb	25	28
Bromide, lb	65	70
Carbonate, lb	12	13
Chlorate, Eng., lb	18	20
Powdered, lb	20	22
Citrate, lb	70	75
Cyanide, lb	40	50
Hypophosphites, oz	10	12
Iodide, lb	3 50	3 75
Nitrate, gran, lb	8	10
Permanganate, lb	40	45
Prussiate, Red, lb	50	55
Yellow, lb	32	35
And Sod. Tartrate, lb	25	30
Sulphuret, lb	25	30
PROPHYLAMINE, oz	35	46
QUININE, Sulph, bulk	28	30
Ozs., oz	32	35
QUINIDINE, Sulphate, ozs., oz	16	20
SALICIN, lb	4 50	5 0
SANTONIN, oz	20	22
SILVER, Nitrate, cryst, oz	80	85
Fused, oz	85	90
SODIUM, Acetate, lb	30	35
Bicarbonate, kgs., lb	2 75	3 00
Bromide, lb	65	70
Carbonate, lb	3	6
Hypophosphite, oz	10	12
Hyposulphite, lb	3	6
Iodide, oz	$ 40	$ 43
Salicylate, lb	1 00	1 10
Sulphate, lb	2	5
Sulphite, lb	8	10
SOMNAL, oz	85	00
SPIRIT NITRE, lb	38	68
STRONTIUM, Nitrate, lb	18	20
STRYCHNINE, crystals, oz	80	85
SULFONAL, oz	28	30
SULPHUR, Flowers of, lb	2½	4
Pure precipitated, lb	13	20
TARTAR EMETIC, lb	50	55
THYMOL (Thymic acid), oz	55	60
VERATRINE, oz	2 00	2 10
ZINC, Acetate, lb	70	75
Carbonate lb	25	30
Chloride, granular, oz	13	15
Iodide, oz	60	65
Oxide, lb	13	60
Sulphate, lb	9	11
Valerianate, oz	25	30
ESSENTIAL OILS.		
OIL, Almond, bitter, oz	75	80
Sweet, lb	40	50
Amber, crude, lb	40	45
Rec't, lb	60	65
Anise, lb	2 75	3 00
Bay, oz	50	60
Bergamot, lb	3 25	3 50
Cade, lb	90	1 00
Cajuput, lb	1 60	1 70
Capsicum, oz	60	65
Caraway, lb	2 75	3 00
Cassia, lb	2 75	3 00
Cedar	55	85
Cinnamon, Ceylon, oz	2 75	3 00
Citronella, lb	80	85
Clove, lb	1 10	1 20
Copaiba, lb	1 75	2 00
Croton, lb	1 50	1 75
Cubeb, lb	2 50	3 00
Cumin, lb	5 50	6 00
Erigeron, oz	20	25
Eucalyptus, lb	1 50	1 75
Fennel, lb	1 60	1 75
Geranium, oz	$1 75	$1 80
Rose, lb	3 20	3 50
Juniper berries (English), lb	4 50	5 00
Wood, lb	70	75
Lavender, Chris. Fleur, lb	3 00	3 50
Garden, lb	1 50	1 75
Lemon, lb	1 75	1 90
Lemongrass, lb	1 50	1 60
Mustard, Essential, oz	60	65
Neroli, oz	4 25	4 50
Orange, lb	2 75	3 00
Sweet, lb	2 75	3 00
Origanum, lb	65	70
Patchouli, oz	80	85
Pennyroyal, lb	2 50	2 75
Peppermint, lb	2 25	2 50
Pimento, lb	2 60	2 75
Rhodium, oz	80	85
Rose, oz	7 50	11 00
Rosemary, lb	70	75
Rue, oz	25	30
Sandalwood, lb	5 50	7 50
Sassafras, lb	75	80
Savin, lb	1 60	1 75
Spearmint, lb	3 75	4 00
Spruce, lb	65	70
Tansy, lb	4 25	4 50
Thyme, white, lb	1 80	1 90
Wintergreen, lb	2 75	3 00
Wormseed, lb	3 50	3 70
Wormwood, lb	4 25	4 55
FIXED OILS.		
CASTOR, lb	12	14
COD LIVER, N.F., gal	80	1 00
Norwegian, gal	130	1 50
COTTONSEED, gal	1 10	1 20
LARD, gal	90	1 00
LINSEED, boiled, gal	56	59
Raw, gal	55	58
NEATSFOOT, gal	1 20	1 30
OLIVE, gal	1 20	1 25
Salad, gal	2 50	2 60
PALM, lb	12	13
SPERM, gal	1 35	1 40
TURPENTINE, gal	50	60

Drug Reports.

Canada.

Business is fairly good; orders are coming in more freely, and the prospects for a good fall trade are very promising. One feature of the month has been the advance of quinine, which, after remaining in a dormant state for months, somewhat suddenly advanced, and has steadily maintained it. Glycerine has been low for some time; has advanced from 2 to 3 cents per lb. We are informed low grade short weight are being offered. Cod liver oil has been offered very low; it seems a good time to buy. Castor oil has suddenly advanced, and is now held at 11 cents by case. Silver bar has gone down until it is being nearly offered at 50 cents on the dollar. Blood root is easier. Cascarilla bark higher. Gentian firm. Bronze and silver gelatines are 5 cents per lb. higher. Information from abroad confirms the reports that heavy chemicals all tend to higher prices. Many look on advanced prices as a bane, but remember we never have good times and low prices.

England.

London, Eng., Aug. 27th, 1897.

There is a decidedly improved tone in general business, and Canada is obtaining its much-needed advertisement through the Laurier boom. Many firms are making inquiries as to the suitability of their specialties to the Canadian market. Drugs are quiet on the whole, although there is a good demand for cod liver oil, glycerin, and other "fall" lines. Quinine is firmer. Castor oil, olive, and linseed all quoted dearer, and the price for essential oils of aniseed, lemon, and bergamot are firmer. Kezanlik reports upon otto show a smaller crop than last year, but as there remains a good deal of old stock, little alteration is expected. Opium is dull. Menthol has improved, but nitrate of silver has, in consequence of the further fall in silver, reached a record price.

Seasonable Preparations

= = in Popular Demand.

Liquid Acid Phosphates:

A nerve and brain food; very popular for use at the soda fountain. Each teaspoonful contains 10 grains pure phosphoric acid (H_3PO_4) partly free and partly in combination with calcium, magnesium, iron, sodium, and potassium.

In 8-fluidounce bottles.....per doz. $1.90
In 16-fluidounce bottles.....per doz. 3.20
In 80-fluidounce bottles.....per bot. 1.20

Bulk prices on application.

Chlor-Anodyne:

An almost magical remedy in the bowel affections so prevalent during the heated term—diarrhœa, dysentery, cholera morbus, colic, etc.

In fluidounce bottles.....per doz. $3.00
In 16-fluidounce bottles.....per bot. 3.45

Also in four- and eight-fluidounce bottles.

Elixir Lactated Pepsin:

Containing the properties of Lactated Pepsin, appropriately combined with aromatics. Each fluidounce now represents 80 grains Lactated Pepsin.

In 16-fluidounce bottles.....per doz. $12.00
In 80-fluidounce bottles.....per bot. 4.40

Less the usual discounts.

Elixir Saw Palmetto and Santal Compound:

Admirable for the relief of congested and irritable conditions of the genito-urinary tract. The formula appears on each label and the ingredients are of the choicest quality.

In 16-fluidounce bottles.....per doz. $12.00
In 80-fluidounce bottles.....per bot. 4.40

Less the usual discounts.

Parke, Davis & Co., Manufacturing Chemists, **Walkerville, Ont.**