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Vol. VIII.

TORONTO, CANADA, JULY, 1896.

No. 7.

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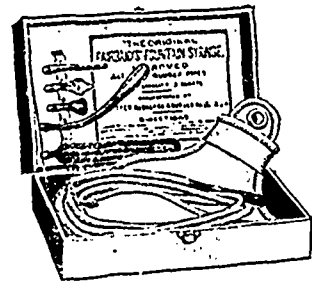
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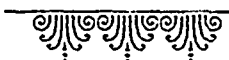
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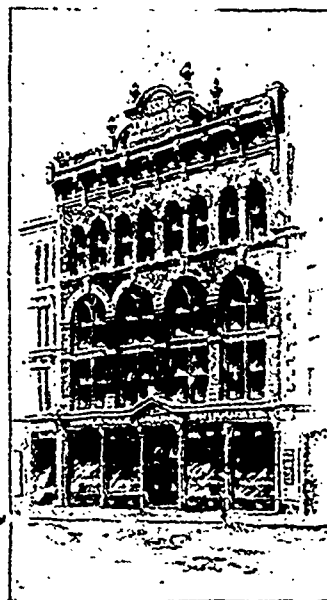
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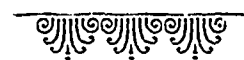
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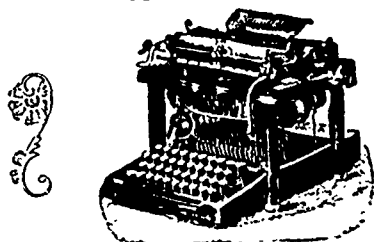
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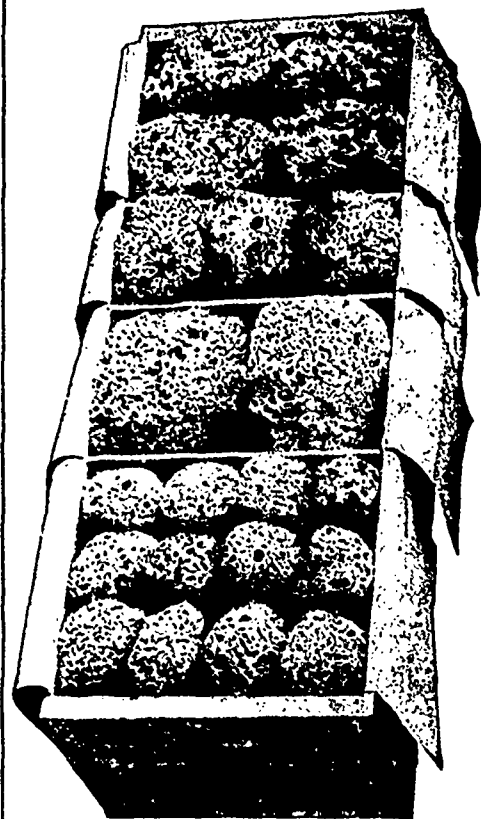
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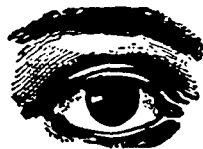
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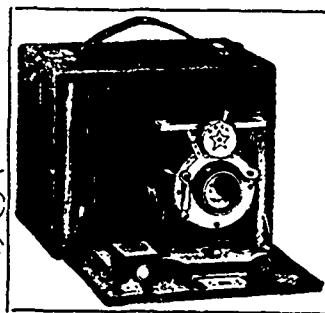
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Canadian Druggist

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

VOL. VIII.

TORONTO, JULY, 1896.

No. 7

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,

11 1/2 RICHMOND ST. WEST,
TORONTO, ONT.

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The Council Ahead.

The final success of the Council of the Ontario College of Pharmacy in its prosecution of R. Simpson, as set forth below, entitles that body to a degree of credit which is rarely given it. The chances in favor of the Council were not any too bright, but, relying upon the advice of a cautious counsel, and the justice of their cause, they pushed to a definite determination an understanding of the Pharmacy Act. The interpretation, now for the first time given, is one which cannot fail to greatly strengthen the present Pharmacy Act if carefully husbanded and applied.

In the High Court of Justice—Queen vs. Simpson.

STATED CASE.

On the 13th day of April, 1896, the college, through its detective, laid an information in the Police Court, Toronto, against Robert Simpson, the owner and proprietor of a large departmental store on the corner of Yonge and Queen streets, in the city of Toronto, to the effect "that in the months of February, March, and April, 1896, the said Robert Simpson did unlawfully 'keep open shop' for retailing, dispensing, and compounding poisons contrary to the form of the Pharmacy Act and amendments thereto in such cases provided."

The purchase made by the detective consisted of five bottles of drugs, one bottle containing carbolic acid, and the others made up from doctor's prescriptions handed in by the detective and consisting of carbolic acid, aconite, and strychnine. When the detective made the purchase, some of the bottles were wrapped up in printed circulars issued by Robert Simpson, giving the price list in his patent medicine department, and also a notice to the public that those who were interested financially in the filling of doctor's prescriptions should deal with him, as he was prepared, with a complete drug department, to serve the public at the lowest rate of profit compatible with the quality of the drugs. These purchases were proved before the Police Magistrate, also the circular, as well as

the receipt given for the money, which showed that Robert Simpson was the owner of the store and received the payments for the goods purchased.

The case for the College was looked after by Mr. E. T. Malone, of the firm of Edgar & Malone, the College solicitors.

Mr. Ritchie, Q.C., appeared for the defendant, and contended that no breach of the Act had been committed, that the public was properly protected, in that the drug department in the defendant's store was under the sole control of a registered chemist, Mr. Charles Potter Lusk, and that no one but the said Lusk made any sales or put up any prescriptions that contained poisons.

C. P. Lusk, in giving his evidence, swore that by the agreement between him and his employer, Robert Simpson, he, Lusk, had the sole control of the department, even to the exclusion of Simpson. Lusk made all the purchases, but Simpson paid for them and received the proceeds of all sales. Alleged that he was assisted by another graduate of the College, named Mr. Warren.

In cross-examination by Mr. Malone, he produced the agreement between him and Simpson, which was to the effect that he, Lusk, was to manage the drug and patent medicine business carried on at Simpson's, and to sell, dispense, and compound all poisonous drugs and medicines required to carry on such business; that he was to receive one per cent. of the net profits to be derived from the sales of drugs and patent medicines containing poisons and an additional sum of \$15 per week, but no commission was to be paid him on any other sales. The agreement was to be terminated by either party on a week's notice.

The run of the defence was also to the effect that Lusk was a partner in Simpson's business and that as Simpson took no part in the sales he had a right to put his name into the business so long as it was conducted by a qualified party.

The Police Magistrate had no doubt that Robert Simpson was the owner of the business, and that Lusk was only a servant, but when he considered that the public was properly protected by the employing of a registered chemist, who personally conducted the sales of all poisons, he refused to convict and dismissed the case. He refused to listen to English cases, which the college solicitor cited in the support of the conviction.

The College solicitor was, however, able to prevail on the magistrate to state a case for the opinion of one of the Divisions of the High Court of Justice,

We give the case in full, as it contains the material for the argument which took place at Osgoode Hall before Divisional Court.

STATEMENT OF CASE.

Frank S. Warner, prosecutor, and Robert Simpson, defendant.

The defendant, Robert Simpson, is the owner of a large departmental store building at the corner of Queen and Yonge streets, in Toronto, and was charged before me on the information of and complaint of one Frank S. Warner, that he did during the months of February, March, and April, 1896, unlawfully keep open shop at the city of Toronto for retailing, dispensing, and compounding poisons, contrary to the form of the Pharmacy Act and amendments thereto.

On the ground floor of said building a space is set apart for a drug department, which department is and has been under the management and control of one Charles P. Lusk, a duly qualified pharmaceutical chemist registered under the Pharmacy Act, and who had taken out the certificate under the provisions of section 18 of said Act.

It was admitted that the said Lusk did in said department dispense certain drugs containing poison, and sell certain poisons, all of which are mentioned and set out in schedule "A" of the Pharmacy Act and amendments thereto, giving to the respective purchasers a bill of sale, on which defendant Simpson's name was printed, and on one of which bills said Lusk had stamped his own name, and thereunder the word "druggist."

At the time of the purchase of the said poisons the said Lusk gave some of the purchasers thereof the printed circular marked exhibit "B," which forms part of this case.

The said Simpson was never inside the said drug department, and never interfered with the conduct of the business therein.

All the goods, including the said poisons, required for the drug department after the employment of the said Lusk were from time to time purchased by the said Lusk, on his own judgment, without consultation with said Simpson, but with the moneys or upon the credit of the said Simpson, who also received the proceeds of all sales made in such department, such proceeds going into the general cash receipts of the whole departmental store.

Poisonous drugs required in connection with the dispensing were kept in a closed dispensary partitioned off in said store, and of which said Lusk had the key, and no other employee in said department could gain access thereto without the permission of said Lusk, and upon leaving the department at night said dispensary was locked and the key kept by the said Lusk, but there are some poisons

mentioned in schedule "A" of said Act which are not in said partitioned dispensary, but are kept on shelves and in drawers behind the counters in said drug department.

The position between the said Simpson and the said Lusk appears by the agreement in writing between them, a copy of which is hereunto annexed and which forms part of this case; and there was a verbal agreement between said Simpson and the said Lusk that the latter should have absolute control of the said drug department to the exclusion of said Simpson.

On the foregoing facts, and in my view of the law, I dismissed the information and complaint of the said Warner, and, my order of dismissal being questioned by the prosecutor on the ground that defendant was guilty of the offence charged in the information under section 24 of the Pharmacy Act, I state this case so that my decision on the law of the case may be reviewed by a division of the High Court of Justice.

G. T. DENISON,
Police Magistrate.

Dated the 11th May, 1896.

On the 15th of June the appeal of the College on the stated case was heard before Chief Justice Sir William Meredith and Mr. Justice Rose.

Mr. B. B. Osler, Q.C., and Mr. E. F. Malone appeared for the College; Mr. Shepley, Q.C., and Mr. Ludwig, for Robert Simpson.

The result of the argument was that the judges unanimously, and without reserving judgment, directed the police magistrate to convict Robert Simpson, which order was subsequently carried out.

There were some very important points brought out on the argument, as well as references to leading English and American cases.

The College solicitors relied considerably on the case of the Pharmaceutical Society vs. The London and Provisional Supply Association referred to in 4 & 5 Q.B.D. and 5 House of Lords and Privy Council Appeal Cases. This was an action against an incorporated company for selling poison.

The defence set up by the London and Provisional Supply Association was that, being an incorporated company, they did come within the meaning of the Pharmacy Act, as the Act only applied to *natural persons*, and prohibited such *natural persons* from selling, retailing, etc., without possessing the necessary qualifications.

They also contended that the public was protected in that the person having the management of the sales of poison was a registered chemist. The House of Lords decided in favor of the incorporated company, but during the argument, and from expressions used giving the judgment, it was clearly shown that, though an incorporation may be exempt,

still a natural person or a partnership was not exempt, and such persons and partnerships would have to conform to the law.

It was shown, on behalf of the College, that the Ontario Pharmacy Act differed from the English in that the clauses of the Ontario Act are all prohibitory, and that the only exception made by the Act was in the case of executors who were allowed to carry on the business of deceased chemists for the purpose of winding up such business, but that even in such cases such business had to be conducted by a pharmaceutical chemist registered under the Act.

In the House of Lords case, Lord Shelburne, the Lord Chancellor, in giving judgment, distinguished between the charge of selling poison and the charge of keeping open shop, and said: "No doubt the words 'keep open shop' may extend to something more, and comprehend the person who keeps an open shop for the sale of poisons, etc., although he may not by his own hands do the business of selling any poisons, if one is only master and proprietor of the business, if he be a person within the proper directions of the Act."

Again, in another part of the judgment, Lord Blackburn states: "But no doubt the Legislature, for what reason it is for those who passed the Act to say, have thought it best to say that a 'person,' which I take to be a natural person, shall not only not sell, but shall not keep an open shop for the sale. I myself think that probably one of the reasons for that was to facilitate convictions, and another may have been that it was thought, if there is a person who keeps a shop who is unqualified, he may have a qualified assistant, and he will be able to overrule the qualified assistant at any moment he pleases, and there may be danger in that."

Lord Cockburn says that the intention of the Legislature appears clearly to have been to prevent any shop or establishment to exist for the sale of poisons except under the immediate superintendence and control of a duly qualified proprietor. It is not enough that the proprietor employs a qualified person to manage the business; the master himself must be duly qualified. Two parties could not combine to carry on the general business of grocer and chemist, though the one attending to the latter part of the business might be a qualified chemist. There would be nothing to insure in such a case that, in the absence of the qualified person, the other might take upon himself to act in his stead, and thus the security against future mistakes in dispensing of medicine which the statute was intended to insure, might be seriously compromised.

When Mr. Shepley attempted to argue that the passing of the Pharmacy Act was *ultra vires* of the Legislature, the judges refused to give effect to such an argument. During the argument a case almost

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For the Soda Water Fountain.

French, Cave & Co.'s Crushed Violet, Red Orange Phosphate, Victor Barothy Co.'s Tangerette, Lime Phosizz, and Gum Foam, Murchison's Celery Phosphate and Acid Phosphate.

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THIS PACKAGE CONTAINS FOUR FELTS.

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NEVER FAILS TO DESTROY		SUPERSEDES
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DIRECTIONS.
Place one of the Felts upon a dish or plate; keep wet with water. Use only enough water to soak the Felt. Flies will drink the poisoned water off the Felt and die immediately.
Placez un des Felts au-dessus d'un plat ou salette; tenez-le humide avec de l'eau. Une quantité assez d'eau pour mouiller le Felt. Les mouches boivent l'eau empoisonnée, sur-le-champ de Felts et mourront immédiatement.

CAUTION—Should the liquid be swallowed by accident at once administer la large dose, Lime Water, Black Tea, or Iron Root, followed by an emetic and drinks of Milk or Flour and Water.

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on all fours with the present one was referred to, *viz.*, State vs. Norton, 67 Iowa Reports 641. In that case the defendant kept a drug store, and liquor, alleged to have been kept with the intention of selling the same in violation of the law, was kept in the drug store or in a room connected therewith.

The defendant claimed that the liquor was kept for the purpose of medicine, and that whatever had been sold had been sold for such purposes, and, while the defendant was proprietor of the store and stock, he did not claim to be a registered pharmacist; he offered to show that his prescription clerk was, and that all sales were made by the clerk. The court refused to receive the evidence, when the defendant appealed to set aside the conviction on the grounds of rejection of evidence, but the judges of the Court of Appeal, in giving judgment, said: "There is no doubt that a person may lawfully become the proprietor of a stock of drugs without being a registered pharmacist, but being such proprietor is quite a different thing from conducting a drug store. A room or building in which the business of selling drugs is conducted is a drug store, and the conductor of the store, within the meaning of the statute, is the person who has the ultimate right to control the business in respect to its continuance or discontinuance, the employment of clerks, the fixing of prices, etc. It matters not with what powers the clerk may be clothed, he cannot be said to be the conductor of a store while the powers are merely derivative. In our opinion the design of the statute was to prohibit persons not registered as pharmacists from engaging in the responsible business of buying and selling drugs as dealers.

The court then held that the defendant was properly convicted. This case also disposed of any argument of Robert Simpson's solicitors that the small space set apart in said departmental store could not be said to be a shop within the meaning of the Act.

The members of the Council of the College deserve the thanks of the druggists of this province for bringing this case before the Superior Court and setting aside the judgment of the Toronto police magistrate. It is the first case of the kind in the Dominion of Canada. It thoroughly establishes what keeping *open shop* means, and who are the proper persons to engage in the business of druggist.

The Microscope in Pharmacy.

A good microscope is almost indispensable to the physician and the pharmacist. The time when the microscope was viewed merely as a scientific toy wherewith to view the millions of animalcules in a drop of stagnant water, or the minute in nature, is long since past. While it is true that many persons of means and leisure are daily using the microscope to gratify their desire (or curi-

osity, if you will) to investigate the minute in nature, and thus increase, in no inconsiderable manner, the new funds of scientific information, it is also true that to the physician in the diagnosis of disease, to the pharmacist wishing to detect adulterations, and to the chemist in his work it has been indispensable. It is now regarded as indispensable in many lines of business where years ago its use was not even thought of.

Since the discovery of the bacillus of tuberculosis by Koch, the microscope has been more and more depended on in the detection of tuberculosis. The physician feeling doubtful in regard to whether the trouble is tubercular or not can, by means of the microscope, settle the question with precision in most cases, the presence of bacilli tuberculosis in the matter or tissue establishing beyond question the fact that the disease is tuberculosis. Again, the microscope is being largely used in the diagnosis of tumors and morbid growths as to their malignancy. It is also indispensable in the examination of urinary sediment. To the analyst it is indispensable, oftentimes the microscopical examination of water being more valuable than the chemical analysis. Without the modern microscope the whole science of bacteriology would of necessity not exist, and such investigation would be impossible.

To the pharmacist, it seems to the writer, more than any other, microscopy offers an inviting field; and, more than that, it may be made a source of profit. The physician often has little time, and sometimes less inclination, to pursue this line of investigation, and often the work is not done because there is no one to do it. It seems that if the pharmacist would fit himself to do this work it would be appreciated by the physician, and would lead, in many instances, to a better understanding between them.

It is argued that in order to prepare to do this work one requires a considerable sum of money. This is true, but it is also true that such outlay would not be all made at one time. First, a suitable stand (one that would take the modern accessories) should be purchased, and then add accessories from time to time as they may be needed, and as the student may feel that he can spare the money. It is a mistake to buy a cheap instrument to learn with, for such instruments will soon be found insufficient, and the owner is often deterred from purchasing a more suitable instrument because of his inability to dispose of the old one. This is too often the case.

A good stand, and that will take all the modern accessories, should be purchased at the outset. It should have both a fine and coarse adjustment. A stand having no fine adjustment may be proper for some purposes, but for the finer work it is not. Either a Universal or Investigator stand will meet every requirement. These are listed by the manufacturers with one eye-piece at \$55 and \$45 respectively. A 1-inch eye-piece will be

found best where only one is purchased; if more are purchased a $1\frac{1}{2}$ -inch and a $\frac{3}{4}$ -inch will be very handy. At first a $\frac{3}{8}$ -inch and a $\frac{1}{2}$ -inch objective will be found sufficient. In purchasing a $\frac{1}{2}$ -inch objective, see that its aperture is at least 0.84 N.A.; or, better, 0.92 N.A. As the student becomes more adept in working with the microscope, and wishes to branch out into bacteriology, an oil immersion objective of $\frac{1}{6}$ or $\frac{1}{8}$ inch will be found almost indispensable. These will be found to answer every purpose nicely, but often other objectives will be found very convenient. The writer has a $\frac{1}{6}$ -inch objective of 0.58 N.A., which he would be loath to part with, it being the handiest objective in certain work he has ever seen. It is excellent in examining urinary sediment, and with it casts can be detected, although the latter are more satisfactorily viewed with a $\frac{1}{2}$ or $\frac{1}{4}$ -inch objective. A good $\frac{1}{2}$ or $\frac{1}{4}$ -inch objective will show bacilli tuberculosis nicely; still, for this class of work an oil-immersion objective is to be preferred.

In using an objective of high power a condenser will be found invaluable; indeed, it is claimed by many competent observers that without a condenser the full capacity of the objective (high power) cannot be shown. Thus one might go on and enumerate what every person will find out for himself when he purchases a satisfactory stand.

As remarked above, the pharmacist is in a position to do this work. A knowledge of microscopy is not to be gained by studying a few books and looking into the microscope a few times, but is only to be gained by such intelligent familiarity with the appearance of objects under the microscope as will enable the observer to judge of what he sees. In other words, it is not so much a question of how to see, but what is seen, and this comes only from practice.

In order to work intelligently with the microscope itself, its adjustments, etc., also to prepare properly material for examination, the student will find it necessary to study closely the standard works relating to the instrument. For a descriptive and explanatory work on the microscope itself, Stoke's "Microscopical Praxis" is the best work the writer is familiar with, price considered. Gage's "Microscopical Manipulations" is an excellent work, and so is Clark's "Practical Microscopy." Wet herell's "Medical Microscopy" is a standard work dealing particularly with the subject from the physician's standpoint; but it is not as complete as Jaksch's "Clinical Diagnosis," which deals very freely with the subject.

With these books at hand the student is in position to enter systematically into the study of microscopy. The writer believes that nothing is so conducive to skill in manipulation as practising on a few slides of diatoms. These can be purchased, and, if carefully selected, will prove very valuable to the student in his work.—*Western Druggist.*

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.

Editor CANADIAN DRUGGIST:

SIR,—Some of the daily papers published an article in reference to the recent fire and assignment of McKendry & Co., of this city, in which our name was mentioned as creditors. As this was published in error it was corrected in a later issue of said papers. Fearing that the correction did not have the same publicity as the statement, and that this might have a tendency to injure our business among some of the drug trade, we wish to state that McKendry & Co. did not owe us anything, and, further, that we do not sell to departmental stores and cutters.

To prove that our statement is correct we give below a letter from McKendry & Co., and also one from F. J. Sanders, manager of the drug department of said firm, which speak for themselves.

M'KENDRY & CO.'S LETTER.

We notice the name of The Dodds Medicine Co. has been published as one of our creditors.

In justice to this firm we wish to publicly deny the statement, as we have no account whatever with this concern. McKee, Smith & Co., which is controlled, we believe, by The Dodds Medicine Co., are creditors of ours to the extent of the amount mentioned, for coffees, spices, and other goods in their line, which probably accounts for the error.

Yours,

(Signed) M'KENDRY & Co.,
P. P. C. D. M'KENDRY.

F. J. SANDERS' LETTER.

I have been manager and buyer in the drug department of McKendry & Co. since March 1st, 1896, and beg to state that this department has not been supplied with any goods either directly or indirectly by The Dodds Medicine Co.

(Signed) F. J. SANDERS,
Druggist.

By publishing the above you will confer a favor.

Respectfully yours,

THE DODDS MEDICINE CO., LTD.
Toronto, Can., June 29th, 1896.

Quebec Pharmaceutical Association— Annual Meeting.

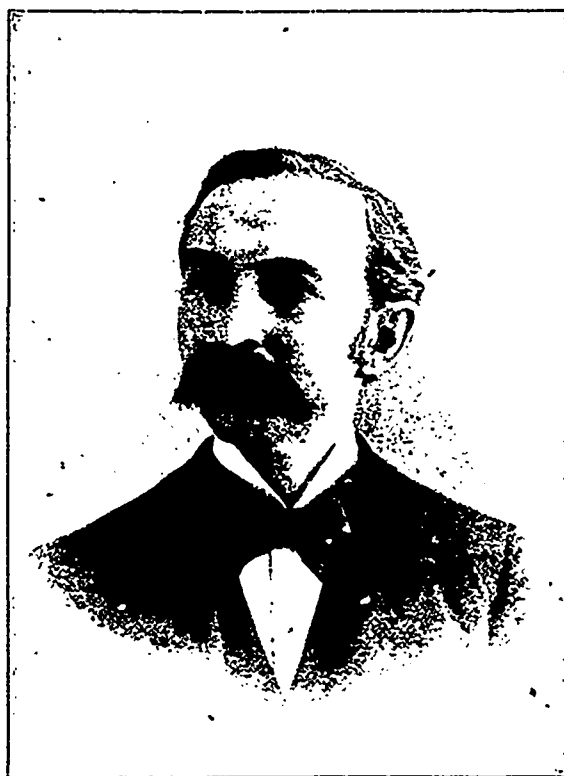
The annual meeting of the Pharmaceutical Association of the Province of Quebec was held in the lecture hall of Laval University, Quebec, Mr. R. W. Williams, of Three Rivers, president, occupying the chair. After the reading of the minutes of the previous meeting, the chairman

called upon Mr. E. Muir, the secretary-registrar, to read the annual report and treasurer's financial statement, both of which were highly satisfactory, and, upon motion, were unanimously adopted, after which the president read his annual address, going pretty fully into the position of the association, and touching upon a number of points which had come up for discussion in the council during the past year. The president's address, with the annual report and financial statement, were, on motion, ordered to be printed in French and English and circulated among the members, after which a motion was adopted appointing Dr. T. D. Reed, of Montreal, honorary member of the association, and Mr. Alexander Lemieux, of Quebec, as scrutineers, who retired to count the ballots for the six new members

Williams, C. J. Coveinton, A. D. Mann, C. E. Scarff, and J. Emile Roy, will comprise the council for the ensuing year. After the usual votes of thanks had been adopted, the meeting closed.

Melting Point of Gelatin Masses.

It is by no means easy to determine with any great degree of accuracy the temperature at which gelatin masses pass from the solid to the liquid condition, especially when a test tube, thermometer, and water bath are the means employed, and much time is also occupied in making determinations by the usual method. R. C. Bayley has, therefore, devised a simple form of apparatus, which consists of an oblong water bath holding a considerable quantity of water, and is so constructed that it can be heated by a spirit lamp or Bunsen burner without the hot air or products of combustion reaching the longest side in front. The bottom makes an angle of forty-five degrees with the front, so that the back is not quite half the depth of the front. In the section of the apparatus, the front is 45 mm. deep, the back, 20 mm.; the width of the bath is 25 mm., and the sloping base measures 35 mm. from back to front. The length of the bath is apparently about 100 mm., and a leg is attached at each end of the back so as to support the sides in a vertical position. A straight line is ruled along the front of the bath an inch from the top, and one or more thermometers are supported inside the bath, with their bulbs parallel to this line. In use the apparatus is laid on its back, and small discs of the gelatin masses to be tested are cast on the front, with their lower edges just upon the line. The discs should be a quarter of an inch thick, and are moulded by pouring the melted gelatin into paper tubes half an inch in diameter, resting upon the front of the bath. When set, the paper is removed and the bath placed erect. Water is then poured in and heated from below, and directly the melting point of one of the discs is reached it begins to slide down the side of the bath. The melting point of one jelly, as ascertained by the usual means, was found to vary between 23° and 25°, the mean being 24°. Six discs of the same jelly were placed on the new apparatus, and all began to move when the nearest thermometer registered 26°. Other experiments gave similar results, the readings being uniformly two degrees higher than the mean of a number of determinations by the ordinary method.—*Photographic Journal*.



James N. Good, Ph.G., St. Louis, Missouri,
President of the American Pharmaceutical Association.

to be elected as members of the council, the number of ballots received being the largest in the experience of the association. During the counting of the ballots, discussion took place upon matters of general interest to the association, notably the desirability of extending the curriculum of study for students entering the study of pharmacy, and also the desirability of raising the standard of the major and minor examinations. The scrutineers, having completed their work, announced the following gentlemen to have received the highest votes polled; they, therefore, are duly elected as members of the council for two years, namely: Messrs. Joseph Contant, S. Lachance, R. McNichols, Alexis Robert, Dr. J. Ledue, and J. E. Barnabie; these, with the following gentlemen, namely, Messrs. R. W.

145,000 gallons of castor oil are used annually in Scotland for turkey-red dyeing



READ THIS

Dear Sirs. St. Marys, August 3rd, 1892.
The following may be of use to you: "A customer of mine, who keeps a butcher shop in this town, bought a 10 cent package of your Fly Pads from me and in 10 days killed over a bushel measure of flies." Yours truly,
F. G. SANDERSON.

**IT WOULD TAKE OVER
300 SHEETS OF STICKY PAPER
TO HOLD THIS BUSHEL OF FLIES**

**WILSON'S
FLY PADS**
SOLD BY ALL DRUGGISTS

Sell...
**WILSON'S
FLY PADS**

They are far more destructive than any other Fly Poison, and will always give your customers satisfaction.

Beware of imitations got up to sell on the reputation of Wilson's Fly Pads.

**WILSON'S
ROOT BEER**

Has taken the trade by storm. Already we have sold far more than during the whole of last season, and the demand is increasing fast. Without doubt Wilson's is the best Root Beer. Each 10-cent bottle makes five gallons.

**Archdale Wilson & Co.,
Hamilton.**

TO RENT.
20 20
Best Drug Stand in Canada

The most desirable unoccupied stand in Canada is the corner store of the MASONIC TEMPLE, LONDON, and very little investigation will convince anyone of the fact.

It is the nearest to all the hotels, the railway station, and the market, besides adjoining the Grand Opera House, and a large transient trade can be had.

The shop is on the corner of Richmond and King streets, is heated by steam, and the rent (which is very moderate) includes both heat and taxes.

A smart, active man who has the confidence of the medical profession should make a fortune here. There are several wholesalers in the city, and only a moderate stock need be carried.

For terms and other particulars apply to

John Overel,
Secretary Masonic Temple Co.,
London, Ont.

**Wampole's
BEEF, WINE, AND IRON.**

In Pint Bottles.....\$5 00 per doz.
Winchesier (1/2 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:

1/2 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.

We Manufacture

- Envelopes
- Writing Tablets
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- Memo. Books, etc., etc.

And are Headquarters for

ALL KINDS OF STATIONERS' SUPPLIES

DO YOU WANT THESE GOODS?
Then write us for prices.

THE W. J. GAGE CO., LTD.
52-54 Front St. West, - - TORONTO.

DO YOU CARRY ODOMOMA IN STOCK
If Not, Why Not?

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The Perfect Tooth Powder

Has captured the market wherever it has been introduced. If it is a new thing to you, here are a few reasons why you should handle it:

- It is cleansing, antiseptic, fragrant, refreshing.
- It is perfectly harmless.
- It has been analyzed by the most expert chemists, who all report in the most favorable terms.
- It sells at a glance in the first instance, and on its reputation thereafter.
- It yields more profit to the retailer, and to the consumer a greater quantity of the best quality, than any other tooth powder in the world.

Order from your wholesale house
AROMA CHEMICAL CO., - TORONTO

The J. STEVENS & SON CO'Y, Ltd.,
145 Wellington St. West, TORONTO.
(Near Union Station.)

- Druggists' Specialties,
- Surgical Dressings,
- Elastic Stockings,
- Clinical Thermometers,
- Glass Importers,
- Trusses and Suspensories,
- Medical Batteries,
- Lints and Cottons,
- Abdominal Belts,
- Instruments of all kinds.

Send for quarterly quotations.

PRICE LIST



Common Sense Exterminator FOR ROACHES
25c. each, \$1.75 doz.; 50c. each, \$3.75 doz.; \$1.00 each, \$8.00 doz.

Common Sense Exterminator FOR RATS AND MICE:
25c. each, \$1.00 doz.; 50c. each, \$1.75 doz.; 50c. each, \$3.50 doz.; \$1.00 each, \$8.00 doz.

Only infallible remedy known. No smell from Dead Vermin. Not Poisonous to man or beast. Once used always recommended. Sold by Wholesale at

MONTREAL, TORONTO, and LONDON.
Common Sense Mfg. Co.,
523 King Street West, Toronto.
Manufacturers of Common Sense Stove Polish, and Common Sense Bicycle Lubricator.

Seasonable Goods

- DAVIS' FLY FELTS
- LUCHEN'S FLY PAPER
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- MARSHALL'S FLY CATCHER
- SMITH'S FLY SQUARES
- TANGLEFOOT
- TANGLEFOOT LITTLE
- WILSON'S FLY PADS

LONDON DRUG COMPANY

London, Ont.

Sponges! Direct from the Fisheries
Sponges!

In original packages, unbleached; or in cases, bleached.

A Large Assortment of **MEDITERRANEAN**

Bath Honeycomb, Forms and Half Forms, Extra Fine Silk Toilet, Fine Silk Pottery, Zinocha Pottery in every size and grade.

NASSAU and FLORIDA

Fine Sheepwool, Velvet, Grass, Reef, Surgical, Slate, Yellow, in every size and grade.

Exceptional advantages in buying enable us to sell cheaper than any other house in the trade.

[SPONGES ARE OUR SPECIALTY]

We also keep a full line of Fine Chamols Skins which we are offering at low prices to the trade.

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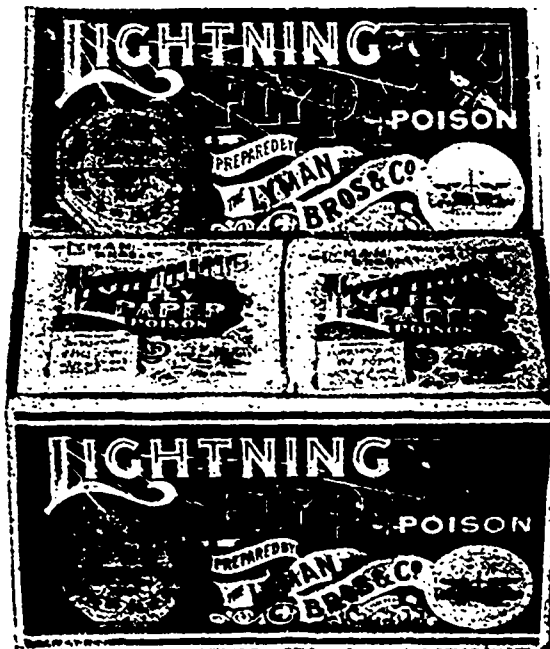
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**Order Soon
A Sure Killer**

Lyman's Lightning Fly Paper



Sold for over forty years in sheets; put up now in new form in pads, as this cut shows.

5c. and 10c. packages

Lyman's Root Beer

10c. and 25c.

MUNYON'S REMEDIES

- Finkler's Papaine
- Gray's Herbal Bitters
- Eserine Sulph.
- Batchelor's Hair Dye
- Phylolene
- Eucalyptus Oil
- Iodoform
- Fritz's Salt Regal
- Apenta Water
- Lampough's Saline
- Paquin's Anti-Tubercle Serum

The Lyman Bros. & Co., Ltd.

71 and 73 Front Street East

Toronto.

Trade Notes.

The drug stores of R. A. Davis and H. Johnston, Tilbury Centre, Ont., were destroyed by fire June 19th.

Amongst the passengers for Europe by the Allan Line S.S. *Numidian*, June 20th, was W. J. Dyas, of THE CANADIAN DRUGGIST, who is off for a brief holiday.

Hooper & Co., druggists, King street west, Toronto, have had a new front put in their store, materially adding to the appearance of the place, although it loses somewhat of its identity to the "oldest inhabitants."

Montreal Notes.

The result of the voting at the annual meeting of the Pharmaceutical Association of the Province of Quebec, a full report of which appears in another column, was a surprise to many. The French-Canadian ticket was voted *en bloc*. Every English Canadian name on the nomination paper was struck off, amongst them being some of the oldest and best-known pharmacists in the province. The number of licensed pharmacists entitled to vote stands at 100 English-speaking, against 116 French. No one can question the right of the majority to rule. It is not, however, judicious to exercise this right in all cases.

Mr. Jules Hertz has opened his new pharmacy, which he has called the "Cosmopolitan." Mr. Hertz speaks English, German, and French, and is an experienced pharmacist. He is the proud possessor of one of the prettiest little pharmacies in Montreal.

Mr. Ransom has recently opened a pharmacy in Lachine, a fashionable suburban watering place near Montreal. A pharmacist speaking English and French was much wanted there. Mr. Ransom will fill the bill.

Mr. E. G. Daniel has removed his pharmacy to the store lately occupied by the Auer Light Co., next the court house, Notre Dame street. Mr. Daniel's business has largely increased of late.

There is a very undeserved attack on Mr. E. Muir, the much respected secretary of the Pharmaceutical Association, in the May number of *Le Pharmacien Canadien*, just issued. Mr. Muir is respected by all who know him, and he is devoted to the duties of his office, besides being one of the earliest workers with Mr. Gray in organizing and obtaining legislation for the Pharmaceutical Association. Mr. Muir has done his duty to the satisfaction of every council since his appointment.

Mr. Edward Morin has sold out his pharmacy to Mr. J. I. Beaudry, who has recently returned from the United States. The pharmacy is on the corner of St. Catherine and German streets.

Mr. Thomas Goulden has assumed the Curtis pharmacy, on Bleury street, near Sherbrooke.

Mr. W. A. Dyer has opened a new pharmacy at the corner of Bishop and St. Catherine streets. Mr. Dyer ought to have friends enough in that neighborhood to make things lively.

Prof. Reed, Dean of the Montreal College of Pharmacy, leaves town this week for Washington and the South, and intends returning, *via* New York, in about two weeks.

Montreal druggists hail with delight the signs of the times in the United States with regard to the agitation for shorter hours for drug clerks and no all day Sunday attendance. An hour or two in the morning and again in the early evening is all that is required by the public, and no soda water and cigar business on Sunday seems to be the platform.

British Columbia Notes.

Business throughout the province continues moderate, though a more hopeful feeling among the druggists, and, in fact, all business men, is decidedly present. The push given to mining through the Kootenay district on the mainland, Alberni on the Island, and Texada Island, will not be without its beneficial results, and British Columbia will, doubtless, have cause to congratulate herself on being a rich province. As intimated, business generally is not rushing, but people are holding on, sanguine as to the future.

The wife of Mr. J. A. Teporten, manager of the Vancouver branch of Langley & Henderson Bros., decided to commemorate the inauguration of the new firm by presenting her husband with twins. Six boys have now to develop into blushing druggists from that home.

Langley and Henderson Bros. have now settled down as wholesalers. They are renovating the old stand, and already it is scarcely recognizable. The prescription books, containing upward of 93,000 prescriptions, were sold to Mr. C. E. Jones, his being the highest tender of the five put in.

The following is a report from the *Westminster Columbian* of June 12th, of the annual meeting and banquet of the British Columbia Pharmaceutical Association:

The annual meeting of the British Columbia Pharmaceutical Association was held in this city in the Board of Trade Rooms, which, through the courtesy of the Board of Trade, had been placed at the disposal of the association. The business transacted was chiefly routine—receiving reports, elections, and the reading of the address of the retiring president, Mr. T. M. Henderson, of Victoria. This latter was especially good, and went a long way towards compensating for the absence of Mr. Henderson, who was unavoidably detained in Victoria.

After considerable discussion on the various matters coming up for consideration, the reports were adopted, and the

election of officers for the ensuing year was then proceeded with, and resulted as follows: President, T. E. Atkins, Vancouver; vice-president, E. McG. Van Houten, Nanaimo; sec.-treas.-registrar, J. K. Sutherland, Vancouver.

Three of the councillors retiring by rotation, the vacancies were filled by the election of Messrs. R. G. Macpherson, Kamloops; T. E. Atkins, Vancouver; and E. H. Hiscock, Victoria.

After passing a vote of thanks to retiring officers and others, the meeting adjourned to the Colonial Hotel, where, being joined by a few invited guests, they ascended to the banqueting hall. Here covers had been laid for about twenty-five, the tables being tastefully decorated with flowers, etc.

Those who had seats at the festive board were: Thomas Shotholt, Victoria; E. Van Houten, Nanaimo; J. R. Seymour, T. E. Atkins, J. M. Atkins, Chas. Nelson, H. McDowell, J. K. Sutherland, W. A. Griffiths, John Reid, and J. R. Templeman, Vancouver; J. A. Wright, Montreal; D. S. Curtis, T. A. Muir, H. Ryall, Capt. Peele, G. Cote, W. Dockrill, and a *Columbian* representative.

A neat souvenir *menu* gave the guests an idea of what kind of diet they were put on, and each took without a whimper the prescription put up for him in the dispensary of "mine host." After the solids had been ground, pulverized, and placed in solution, the graduates were filled, and the president proposed "The Queen," all rising and singing, lustily, the National Anthem. "Pioneer Druggists of British Columbia" was the next toast, coupled with the name of Captain Peele, who was one of the earliest chemists and druggists in the Province. The captain, who was in good form, responded briefly with a few well chosen remarks. "The British Columbia Pharmaceutical Association" was replied to by J. R. Seymour and John Reid. The chairman made a few remarks, regretting that the lateness of the hour prevented the toast list being gone through with.

After a song by Mr. Cote, and instrumental solos and duets by Messrs. Dockrill and Hill, which were heartily encored, the company dispersed, singing "Auld Lang Syne."

A special car, in waiting, conveyed most of the visitors to Vancouver, they being loud in their praises of Westminster's hospitality.

The retiring sec.-treas.-registrar, Mr. Chas. Nelson, deserves great praise for the able manner in which he has discharged the duties of that office for the past few years. He has skilfully managed the affairs of the association through very critical periods of its history, and has always manifested an intense interest in pharmaceutical advancement in this province. In the new registrar, Mr. J. K. Sutherland, the association has an efficient successor to Mr. Nelson. He is a young man, about twenty-three years, a native of Belleville, Ont., and a graduate of the

Ontario College of Pharmacy. Since his arrival in this Province he has worked hard for the drug business, and has been most prominent in efforts to maintain right prices, and keep down cutting tendencies. He is accorded a hearty welcome as sec.-treas.-registrar of the British Columbia Pharmaceutical Association.

Books for Druggists.

Any of the following books will be mailed on receipt of the prices named:

British Pharmacopœia.....	\$2 00
British Pharmacopœia Addendum .	35
U.S. Dispensary (in cloth).....	7 50
U.S. Dispensary (in leather).....	8 25
U.S. Dispensary (in leather) with index.....	8 50
National Dispensary.....	8 50
National Formulary.....	1 00
Atfield's Chemistry.....	3 25
Gray's Botany, first lessons.....	1 40
Maisch's Materia Medica.....	3 50
Martindale's Extra Pharmacopœia.	2 00
Pereira's Prescriptions.....	75
Parrish's Pharmacy.....	5 25
Squire's Companion.....	3 25
Remington's Pharmacy.....	6 00
Practical Dispensing.....	50
Minor Ailments.....	1 50
Heebner's Practical Synopsis of B.P.	1 00
Heebner's Manual of Pharmacy, etc.	2 00
Manual of Formule.....	1 50
Diseases of Cats and Dogs.....	75
Practical Dentistry.....	50
Hartop's Monograph on Fluid Extracts.....	2 00
Harrop's Monograph on Flavoring Extracts.....	2 00
Quiz Compend on Pharmacy, Stewart.....	1 00
Caspan's Treatise on Pharmacy....	4 50
Coblen's Handbook of Pharmacy.	3 50
Druggists' Price Books.....	2 00
Standard Dictionary, Funk & Wagnalls, single volume.....	\$12 to 18 00
Standard Dictionary, in two volumes, according to binding.....	\$18 to 22 00
Art of Compounding, by Scoville..	2 50
Bartley's Medical Chemistry.....	3 00
How to do Business (McLean)....	75
Sayre's Organic Materia Medica and Pharmacognosy.....	4 50
Practical Perfumery.....	50

CANADIAN DRUGGIST, Toronto.

TO SOFTEN HARDENED MEDICINAL EXTRACTS.—A. Schacherl (*Oest. Zeit. f. Pharm.*) has found that a few drops of glycerine spread over the surface of the hardened crust of solid extracts soon causes softening and prevents further drying.

Carvol Derivatives.

We give here a brief abstract of two papers by Prof. Bayer on derivatives of Carvol, taken from Schimmel & Co.'s report.

(1) *Carone*. On standing with alcohol and dilute sulphuric acid carone takes up water, forming oxytetrahydrocarvone, identical with the oxyhydrogenium addition product of dihydrocarvone. Carone bisnitrosylic acid (obtained by the action of hydrochloric acid upon bisnitrosocarvone), is changed to bisnitrosylic acid of oxytetrahydrocarvone, melting at 184° C. when its alcoholic solution is exposed to steam. When acted upon by acetic acid and hydrobromic acid, the hydroxyl group of this body is replaced by bromine and bisnitrosylic acid of (S)-bromtetrahydrocarvone, melting at 130° C. results. This is again converted, by the action of alcohol, into caronebisnitrosylic acid, melting at 93° C. Oxycarone is formed when sodium hydrate solution is added to the alcoholic solution of bisnitrosocarvone-dichloride, and ketoterpene is formed, when the former is agitated with dilute sulphuric acid.

2. *Carzone*. When α or β *d*-limonenitrosochloride is allowed to stand with a mixture of alcohol and hydrochloric acid, active hydrochlorocarvoxime is formed. Inactive hydrochlorocarvoxime is formed (a) from inactive carvoxime, (b) by mixing the two active compounds, (c) from hydrochloridipentenitrosochloride when acted upon by ether and hydrochloric acid, (d) from terpineolnitrosochloride, (e) from pinenitrosochloride. From this department Prof. Bayer infers that carvone, limonene, terpineol, pinene, nitrosopinene and isocarvoxime belong to one family, since they all form hydrochlorocarvoximes upon proper treatment.

3. *Tetrahydrocarzone*.—By the action of amylnitrite and hydrochloric acid originate: (a) an oximido acid $C_{10}H_{16}NO_3$, and (b) bisnitrosotetrahydrocarvone.

(a) The oximido acid, when acted upon by acids yields isopropylheptanonic acid, which can be oxydized so as to form isopropylsuccinic acid. This is also formed by the oxydation of tetrahydrocarvone. The ethylic ester of isopropylheptanonic acid is reduced by Na, forming acetylisopropylketopentamethylene, which is again converted into the original ketonic acid, when it is boiled with dilute potassium-hydrate.

(b) Bisnitrosotetrahydrocarvone, when acted upon by hydrochloric acid, gives tetrahydrocarvonebisnitrosylic acid, oximido acid, just mentioned, and a ketone containing chlorine; the latter is converted into a new terpenone $C_{10}H_{16}O$ on the discharge of a part of hydrogenchloride; this boils at 233-235°, has an odor somewhat like caraway, but, strange to say, is not identical with carvotanacetone.

(4) *Eucarzone*, when oxydized by potassium permanganate, is converted into asymmetric dimethyl-succinic acid. Eucarvoxime is not acted upon by ether and hydrochloric acid.

Fruits.

Ripe fruit of all kinds, almost, including nuts, are attractive, delicious, appetizing, and healthful. Overripe and immature fruit is neither appetizing nor healthful. Since so much is said about appendicitis a great many persons who are very fond of fruit and who need it, discard its use through fear of being attacked with this affection. The disease is not any more common than it used to be. It is only more generally recognized, and it is the explanation of many sudden and fatal attacks of peritonitis, or inflammation of the bowels—the causes of which are unknown.

Most persons who discard fruit because of their fear of appendicitis use the pulpy fruits, such as apples, pears, plums, and peaches, freely and confidently, while they deny themselves the many-seeded fruits, such as raspberries, blackberries, strawberries, grapes, etc. These small and many-seeded fruits can always be eaten with impunity if taken with other food, especially with bread, potatoes, and such glutinous and starchy foods as afford covering for the seeds. It is surprising what sharp, and rough, and indigestible substances will safely pass through the whole intestinal track without doing any injury at all, if plenty of potatoes, bread, or oatmeal is eaten at the same time. The best time to eat any fruit is at the table and with other food.

All fruits with skins on should be washed and peeled before eating—especially fruits exposed on the streets, and where dust and flies can have access to them. Few are aware of the danger of food contamination by flies. They are great scavengers, and are not at all choice as to what they eat, nor where they step. They pass at one bound from an infectious carcass, a foul ulcer, or a mass of diseased sputum or reeking filth to the apple, pear, or peach, and with dirty feet and dirty proboscis run over it and contaminate it. Hence all such fruit should be first washed and dried and then pared, if possible. Even food to be cooked ought, for cleanliness sake, to be washed if cooked with the skin on.

Fruit is rich in acids that are grateful to the stomach, stimulate the salivary secretion, are grateful to the taste, and aid in digestion. It is foolish for persons to deny themselves the pleasure of eating fruit through fear of infection by microbes or appendicitis because perhaps one in a million persons happens to get a seed in the "appendix." Fruits are among God's good creatures grown for the delight, enjoyment, and physical benefit of rich and poor, prince and peasant.—*Iowa Health Bulletin*.

CRYSTALLIZED BROMINE.—Wicke (*Zeit. Oest. Apoth. Ver.*) has obtained bromine in acicular crystals of dark carmine color, similar to those of chronic anhydride, by reducing to 90°C. a concentrated solution of bromine in carbon disulphide.

KOLA..

FRESH Kola

Fresh (UNDRIED) Kola

Fresh (Undried) TRUE AFRICAN

..KOLA

Is a Valuable Drug!

ALL kinds of Kola can't be depended upon, whether they be the various varieties which do not come from Africa, or whether they be the ordinary commercial DRIED nuts which do. We introduced Kola commercially to America, and did it in a fair, ethical manner, advertising it only to the medical and pharmaceutical professions, never to the laity. We were the first (and we believe we are still the only) house to import the fresh (undried) nuts direct from Africa.

Properties of the Kola Nut

Kola now occupies a position of importance, both as food and medicine. Being a conservator of energy, it is ranked as a food; and, possessing special merits in the treatment of debilitated states of the system generally, it has obtained reputation as a medicine.

Our Preparations of Kola

may be depended on to faithfully represent the drug in the fresh (undried) state. We offer the following to the trade:

KOLA-STEARN'S

A special aromatized Fluid Extract of fresh (undried) true African Kola, each minim (drop) representing one grain of fresh Kola Nut. It is the ONLY palatable liquid preparation of fresh (undried) Kola in CONCENTRATED form. Kola-Stearns is put up in 6-ounce bottles (96 doses of one-half teaspoonful) at \$8.00 per dozen.

KOLAVIN (Stearns)

The Original Wine of Kola, prepared from the fresh (undried) true African Kola Nuts. Indicated in cases where a mild alcoholic stimulant in combination with Kola is desired. Kolavin (Stearns) is put up in full 16-ounce bottles at \$8.00 per dozen.

KOLACYLS (Stearns)

A confection made by covering a soft extract of the fresh (undried) true African Kola with a soluble coating of sugar. It is the ideal Kola preparation for bicyclers, pedestrians, athletes, students, etc. Kolacyls (Stearns) are put up in screw-top flasks and sold at \$4.00 per dozen.

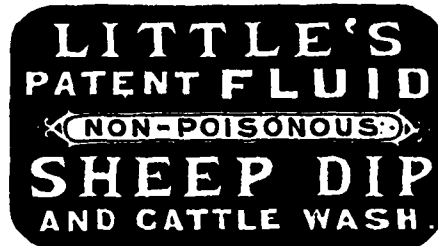
The above preparations are sold by all jobbers,
or can be ordered direct from

FREDERICK STEARN'S & CO.

Manufacturing Pharmacists,

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NEW YORK CITY.

WINDSOR, ONT.



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.

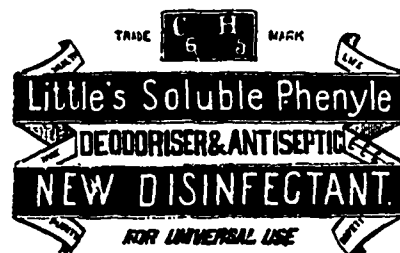
17 Gold, Silver, and other Prize Medals have been awarded to "Little's Sheep and Cattle Wash" in all parts of the world.

Sold in large Tins at \$1.00. 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.



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.

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

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are the best for hygroscopic powders and all other powders. The following prices show they are the cheapest:— Put up in Neat Boxes of 500 Sheets.

No.	Rpt.	No.	Rpt.
27	For Magnesia and general use,	31	Large Seidlitz, Blue, 6 x 6,
	White, 6 x 8	40	Powder Papers, White, 2 1/2 x 4,
28	Regular Seidlitz, White, 4 1/2 x 5 1/2,	41	Powder " " 3 x 4 1/2,
29	Regular " Blue, 4 1/2 x 5 1/2,	42	Powder " " 2 1/2 x 3 1/2,
30	Large " White, 6 x 6,	43	Powder " " 1 1/2 x 4 1/2,

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Major's Liquid Glue repairs furniture, books. 10c.

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The big bracing tonic.

Physicians swear by it—Sick men
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For Sale Everywhere.

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Pharmacy in England.

Resignation of Professor Atfield—The "Nurseries" Exhibition—Bottles, Dispensing and Others—A New Powder Insufflator—Eucaine and Lactophenine.

(From Our Own Correspondent.)

Resignation is the order of the day. In swift succession I have had to chronicle the retirement of Mr. Schacht, the resignation of Professor Dunstan, the determination of Mr. Carteighe not to be re-elected president of the Pharmaceutical Society after fourteen years in that position, and now Professor John Atfield, F.R.S., has sent in his resignation as Professor of Practical Pharmacy. The idea that the council have in mind of making the Professor of Chemistry, theoretical and practical, also the director of the Research Laboratory is praiseworthy, but will probably be found inconvenient. It is true that by the amalgamation they will be in a position to guarantee a salary of not less than \$3,000 per annum to the professor, but the retirement of Atfield is a great loss to the prestige of the School of Pharmacy at Bloomsbury Square. Since the death of Redwood, the name of Atfield was the principal attraction for students at the premier English school of pharmacy. With a world-wide reputation, both as an investigator and as an author, Atfield was still a name to conjure with. And now, whom have we left? Professor Green is a junior in reputation, although an intellectual giant. Mr. Joseph Ince is within sight of the date when active work will be too much for him, and Professor Greenish is a very young man. If the council had been well advised they would have occupied the next few years in preparing a suitable successor to Professor Atfield, instead of making the bareness of the teaching talent only the more glaring at the present moment. One thing is very certain, if the trouble with Professor Dunstan and his researches on subjects outside of pharmacy teaches anything, it means that a pharmaceutical man must be elected as professor and not an outsider. Will the council appreciate this point? This is the question of the moment.

The "Nurseries" is the appropriate title bestowed upon the exhibition inaugurated by the initiative of the *Nursing Record*. Presumably it was intended to get medical men as well as nurses to visit the exhibition, but this was not very successful. Another mistake is to run such an exhibition for such a length of time as thirteen days. The matter for attraction was not sufficiently large, and every nurse in the metropolis could have visited the exhibition easily within six days, which would have been quite long enough. Allowance must be made for the fact that this is the first attempt at anything of the kind, and if it should be repeated experience will alter all this. Maw, Son & Thompson made a very complete display of instruments, hygienic sundries, and a

useful "Handbook for Nurses." This latter has always seemed to me a model that pharmacists would do well to imitate. On the continent it is by no means unusual for some of the principal chemists to publish similar "handbooks," containing useful hints on the treatment of minor ailments and wounds and a detailed description of the special preparations of the house. Burroughs, Wellcome & Co. had also a good show of their well-known tabloids. Dermatol—the basic gallate of bismuth—is strongly recommended as a dusting powder in eczema, bedsores, etc. Sanitas was prominently displayed by the company, but they are now making other disinfectants besides. This is, I believe, because the Sanitas Company used to lose many a good slice of a contract for disinfectants because carbolic acid or permanganate was not supplied by them. They are anxious to let you know that their faith in Sanitas as the disinfectant *par excellence* is not on the wane because they offer to quote for other disinfectants. Reynolds & Branson, of Leeds, are to be congratulated upon their first appearance at a metropolitan exhibition. Of recent years someone connected with the firm—possibly young Mr. Fred Reynolds—has displayed pretty skill and ingenuity in devising little improvements, such as the hand-charge shoot, the pill-box shoot, enema clips, self-closing dust-proof drawers, etc. Many of these are so simple, and yet so obviously useful and effective, that one only wonders why on earth the idea was not hit upon years ago. Southall Bros. & Barclay are the only other pharmaceutical firm exhibiting, and their space was devoted chiefly to the well-known Sanitary towels.

There is no detail in connection with dispensing that is more important than the style of bottle and label. A chemist who is satisfied with the cheapest containers obtainable, and adopts stock labels, is missing one of the most important details of the calling. The public cannot discriminate between the contents as dispensed at a cheap drug store and that of a leading pharmacist, but superior "finishing off" is appreciable to the meanest intellect. At the West end it has become usual to send all mixtures out in round-cornered bottles, either squares or flats. At Savory and Moore's the round-cornered square is favored, whilst Bell & Co. adopt the round-cornered flat. This style of bottle is certainly superior in appearance to the old dispensing flats and squares, and the varying tints of greens and blues are replaced by what is called the "quinine-tint." For displaying packed goods, such as cod-liver oil, etc., this quinine-tinted, round-cornered, flat bottle is one of the best, but it is a mistake to put everything into this kind of bottle. Glycerine, for instance, if perfectly water-white, as it should be, is displayed much better in a white flint panelled bottle, but good bottles must be chosen, or the little specks and air-bubbles in inferior flint spoil the brilliancy of the preparation. Labels should be obtained to fit the bottles instead of

stock ones being used. Thus a good-sized cod-liver oil label looks well on the round-cornered flat, and the appearance is, if anything, improved by its overlapping the sides partly. But a glycerine label should just fit in the front of the bottle and not overlap—if panelled bottles are adopted. I am convinced that it pays chemists to have their own special design for important labels, such as dispensing labels and any little proprietary. These should be obtained from a good label printer in the form of a sketch at first, so that the features to which prominence is required may be properly worked out. Then the quality of paper should be good, and a delicate groundwork is a great improvement, especially if it be a contrast color to the general tone of the label.

Messrs. Slater Bros., of Baker street, London, have just shown me a new insufflator that has some striking advantages over the ordinary powder-blowing instrument. The principle employed is that by means of compressed air, obtained from the ordinary double bellows of enemas or atomizers, the powder is blown from a reservoir when the exit is released by a trigger. The operation is therefore something similar to firing a revolver, and the glass barrel of the insufflator is shaped after this fashion. First of all, the bellows are compressed in the usual way until no more air can be pumped in, then the instrument is introduced into the mouth of the patient, or wherever the insufflation is required, and the tube directed at the desired spot. By merely touching a trigger with the index finger the powder is discharged as a momentary explosion, and as only one hand need be employed during the whole time the advantage of this form of insufflator is obvious. For iodoform blowing, etc., it will be found the most useful instrument yet suggested, and I understand that the apparatus has been patented. Messrs. Slater represent in England Messrs. Ellis & Gottermann, of New York, whose atomizers, fountain syringes, etc., are widely known.

Among the new remedies that are being somewhat largely employed by medical men in London just now, special prominence must be given to eucaine and lactophenine. Eucaine is the threatened rival to cocaine, but it is just possible that cocaine may outlive its rival. The new anæsthetic is stated to be equal to cocaine in its local effects, whilst absolutely its superior in not affecting the heart or producing unpleasant after effects. So far it has been tried chiefly in dental practice, and 20 to 60 minims injected of a 15 per cent. solution. In this proportion it is only soluble in warm water. Eucaine is offered cheaper than cocaine, and as it is a synthetical body it is probable that our German friends are not giving it away at the price of \$2.50 per ounce. Lactophenine appears to have some advantages over antipyrine and antifebrin, inasmuch as besides its antipyretic, antineuralgic, and antirheumatic action it has a marked soothing, hypnotic effect. Even children

can take it without unpleasant results and in febrile diseases, especially in typhoid, it has given satisfaction. The ordinary dose is 8 to 15 grains, but 60 grains *per diem* have not produced injurious after-effects.

Last year Messrs. Greeff & Co. exhibited Airol—a gallate of bismuth iodide—at the meeting of the British Medical Association, and they are just now pushing it, on the strength of a pamphlet containing English medical opinion. The presence of iodine in the compound with bismuth is of special value as an antiseptic and deodorizer. Its superiority to iodoform is claimed chiefly on the ground that it is practically odorless, that it is much lighter, being about four times as voluminous as iodoform powder, whilst the presence of the gallic acid part of the compound gives it a superior desiccative and astringent action. As a dusting powder for ulcerated legs, and in the dry-dressing treatment of wounds, several doctors speak highly of airol. No ill-effects have occurred from its use, as now and again have happened with iodoform, whilst in better class practices, where the use of the latter drug is strongly objected to, it has been found a very efficient substitute. It is advisable to remember that airol does not keep well in ointments, being gradually decomposed, but an emulsion in glycerine and water keeps well and is easily employed.

Pharmaceutical Examinations.

The preliminary Board of Examiners held their quarterly examinations for students entering the study of pharmacy in Montreal and Quebec on Thursday last, when twenty candidates presented themselves in Montreal and five in Quebec. Of these the following candidates passed, and are named in order of merit, namely, J. Fotheringham, Joseph P. Dobbins, J. R. Laurier, and J. C. Deneault.

Mr. J. E. Crack passed upon all subjects but geography, which subject he will require to be examined upon at the next examination. The remainder of the candidates are referred back for further study.

The examiners were Prof. A. Leblond de Brumath, and Prof. Isaac Gammell, Montreal, with Mr. J. Emile Roy as supervisor in Quebec.

The next examination will be held on October 1st, intending candidates being required to give the secretary, Mr. Muir, ten days' previous notice.

Missouri Pharmaceutical Association.

The Missouri Pharmaceutical Association held its eighteenth annual meeting at Excelsior Springs, June 9, 10, 11, and 12.

President J. M. Love, of Kansas City, was in the chair. His annual address cautioned the druggists against losing sight of the commercial side of their occupation, but urged them to push for-

ward in the profession and become known as pharmacists in the true sense. He implored them to keep up national, state, and local organizations, and spoke a good word for the American Pharmaceutical Association. The Pharmacopœia was pointed out as the official guide, and the National Formulary was duly noticed. A fitting tribute was paid to the memory of the late Dr. Charles O. Curtman. The association was cautioned against over-zealous efforts for legislation, but requested to ask for a law requiring proprietary preparations, foods and medicines, to have on the label a guarantee from the manufacturer as to the length of time the preparation will keep in good condition. The president favored free alcohol in pharmacy. Continued interest and support for the Board of Pharmacy was asked, and several other timely suggestions made.

Secretary H. M. Whelpley reported a membership list of 674.

Treasurer E. G. Orear reported a balance of \$84.25.

A. S. Forker, chairman of the Committee on Membership, reported twenty-two new names.

The following papers were read and discussed: "Process for Spirit of Nitrous Ether, with Practical Demonstration," by Professor David Walker, of Kansas City; "What Shall we do to Induce the Druggists to become Members of and Attend the Meeting of the American Pharmaceutical Association and the Medical Pharmaceutical Association?" by A. N. Doerschuk, of Kansas City; "How to Prevent the Cutting of Prices on Patent and Proprietary Medicines," by T. A. Moseley, of Harrisonville; "Semi-Proprietary, or so-called Elegant Preparations," by C. E. Corcoran, of Kansas City; "The Future of Pharmacy in the United States," by A. N. Doerschuk, of Kansas City; "The Professional and Business Aspects of Pharmacy," by T. A. Moseley, of Harrisonville; "Semi-Proprietary, or so-called Elegant Preparations," by R. J. Brown, of Leavenworth, Kansas; "Semi-Proprietary, or so-called Elegant Preparations," by J. M. Love, of Kansas City; "Hints for the Benefit of the Medical Pharmaceutical Association," by Ambrose Mueller, of St. Louis; "Problems in Organic Chemistry," by Prof. J. M. Good, of St. Louis; "Eighteen Years of Pharmaceutical Reminiscences in Missouri," by F. R. Dimmitt, of Kansas City; "Methods of Detecting Drug Adulterations, with Illustrations," by Prof. Francis Hemm, of St. Louis; "A New Method of Preserving Fruits and Flowers," by John Wright, of Indianapolis, Ind.

Prizes were awarded for papers as follows: Francis Hemm, \$10 in gold, from the J. S. Merrell Drug Company; A. N. Doerschuk, \$5 in gold, from the J. S. Merrell Drug Company, also a Sponge Case from Woodward, Faxon & Company; Ambrose Mueller, a copy of the Era Formulary, from the publisher; David Walker, one dozen Listerine, from the manufac-

turer; C. E. Corcoran, one pair fine counter scales, from Henry Troemner, also fifty pounds of glycerine from W. J. M. Gordon; J. M. Love, \$5 in gold, from the J. S. Merrell Drug Company; J. M. Good, copy of the United States Dispensatory, from the Meyer Brothers' Druggist.

George C. Bartells, of Camp Point, reported as a delegate from the Illinois Association, and S. C. Wilson, of Lincoln, from the Nebraska Association.

The association adopted a resolution urging all institutions teaching pharmacy to require satisfactory evidence from each applicant for the degree of Ph.G., showing at least four years time served in a drug store under the direction of a competent pharmacist.

Meramec Highlands, June 22, 1897, was selected as the place and time for the next annual meeting.

The Memorial Committee presented appropriate resolutions to the memories of Drs. Charles O. Curtman and C. C. Hamilton.

Francis Hemm, chairman of the Committee on Drug Adulterations, made a lengthy report, showing that the quality of the drugs in Missouri is better than formerly.

William Mittelbach, chairman of the Committee on the United States Pharmacopœia, presented a lengthy report full of practical recommendations.

R. E. Maupin, chairman of the Committee on Legislation, made an extended report.

F. A. Faxon, chairman of the Committee on Trade Interests, made a verbal report, in which he stated that the retail druggists are much to blame for the demoralized condition of trade on account of their voluntary cutting of prices.

The Missouri Pharmaceutical Travelers' Association held a successful meeting and contributed largely to the amusement feature of the Medical Pharmaceutical Association Convention. W. E. Berryman, of the Meyer Brothers Drug Company, was elected president, and A. S. Forker, of the Evans-Gallagher Drug Company, secretary and treasurer.

The following officers were elected: President, Eugene Soper, St. Joseph; first vice-president, F. W. Sennewald, St. Louis; second vice-president, Dr. D. K. Morton, Missouri City; third vice-president, W. R. Scheldrup, Pierce City; secretary, Dr. H. M. Whelpley, St. Louis; treasurer, William Mittelbach, Boonville; assistant secretary, Ambrose Mueller, St. Louis; local secretary, Thomas Layton, St. Louis. Members of the Council: J. M. Good, of St. Louis; J. M. Love, of Kansas City; R. E. Maupin, of Pattonsburg; C. E. Corcoran, of Kansas City; and Miss Fredrica De Wyl, of Jefferson City.

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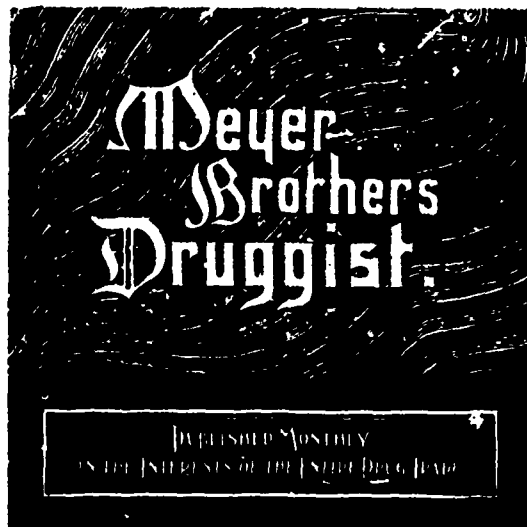
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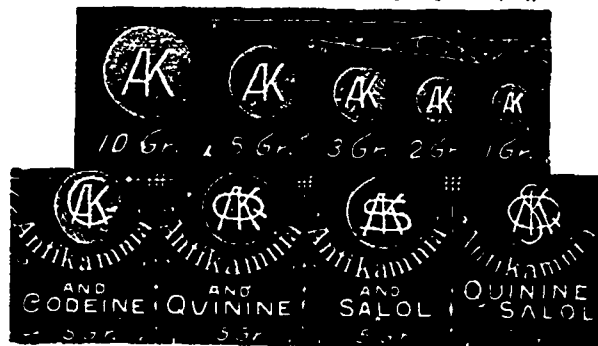
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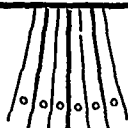
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Toilet Requisites.

Of all the articles that druggists sell no class of preparations are in greater demand than toilet preparations. Many druggists prepare a line, or perhaps only one or two, of such preparations. When nicely made and neatly put up they add greatly to the reputation of the druggist, as well as to the profits of the business. The following are in demand as toilet requisites, and it will pay druggists to put up the whole line.

IMPERIAL LOTION.

Spirits of camphor.....	2 fl. dr.
Carbolic acid.....	2 dr.
Alum, in powder.....	2 dr.
Glycerin.....	10 fl. oz.
Distilled witch hazel.....	20 fl. oz.
Essence rose, q. s.	

Mix, dissolve, and filter clear.

The essence rose may be made by dissolving 5 drops oil of rose in 1 ounce cologne spirits. This amount should be used for the above quantity. One ounce bulk rose perfume may be used instead.

IMPERIAL MOTH AND FRECKLE LOTION.

Solution of hydrogen dioxide....	8 oz.
Distilled witch hazel.....	16 oz.
Orange flower, or rose water....	8 oz.

Mix them.

The solution of hydrogen dioxide or peroxide may be the U.S.P., Marchand's, or any other reliable make. This preparation is an excellent application for moth and freckles, with which so many ladies are afflicted, and has only to be shown to sell.

IMPERIAL FACE BLEACH.

Mercury bichloride, in powder..	60 gr.
Calomel.....	4 oz.
Cologne spirit.....	4 fl. oz.
Water.....	20 fl. oz.
Glycerin.....	6 fl. oz.
Essence bitter almonds.....	4 fl. dr.

Dissolve the mercury bichloride in the cologne spirit, mix with the water, glycerin, and essence of almonds and add the calomel.

When applied to be well shaken.

IMPERIAL VELVET CREAM.

Flake white.....	4 oz.
Glycerin.....	1 1/2 fl. oz.
Rose water, sufficient to make...	32 fl. oz.

Orange flower water or bitter almond water may be used instead of rose water.

The flake white should be rubbed to a smooth paste with the glycerin and a portion of the water, and the remainder of the water added. It must be thoroughly mixed before pouring into bottles, so that each bottle may have the proper amount of flake white.

This is a regular "white wash" for the complexion. It sticks well, and is similar to "Magnolia Balm" and other preparations of that kind.

IMPERIAL MALLOW CREAM.

Bitter almonds, blanched and rubbed very fine in a mortar.....	2 oz.
Borax.....	1/2 oz.
Tincture of benzoin.....	2 oz.
Glycerin.....	4 oz.
Rose water, bitter almond water, or orange flower water.....	24 oz.

The tincture of benzoin is to be put in a half-gallon bottle arranged with a funnel with a very small hole through the cork in the neck, so that a liquid will flow drop by drop. The rose water, or other water, is to be poured in the funnel and allowed to drop into the tincture of benzoin. When all the flavored water has been added, the other ingredients are to be added and the mixture thoroughly shaken. It should then be poured through a sieve or a coarse cloth strainer, and mixed well before bottling. It is to be applied with a soft sponge or cloth and allowed to dry on.

This is excellent for softening the skin, removing pimples, healing eruptions, etc.

IMPERIAL FROST-CREAM.

Quince seed.....	1 oz.
Borax, in powder.....	120 grains.
Hot water.....	24 fl. oz.
Glycerin.....	6 fl. oz.
Cologne.....	2 fl. oz.
Bulk perfume additional if desired.	

The quince seeds are to be crushed and macerated with hot water for several hours, stirring frequently; then strained without pressure through cheese cloth, the glycerin added, and the mixture then added slowly to the cologne, contained in a quart bottle, with frequent agitation, and thoroughly mixed. This makes a smooth, bland preparation, similar to Fragrant Cream. It is a good seller.

IMPERIAL HAIR TONIC.

Quinine sulphate.....	60 grains.
Tincture cantharides.....	2 fl. oz.
Tincture orris root.....	2 fl. oz.
Imperial cologne, or other good cologne.....	8 fl. oz.
Cologne spirit.....	8 fl. oz.
Glycerin.....	5 fl. oz.
Oil bergamot.....	20 drops
Oil angelica.....	10 drops
Oil Cassia.....	5 drops
Oil rose geranium.....	15 drops
Water.....	8 fl. oz.
Tincture cudbear, or archil, q. s. to color bright red.	

Dissolve the oils and the quinine in the cologne and cologne spirit and add the tinctures, coloring, and water; filter clear.

The coloring may be added as desired to make a bright red color.

IMPERIAL TOOTH WASH.

Soap bark, in coarse powder..	6 oz.
Orris root, in coarse powder...	3 oz.
Alkanet root.....	1/2 oz.
Oil of wintergreen.....	2 fl. dr.
Oil of cloves.....	15 minims.
Oil of cassia.....	20 minims.
Glycerin.....	4 fl. oz.
Cologne spirit.....	16 fl. oz.
Water, enough to make.....	2 pints.

Moisten and macerate the drugs with eight ounces of the cologne spirit mixed with eight ounces of water; after standing three or four days percolate, adding through the percolator first the remaining cologne spirit mixed with eight ounces of water, and then continuing the percolation with water until 28 ounces of the percolate are obtained. Dissolve the oils in half an ounce of the cologne spirit, then add the glycerin, and, after standing, filter.—*B. Fenner, in The Formulary.*

The New Chemistry.

At the Royal Institution, Professor Dewar gave a most interesting talk on the wonders of high temperature chemistry and the marvels of acetylene gas. As the result of a complicated laboratory product acetylene has been known for many years, but its manufacture was confined to laboratory experiments only available for chemists with practically unlimited means and of great skill. The discovery of the electric furnace, however, has opened new possibilities to the chemist, and many other amazing results besides acetylene gas have been brought easily within the range of commercial industry. Heretofore the highest temperature attainable by science was that of the oxyhydrogen blowpipe, which made so fierce a flame that many of the rebellious minerals and metals succumbed to its potency. The most refractory of all metals, platinum, succumbed to its persuasive temperature, as did many other contumacious elements. By means of a few pounds of coal and water transformed into the dominant force of electricity, science found itself armed with another 1,000 degrees of temperature—from 2,600 they jumped at once to 3,600 degrees. By the vast potentiality of this increase of heat a new chemistry was given to the world. A class of chemical products, the importance of which we have but just begun to realize, is now made easily productive; these are known as carbides, known before, but far outside the range of commercial value. We may liken the new chemistry to the soluble power of water; water in its solid state has but little potency as a solvent; convert it into its liquid form and it has greater powers of solution than any other liquid; by adding successive degrees of heat its solvency is increased. It is so with minerals and metals. As a solid a metal is relatively inert, but bring it once into its liquid condition and its range of power in uniting with other elements becomes almost indefinitely extended. Under the enormous temperature now available in the electric furnace, metals heretofore unmanageable combine with minerals or chemical elements, forming combinations which heretofore have been mainly hypothetical. The metallic base of lime, calcium, under the temperature of the electric arc, forms a new union with carbon, and calcium carbide is the result. Drop calcium carbide into water, and the elemental union formed under the terrific temperature of the vaporizing point of carbon, 3,600 degrees, evolves acetylene gas.

It was to show some of the more recondite qualities of this gas that Prof. Dewar illustrated his remarks by marvelous experiments. He showed how this strange Protean product of hydrogen and carbon in its gaseous form would unite with metals—copper, silver, and others; he showed us how, by the admixture of a molecule more or less of other elements,

not only one but many groups of chemical compounds foreshadowed the manufacture commercially of a great range of natural products; how petroleum—true petroleum such as we extract from the earth—could be made directly from acetylene gas; how it could be transformed by adding a molecule of nitrogen into prussic acid, and that from this most potent of all poisons other groups of chemicals could be manufactured. From the entire range of coal tar products with their almost infinite possibilities, such as the aniline dyes and medicines, other industrial products were made possible by the dynamics of the new chemistry. He stated, as the latest news from America, more interesting and valuable far than even the possible solution of the Venezuelan question, how the probabilities were that by the cheap power of Niagara calcium carbide might be made at a cost not to exceed £5 per ton, with still further probabilities in the reduction of the cost in the future. Leaving the matter of acetylene gas, Professor Dewar gave us still further instruction, illustrating by experiments all the possibilities of the new high temperature chemistry. He showed us a new chemical product which he had just received from the United States, carborundum, harder almost than the diamond, the crystalline carbide of silicon, the base of flint, a product as much harder than flint as flint is harder than common window glass, possibly even more than that—a new abrasive by which grinding and polishing of the most refractory metals is now made easy.

One of the most curious experiments he tried was the fusing of a mass of copper in a crucible. This was quickly accomplished by means of the electric furnace; to that was added large pieces of cold aluminium. One would suppose that the introduction of a cold metal to a mass of melted copper would have frozen it up, so to speak; that it would at least have extracted the heat; but, on the contrary, the more of the cold aluminium the professor added to the molten copper the hotter it got, till it glowed with an intensity even greater than when it was extracted from the fervent embrace of the electric arc. In the union of the alloy aluminium and copper a fierce potentiality of heat was actually developed greater than that of the melted copper. *Queer, isn't it?*

Another exquisite experiment with which he delighted our eyes was the action of the electric spark on acetylene gas. Although the terrific heat of 3,600 deg. is required to manufacture the substance from which this gas is made, the gas when produced will not stand any such temperature at all. In a glass vessel filled with acetylene he introduced a little electric arc, throwing the result upon a screen by means of a lens. As the spark passed from the one pole to the other through the gas, instantly were formed great particles of carbon, floating in grotesque shapes in the pure gas till

the holder was filled with the feathery filaments, which rapidly formed a carbon bridge between the poles, and carried the current without forming a spark. He showed us also the acetylene gas forming a solid, which he extracted from the tube in which it was made, a substance very like paraffin wax. Curiously enough, unless great pressure is applied it will not assume a liquid form, but under the atmospheric pressure freezes directly from the gas before becoming liquid. This frozen acetylene he threw into a vat of water and lighted it with a taper, when it burned with a brilliant but smoky flame until consumed. The wonders of the elements which go to make up our material world are more fascinating matters than any possible volume of fiction. Our sense of the marvellous is not only developed, but gratified to the fullest extent. Each month we live in this scientific age adds not only to our actual knowledge, but to the possibilities of acquiring knowledge. It seems as though we were within easy reach already of grasping the last of Nature's laws, and he is bold, indeed, who will doubt that the great problem of life and existence is not possible of solution by the exact sciences.—*Manufacturing Chemist.*

The Smatterer in Pharmacy.

By WILLIAM B. THOMPSON.

The dictionary defines a "smattering fellow" as one who does nothing thoroughly. We meet with many types of this class in our daily observations, and we notice that trades and occupations and arts are much afflicted with the genus. In many cases "botchy" work does and will pass by, escaping a close, rather than a critical, inspection; but in any and all labor and skill which demand thoroughness this individual is never "in it" with credit. This fact is more especially true of an occupation which is conspicuously prominent in painstaking care, in accuracy, in nicety, and in exactness of detail, such as is that of pharmacy. All these general attributes of habit constitute so important a part of the daily practice that they can hardly be said to be even secondary or subordinate to the prime essentials of education, *i.e.*, knowledge and skill. The character and individuality of a man is always clearly discerned in his work, and this, while it may fail to elicit the expressed commendation of some, does not fail of being observed by others. For an instance, let us take that bottle of medicine, which is to be found in every household in the land—whether it be the special prescription or some familiar domestic remedy—it should come to the hands of the sick bearing all the external evidences, not only of responsible authenticity, but an absolute correctness in the individual work and care which prepared it. This is the education of which we have spoken, and which the "smatterer" never has, and can, therefore, never exercise. Let us criticize this bottle yet

further. The sensible property of the contents, not being positive, may be obscure to us, but we will assume that it is a correct compound. First, observe the cork; is it well adapted? size just what it should be? has some regard been paid to its quality, and to the fact that its use will be extended for some time? or has an attempt been made to utilize one too large, or too small, with a result that is likely to provoke both patience and patient? Note next the general neatness, trimming, and superscription on the label—is the handwriting what it should *especially* be—clear, distinct, perspicuous, filling the allotted blank space with lines shapely written? Is there no bad English in it, and possibly no bad grammar? Is date and numerical notation distinct? Now, as to the bottle itself, is the surface cleanly and all cracks and abrasions carefully avoided?

This simple illustration of the detail which pertains to the duty of the exact as well as the careless man may appear to some of your readers trifling, and in others excite but a derisive smile; but instances abound to prove that little things are equally the stamps of character, and that attention to these has led to business fame and fortune. If a high standard of accuracy becomes a habitual practice, then, indeed, we have an apothecary worthy of the name—the fame will assuredly follow. This is the education of which we speak, and which the "smatterer," not possessing, can never exercise. It belongs wholly and exclusively to the practice and experience of good systematic shop-teaching. It can *never* be acquired under any college instruction. It is vain, delusive, and deceptive to expect it or promise it. We have only casually referred to the prime essential of the apothecary's education, namely, that of its comprehensive and varied character, with skill and art in a high degree, which can be attained only by the experience and study of years. A good foundation for it, however, must be laid in youth. The man of science ought, perforce, to be a man of liberal education. The apothecary of *fact* ought to be as well informed as the apothecary of *fiction*. For we are told of a certain apothecary in fiction whose education was the means of his fortune and his preferment. Thackeray introduces the hero of his novel, John Fendennis, as the little apothecary who, although he sold a *pennyworth* of salts and a cake of fragrant Windsor soap to the casual customer, as well as brown paper plaster to the farmer's wife, yet was a gentleman of good education, gaining the esteem of all his patrons, and the confidence of the wealthy and influential. This man ultimately, according to the well-told story, became very comfortable in his circumstances, if not actually rich—*nous verrons!*—*Alumni Report, O.C.P.*

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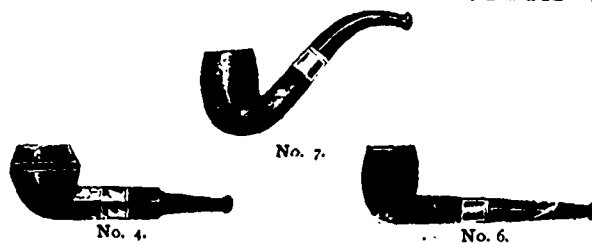
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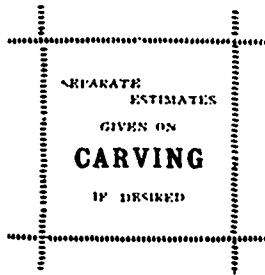
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The Making of Tablets.

By FRANK EHEL, Des Moines, Ia.

For many years compressed tablets have grown in popularity until they have become an important item in the sales of every pharmacy. They have recommended themselves to the physician because of their accuracy of dosage and convenience, and these are probably the main reasons for their popularity.

The increasing sale of these goods tends, however, to make the pharmacist more and more dependent on the manufacturer, for but few pharmacists make the tablets they sell.

Why is this so? Is there no money in making compressed tablets? Is the preparation of compressed tablets so difficult as to deter any intelligent pharmacist from making them?

The reason why so few pharmacists prepare their tablets is due probably more largely to a lack of information concerning their mode of preparation than to any other cause, for there is nothing about the preparation of compressed tablets which should deter any pharmacist from preparing his own tablets.

As to the question of profit in making them, does anyone suppose for an instant that so much capital would be invested in plants devoted to their manufacture if it was not profitable to make them? The writer can say from experience that any intelligent pharmacist can prepare these goods in first-class manner, and as he may need them, and not be compelled to carry in stock the many different kinds now in demand. I have never felt kindly towards the idea of a pharmacist buying supplies that he can make himself. This tendency of modern pharmacists to depend on others for laboratory products that they can make themselves is one of the main reasons for the decreased profits we hear so much about.

If the pharmacist will prepare himself to produce his own tablets and give the physician to understand that he will make any combination that the physician may desire, he will find that the sale of tablets will become a source of more profit than if he lent himself to the sale of the ready-made tablets of the market.

In order to make nice tablets the substances to be compressed must be carefully prepared. Not only is this necessary, but the machine used to compress them must be kept scrupulously clean, the dies must be smooth and polished, and free from rust. With a rough die it is utterly impossible to make smooth tablets, and not only is this so, but the material will stick to dies. The dies never should be cleaned with any hard instrument, but with a damp cloth, and then carefully dried and rubbed with cloth slightly greased with petrolatum. If the machine is to be laid aside, the moulds and die and nickel-plated part should be covered with petrolatum; this is absolutely necessary in order to prevent rusting.

When the dies become roughened, as

they will from constant use, they should be carefully polished and made smooth by means of emery flour and oil. This can best be done in a lathe, but can be done by hand. If done by hand a piece of wood should be made of such shape as to fit the face of die, and this used to polish with in using the emery flour. It takes more time than working with a lathe, but the work can be nicely done in this manner. The smoother and more perfect the surface of the dies, the less trouble will be had with material adhering to dies, and the smoother and more perfect the tablet. It can, then, be readily seen that too much attention cannot be given to the care of the moulds and dies.

While some materials compress readily without any special treatment, this is far from the rule. Some chemicals already in granular form are readily made into tablets; by far the greater number, however, must be specially prepared before they can be successfully compressed. It is necessary to add some adhesive to many substances and combinations before they can be successfully compressed.

The adhesives usually used are powdered acacia, powdered sugar, starch, and glucose. Glucose is only used where it is desired to prepare hard tablets for slow solution in the mouth. Prof. Coblentz, in his "Handbook of Pharmacy," says that there are few substances which cannot be successfully compressed after being mixed with five per cent. powdered acacia and ten per cent. powdered sugar. My own experience has fully demonstrated to my mind the utility of this as a general formula.

It should be the aim in preparing tablets to make them as soluble as possible. Tablets made with sugar as an adhesive are more soluble than those made with acacia or even acacia and sugar. Starch is also used to make tablets soluble, but is hardly as advisable as sugar. It has the advantage of taking up a considerable quantity of liquids, and on this account is very useful in such tablets as contain these in such quantities as to be objectionable if made with sugar alone. Powdered acacia should be used in all combinations of a hygroscopic nature.

Some have recommended, in order to insure more ready disintegration of the tablet, that small quantities of bicarbonate soda and either tartaric acid or citric acid be worked into the tablet.

While this would increase the solubility of the tablet and be very desirable in some instances, it has the disadvantage that, in order to incorporate it, the material must have different treatment from regular tablet material in order to prevent the action of the acid and soda before the tablet is made, and then defeat the purpose for which it is added. Again, tablets thus made, if not carefully kept from the air, do not keep. However, the writer believes that in some tablets which are naturally slow of solution it has much in its favor. It is only intend-

ed to use these in very small quantities, not to produce effervescence, but make the tablet disintegrate by the action of the acid in the soda when taken into the stomach.

It has been found that a fine powder does not compress as nicely nor feed as evenly as a coarse one, and on this account it is necessary to carefully granulate the material to be compressed. This is done by carefully mixing the powder and moistening, then passing through a No. 20 sieve and drying, then passing through sieve again. Water is generally used to moisten, although alcohol and solution of glucose are sometimes used. The powder must not be moist enough to stick to sieve. A tinned iron sieve is recommended, but if it were possible to get a tinned brass sieve it would be much better.

It is necessary to have the granulated material thoroughly dry before compressing. If the granulating has been carefully done and the material well dried, it will often be found unnecessary to add any substance to keep the material from sticking to the dies.

LUBRICANTS.

In the great majority of instances, however, it is necessary to add some substance to the granulated material to prevent the powder from adhering to dies. White vaseline, powdered talcum, and powdered boric acid are the substances usually used. The vaseline is best used as a two per cent. solution in ether with an atomizer. The material is granulated and dried, then sprayed with the solution vaseline, and mixed on a paper or stirred with spatula and dried. It is then passed through sieve. If powdered talcum is used it should be added to the dry granulated material, and stirred with spatula, or mixed on a paper, or it can be added to the dried granulated material in a wide-mouth bottle and mixed by agitation. Not to exceed three per cent. (of the weight of the granulated material) of powdered talcum should be used.

Boric acid is used in the same manner as talcum, but not to exceed two per cent. should be used. It is only used in making those tablets where a perfect solution in water is desired, such as in hypodermic tablets.

Sometimes it is necessary to use both vaseline and talcum; the talcum is then added last, after the vaseline, and not until the powder is dry, when it is mixed as directed above.

In preparing tablets it is a mistake to apply too much pressure; only as much pressure as is absolutely needed should be used. Never try to compress a moist powder, for it will stick to dies and not be satisfactory. Do not use any more lubricant than is absolutely necessary.—
The Spatula.

The oldest United States college is Harvard, founded in 1636.

Homœopathic Pharmacy.*

PREPARATION OF POTENCIES.

The homœopathic pharmaceutical practice, triturating and diluting of mother tinctures, is named subtilization or potentializing. This work is done according to two scales, the centesimal and the decimal. The centesimal scale was introduced by Hahnemann. Its principle is that the first potency must contain $\frac{1}{100}$ part of the strength of the remedy, and each following $\frac{1}{100}$ part of the preceding. Inasmuch as the mother tinctures are prepared after different directions, the medicinal strength of the diluted tincture or triturated powder must become unequal. The centesimal scale is known as the German scale; the second is the French or decimal scale. The first potency contains $\frac{1}{100}$ part of the strength of the remedy, while the following potencies are prepared each with 10 drops, or quotas, of the remedy to 99 drops of the neutral substance, of alcohol.

In order to make the first dilution according to Hahnemann, 1 drop of the mother-tincture has to be mixed with 99 drops of alcohol = 100 drops. Second dilution = 1 drop of the former to 99 drops of alcohol, etc.

Liquid substances must be potentialized in a room protected from the sunlight. Potencies must never be filtered. The name of the remedy and the number of the potency must be written on the cork. Centesimal potencies are marked by the letter C; decimal potencies with the letter D, or simply with the Latin numbers I, II, III, etc.

IN THE CENTESIMAL SCALE UP TO THE THIRTIETH POTENCY.

All bottles are to be placed in a row before the operator and then by means of the measure-glass supplied with the number of drops of alcohol prescribed in the respective directions, care being taken that the measure-glass is well emptied and the bottles afterward well corked. The bottles used for this purpose should be round, with broad, plain mouth, the edges smooth and not turned in or out. The bottles must be large enough to contain double the quantity of what is therein potentialized. Then the exact number of drops of the tincture or essence as prescribed is dropped into the glass bottle, which is marked for the first potency; the bottle is thereupon firmly corked and shaken with 10 vigorous jerks of the arm. C 1 is the label on the cork. Then one drop of this mixture is dropped into the next bottle, which is shaken as already described for bottle C 1. From this second potency one drop is added to C 3, which is treated in the same way as the two former potencies. In this way the potentializing is continued to the last bottle; one drop of the previous potency being always added to the next following bottle.

* Monatsblatt.

For the decimal scale the corks are marked D 1, D 2, D 3, etc., or I, II, III, etc., numbered from 1 to XXX. The operator has to take 99 drops of alcohol to 10 drops of mother-tincture for 1, then shake with 10 vigorous jerks of the arm; 10 drops from 1 being added to II, 10 drops of II being added to III, and so on until No. XXX is reached.

POTENTIALIZING OF DRY SUBSTANCES TO THE THIRD CENTESIMAL AND SIXTH DECIMAL POTENCY.

Dry substances, the medicinal strength of which must be first developed by trituration with sugar of milk, and to be worked up in a warm and dry atmosphere.

CENTESIMAL SCALE.

One grain of the drug is rubbed with 33 grains of sugar of milk for 6 minutes, scraped together (mortar and pestle must be unglazed) for 2 minutes, then 33 grains of sugar of milk added; repeat the operation; after 6 minutes scrape again for 4 minutes, add 33 grains of sugar of milk. Now work it up a third time, also 6 minutes rubbing and 6 minutes scraping. This is the first trituration or dry potency, C 1 d. To get the second trituration take 1 grain of C 1 d and incorporate it into 99 grains of sugar of milk according to the previous rules, C 2 d. In like manner the third trituration is prepared with one grain of the second. The triturating must be done with force, yet not so much as to cause the sugar of milk to adhere too strongly to the mortar as to prevent removal within 2, 4, or 6 minutes.

DECIMAL SCALE.

For triturating according to the decimal scale the same process as just described is pursued, the only difference being that 10 parts of the crude medicine are triturated first with 30 parts of sugar of milk twice for six minutes, with 6 minutes interval for scraping, then another addition of 30 parts of sugar of milk is made, and the whole manipulated exactly as before. This forms the first trituration, D 1 d, or I d; 10 parts of I d is in the former way well mixed with 90 parts of sugar of milk; it forms the II d, or D 2 d, and this procedure is continued up to the sixth trituration.

POTENTIALIZING OF THE THIRD CENTESIMAL AND SIXTH DECIMAL TRITURATIONS.

The medicinal substances which have been triturated after the centesimal scale up to the third, and after the decimal scale up to the sixth, potency are so subtilized that they may be mixed with alcohol or water and thus much higher potentialized.

FOR THE CENTESIMAL SCALE

make a solution of this trituration or bring the potentialized powder into a fluid state, in which its degree of potency may be carried further. To 1 grain of the third trituration are therefore added with the

measure-glass 50 drops of distilled water, and by a few turns of the bottle on its axis slightly dissolved; then 50 drops of alcohol are added, and the bottle, which ought to be large enough to leave a third of its space empty, is ten times shaken (that is with ten jerks of the arm). This is the fourth potency, C 4 d. One drop of this potency is mixed with 99 drops of strong alcohol, and the mixture, well corked, shaken with ten jerks of the arm, which gives the fifth potency, C 5 d. The next potencies up to the thirtieth are prepared each with 1 drop of the preceding one to 99 drops of strong alcohol and shaken with ten jerks of the arm, C 30 d. The letter d shows the potentializing out of the trituration.

DECIMAL SCALE.

Dry medicinal substances are prepared in different ways for the decimal scale up to the thirtieth potency, as some medical men who use these preparations prescribe the higher potencies in the liquid form, whilst others use the decimal triturations up to the thirtieth.

For dry potencies up to the thirtieth, 10 parts dry drug are treated with 30 grains of sugar of milk 3 times, as previously described. D 1 d, or I d; I d 10 parts with 90 parts of sugar of milk II d, etc., until XXX.

For liquid potencies up to XXX, one grain of the sixth trituration is dissolved in a small glass bottle in 50 drops of distilled water; 50 drops of strong alcohol are then added and the bottle shaken with ten jerks of the arm. This is the 8th potency, VIII d. The seventh would be not in keeping with the rules for this scale, proportion (1:9). Ten drops of the VIII d with 90 drops of diluted alcohol are shaken ten times for the ninth IX d; ten drops of this last with 90 drops of strong alcohol gives X d. From X d until XXX and higher the potentializing has to be performed with strong alcohol.

GLOBULE POTENCIES.

The moistening of the globules with the potencies is done in a glass bottle, not too small, filled two third with globules; the potency is dropped intact, the bottle corked and shaken so that all the globules are equally moistened. The bottle is then turned upside down and left standing 10 hours; after this time the cork is loosened a little to allow the liquid in the neck of the bottle to escape. The globules are in few days completely dry and ready for filling smaller bottles. Diluted alcoholic potencies are not to be used to moisten globules; so that if the lower potencies are required for this purpose, they must be freshly prepared with strong alcohol. Another method is to put the globules into a china cup; enough drops of the potency are added so that the fluid may drain the globules to the bottom, having moistened all the globules in a minute. The cup is then turned over on a piece of clean, dry blotting paper, to absorb the superfluous liquid, and the

globules spread out. When dry, they are filled in glass bottles, corked and labelled with the name of the contents and Arabian number of the potency.

We see immediately that this moistening business is wrong; the physician is absolutely unable to control the dose. I proposed thirty years ago to change this method and introduce into the Pharmacopœia homœopathica the following change according to the scale of globules.

Moisten 1,000 globules equal to one gramme with 20 drops of a potency prepared with absolute alcohol in a bottle several times during the day, make slight motion with the bottle, lay the bottle over night and keep it corked, the next morning remove the cork, close the mouth with chemically pure cotton and allow the alcohol to escape, turning the bottle around its long axis. In this way we can exactly count up the quantity of medical substance in each globule.

This counting can be conducted *ad infinitum* with every potency, and such operation saves the homœopathic physicians from the stigma of humbug, which they cannot evade in following Hahnemann's method of operation, because they are absolutely unable to give an estimation of the dose they are prescribing.

HOMŒOPATHIC NOMENCLATURE.

In all cases where only one species of the genus of a plant is officinal, the remedy bears the name of the species; instead of Aconitum Napellus only Aconitum; of Atropa Belladonna only Belladonna. If another plant of the same species should enter in the homœopathic pharmacopœia, it would receive the significant addition.

The elementary substances have on the label in addition to the name the following numbers: Minerals, Chemicals o. Mother-tinctures, Essences o.

Liquid potencies are distinguished by Dil.; triturations by Tr.; in addition it is denoted C, or D, or L, II with d. For instance Calcarea (Tr. II), (Tr. C 3), (Dil. NH d). Aconit. Dil. C 5, DV, V.

Generally in medical prescription the height of a potency is expressed for C-scale by the Arabian numbers; for D-scale by the Latin numbers.

Hahnemann's prescriptions when numbered by Latin numbers express the following height of potency:

	Strength of the drug	
I	a millionth part.....	3 potency
II	a billionth ".....	6 "
III	a trillionth ".....	9 "
IV	a quadrillionth ".....	12 "
V	a quintillionth ".....	15 "
VI	a sextillionth ".....	18 "
VII	a septillionth ".....	21 "
VIII	a octillionth ".....	24 "
IX	a nonillionth ".....	27 "
X	a decillionth ".....	30 "

Animal Oils and Their Uses.

By A. M. GRANCK.

Animal oils are obtained from a large variety of land and sea animals, and from

several kinds of fish. They find many important uses, and their place cannot be filled entirely by vegetable or mineral oils. It will be useful to give briefly the more important points of the principal varieties.

Neat's Foot Oil.—Neatherd is nowadays looked upon as an archaic word, and in everyday use the name of this oil is the solitary survival of the old Saxon name for the ox. The tripe shops keep its method of preparation constantly in the public mind. It is obtained, in fact, in the ordinary boiling of "cow heels" and tripe for public consumption, and separated from the water merely by rest and decantation. 100,000 pairs of ox feet give from 25 to 28 tons of oil. When pure it is an odorless, very limpid, straw-colored liquid which solidifies with difficulty. It will also keep a long time without turning rancid, and can be heated more frequently and to a higher degree without alteration than any other oil. Hence it is the best lubricating oil for delicate mechanism, such as the locks of firearms and the machinery of fieldpieces, and it is used by the clockmakers to a certain extent, perhaps not so much as before the Americans perfected their fish oils for this special purpose. It has also certain preservative employments; for instance, the prudent cricketer lays up his implements through the winter safeguarded against damp by a liberal coating of neat's-foot oil. It is rarely found pure in commerce. At the tripe shop it usually contains "sheep's trotter" oil, which has not such good qualities; this has an odor and congeals at a higher temperature than neat's-foot oil. In the wholesale market neat's-foot oil will also often contain a real adulteration in the shape of some or other vegetable oil, and in some places the hoofs of horses will have added their contribution. The oil from these is reddish yellow; it contains a large proportion of solid matter, and congeals at a relatively high temperature. It is, therefore, an undesirable addition.

Still another use of neat's-foot oil is in the preparation of leather, and in this employment it finds a competitor in an oil extracted from pigs' feet and refined. The oil obtained from pigs' feet by boiling in water contains a large proportion of stearine and is turbid at the ordinary temperature. At freezing point it solidifies altogether, and on being pressed yields a white limpid oil which is specially valuable in leather dressing. This contains 75 parts of oleine, 19 of margarine, and 6 of stearine, and is therefore very like lard oil, except that this latter contains no stearine and more oleine. The oil extracted from lard is white with a slightly yellow tinge, and is also used in leather dressing. It is sometimes sold for illuminating purposes.

Egg Yolk Oil.—The yolk of a hen's egg contains about 21 per cent. of oil, and in round numbers it takes 5,000 eggs to obtain a hundredweight of oil. Egg oil is thick and almost opaque, with a color between yellow and orange; in fact, it seems

to be the coloring principle of the yolk. It is prepared by drying the yolk at boiling point until it is reduced to about half its size, and then pressing out the oil. It finds restricted uses in pharmacy and in the making of perfumery.

Cod Liver Oil.—If we said that this familiar delight of childhood was never found pure in commerce certain gigantic advertisers might talk of law and damages. We prefer, therefore, to insist that if there be a pure preparation on the market, the manufacturer is a remarkably conscientious man whose employees have a wonderful knowledge of the marine kingdom. At any rate, the ling and a whole tribe of other fish of the genus *gadus*, which have not even English names, contribute their quota of liver to the boiling pots. It would be difficult to reject them, and if it could be done it is very questionable whether any useful purpose would be served. Cod-liver oil is made principally in Newfoundland; but there are factories in Scandinavia and in Ireland. The livers of the fish are put into a kettle made with a double envelope, and on steam being introduced into the inner compartment the oil runs out without pressure. This is white, with a very slight odor. When no more oil runs the livers are stirred up, and this slight pressure brings out abundance of yellow oil. By more heat and more stirring, and the addition of water to the contents of the kettle, a final flow of brown or nearly black oil is obtained. Outside its well-known use as a medicinal food, it is largely used in tanning. The liver of the skate gives a golden yellow oil, which possesses almost the same properties as cod-liver oil. Lipaline, or artificial cod-liver oil, has nothing fishy about it. It is made by adding 6 per cent. of oleic acid to olive oil.

Whale and Sperm Oil.—The whales have been almost ruined by modern illuminating methods, and the whalers are perforce almost forgotten, except in out-of-date books for the boys. It is little use to detail the methods of capture, the difference between the descriptions of whale, and the rough and ready extraction of the oil. There are three kinds of whale oil—white, yellow, and black—and their mixture gives the medium quality which is found in commerce. Ordinary whale oil is reddish yellow and transparent, liquid in summer and of a honey-like consistence in winter. Sperm oil is an orange yellow transparent liquid with a strong fishy smell. The sperm whale is worth chasing still, for a single "fish" will give from 75 to 100 tons of oil, two to three tons of spermaceti, and a pound or two of ambergris. It is used principally now in skin and leather dressing, especially in preparing chamois leather.

Dolphin or Porpoise Oil.—Two members of the dolphin family furnish forth these oils, which are usually considered as one and the same thing. The round-headed porpoise gives a lemon yellow oil with a strong smell of the briny ocean.

The oil extracted from the dolphin is a paler yellow and more dense. Both are used in tanning and in the lubrication of delicate machinery.

Alligator Oil.—New Orleans was formerly the market for alligator skins and oil, but indiscriminate slaughter and want of a close time has cleared Louisiana of the saurians, and now they are farmed on the Mississippi and hunted in the vast marshes of Florida. New York is now the principal market for crocodile products. The oil is like an ointment of a reddish color, and contains more solid fat than cod-liver oil or sperm oil. In Brazil they call the oil extracted from the local variety of alligator "jacary grease," and use it for lighting purposes, in the making of waterproof varnishes, and as a medicine. In continental countries it is used principally in the making of degreas.

Shark Liver Oil.—This is a thick reddish nauseous oil, sometimes substituted for whale oil. Degras is manufactured from it. It is the shark of the northern latitudes that furnishes the oil, and the principal fishery is in Greenland.

Seal Oil.—The seal gives a very similar oil to its cousin the dolphin. The oil is extracted from the flesh much in the same way that whale oil is obtained. The color is yellow and the taste is nauseous. It is usually met with mixed with whale or sperm oil.

Dugong Oil.—Two sorts of dugong found on the coasts of India and Australia respectively give this oil. It is a brownish yellow turbid liquid with a strong fishy smell.

Other Similar Oils.—The sea-lion, the orc, the borqual, the jubari, the walrus, the manatee, and other sea animals are all laid under contribution for oil. If the mermaid ever does appear, she will most undoubtedly be of the company. These oils are seldom or never pure; they are mixed together with those already noted, and sold under the better known names. Everything caught goes to the pot, so that the composition of the oil sent out varies constantly and infinitely according to the hazard of the catch. The leather trade can and does use them all without enquiring too closely into the nature of the mixture.

Fish Oil.—It would be impossible to enumerate the fish that get into the oil kettle. Almost everything that swims is popped into the pan for oil in one place or another. The herring, sardine, whiting, skate, salmon—all our old familiar friends, in fact—yield oil, and "fish oil" may be a mixture of any or all of them. The oil is extracted either by boiling or by allowing the fish to putrefy. This latter is a method which makes the fish oil factory the place of all others to avoid. Fish oil, as ordinarily sold, is a brownish yellow oil, with a strong smell. It keeps limpid at freezing point, and is used principally for degreas manufacture.

Some fish oils, however, are sent out pure, under specific names, and among these are the following:

Japan Sardine Oil.—This is made in the islands of Yesso and Ava, and refined at Yokohama. Before this process, the oil, extracted by boiling the fish in water, is thick, even in summer; but as sent out from Yokohama it is a clear liquid, separated from the solid matter which is sold as fish wax or fish stearine. The oil is used in soap and candle making.

Tunny Fish Oil.—The tunny is a Mediterranean fish, caught in tremendous quantities off the coast of Italy. It is very rich in oleine and margarine, and is used principally for degreas.

Menhaden Oil.—This is extracted from a kind of shad found in abundance in American waters. An average specimen will weigh about four pounds, and a ton of fish boiled up in the usual way will yield about thirty-five gallons of oil. It has a brown color, a density of 0.933, and solidifies a few degrees under freezing point. It has all the properties of cod-liver oil. The Russian shad, caught in the Volga, is rather richer in oil, and this is sold under the name of Astrachan herring oil.

Salmon Oil.—There is hardly likely to be, in our times, an oil factory on Deeside, using the "fush" as raw material, though it might have been so in the days when Preston apprentices had a clause in their indentures by virtue of which salmon was not to appear on their dinner-table more than three times per week. China is the only country where salmon oil is made. It is a clear white oil, and is used in the preparation of Chinese ink.

In addition to the wide stretch of the animal kingdom we have already shown as laid under contribution for oil, there are still the birds and insects to speak of in this connection. Both yield oil, and we will give a few of the most noteworthy examples.

Penguin Oil.—Penguins have little or no wing, but otherwise look and behave remarkably like geese. They are so numerous and so easily knocked on the head that ten sailors have killed 275,000 in five weeks. As these would give about 25,000 gallons of oil, the business seems to be a pretty good one. The oil is extracted by scorching the flesh and boiling it. It is very like whale oil, but has a faintly disagreeable smell and soon turns rancid. It is used in leather dressing.

Fulmar Oil.—The fulmar is a puffin which makes a home of St. Kilda in the Hebrides, and it is the oiliest bird in creation. It is a small oil factory on two legs. Its method of defence, in fact, is to squirt oil at the pursuer. When the birds are caught in August the operator takes them one by one and strangles them in a bag made out of the stomach of a solan goose, forcing them at the same time to part with their oil. A fulmar gives about a pound of oil which could easily be mistaken for cod-liver oil, and has some of its qualities. In St. Kilda it is a favorite medicine. In New Zealand and Tasmania another of the petrel family is done

to death for its oil in the same way, and this is used for lamps.

Frigate Bird Oil.—The frigate bird is plentiful in the Indian seas, and is the strongest of all flyers. The oil got by boiling its flesh is a sovereign remedy for Indian sciatica. It is an orange-tinted oil, of the consistency of palm oil, and the smell is not particularly disagreeable.

Insect Oils.—These, of course, are only made and used where insects are peculiarly plentiful; for instance, in locust-invaded countries. Locusts, cock-chafers, crickets, weevils, beetles, and other insects have been used from time to time, and the preparation of oil from them is always the same. They are ground up with water between two millstones, and the black or chestnut-brown paste thus obtained is left to rest in a vat for about a month. At the end of this time the oil has risen to the surface, and can be decanted. It looks like cod-liver oil, but has a disagreeable odor. After purification with sulphuric acid, an oil good enough at a pinch for several purposes, lubrication, for instance, is obtained.

Doubtless, in the remotest parts of the earth's surface, other and perhaps more curious animal oils are made and used. This essay, however, is sufficient to show that they are wonderfully varied, and that no division of the animal kingdom is forgotten in the universal quest for oil.—*Oils, Colors, and Drysalteries.*

Anthion.

The *Chemische Fabrik*, of Berlin, says the *Revue Universelle*, has recently put upon the market an oxidizing substance, the properties of which have been long known to chemists. It is the persulphate of potassa, and is prepared by electrolysis in submitting a solution of sulphate of potassa to an electric current. There occurs an oxidation and a deposit, at the positive electrode, of the persulphate, which is, in fact, less soluble than the ordinary sulphate, while hydrogen is disengaged at the negative electrode.

There is obtained a very light precipitate which readily crystallizes through solution in warm water, and which in cooling yields brilliant crystals having a reflection comparable to that of mother-of-pearl. These crystals are sold by the Berlin works under the name of "anthion." This substance, like all bodies whose stability is not perfect, is a remarkable oxidizing agent, either in neutral or slightly alkaline solution.

It is employed in dyeing and serves for decolorizing indigo and various other substances. It is also used for bleaching fabrics. But its greatest utility, without doubt, is the application that can be made of its properties in photography.

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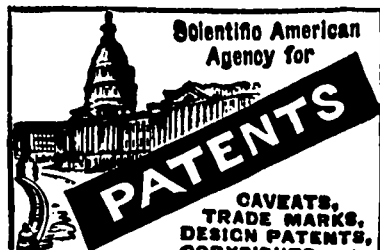
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Compound Syrup of White Pine.*

By ROBERT S. SHERWIN, Ph.G.

Compound syrup of white pine is a very popular expectorant that is used in many parts of this country.

All large manufacturing pharmacists who do not deal solely in specialties manufacture this syrup. Originally the formulas varied somewhat. One of these older formulas was as follows, for one fluid ounce :

White pine bark.....	20 grains.
Ipecac.....	15 "
Chloroform.....	4 minims.
Morphine acetate.....	½ grains.

The names of the ingredients that I selected to manipulate were taken from the label of a large manufacturing pharmacist. His syrup, from the information I have obtained, has by far the widest sale.

According to the labels on a number of different syrups, the ingredients are practically identical.

I have found that the white pine bark that is used in this preparation should be taken from those parts of the limbs or trunk on which either little or no cork formation has taken place, as those parts contain the most oleoresin.

The bark from the older parts of the tree, and especially that from old trunks, contains practically no oil and very little resin; it is composed almost entirely of cork. This older, corky bark is all that I have been able to obtain from different wholesale druggists. When making this syrup I collected the bark myself. I have found that it is collected more easily in the spring of the year than in the late summer or fall. I have made the syrup from both the fresh and the dried bark, and find the dried to be not only more easily manipulated, but also to afford a better preparation. In preparing the syrup I use the sulphate of morphine. The hydrochlorate may be used, and the acetate is used by some manufacturers; the latter, however, is not so invariable in quality as the sulphate. I use one-half the quantity of chloroform that is stated on the labels of the various manufacturing pharmacists, yet my finished product contains more chloroform than any of the commercial samples that have come into my hands. Therefore, the manufacturers either do not put in as much as they state or it is lost by evaporation before it reaches the retail trade. All of the samples of the syrup on the market which I have examined contain coloring substances. I made my first lot of syrup by exhausting the drugs with a hydro-alcoholic menstruum, and dissolving the morphine sulphate, chloroform and sugar in the medicated percolate. This procedure yielded an unsatisfactory product, yet it was very much like the numerous syrups on the market. In a second attempt I exhausted the drugs with a menstruum composed of 2 parts of glycerin and one part

of water, and dissolved the morphine, chloroform, and sugar in the medicated percolate. This method gave a better product than the first did, but it was not as satisfactory as the preparation yielded by the following plan, which has given the best results so far :

White pine bark } of each.....	65.0 grammes.
Wild cherry bark } of each.....	8.7 "
Balm of Gilead buds } of each.....	6.5 "
Spikenard root.....	4.4 "
Sanguinaria root.....	0.4 "
Sassafras bark.....	4.0 c.c.
Morphine sulphate.....	150.0 "
Chloroform.....	700.0 grammes.
Glycerin.....	
Sugar.....	

Water, a sufficient quantity to make 1,000 cubic centimetres

Mix the glycerine with 300 cubic centimetres of water. Having mixed the white pine bark and other vegetable drugs, reduce them to a No. 40 powder. Moisten the powder with a sufficient quantity of the menstruum, and allow it to macerate for twenty-four hours; then pack it firmly in a cylindrical glass percolator, and gradually pour on the remainder of the menstruum. When the liquid has disappeared from the surface, follow it with water, continuing the percolation until 500 cubic centimetres are obtained. Dissolve the morphine sulphate and chloroform, and then the sugar, in the percolate by agitation without heat, strain and pass enough water through the strainer to make the product measure 1,000 cubic centimetres.

Each 30 cubic centimetres of the product represent :

White pine bark.....	2.000 grammes.
Wild cherry bark.....	2.000 "
Balm of Gilead buds.....	0.250 "
Spikenard root.....	0.250 "
Sanguinaria root.....	0.150 "
Sassafras bark.....	0.120 "
Morphine sulphate.....	0.012 "
Chloroform.....	0.120 c.c.

The foregoing process makes a beautiful, bright, and permanent preparation, that may be given in doses of from one to three teaspoonfuls.

This syrup is as easily prepared as syrup of wild cherry. It costs less than \$1 per gallon, while those brands on the market are sold for about \$3.50 per gallon. It can be put up in bottles holding four fluid ounces, and syrup, bottles, corks, and labels need not cost over sixty cents per dozen.

Inasmuch as the compound syrup of white pine is used over such an extensive territory, and its sale in some parts of this territory is so enormous, I am of the opinion that there should be a formula for its preparation in the National Formulary. I believe the compound syrup of white pine is now used much more than a number of preparations which are now recognized in the National Formulary.

NOTE.—Since Mr. Sherwin's thesis was deposited with the faculty of the college, we have received a copy of the new and revised edition of the National Formulary, and find that compound syrup of white

pine is recognized therein under the title of *Syrupus Pini Strobi Compositus*. We print the formula in full, so that comparison with Mr. Sherwin's formula may be easily made :

White pine bark (<i>Pinus Strobus</i>)...	75 gms.
Wild cherry bark.....	75 "
Spikenard root.....	10 "
Balm of Gilead buds.....	10 "
Sanguinaria root.....	8 "
Sassafras bark.....	7 "
Morphine sulphate.....	0.5 "
Chloroform.....	6 c.c.
Sugar.....	750 gms.
Alcohol.....	—
Water.....	—
Syrup (U.S.P.), of each a sufficient quantity to make 1,000 cubic centimetres.	

Reduce the vegetable drugs to a moderately coarse (No. 40) powder, moisten the powder with a menstruum composed of one volume of alcohol and three volumes of water, and macerate for twelve hours. Then percolate with the same menstruum until 500 cubic centimetres of tincture have been obtained, in which dissolve the sugar and the morphine sulphate; lastly, add the chloroform and sufficient syrup to make 1,000 cubic centimetres, and strain.—*American Pharmaceutical Journal*.

Pharmacy in Victoria.

According to the report for 1895 of the Pharmacy Board of Victoria, Australasia, the number of would-be pharmacists in that colony is greater than ever, 148 students having entered for the preliminary examination, and 71 passed during the year, as against 126, of whom 60 passed, in 1894, the highest number previously on record. For the certificate of the Melbourne College of Pharmacy, 48 students presented themselves for examination in chemistry and practical chemistry, (30 passed), and the same number in materia medica and botany (26 passed). Having passed the preliminary examination before apprenticeship, served for not less than four years as an apprentice, attended courses of lectures in materia medica, botany, chemistry, and practical chemistry, and passed college examinations in those subjects, 29 candidates presented themselves for the final examination in practical pharmacy, and 16 passed. In 1891 there were 37 entries, and 26 passes. For the modified examination, open to those whose apprenticeship commenced before the passing of the Pharmacy Act, 1876, four candidates presented themselves, and all failed. The additions to the register of pharmaceutical chemists during 1895 were 20 only, the smallest number for any year on record, but the number of apprentices registered was fifty-one, the highest on record. There are now 1,170 pharmaceutical chemists registered under the Act, of whom 137 were registered under certificates from the Pharmaceutical Society of Great Britain, and 523 apprentices.—*Pharmaceutical Journal*.

*Abstracted from a thesis presented to the Philadelphia College of Pharmacy.

The Science of Optics.

BY LIONEL LAURANCE.

Principal of the Optical Institute of Canada.

[Entered according to Act of Parliament of Canada, in the year 1896, by Lionel Laurance, at the Department of Agriculture.]

Emmetropia.

A much simpler and quicker method, and one that serves quite well enough for general purposes, is to make the refraction normal by the distance test and then to find the nearest point at which the fine print can be read; this is the P.P.; measure its distance from the eyes and divide the distance into 40, the result is the amplitude. For instance, the P.P. is at 8 in., then 8 into 40 gives 5, which is the amplitude in D; or the P.P. is at $4\frac{1}{2}$ in., then that into 40 goes 9 times and the amplitude is 9 diopters. By this test it can be learnt if the accommodation be normal according to age and also, in many cases, if the correcting lenses be about right. It also gives approximately the age of a person; for example, if you find an amplitude of 7D you can reckon the person to be very near to 30 years old. The accommodation in both eyes is always the same; if there be a difference of vision it is due to the refraction. Perhaps a little more accurately it might be found by testing each eye separately, the other being covered.

If parallel rays from a candle 20 ft. distant be focussed on to a screen of white paper by a convex lens of 1 in. focal length or 40D refraction a clear sharp image of the flame will be obtained on the screen if the lens be exactly 1 in. in front of it. If, now, the candle be brought nearer than 20 ft., the rays proceeding from it to the lens are divergent and the image is blurred unless the lens be moved further from the screen and nearer to the candle, or the screen placed further back. But let us suppose that, both the screen and the lens being firmly fixed, the distance between them cannot be increased. In such a case there is but one means of getting a sharp focus, and that is by adding to the 1 inch lens another whose refractive power is just enough to make the divergent rays parallel before they enter the fixed lens. From what has been said before it should be known that if the rays be divergent from, say, 10 in. then a 10 in. lens will make them parallel; and the same with those from any other distance, a convex lens of that focal length will render them parallel. So that if the candle be at 40 in. a 40 in. convex or a +1D lens must be added to the fixed lens; then the divergent rays from the candle 40 inches off will be rendered parallel; and being parallel when they enter the 1 in. or 40D lens the strength of the latter is sufficient to bring them to a focus on to the screen. If the candle be brought to 20 in. it requires a 20 in. convex or +2D lens; if it be at 10 inches it requires a 10 in. or +4D lens, and so with any other position of the candle.

So also the refractive power of the

emmetropic eye, 50D, just suffices to bring parallel rays to a focus on the retina, but if the rays come from an object that is nearer than 20 ft., the rays being divergent, the refractive power of the eye is not sufficient, and in order to bring them to a focus at the retina it must be increased in strength; this increase is obtained from the accommodation, and the nearer the object is the more divergent are the rays and the greater is the amount of accommodation required in order that the object be seen. Accommodation can therefore be defined as "The power to form a clear image of divergent rays," or as "The adaptation of the eye to seeing objects at various distances.

The quantity of accommodation exerted for seeing a thing at any certain distance is the same as I illustrated with the lenses thus

Distance in inches.	Distance in Cm.	Acc. exerted.
At ∞	∞	None
160	400	0.25D.
40	100	1.00D.
20	50	2.00D.
8	20	5.00D.

To find the quantity employed divide the distance in inches into 40, and the result is the diopters of accommodation; for instance, at 5 in. 8D of accommodation is exerted; at 16 inches 2.5D of accommodation; at 13 inches 3D of accommodation, and so on. If the distance is in centimetres, then divide into 100; if in millimetres, divide into 1,000. For example, the quantity of accommodation employed for seeing an object at six inches, 15 centimetres or 150 millimetres, then these numbers divided respectively into 40, 100, and 1,000 give the same result, viz., 6.50D of accommodation. There is often a small fraction left, as in the last example, which need not be reckoned.

If the calculation of the accommodation be made in inches, it is exactly the same as the distance of the object. If the origin of the rays be at 13 inches, then the accommodation employed is $\frac{1}{3}$, which is the refractive power equal to that found in a $\frac{1}{3}$ or No. 13 lens—namely 3D, but the accommodation can properly only be reckoned by diopters.

When a person is well advanced in age the diminution of the amplitude of accommodation shows itself by the defect known as old sight.

Convergence is that power of the internal recti to turn the two visual axes to any point nearer than 20 feet, so that a single object be seen by the two eyes at the same time.

When the eyes are directed to a distant point the visual axes are said to be parallel. They are not really so, but the

amount of inclination is so extremely small as not to be worth considering.

The measurement of convergence is by metre angles (symbol MA). The unit MA, is the quantity of convergence exerted in order to fuse the images of an object 1 metre or 40 inches distant. For points nearer than 40 inches more convergence must be employed and the quantity for any given point is found by dividing 40 by the number of inches the object is distant, or if calculated by centimetres, by dividing 100.

The following gives the convergence for various distances:

Distance in inches.	In Cm.	Con. exerted.
At ∞	∞	None.
160	400	0.25 M.A.
40	100	1.00
20	.50	2.00
8	.20	5.00

For more on this subject see chapter on convergence.

Then at ∞ no accommodation is required in order that rays be focussed on the retina, nor is any convergence required in order that a single object be seen by both eyes, but at any point short of 20 feet both functions are brought into play, and the number of MA of convergence for any distance is the same as the number of D of accommodation; in fact, the metre angles measurement of convergence was adopted in order to make this fact more simple of calculation. When the eyes are directed to the reading point of, say, 16 inches, the convergence exerted is 2.50 MA and the accommodation employed for focussing such divergent rays is 2.50D, and at every other distance the same quantity of the two functions is exerted so long as the eyes are normal as to their refraction.

In emmetropia the harmonious working of the two functions takes place quite naturally without jar or cognizance of the fact, and, moreover, if the eyes be converged to a certain point the accommodation necessary for seeing at that distance is also immediately exerted; also, if the eyes be accommodated for a certain distance, they are at once converged to the same point. A person blind of one eye, to whom convergence is therefore useless, will, when reading, turn them both inwards. There is no doubt that the muscles of accommodation and convergence have their innervation at the same source, so that their movements are associated.

So intimate is the connection between the working of the ciliary and that of the internal recti that the slightest disturbance of their joint action in some eyes results in that condition which is called asthenopia—a weak, painful condition of the eyes. This defect can almost invariably be traced to the want of co-ordination between accommodation and convergence, due to one set of muscles being deficient in strength, or to the fact that, owing to an error of refraction, the one function has to be used in excess of the other.

Although the convergence and accommodation are thus intimately connected,

Montreal Optical Company

1873

1896

Montreal

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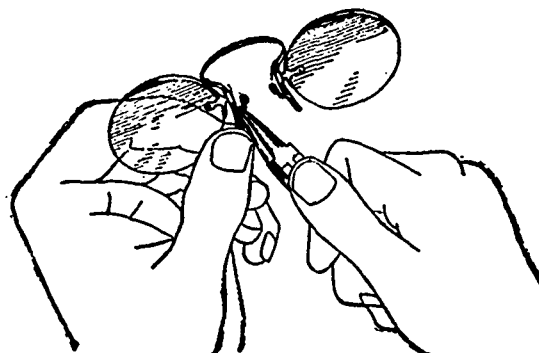
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Intending students please communicate with Mr. J. S. Leo, the principal, who will furnish all further particulars.

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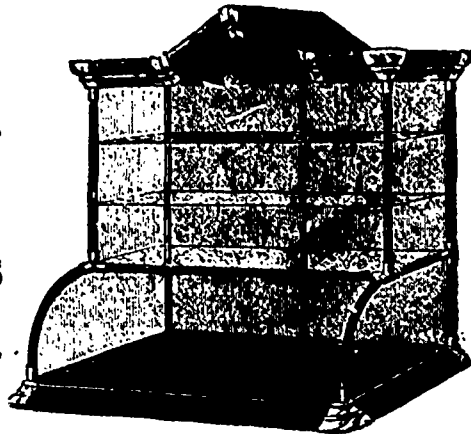
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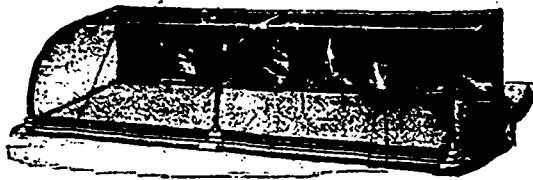
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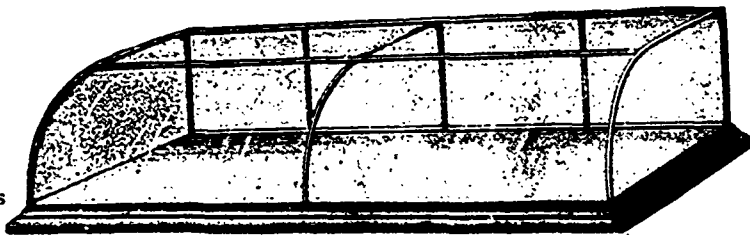
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Deafness	Millions of	Head Noises
Deafness	Sufferers	Head Noises
Deafness	Cured	Head Noises
Deafness	after all else	Head Noises
Deafness	had failed.	Head Noises
Deafness	Why	Head Noises
Deafness	remain deaf	Head Noises
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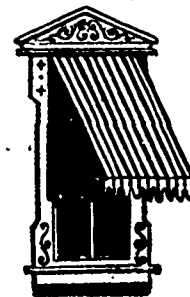
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still they can also act independently of each other to a certain extent. At the far point the accommodation can be exerted in excess of the convergence, and at the near point the convergence can be used in excess of the accommodation, so that in minor defects of the refraction the strain of employing one function in excess of the other is not felt. This will be better understood when hyperopia and myopia have been studied. That these two functions can be exerted independently can be proved in this way. Look at an object situate 20 feet away and hold in front of the eyes a pair of concave lenses, say 2D. The object will still be seen, because 2D of accommodation is brought into action, while the object is seen singly, which would not be the case if convergence were also exerted, as then double vision would be caused, and two objects seen instead of one, nor would the object be seen at all through the concave lenses unless accommodation equal to their strength were employed.

In the same way it can be proved that convergence can be exerted without accommodation, by looking at a distant object through a pair of prisms, say, 2° bases out placed in front of the eyes. To counteract the deviation caused by the prisms convergence is exerted, while accommodation is completely at rest.

Or at the near point similar tests can be employed by reading print through convex lenses which prevent the employment of accommodation, and through prisms bases in, which prevent the employment of convergence; or by looking through concave lenses which cause more accommodation to be exerted and through prisms bases out which cause more convergence to be employed.

Although these tests prove that one function can be used without the other, still it is contrary to nature, and therefore unpleasant, if not painful. When looking at a distance through concave glasses the eyes soon feel strained (if they be not myopic), but this can be relieved by using also prisms bases out. The latter cause convergence to be exerted, and then the two functions being equally employed no strain is felt. So also, when an object at the close point is looked at through convex lenses of sufficient strength to prevent the use of accommodation, the eyes shortly feel quite painful; but if prisms bases in be also used, these, preventing the use of convergence, also remove the painful symptoms.

It is of the utmost importance that the co-ordinate action of accommodation and convergence be thoroughly understood, as the proper fitting of glasses can never be achieved without it. It is the want of this harmony that is the cause of the painful symptoms in uncorrected or improperly corrected errors of refraction and accommodation, and next to the improvement of vision, and very often in preference, the most important thing is to obtain as nearly as possible harmonious working of the two sets of muscles.

The relative convergence is the amount that can be exerted with any given quantity of accommodation. It can be found by directing the eyes to a certain point, say, 20 inches. At this point 2D of accommodation is employed. Then find the strongest prisms, bases out, through which a single object is still visible. The deviation of the eyes to overcome the prismatic power can be calculated in MA.

The relative accommodation is the amount that can be exerted with any given quantity of convergence. It can be found by directing the eyes to a certain point, say, 20 inches. At this point 2MA of convergence is employed. Then find the strongest concave lenses through which the object can still be seen. The numbers of D of these lenses must be added to 2D, which is the accommodation that must anyhow be exerted to see the object at 20 inches.

The nearer the point the greater the relative convergence and the smaller the relative accommodation. The more distant the point the smaller the relative convergence, and the greater the relative accommodation.

Binocular accommodation is that of the two eyes together.

Absolute accommodation is that which each eye can exert separately.

The latter is greater than the former, as then convergence to a nearer point can be exerted, and so more accommodation. The former is, however, greater than the latter, if convergence to a nearer point be prevented.

If the two eyes be directed to an object 20 feet away the absolute accommodation can be ascertained by finding the strongest concave glass through which each eye separately can see it. The binocular accommodation will be that which can overcome the strongest concave lenses held in front of the two eyes. There will be found a difference of from one to two diopters, the absolute accommodation being greater to that extent, because when the one eye is covered over, binocular vision not being necessary, convergence is brought into play, so that more accommodation can be exerted; while, when the two eyes are together directed to the object, this being at infinity, binocular vision is necessary, and no convergence can be exerted, and, therefore, not so much accommodation.

From the foregoing it will be seen that in order to exert accommodation to its fullest extent convergence must also be used; this is a most important fact. Also if it be understood that the employment of the one function brings about the exertion of the other this will immediately explain convergent squint, and the reason why in hyperopia stronger convex lenses are accepted by the two eyes together than by each separately.

The co-ordination between accommodation and convergence is more conserved in some eyes than in others. When there is an error of refraction the link be-

tween the two must be, to a certain extent, severed. In slight defects this is fairly easily achieved, and in the deeper ones, if it be effected, there is a more painful condition than when the intimate connection is kept up.

A watchmaker who uses a 10D lens constantly for viewing objects 4 inches from the eyes sees without accommodating, and, as one eye only is employed, he also uses no convergence. He, therefore, suffers no pain or inconvenience; but, if he were to use a pair of spectacles of that same strength, as he would then be using convergence without accommodation, he would not be able to keep them on five minutes together.

As I have before stated, when there is an error of refraction, the harmony is disturbed, and in Hyperopia (symbol H) accommodation is used in excess of convergence, and in Myopia (symbol M) convergence is used in excess of accommodation.

The following table gives the quantity of accommodation and convergence employed at various distances in emmetropia, in H of 1D, and in M of 1D.

Distance Inches.	Distance Cm.	MA of Con. employed.	Diopters of Ac. Em.	H of 1D	M of 1D
∞	∞	Nil	Nil	1.00	Nil
160	400	0.25	0.25	1.25	Nil
80	200	0.50	0.50	1.50	Nil
40	100	1.00	1.00	2.00	Nil
30	75	1.50	1.50	2.50	0.50
20	50	2.00	2.00	3.00	1.00
16	40	2.50	2.50	3.50	1.50
13	33	3.00	3.00	4.00	2.00
10	25	4.00	4.00	5.00	3.00
8	20	5.00	5.00	6.00	4.00
6	15	6.50	6.50	7.50	5.50
5	12.5	8.00	8.00	9.00	7.00
4	10	10.00	10.00	11.00	9.00

Note that for every D of H one diopter more of accommodation must be employed at any certain distance, and for every D of M one diopter less.

Although acting independently there is also an intimate connection between the action of the ciliary and that of the iris. When the sphincter of the former contracts the sphincter of the latter contracts also, so that when the crystalline lens is accommodated by the contraction of the sphincter muscle of the ciliary, the pupil is made small by the contraction of the sphincter muscle of the iris.

The utility of small pupils when the eyes are adjusted for reading will be found by referring to "Spherical Aberration."

When the pupils are small defects of refraction are modified. In testing when one eye is covered over, the pupil will sometimes dilate because the light is excluded from it, and will cause a similar dilation in the uncovered eye; so that the sight is found rather more defective, which, perhaps, is not a disadvantage in testing. This seemingly contradicts what I have just stated regarding the pupil being smaller when the eye is accommodated, and as to more accommodation being exerted when the one eye is covered over. Both are true, and the former will apply in some cases and the latter in others, or perhaps the one will counteract the other, and the pupil remain stationary as to size.

Advertising.

Practical Hints on Advertising.

Copyrighted, 1896, by CHARLES AUSTIN BATES, New York.

If advertising be confined to a specified territory, it ought to be a simple matter of arithmetic to tell whether or not it was profitable. Certainly the manufacturer knows what quantity of his goods are sold in a certain territory. If he tries advertising for six months or a year, and the sale isn't increased, he certainly knows that the advertising was not of the right sort.

If the business is increased, he can measure by the additional profits against the cost of the advertising, and by the simple operation of subtraction find out just how profitable the advertising had been.

Of course, where the advertising has been general all over the country for a long time, it is hard to tell just exactly what it accomplishes. This is more particularly the case when general as well as local circulating mediums are used.

The man who is using local papers and also the great monthly magazines cannot tell whether the magazine advertising pays or not. He cannot tell absolutely about the local advertising, but he can get near it if he tries.

Of course, if he sells to jobbers, and they in turn sell to retailers, the problem is more difficult, and, in fact, is almost unsolvable. When he is first going into any given territory, however, he can tell exactly what its advertising is doing. It will require attention to do this, and it will require some figuring.

To be sure, a Cincinnati jobbing house may buy the goods that are sold by a Kentucky retailer, and so apparently results might come from Ohio when the advertising was being done in Kentucky. It is comparatively easy, however, to find out where the actual sales are made if an effort is made to do so.

A certain wise man, who has now been dead some years, said: "Of the making of many books there is no end." He must have foreseen the booklet era in the history of advertising. There are more booklets used now than were ever used before in the world. It seems that no business of any kind can get along without a booklet, and booklets are good things. There's no question about that.

A booklet enables a man to tell a longer story than he can tell in an advertisement, unless he has a great deal of money and a great deal of nerve. Sometimes I am inclined to think that an advertisement covering the entire ground might be published in the right sort of papers and get a great deal wider circulation for the same amount of money than can be obtained by the publication of a booklet. The booklet is a sort of stock advertisement, however, and may be used effectively in the regular daily correspond-

ence, or in the daily out-go of packages and boxes.

The booklet is necessary. Many makers of booklets make the mistake of talking too much before they begin to tell their story. I like the booklet that jumps right into the middle of the story on the first page, and talks business from the first letter to the last period. I do not like the booklet, or the advertisement, for that matter, that begins in some such way as this:

"That interesting work, Webster's Unabridged, defines a hinge as a joint on which a door, lid, etc., hangs or turns."

This sort of thing is generally the opening to two or three pages of unnecessary introductory literary matter.

Business men do not have time to read stories during business hours, no matter how interesting and well written the stories may be. If a man who is interested in hinges gets a booklet about hinges, he wants to get the meat out of it as quickly as he can. He doesn't care anything about what Webster says about hinges. He knows what a hinge is, and his opinion and Webster's may possibly differ. He cares more about the quality and prices of the commercial hinge than he does to know the dictionary definition of the word.

I believe in a booklet that tells quickly whatever it was written to tell. I do not mean that I would sacrifice clearness for the sake of brevity, but I would start immediately to tell my story whether it was long or short.

Newspaper publishers will get more benefit from progress in advertising than any other class of men, and yet they are the ones of all others who throw obstacles in the path of the progressive advertiser. I have recently had it brought forcibly to my attention that many publishers fine their advertisers when they endeavor to make their advertising profitable. They apparently do not want the advertising made profitable, at least profitable to the advertiser. Publishers refuse to change the ads of local advertising unless exorbitant extra charges are paid. In doing this they are certainly standing in their own light. They are doing what they can to make the advertising unprofitable, and, if it is made unprofitable, how in the world can they expect it to be continued or increased?

If they are not getting enough money for their space to afford to change the ads frequently, then they ought to advance their rates. I believe, however, that it is generally true that they are getting enough money to permit the frequent changes of the advertisements.

Several years ago, when I was making some contracts with a number of local papers, I proposed to furnish electrotypes, provided I could get a concession in rates by so doing. I was told that it didn't make any difference whether electrotypes were sent or whether the composition was

done in the office, because the printers were there, and were employed by the week, so that it cost no more when they were busy than when they were not busy.

This is, undoubtedly, the case in most local newspaper offices. It must of necessity be in only the larger cities, where composition is paid for by the piece, that the changes of ads make any appreciable difference in the expense of getting out a paper.

It doesn't cost much to set an entire paper in an ordinary weekly office. There are comparatively few papers that are all set in the office of issue. Plate matter is now so good that the average local editor cannot possibly improve upon it, even if he gives his entire time to the subject. An ordinarily good printer will set several columns of advertisements in a day. I mean the ordinary run of ads that go into weekly papers.

Of course, if he has any fancy work to do on the ads, or if a good man, of them have borders, he won't set so much, but I should think a reasonably fast printer ought to set six or eight columns of ads in a day. I suppose that the average price paid for this kind of work in newspaper offices all over the country is not more than two dollars a day. In the general run of country offices, I doubt if it is more than a dollar and a half a day.

At this rate, it would cost something like twenty-five cents to change a column of ads. Of course, the making-up would take some time, but the increased business that would surely come from this kind of work would more than pay for the time and trouble involved.

Tobacco soap (Nicotiana soap) has been introduced in Germany for treating parasitic diseases of all kinds, particularly itch. The originator, P. Tauzer (*Pharm. Centrall.*) prepares an extract from tobacco refuse, containing about 8 per cent. of nicotine, of which he incorporates 10 per cent. in the soap, scenting slightly with oil of bergamot. This soap has proven excellent in allaying itching, and hence is expected to prove valuable to hives and pruritus. It must not be used on moist eczemas and pustulous affections, while on children it must be employed with great care.

BLAUD'S PILLS.—A good method, according to Rava (*Pharm. Zeit.*), is the following: Prepare ferrous carbonate by precipitation from 270 grams of ferrous sulphate with 168 grams of sodium bicarbonate. Mix the fresh precipitate with 50 grams of honey, 25 grams of acacia, and 20 grams of glycerin. Complete the mass by the aid of any suitable constituent, and make into pills weighing 0.25 gram each.

IODOFORM DEODORIZER.—Iodoform forms an odorless combination with hexamethylentetramin, and so the latter is recommended (*Phar. Centrall.*) for removing the odor of iodoform from hands and utensils.

"THE LANCET," "BRITISH MEDICAL JOURNAL," and "THE OPTICIAN,"
strongly recommend

**DENTONS' ^{New Patent} "Acme" Lens-
Front Clinical Thermometer**



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The Great Cure for Rheumatism.

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In 5c. Packages, 1/3 gross box, \$1
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Mail orders promptly executed.

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Sold by all first-class
Chemists and Druggists

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This Wine of the Extract of Cod Liver, prepared by M. CHEVRIER, a first-class Chemist of Paris, possesses at the same time the active
principles of Cod Liver Oil and the therapeutic properties of alcoholic preparations. It is valuable to persons whose stomach cannot retain fatty
substances. Its effect, like that of Cod Liver Oil, is invaluable in Scrofula, Rickets, Anæmia, Chlorosis, Bronchitis, and all diseases of the Chest.

Wine of the Extract of Cod Liver with Creosote

General Depot:—PARIS,
21, Faubourg Montmartre, 21

CHEVRIER

Sold by all first-class
Chemists and Druggists

The beech-tree Creosote checks the destructive work of Pulmonary Consumption, as it diminishes expectoration, strengthens the appetite,
reduces the fever, and suppresses perspiration. Its effect, combined with Cod Liver Oil, makes the Wine of the Extract of Cod Liver with Creosote
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Formulary.

FLUID EXTRACT OF COFFEE.

Coffee, freshly roasted and ground $\frac{3}{4}$ xxii.
Glycerin Oi.
Water, q. s. ad. Oiv.

Dilute the glycerin with three pints of water, and pour the solution upon the coffee contained in a wide-mouthed bottle. Macerate for several days; then transfer to a percolator, add water, and displace three pints. Continue the percolation until the coffee is exhausted, then evaporate the product to one pint to be mixed with the three pints of the first percolate.

POUDRE DE RIZ.

The *Seifen-fabrikant* recommends the following formula:

Wheat starch 2,500 parts.
Talc 1,500 "
Magnesium carbonate..... 500 "
Oris root 500 "
Oil of lemon peel 25 "
Attar of roses 5 "

Powder each of the solids separately, mix and triturate with the oils.—*National Druggist*.

ZINC GLYCEROLE FOR CHILBLAINS, ETC.

Zinci oxyd. *precip.* 3 ounces.
Glycerini, *opt.* 12 "
Acid tannic 2 "
Ol. eucalypt. glob. ½ "

Mix the oxide of zinc to a perfectly smooth paste with some of the glycerine in a Wedgwood mortar; perform a similar operation with the tannic acid, adding in the oil of eucalyptus to this latter mixture; work the whole together with remainder of glycerine, until of perfectly homogeneous consistence throughout. Store in suitable jars, or wide-mouthed bottles, for use.

This preparation is to be applied by painting on the affected part. It is also valuable for inflamed surfaces.

HARNESSE COMPOSITION.

Beeswax (best yellow)..... 90 parts.
Spirits of turpentine..... 900 "
Animal charcoal (ivory black) 50 "
Indigo 5 "
Prussian blue 10 "

Melt the wax in a suitable vessel, reduce the other ingredients to the finest possible powder, intimately mix them in the dry state, and stir into the hot solution of wax in spirits of turpentine. Cool gradually with constant stirring, and pack into boxes for sale.

RESTORING GERMAN GILT.

The following varnish is useful for restoring tarnished German-gilt picture frame moulding:

Gamboge 30 grs.
Dragon's blood 240 grs.
Powder the above and then add:
Turmeric 30 grs.
Shellac 2½ oz.
Sandarac 2½ oz.

Place the whole of the above in a bottle, and add 2 ounces dry oil of turpentine; shake often, keeping in a warm place for fourteen days; filter, and add 4 ounces clear mastic varnish as above.

A SEPIA DENTRIFICE.

A very good dentrifice is that which has come to our knowledge from private sources, and which bears the above not too appropriate title. The *oss. sepia* is the prominent ingredient.

Oss. sepia, pulverized 4 oz.
Creta *precip.* 1½ oz.
Rad. irid. florent., pulv. 2½ oz.
Ol. rhodii 25 m.
" limonis 10 m.
Tinct. carmine q. s.

Mix the first three ingredients, and color to a pale rose tint with the carmine solution; then add the essential oils; rub the whole together in a large mortar, sift, and put up in small ornamental boxes.—*Magazine of Pharmacy*.

PURGATIVE COFFEE.

Infusion of coffee, 60 grammes; simple syrup, 35 grammes; scammony, .80 centigramme; citrate of soda, 25 grammes; gum arabic, in powder, 8 grammes. Triturate the scammony with the gum, dissolve the citrate in the infusion, add the syrup, and mix altogether. To be taken frequently.—*Boletim do Centro Pharmaceutico Portuguez*.

NEW LIQUID CEMENT.

In 125 parts of acetic acid dissolve 100 parts of Russian isinglass. In another vessel dissolve 20 parts gelatin in 125 parts of water, by the aid of heat. Mix the solutions little by little, with constant agitation, and finally add 20 parts of a strong alcoholic solution of shellac.

MEDICATED BOUGIES—ALUM AND TANNIN.

The *Nederlandsche Tijdschrift der Pharmacie* gives the following (*National Druggist*):

Alum Bougies.

Macerate for fifteen minutes 5 parts of gelatin in 35 parts of water, then add 10 parts of glycerin and heat until the gelatin is dissolved. Evaporate down to 40 parts, taking care not to let the liquid come to ebullition, as otherwise the gelatin loses its power of solidifying. This may be effected by interposing a wire net work at a distance between the lamp and the capsule. Add to the hot mass 8 parts of alum dissolved in 25 parts of water. This will cause a coagulation of the gelatin, but on continuing the heat it will again dissolve. Evaporate down to 64 parts, pour into moulds and let cool. Each bougie contains 12½ per cent of alum.

Tannin Bougies.

Macerate 5 parts of gelatin in 20 parts of water for fifteen minutes. Add 25 parts of glycerin and heat until solution is complete. When this is effected add 2 parts

of tannin dissolved in 10 parts of hot anhydrous glycerin. As in the case of alum, a coagulation will take place, and disappear on continuation of the heat. Continue the heat until the water is driven off, then pour into moulds and put the latter at once in the ice box. By following this method, the resultant bougies are entirely transparent. The point of elimination of the water may be determined either by weighing or by letting a drop fall on some cold object. If it remains transparent, evaporation has proceeded far enough.

CURRY POWDERS.

1. (said to be true Indian curry).

Coriander seed 360 grains
Turmeric 100 grains
Fresh ginger 260 grains
Cumin seed 18 grains
Black pepper 54 grains
Poppy seed 94 grains
Cinnamon 20 grains
Cardamom 40 grains
Cloves 20 grains
One-half cocoanut, grated.

All but the cocoanut to be ground together.

In order to obtain good results the material should be selected with great care.

2. (Said to be Dr. Kitchener's.)

Coriander seed 3 ounces
Turmeric 3 ounces
Black pepper 1 ounce
Mustard 1 ounce
Ginger 1 ounce
Allspice 4 drachms
Cardamom 4 drachms
Cumin seed 2 drachms

Reduce to a fine powder, mix thoroughly, and preserve in well stoppered bottles.

3. (Also given out as true East Indian curry.)

Coriander seed, powdered.. 8 ounces
Allspice, powdered..... 2 drachms
Mace, powdered..... 2 drachms
Caraway, powdered..... 2 drachms
Fennel, powdered..... 2 drachms
Celery seed, powdered..... 2 drachms
Turmeric, powdered..... 8 ounces
Black pepper, powdered.... 1 ounce
Capsicum, powdered 4 drachms
Mustard, powdered 2 ounces
Ginger, powdered..... 1 ounce

—*Bulletin of Pharmacy*.

AMERICAN METAL POLISHING PASTE

Bohemian Tripoli powder... 1 lb.
Spanish whiting..... 1 lb.
Commercial red oxide of iron.. ½ lb.
Common petrolin—burning oil 1 ounce
Glycerine..... q. s.
Water..... q. s.
Oil of citronella..... ½ ounce

Thoroughly mix the powders, then add the petrolin, etc.—*Mag. Pharmacy*.

CRYSTALLIZED GLYCERINE.

At a recent meeting of the Society of Public Analysts, E. J. Bevan exhibited some specimens of crystallized glycerine. He said that some time ago some glycerine had been submitted to him which

consisted of a mass of small crystals resembling soft sugar. He had found that by dropping a small quantity of the crystals into ordinary glycerine, kept at a temperature of about 15° C., fresh crystals are formed at a considerable rate. Mr. Bevan said that the glycerine above the crystals, or mother liquor, was weaker than the original glycerine, and, of course, much weaker than the crystals. Prof. Dewar had obtained solid glycerine resembling glass by cooling with the aid of solid carbonic acid and ether.

Mr. Bodner said that a sample of glycerine existed some years back at Guy's Hospital, which was absolutely solid, no mother liquor, the material being like a piece of ice.

TO REMOVE IODOFORM ODOR FROM MORTARS.

It is said that the odor of iodoform may be completely removed from mortars, spatulas, and other utensils used in compounding iodoform combinations, by simply adding a little turpentine to the water used in washing, with soap, and rinsing well. This might be found useful in removing the odor of iodoform from the hands.

LEMON SYRUPS.

The *Zeitschrift f. d. g. Kohlensäure Industrie* gives the following formulae for soda-water syrup of lemon peel:

Cut into fine pieces the peels of two large lemons, and rub up with 60 gm. milk sugar, and 500 c.cm. of hot simple syrup. Let cool, keeping up a constant agitation, and when quite cold add the expressed juice of the lemons to which has previously been added 7.5 c.cm. of a 50 per cent. solution of citric acid. Then add sufficient simple syrup to bring the whole up to four litres.

ANOTHER FORMULA.

Lemons.....	S
Alcohol.....	120 c.cm.
Citric acid solution (50 per cent.)	60 c.cm.
Sugar.....	4750 gm.
Water.....	5000 gm.
Albumen, q.s.	

Peel the lemons, chop the peelings fine, and exhaust with the alcohol. Press out the juice and add to the alcoholic extract. Add the sugar and water, and make a syrup, using only a mild heat in doing so. After it cools off add the solution of citric acid. Beat up the white of eight eggs to a stiff foam, and stir into the syrup. Finally, apply sufficient warmth to coagulate the albumen, and strain.—*National Druggist*.

BROMNITROBENZENE.

J. H. Coste and E. J. Parry publish a paper in the current number of the *Berichte*, on the nitration of brombenzene. They show that, contrary to the usual statements in other original papers and text books, very large quantities of the ortho-compound are formed. Experi-

menting in several different methods, the authors show that the ratio of parabromnitrobenzene to the corresponding ortho-compound is nearly constant, namely, about 2 to 1. An exact quantitative method for separating the isomers is described. It appears evident that the methods of separating the two bodies adopted by other workers have been inexact.—*British and Colonial Druggist*.

IODOGALLATE OF BISMUTH.

According to Frizzi, this salt may be prepared as follows: Dissolve with heat 30.4 grams of bismuth in 100 grams of equal weight of strong nitric acid and water; add to the solution 500 c.c. of boiling water, and pour into the liquid with constant agitation the following mixture made hot: 16.6 grams potassium iodide, 18.8 grams gallic acid, 300 c.c. distilled water. Collect the precipitate, and wash with a cold saturated aqueous solution of gallic acid. Dry at a moderate temperature in dry air. Iodogallate of bismuth forms a grayish-green amorphous odorless powder insoluble in water, alcohol, and ether, soluble in dilute mineral acids and in fixed alkalis. It forms a good antiseptic.—(*Bolletino Chimic Farmaceut*)—*Pharmaceutical Journal*.

MEDICATED GELATIN PENCILS.

The following basis and method is recommended by Montier for the preparation of gelatin crayons: 60 grams of water and 10 grams of glycerin are placed in an enamelled dish, and the medicament dissolved in the liquid which is heated to boiling, to the boiling solution 100 grams of gelatin is added, with constant stirring to prevent its adhering to the bottom of the vessel. When the water is almost evaporated and the paste flows with difficulty in the capsule, it is run into suitable moulds of gun metal, or into glass tubes previously oiled. The author has devised an ingenious arrangement, in which the tubes are surrounded by a water-bath, thus keeping the paste fluid until they are filled. The moulds are then cooled, and the mass withdrawn, trimmed, and exposed to the air to dry for twenty-four hours.—(*Répert*)—*Pharmaceutical Journal*.

EUROPHEN AS AN ALTERANT.—Europhen (*National Med. Rev.*) possesses many of the properties of iodine without its odor and poisonous properties. It possesses many advantages over iodoform, among which may be mentioned its freedom from odor and toxic effects. It might be called an alterant and protectant. It liberates free iodine in the presence of heat and moisture.

BAPTITONINE, CYTISINE, ULEXINE, SOPHORINE, according to Plugge (*Arch. d. Pharm.*), all found in baptisia tinctoria by various investigators, are identical, and hence only four different names for the same substance.

Photographic Notes

CHOICE OF PHOTOGRAPHIC APPARATUS.—To the chemist who is desirous of taking up photography, and to the customer also, size of apparatus is an important consideration. The principal sizes are:

3½ by 3½ inches	Lantern-plate size.
*4½ " 3½ "	Quarter-plate size.
5 " 4 " "	
6½ " 3½ "	A stereoscopic size.
6½ " 4½ "	" "
*6½ " 4½ "	Half plate
7 " 5 " "	
7½ " 5 " "	
*8½ " 6½ "	Whole plate.
10 " 8 " "	
15 " 12 " "	

Those marked with an asterisk are the usual and most common sizes, and the dimensions given above are the actual sizes of the plates used; the cameras, of course, will measure a little more. I do not recommend any size not marked with an asterisk, except under exceptional circumstances.—*Foto-File in Pharmaceutical Journal*.

PRACTICAL HINTS.—An English firm of plate workers publish the following hints, which apply with equal force to all makes of dry plates: Open only in a ruby light. Keep cool and dry. Do not wet the plate before development. Do not drop plate into developer. Do not use Pyro developer for a second plate. Lay the dry plate in dry dish and pour developer over it in one sweep, taking care plate is well covered. Rock dish occasionally during development. Test your developing light, your camera, your dark slides, your shutter, however "safe" you may consider your light. Do not expose plates to it more than is absolutely necessary. Have a cover for dish during development. Do not fix plate directly you see enough detail, but give enough time to acquire density also. Fix thoroughly, and always use alum bath after fixing. Do not expose plate to white light until this has been done. In warm weather use alum bath before fixing. Have all your solutions and washing water as nearly same temperature as possible, and under 60 degrees if you can; differences of temperature tend to produce frilling; warm developer induces fog and flatness very cold developer takes a long time to act, and may be used stronger.

BACKING FOR PLATES.—At the present time there is considerable demand for plate backings, which can be easily applied and as readily removed. There are two distinct kinds, one a solution or paste which is applied to the back of the plate, and the other a sheet of paper or cloth coated with some sticky substance which can be temporarily affixed to the back of the plate, and then removed before development, and can be used over again.

The first kind includes collodions, varnishes, and caramels.



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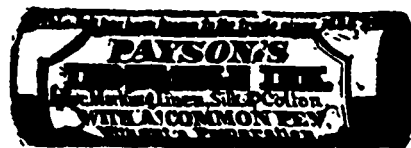
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- Dr. Wilson's Pulmonary Cherry Balsam
- Dr. Wilson's Cramp and Pain Reliever
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- Nurse Wilson's Soothing Syrup
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- Wright's Vermifuge
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- Hurd's Hair Vitaliser
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COLLODION FOR BACKING PLATES.

Pyroxylin.....	5 grs.
Methylated spirit.....	1/2 oz.
" ether.....	1/2 oz.
Coralline rouge or aurine.....	10 grs.

Allow to stand for three days, shaking occasionally, then decant from any undissolved precipitate and bottle.

VARNISH FOR BACKING PLATES.

Gum sandarac.....	1 1/2 ozs.
Castor oil.....	1 1/2 ozs.
Methylated spirit.....	5 ozs.
Dragon's blood.....	150 grs.
or Aurine.....	75 grs.

Macerate for a week and apply to the back of the plate with a pad.

These need not be removed prior to development.—*Pharmaceutical Journal*.

NOVEL USE FOR OLD FILTERS.—A correspondent of the *Amateur Photographer* suggests the use of a disused filter for keeping a stock solution of sodium hyposulphite ready for use. The crystals are placed in the upper chamber of the filter, which is then filled with water. The solution filters through into the lower compartment gradually, is kept free from dust, and can be drawn off by the tap as required. The same idea will suggest itself to pharmacists as being capable of application in the preparation of other stock solutions, such as certain syrups, mucilages, etc., etc.

A SIMPLE PHOTO-ENGRAVING METHOD.

—W. H. Hyslop gives the following explicit instructions, by following which he claims that any one familiar with dry plate photography may produce half-tone printing blocks. Take any of the slower brands of gelatin films—that is, those coated on celluloid—and expose behind a ruled screen in the usual way, giving, of course, a much shorter exposure than given for wet collodion. Develop the plate with the usual pyro-soda formula sent out by the plate makers, and fix in hypo-soda. Wash thoroughly, and while this is proceeding make up a very hot and saturated solution of chrome alum, and have it in a deep tray. When the washing is completed, plunge the negative into the hot alum solution and keep it there for five or ten minutes, when it will swell where it has not been exposed to the light and remain sunken where it has been exposed. From this solution the plate is taken and washed; it is then placed in a strong solution of chloride of aluminium for ten minutes, then washed again and dried over the stove. When dry it is ready for mounting on the block or for electrotyping. If a small edition of prints is required an electrotype is unnecessary, because the film is already as hard and as difficult to injure as a copper block. It only remains, therefore, in this case to mount the film on a type-high block with celluloid cement, as used for celluloid electrotypes, and it will stand all the impressions desired. Where a large edition is desired the film may be sent to the electrotypers, and manipulated in the

usual way. There is no doubt, concludes Mr. Hyslop, but that this is the process of the future, being quicker, simpler, and cheaper than the present methods; indeed it seems impossible that cuts can ever be made at a less price than by this method.—*Inland Printer*.

CONDENSATION OF DARK LIGHT.—

According to G. le Bon, dark light (*la lumière noire*) possesses several properties resembling those of electricity. He assumed, therefore, that it should be possible to condense the rays on the surface of metallic plates, which they would then traverse and act upon the photographic plates placed behind in the dark. Experiments have shown that this hypothesis is based on fact. Thin sheets of copper and lead were placed in photographic printing frames, and one face of each exposed to the light of an electric arc for an hour. They were then placed in darkness for two hours, the sheets of metal removed, and their non-exposed faces placed together, with a sensitive plate and the object to be copied between them. After leaving the whole apparatus in darkness for five or six hours, a perfect image of the object appeared on developing the plate, the light condensed upon the outer surface of the copper sheet having apparently traversed the metal and produced the impression on the sensitive film. Care was taken to prevent the effects of heat, contact, or pressure, and it was ascertained that no action took place if the sheets of metal were covered with black paper whilst exposed to light. It is considered that the rays of so-called "dark light" differ entirely from the Rontgen rays and others. The "X" rays pass through black paper and organic bodies, but not through most metals, and they are neither reflected nor refracted. On the other hand, the author's experiments prove that radiations from luminous bodies falling upon metallic surfaces cannot traverse black paper nor most organic substances, but they pass through many metals and, like electricity, are capable of being condensed and can diffuse themselves on the metallic surface. Invisible variations from fluorescent bodies also differ, having been shown by d'Arsonval and Becquerel to pass through metals, and be capable of both refraction and reflection. The radiations given off by certain fishes and animals in the dark somewhat resemble the last-named, but are unable to penetrate metals, especially aluminium.—*Comp. rend. (Pharmaceutical Journal)*.

How to Take a Photograph.

When a man gets hold of a camera for the first time he is very much like a child with a new toy, and nothing will content him till he has tried it, but this is rather a mistake. The first thing to do is to learn all the parts of the camera and their various uses.

The various parts of the camera are

the baseboard, the lens front, the bellows, and the back. The baseboard is that part which bears the bush or screw hole to affix it to the tripod head. Sometimes the baseboard is perforated and a brass ring let in on which the whole camera may be turned, and to which the legs can be affixed; this is a saving of weight sometimes, as the brass weighs less than the wood which it replaces; in other cases, however, it does not decrease the weight at all.

When fixing the camera to the tripod head it should be so arranged that the lens is directly over one of the legs, so that when working the operator can stand between the other two legs, and thus manipulate the camera without any trouble. If the camera is arranged in this way, not the slightest difficulty will be found in adjusting it to any position; for instance, suppose on examining the image on the ground glass you find that the horizon line is too high, by merely drawing the front leg a little towards you the horizon line is lowered, and *vice versa*. Then, again, suppose that the horizon does not appear straight, one of the side legs can be stretched further out or drawn in without any trouble.

The position of the horizon line, as regards the base of the picture, that is, the focusing screen, of course, may be altered also by raising or lowering the lens bearing front, a movement which is fitted to all good-class cameras, but this should not be used unless absolutely necessary, as it is an accepted axiom that the axis of the lens should always be in a line with the centre of the focussing screen. Most cameras are also fitted with what is called a cross front, that is, a sliding movement from right to left. This enables one to slightly alter the point of view; that is, by shifting the cross front to the right we include a little more subject on the right. This movement should also be sparingly used for the same reason as stated above, which is easily explicable from the following diagram: Let A, B, C, D represent our plate; it is obvious that whichever way the plate is turned it will be contained in the inner circle. Now, if we assume the outer circle to be the entire circle of light transmitted by the lens when it is central with centre O of the plate, it is obvious that shifting the lens either right or left must bring the plate nearer the margin of the field where the definition and the illumination are poorer, and, therefore, the lens must be stopped down more.

The back of the camera is generally made what is called reversible, that is to say, it can be turned so that the longer base of the plate can be turned either horizontal or vertical. With the old form of camera it was necessary to unscrew the camera and turn it bodily over. Beside this movement the back should possess a swing, that is, it should be possible to swing the top or bottom in or out. The advantage of this is that when we wish to include a very high building it is neces-

sary sometimes to tilt the camera, and if the back were kept in the normal position the lines of the building would, instead of being parallel, be convergent.

There is now only one part of the apparatus we have not dealt with, and that is the dark slide. The dark slide is nothing more than a shallow box made generally to contain two sensitive plates back to back, with a piece of black card or blackened metal in between to prevent the light striking through from one plate to the other. There are two principal forms, the solid in which the plates are put in from one side, the first film or sensitive side downwards, then the separating card, and then the second plate film up. The other form of slide is what is called the book form, which opens at one end on a hinge, the plates being laid film side down, the card being placed on one, and then the slide closed again. It is, of course, almost unnecessary to repeat that the slides must be filled in the dark room. After filling the slides it is always advisable to make sure that you have not placed the plates the wrong way round in the slide, that is, with the glass side towards the lens, and to determine this it is just as well to draw up the sliding part, the so-called shutter, about an inch and just look at the plate; it will be found that if the right or film side is towards you it will look somewhat dull, and without the shine of glass.

We now come to the question of plates. For the beginner undoubtedly the slow plate, usually called the "ordinary," is the best; the "rapid" and "extra rapid" may be left till general experience is gained. It would be invidious to single out any particular make, but any one of the leading brands should be obtained and adhered to till a good result is obtained; chopping and changing from one plate to another, and from one developer to another, is ruination to successful work at first. As experience is gained every plate and every developer may be and should be tried in turn.

Having decided on the particular brand of plate and filled your dark slides, you will naturally look out for a subject, and it is almost ten chances to one that you choose a portrait. Well, if you want to mortally weary and offend anyone, by all means ask them to sit to you; by the time you are ready to expose, their temper and patience will be all gone. There is hardly any subject in photography which is so difficult as portraiture, especially portraiture at home, therefore do not attempt portraiture as your first subject.

Set your camera up at an open window at the back of your house, and learn thoroughly the result of every movement on the camera. When you are thoroughly conversant with every movement and the action of the diaphragm, then begin to look about for a subject. We will suppose for the occasion that you can see from your back windows the backs of a row of houses, then focus these as sharply as you can. Do not look at the centre of the screen, but, placing the head about nine

inches from the ground glass—the head and camera being covered with the focussing cloth to keep out the glare of light—choose some point about midway between the centre and the margin of the screen, and, with the full aperture of the lens, focus this, that is, rack the camera in or out till it appears sharp. When this is sharp examine the centre and the extreme margins; probably they will be indistinct. Then insert the stops in the lens, commencing with the largest, till satisfactory definition is obtained. Now cap the lens, turn back the focussing screen and insert the dark slide; cover it with the focussing cloth and withdraw the sliding shutter, and everything is ready for making the exposure.

The problem of correct exposure has not inaptly been dubbed the *pons asinorum* of photography. It is the most difficult thing to correctly estimate. There are numerous instruments in the market for correctly estimating exposure, and one of the most satisfactory is Watkin's exposure meter, sold by R. Field & Co., 142 Suffolk street, Birmingham. The principle of this is the darkening of a specially prepared bromide paper to a standard tint, and then by the use of a series of sliding scales the correct exposure is found.

Exposure is determined by numerous factors, the principal of which are (a) the rapidity of the plate; (b) the actinic power of the light; (c) the aperture of the lens. We have already commented on the aperture of the lens. The rapidity of the plate is estimated unfortunately by various methods, but we will assume that we are going to use a slow landscape plate, such as an Ilford ordinary. The actinic power of the light varies with the latitude of the place, the state of the atmosphere, the time of day, &c. And as some guide we give Scott's law of the variation in actinic power of the light for the different months of the year and times of the day.

We will, however, proceed to practically test the exposure. Suppose we have set up the camera at a window with the lens stopped down to F. 45, using an ordinary plate, this time of the year, midday, with the sun shining. We will draw the sliding shutter of the dark slide just about one-fourth of the way out; we uncap the lens for a quarter of a second and replace it. Now we withdraw the shutter another fourth, and give another quarter of a second, and again cap the lens, and repeat this till the whole plate is exposed; we shall find on exposure that we have a negative with four strips of totally different character, and we shall soon be able to determine which is the correctly exposed strip. This gives us a guide to work from. A correctly-exposed negative should have little or no bare glass in it, even in the deepest shadows, and a gradually increasing deposit throughout all the half tones of the picture to a dense deposit in the sky, the highest light.

To all beginners we strongly recommend that they try to see a correctly exposed and developed negative, and in these days of photographic societies and

papers it will not be difficult to find somebody who can show you such a negative. —*Pharmaceutical Journal.*

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SITUATION WANTED BY GRADUATE O.C.P. Good dispenser and stockkeeper. Five years' experience. State wages. J. A. Mitchell, Box 17, Clarksburg, Ont.

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Blue Vitriol Xtal,
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Copperas,
Moth Camphor—Balls,
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Paris Green,
Sulphur Sublimed,
Sulphur Roll,
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Two " " " " 1 " " 8.00

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Corrected to July 10th, 1896.

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ALCOHOL, gal.....	\$4 37	\$4 65
Methyl.....	1 90	2 00
ALISPICE, lb.....	13	15
Powdered, lb.....	15	17
ALOIN, oz.....	40	45
ANODYNE, Hoffman's bot., lbs...	50	55
ARROWROOT, Bermuda, lb.....	50	55
St. Vincent, lb.....	15	18
BALSAM, Fir, lb.....	40	45
Copaiba, lb.....	65	75
Peru, lb.....	3 75	4 00
Tolu, can or less, lb.....	95	1 00
BARK, Barberry, lb.....	22	25
Bayberry, lb.....	15	18
Buckthorn, lb.....	15	17
Canela, 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
BRANS, Calabar, lb.....	45	50
Tonka, lb.....	1 50	2 75
Vanilla, lb.....	8 50	9 00
BERRIES, Cubeb, sifted, lb.....	30	35
powdered, lb.....	35	40
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.....	65	75
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
CASFOR, Fibre, lb.....	20 00	20 00
CHALK, French, powdered, lb...	10	12
Precip., see Calcium, lb.....	10	12
Prepared, lb.....	5	6
CHARCOAL, Animal, powd., lb...	4	5
Willow, powdered, lb.....	20	25
CLOVE, lb.....	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
CRESOTE, Wood, lb.....	2 00	2 50
CUTTLEFISH BONE, lb.....	25	30
DETRINE, 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, Amica, 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.....	22	25
GUARANA.....	200	2 25
Powdered, lb.....	2 25	2 50
GUM ALOES, Cape, lb.....	18	20
Barbadoes, lb.....	30	50
Socotrine, lb.....	65	70
Asafetida, 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.....	2 00	2 25

Myrrh, lb.....	\$ 45	\$ 48
Powdered, lb.....	55	60
Opium, lb.....	3 80	00
Powdered, lb.....	4 75	5 00
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, ozs, lb.....	15	17
Catnip, ozs, lb.....	17	20
Chiretta, lb.....	25	30
Coltsfoot, lb.....	20	38
Feverfew, ozs, lb.....	53	55
Grindelia robusta, lb.....	45	50
Horehound, ozs, lb.....	18	20
Jaborandi, lb.....	45	50
Lemon Balm, lb.....	38	40
Liverwort, German, lb.....	38	40
Lobelia, ozs, lb.....	15	20
Motherwort, ozs, lb.....	20	22
Mullein, German, lb.....	17	20
Pennyroyal, ozs, lb.....	18	20
Peppermint, ozs, lb.....	21	22
Rue, ozs, lb.....	30	35
Sage, ozs, lb.....	18	20
Spearmint, lb.....	21	25
Thyme, ozs, lb.....	18	20
Tansy, ozs, lb.....	15	18
Wormwood, oz.....	20	22
Yerba Santa, lb.....	38	44
HONEY, lb.....	13	15
HORS, fresh, lb.....	20	25
INDIGO, Madras, lb.....	75	80
INSECT POWDER, lb.....	30	32
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	20
Hyoscyamus.....	20	25
Matico, lb.....	70	75

Senna, Alexandria, lb.....	\$ 25	\$ 30	Queen of the Meadow, lb.....	\$ 18	\$ 20	Valerianate, oz.....	\$ 55	\$ 60
Tinnevely, lb.....	15	25	Rhatany, lb.....	20	30	AMYL, Nitrite, oz.....	16	18
Stramonium, lb.....	20	25	Rhubarb, lb.....	75	2 50	ANTINEVIN, oz.....	85	00
Uva Urei, lb.....	15	18	Sarsaparilla, Hond, lb.....	40	45	ANTIKAMIA.....	1 30	1 35
LICORICE, Swedish, doz.....	1 00	1 10	Cut, lb.....	50	55	ANTIPYRIN, oz.....	1 10	1 20
LICORICE, Solazzi.....	45	50	Senega, lb.....	55	65	ARISTOL, oz.....	1 85	2 00
Pignatelli.....	35	40	Stillingia, lb.....	13	15	ARSENIC, Donovan's sol., lb.....	25	30
Grasso.....	30	35	Powdered, lb.....	22	25	Fowler's sol., lb.....	10	13
Y & S—Sticks, 6 to 1 lb., per lb.	27	30	Unicorn, lb.....	25	27	Iodide, oz.....	50	55
" Purity, 100 sticks in box	75	75	Valerian, English, lb. true.....	38	40	White, lb.....	6	7
" Purity, 200 sticks in box	1 50	1 50	Virginia, Snake, lb.....	20	25	ATROPINE, Sulp. in $\frac{1}{8}$ ozs. 8oz.,	6 00	6 25
" Acme Pellets, 5 lb. tins	2 00	2 00	Yellow Dock, lb.....	40	45	oz.....	35	40
Lozenges, 5 lb. tins.....	2 00	2 00	RUM, Bay, gal.....	2 50	2 75	BISMUTH, Ammonia-citrate, oz..	50	55
Tar, Licorice, and Tolu,	2 00	2 00	Essence, lb.....	3 00	3 25	Iodide, oz.....	20	25
5 lb. tins.....	2 00	2 00	SACCHARIN, oz.....	1 25	1 50	Salicylate, oz.....	1 80	2 00
LUPULIN, oz.....	30	35	SEED, Anise, Italian, sifted, lb..	13	15	Subnitrate, lb.....	1 50	1 60
LYCOPodium, lb.....	70	80	Star, lb.....	35	40	BORAX, lb.....	7	8
MACE, lb.....	1 20	1 25	Burdock, lb.....	30	35	Powdered, lb.....	8	9
MANNA, lb.....	1 60	1 75	Canary, bag or less, lb.....	5	6	BROMINE, oz.....	8	13
Moss, Iceland, lb.....	9	10	Caraway, lb.....	10	13	CADMIUM, Bromide, oz.....	20	25
" Irish, lb.....	12	13	Cardamom, lb.....	1 25	1 50	Iodide, oz.....	45	50
MUSK, Tonquin, oz.....	46 00	50 00	Celery.....	25	30	CAFFEINE, oz.....	55	60
NOTIGALS, lb.....	21	25	Colchicum.....	50	60	Citrate, oz.....	45	50
Powdered, lb.....	25	30	Coriander, lb.....	10	12	CALCIUM, Hypophosphite, lb....	1 50	1 60
NUTMEGS, lb.....	1 00	1 10	Cumin, lb.....	15	20	Iodide, oz.....	95	1 00
NUX VOMICA, lb.....	10	12	Fennel, lb.....	15	17	Phosphate, precip., lb.....	35	38
Powdered, lb.....	25	27	Fenugreek, powdered, lb..	7	9	Sulphide, oz.....	5	6
OAKUM, lb.....	12	15	Flax, cleaned, lb.....	3 1/2	4	CERIUM, Oxalate, oz.....	10	12
OINTMENT, Merc., lb. $\frac{1}{2}$ and $\frac{1}{2}$.	70	75	Ground, lb.....	4	5	CHINIDINE, oz.....	15	18
Citrine, lb.....	45	50	Hemp, lb.....	5	6	CHLORAL, Hydrate, lb.....	1 25	1 30
PARALDEHYDE, oz.....	20	22	Mustard, white, lb.....	11	12	Croton, oz.....	75	80
PEPPER, black, lb.....	12	13	Powdered, lb.....	15	20	CHLOROFORM, lb.....	60	1 90
Powdered, lb.....	15	16	Pumpkin.....	25	30	CINCHONINE, sulphate, oz.....	25	30
PITCH, black, lb.....	3	4	Quince, lb.....	65	70	CINCHONIDINE, Sulp., oz.....	15	20
Bergundy, true, lb.....	10	12	Rape, lb.....	8	9	COCAINE, Mur., oz.....	5 50	6 50
PLASTER, Calcined, hbl. cash....	25	3 25	Strophanthus, oz.....	50	55	CODEIA, $\frac{1}{2}$ oz.....	70	75
Adhesive, yd.....	12	13	Worm, lb.....	22	25	COLLOIDION, lb.....	65	70
Belladonna, lb.....	65	70	SEIDLITZ MIXTURE, lb.....	25	30	COPPER, Sulph., (Blue Vitriol) lb.	6	7
Galbanum Comp., lb.....	80	85	SOAP, Castile, Mottled, pure, lb..	10	12	Iodide, oz.....	65	70
Lead, lb.....	25	30	White, Cont'd, lb.....	15	16	COPPERAS, lb.....	1	3
POPPY HEADS, per 100.....	1 00	1 10	Powdered, lb.....	25	40	DIURETIN, oz.....	1 60	1 65
ROBIN, Common, lb.....	2 1/2	3	Green (Sapo Viridis), lb.....	25	25	ETHER, Acetic, lb.....	75	80
White, lb.....	3 1/2	4	SFERMACHETI, lb.....	65	70	Sulphuric, lb.....	40	50
RESORCIN, white, oz.....	25	30	TURPENTINE, Chian, oz.....	75	80	EXALGINE, oz.....	1 00	1 10
ROCHELLE SALT, lb.....	28	30	Venice, lb.....	10	12	HYOSCYAMINE, Sulp., crystals, gr.	25	30
ROOT, Aconite, lb.....	22	25	WAX, White, lb.....	50	75	IODINE, lb.....	4 75	5 50
Althea, cut, lb.....	30	35	Yellow.....	40	45	IODIFORM, lb.....	6 00	7 00
Belladonna, lb.....	25	30	WOOD, Guaiac, rasped.....	5	6	IODOL, oz.....	1 40	1 50
Blood, lb.....	15	16	Quassia chips, lb.....	10	12	IRON, by Hydrogen.....	80	85
Bitter, lb.....	27	30	Red Saunders, ground, lb.....	5	6	Carbonate, Precip., lb.....	15	16
Blackberry, lb.....	15	18	Santal, ground, lb.....	5	6	Sacch., lb.....	30	35
Burdock, crushed, lb.....	18	20	CHEMICALS.			Chloride, lb.....	45	55
Calamus, sliced, white, lb.....	20	25	ACID, Acetic, lb.....	12	13	Sol., lb.....	13	16
Canada Snake, lb.....	30	35	Glacial, lb.....	45	50	Citrate, U.S.P., lb.....	90	1 00
Cohosh, black, lb.....	15	20	Benzoic, English, oz.....	20	25	And Ammon., lb.....	70	75
Colchicum, lb.....	40	45	German, oz.....	10	12	And Quinine, lb.....	1 50	3 00
Columbo, lb.....	20	22	Boracic, lb.....	13	14	Quin. and Stry., oz.....	18	30
Powdered, lb.....	25	30	Carbolic Crystals, lb.....	28	30	And Strychnine, oz.....	13	15
Coltsfoot, lb.....	38	40	Calvert's No. 1, lb.....	2 10	2 15	Dialyzed, Solution, lb.....	50	55
Comfrey, crushed, lb.....	20	25	No. 2, lb.....	1 35	1 40	Ferrocyanide, lb.....	55	60
Curcuma, powdered, lb.....	13	14	Citric, lb.....	45	50	Hypophosphites, oz.....	25	30
Dandelion, lb.....	15	18	Gallic, oz.....	10	12	Iodide, oz.....	40	45
Elecampane, lb.....	15	20	Hydrobromic, diluted, lb.....	30	35	Syrup, lb.....	40	45
Galangal, lb.....	15	18	Hydrocyanic, diluted, oz. bottles	1 50	1 60	Lactate, oz.....	5	6
Gelsemium, lb.....	22	25	doz.....	1 50	1 60	Pernitrate, solution, lb.....	15	16
Gentian or Gentian, lb.....	9	10	Lactic, concentrated, oz.....	22	25	Phosphate scales, lb.....	1 25	1 30
Ground, lb.....	10	12	Muriatic, lb.....	3	5	Sulphate, pure, lb.....	7	9
Powdered, lb.....	13	15	Chem. pure, lb.....	18	20	Exsiccated, lb.....	8	10
Ginger, African, lb.....	18	20	Nitric, lb.....	10 1/2	13	And Potass. Tartrate, lb.....	80	85
Po., lb.....	20	22	Chem. pure, lb.....	25	30	And Ammon. Tartrate, lb.....	80	85
Jamaica, blehd., lb.....	27	30	Oleic, purified, lb.....	75	80	LEAD, Acetate, white, lb.....	13	15
Po., lb.....	30	35	Oxalic, lb.....	12	13	Carbonate, lb.....	7	8
Ginseng, lb.....	4 50	4 75	Phosphoric, glacial, lb.....	1 00	1 10	Iodide, oz.....	35	40
Golden Seal, lb.....	75	80	Dilute, lb.....	13	17	Red, lb.....	7	9
Gold Thread, lb.....	90	95	Pyrogallic, oz.....	30	35	LIME, Chlorinated, bulk, lb.....	4	5
Hellebore, white, powd., lb....	12	15	Salicylic, white, lb.....	75	80	In packages, lb.....	6	7
Indian Hemp.....	18	20	Sulphuric, carboy, lb.....	2 1/2	2 1/2	LITHIUM, Bromide, oz.....	30	35
Ipecac, lb.....	1 75	2 20	Bottles, lb.....	5	6	Carbonate, oz.....	30	35
Powdered, lb.....	2 00	2 25	Chem. pure, lb.....	18	20	Citrate, oz.....	25	30
Jalap, lb.....	60	65	Tannic, lb.....	80	85	Iodide, oz.....	50	55
Powdered, lb.....	60	65	Tartaric, powdered, lb.....	38	40	Salicylate, oz.....	35	40
Kava Kava, lb.....	40	90	ACEFANILIN, lb.....	75	80	MAGNESIUM, Calc., lb.....	55	60
Licorice, lb.....	12	15	ACONITINE, grain.....	4	5	Carbonate, lb.....	18	20
Powdered, lb.....	13	15	ALUM, cryst., lb.....	1 1/2	3	Citrate, gran., lb.....	35	40
Mandrake, lb.....	13	18	Powdered, lb.....	3	4	Sulph. (Epsom salt), lb.....	1 1/2	3
Masterwort, lb.....	16	40	AMMONIA, Liquor, lb., 880.....	10	12	MANGANESE, Black Oxide, lb....	5	7
Orris, Florentine, lb.....	30	35	AMMONIUM, Bromide, lb.....	80	85	MENTHOL, oz.....	55	66
Powdered, lb.....	40	45	Carbonate, lb.....	14	15	MERCURY, lb.....	75	80
Pareira Brava, true, lb.....	40	45	Iodide, oz.....	35	40	Ammon (White Precip.).....	1 25	1 30
Pink, lb.....	40	45	Nitrate crystals, lb.....	40	45	Chloride, Corrosive, lb.....	85	90
Parsley, lb.....	30	35	Muriate, lb.....	12	16	Calomel, lb.....	1 00	1 10
Pleurisy, lb.....	20	25				With Chalk, lb.....	60	65
Poke, lb.....	15	18						

The New System.

The following druggists have been prompt in adopting the newest and best method of encouraging a cash trade in their stores. Each cash customer receives a printed rebate check issued by the latest National Cash Register. The check is dated, the amount of the purchase printed on it, with a request like this: "Return \$5 in checks and get 25 cents in trade." The register prints a detailed list of the sales as well as giving the day's total sales. Also keeps accurate account of all charges, collections, and disbursements, and so prevents many mistakes. When may we add your name to the list?

H. F. McCarthy, Ottawa.

C. H. Cotten, Toronto.

D. M. Waters, Belleville.

W. S. Dettlor, Napanee.

R. S. Shilington, Ottawa.

Dickson Drug Co., Jas. Findlay, Pembroke.

John T. Wait, Arnprior.

Jos. Clark, H. H. Hough, Renfrew.

W. H. Medley, Kingston.

M. Patterson, Almonte.

W. G. Smith, Guelph.

R. B. W. Robinson, Ottawa.

Magazines.

FRANK LESLIE'S POPULAR MONTHLY FOR JULY.—Many very attractive and beautifully illustrated articles are given in *Frank Leslie's Popular Monthly* for July, and also several excellent short stories. The leading feature is a description of General Robert E. Lee's part in the battles of Fredericksburg and Chancellorsville, written by Colonel John J. Garnett, of the Confederate States Artillery, and forming the sixth paper in the magazine's great "Lee Series." The article is profusely illustrated with portraits and battle scenes. The Isle of Man is described in an interesting article; Mrs. A. A. Stowe chats entertainingly of the Lick Observatory; there is a splendid department for young people, containing short stories and poems, and the continuation of a serial by Horatio Alger, jr.; and there are several other attractive features.

"Surf" Sea Salt

is a new 15c. pkg., put up in 1 doz. 5 lb. pkgs. per case. Price, \$1; per gross (12 cases) \$11. Wholesale houses sell it. Pkg. is a new patent cardboard one, and handsomely printed. Sales of first week in Toronto 120 cases. The salt is clear as glass and of a size that dissolves readily. It never gets damp, and contains no dirt or grit. Analyzes 99.98 per cent. pure salt. You can work up a good salt trade if you try. Why not do it?

TORONTO SALT WORKS, Toronto, Importers.

Business Notices.

As the design of the CANADIAN DRUGGIST is to benefit mutually all interested in the business, we would request all parties ordering goods or making purchases of any description from houses advertising with us to mention in their letter that such advertisement was noticed in the CANADIAN DRUGGIST. The attention of Druggists and others who may be interested in the articles advertised in this journal is called to the special consideration of the Business Notices.

Every one of your customers ought to buy a box of Tanglefoot; they will if you properly urge them. Besides doing yourself a good turn, with the 100 per cent. profit, you are actually conferring a benefit upon your customers, for flies are not only a source of annoyance and uncleanliness, but are also a source of danger to health. The more liberally your customers use Tanglefoot, the better the result and the greater a necessity it becomes to them.

Nerlich & Co., Toronto, are advertising on another page The Morell Mackenzie Pipe. This pipe contains in the stem a small roll of soft paper, specially prepared, which serves to absorb all moist substances accumulating in the stem, so unpleasant to every smoker. This roll, properly called cartridge, can be replaced by a fresh one when necessary, and, being of very small cost, adds to the popularity of the article. The Morell Mackenzie pipe is already having a large sale, and every smoker using one will recommend it to his friends.

Some of our readers dealing in this line might find it to their interest to write for samples.

Headquarters Michigan Military Academy,

Orchard Lake, Mich., June 2nd, 1896. Messrs. F. Stearns & Co., Detroit, Mich.: GENTLEMEN,—I have the honor to report for your information some observations in regard to the effect of the Kola nut and the liquid preparation (Kola-Stearns) furnished by you for a forced march by a company of cadets from the Michigan Military Academy at Orchard Lake, Mich., to Detroit, Mich., on Saturday, May 23rd, 1896.

A company of forty one cadets from the academy left Orchard Lake at 4.52 a. m., and reached the Russell house, Detroit, at 12.05 p. m., being seven hours and thirteen minutes marching the entire distance of twenty-eight miles, including rests and twenty-five minutes for lunch.

The actual marching time was six hours and twelve minutes, and the distance, as twice measured by a cyclometer, is 28.07 miles, or at the rate of 4.53 miles per hour while marching—a very remarkable record.

Before starting I gave to one-half of the company the Kola nut, to the other half the liquid preparation (Kola-Stearns). I am convinced that the effect of the nut and your liquid preparation is to stimulate the muscles and permit of sustained exertion, while it allays thirst and hunger. The company felt comparatively well

after the trip, with the exception of some stiffness and sore feet; but they soon recuperated, and no protracted effects of the long march were noticeable.

This was my first experience with the Kola, and while I could not observe its effects on individuals as closely as I desired, I am of the opinion that it will find favor with those undergoing great physical exertion.

Yours truly,

FRED A. SMITH,

Captain 12th Infantry, Commandant of Cadets.

Verdict in Soda Apparatus Patent Suit.

The suit of the American Soda Fountain Company against R. M. Green & Sons, Philadelphia, for infringement of Drawer Can patent has been decided in favor of the plaintiff.

The case was tried before Judge Acheson, of the United States Circuit Court, Eastern District of Pennsylvania, who has just handed down the decision as above stated.

Convention of the American Pharmaceutical Association.

Delegates to the American Pharmaceutical Association Convention in Montreal, August 12th, should bear in mind the perfect train service and luxurious appointments of the great Canadian Pacific Railway, which has direct lines for all points to Montreal.

No doubt, this ever popular route will be favored this year as in the past by the patronage of the travelling delegates.

A New Use for Atomizers.

A young New Yorker, salesman for a druggists' sundries house was travelling in the State of Coahuila, Mexico, about two years ago, and went one night to Saltillo. It was the first time he had been in the town, and after transacting a little business he started out to see the sights. As he entered an isolated street, he was suddenly confronted by a brigandish-looking fellow, who, in mongrel Spanish, demanded his valuables. The highwayman held in one hand a long, sinister-looking knife, and waved it about in a suggestive manner which implied the necessity of a ready compliance with his wishes or a tragic result. But the salesman was a man of quick wit and ready resources. Instead of handing over his property he thrust his hand into his pocket, and a moment later the cold, shiny barrel of what seemed to be a revolver was pointed at the would-be robber's head. The surprise caused by the unexpected production of a revolver produced a change in the confident manner with which the robber had confronted the New Yorker, and he started back. Instantly the salesman knocked the knife from his hand, stooped down, picked it up, took the highwayman by the collar before he could

Iodide, Proto, oz.....	\$ 35	\$ 40	Iodide, oz.....	\$ 40	\$ 43	Geranium, oz.....	\$1 75	\$1 80			
Bin., oz.....	25	30	Salicylate, lb.....	1 00	1 10	Rose, lb.....	3 20	3 50			
Oxide, Red, lb.....	1 15	1 20	Sulphate, lb.....	2	5	Juniper berries (English), lb...	4 50	5 00			
Pill (Blue Mass), lb.....	70	75	Sulphite, lb.....	8	10	Wood, lb.....	70	75			
MILK SUGAR, powdered, lb.....	30	35	SOMNOL, oz.....	85	00	Lavender, Chris. Fleur, lb....	3 00	3 50			
MORPHINE, Acetate, oz.....	1 75	1 80	SPIRIT NITRE, lb.....	35	65	Garden, lb.....	1 50	1 75			
Muriate, oz.....	1 75	1 80	STRONTIUM, Nitrate, lb.....	18	20	Lemon, lb.....	1 96	2 00			
Sulphate, oz.....	1 80	1 85	STRYCHNINE, crystals, oz.....	80	85	Lemongrass, lb.....	1 50	1 60			
PEPSIN, Saccharated, oz.....	35	40	SULFONAL, oz.....	40	42	Mustard, Essential, oz.....	60	65			
PIRENACETINE, oz.....	40	42	SULPHUR, Flowers of, lb.....	24	4	Neroli, oz.....	4 25	4 50			
PILOCARPINE, Muriate, grain....	35	38	Pure precipitated, lb.....	13	20	Orange, lb.....	2 75	3 00			
PIPERIN, oz.....	1 00	1 10	TARTRAR EMETIC, lb.....	50	55	Sweet, lb.....	2 75	3 00			
PHOSPHORUS, lb.....	90	1 10	THYMOI. (Thymic acid), oz.....	55	60	Origanum, lb.....	65	70			
POFASSA, Caustic, white, lb.....	60	65	VERAFRINE, oz.....	2 00	2 10	Patchouli, oz.....	80	85			
POFASSIUM, Acetate, lb.....	35	40	ZINC, Acetate, lb.....	70	75	Pennyroyal, lb.....	2 50	2 75			
Bicarbonate, lb.....	15	17	Carbonate lb.....	25	30	Peppermint, lb.....	3 00	3 25			
Bichromate, lb.....	14	15	Chloride, granular, oz.....	13	15	Pimento, lb.....	2 60	2 75			
Bitrat (Cream Tart.), lb.....	29	30	Iodide, oz.....	60	65	Rhodium, oz.....	80	85			
Bromide, lb.....	65	70	Oxide, lb.....	13	60	Rose, oz.....	7 50	11 00			
Carbonate, lb.....	12	13	Sulphate, lb.....	9	11	Rosemary, lb.....	70	75			
Chlorate, Eng., lb.....	18	20	Valerianate, oz.....	25	30	Rue, oz.....	25	30			
Chloride, lb.....	20	22	ESSENTIAL OILS.								
Citrate, lb.....	70	75	Oil, Almond, bitter, oz.....	75	80	Sassafras, lb.....	75	80			
Cyanide, lb.....	40	50	Sweet, lb.....	50	60	Savin, lb.....	1 60	1 75			
Hypophosphites, oz.....	10	12	Amber, crude, lb.....	40	45	Spearmint, lb.....	3 75	4 00			
Iodide, lb.....	4 00	4 10	Rect., lb.....	60	65	Spruce, lb.....	65	70			
Nitrate, gran, lb.....	8	10	Anise, lb.....	3 75	3 90	Tansy, lb.....	4 25	4 50			
Perganganate, lb.....	40	45	Bay, oz.....	50	60	Thyme, white, lb.....	1 80	1 90			
Prussiate, Red, lb.....	50	55	Bergamot, lb.....	3 75	4 00	Wintergreen, lb.....	2 75	3 00			
Yellow, lb.....	32	35	Cade, lb.....	90	1 00	Wormseed, lb.....	3 50	3 75			
And Sod. Tartrate, lb.....	25	30	Cajuput, lb.....	1 60	1 70	Wormwood, lb.....	4 25	4 50			
Sulphuret, lb.....	25	30	Capsicum, oz.....	60	65	FIXED OILS.					
PROPYLAMINE, oz.....	35	40	Caraway, lb.....	2 75	3 00	CASTOR, lb.....	8	10			
QUININE, Sulph, bulk.....	35	38	Cassia, lb.....	3 30	3 50	COD LIVER, N.F., gal.....	2 25	2 30			
Ozs., oz.....	38	42	Cedar.....	55	85	Norwegian, gal.....	3 00	3 25			
QUINIDINE, Sulphate, ozs., o.....	10	25	Cinnamon, Ceylon, oz.....	2 75	3 00	COTTONSEED, gal.....	1 10	1 20			
SALICIN, lb.....	75	4 00	Citronelle, lb.....	80	85	LARD, gal.....	90	1 00			
SANTONIN, oz.....	20	22	Clove, lb.....	1 10	1 20	LINSEED, boiled, gal.....	62	65			
SILVER, Nitrate, cryst, oz.....	90	1 00	Copaiba, lb.....	1 75	2 00	Raw, gal.....	60	62			
Fused, oz.....	1 00	1 10	Cotton, lb.....	1 50	1 75	NEATSFOOT, gal.....	1 20	1 30			
SODIUM, Acetate, lb.....	30	35	Cubeb, lb.....	2 50	3 00	OLIVE, gal.....	1 20	1 25			
Bicarbonate, kgs., lb.....	2 75	3 00	Cumin, lb.....	5 50	6 00	Salad, gal.....	2 50	2 60			
Bromide, lb.....	65	70	Erigonon, oz.....	20	25	PALM, lb.....	12	13			
Carbonate, lb.....	3	6	Eucalyptus, lb.....	1 50	1 75	SPERM, gal.....	1 35	1 40			
Hypophosphite, oz.....	10	12	Fennel, lb.....	1 60	1 75	TURPENTINE, gal.....	60	65			
Hyposulphite, lb.....	3	6									

escape, and marched him before the police authorities. At the preliminary trial of the would-be robber the following morning the guilt of the prisoner was readily established, and his commitment was about to follow, when he asked if it were not an offence for strangers in the country to carry concealed weapons. He was told that it was. Then the native justice asked the salesman if the charge was true. This was admitted. He then asked if he had still the weapon concealed on his person. The young man said he had, but pleaded that its possession had, the night before, prevented a robbery and possibly a murder. He was informed that such a circumstance did not alter the case, that he had violated the law and must suffer.

The prisoner smiled sardonically on beholding the tight place into which the authorities were seemingly drawing the New Yorker. His mirth, however, turned to disgust when the young man pulled the alleged revolver from his pocket and laid it down before the magistrate, and it proved to be nothing but a cologne-atomizer.—*Baltimore Sun.*

RINGWORM.—Ringworm may be removed by first rubbing briskly with turpentine until smarting is induced, washing with carbolic acid soap (ten per cent.), and finally, after drying, applying two or three coats of tincture of iodine.

Drug Reports.

England.

London, June 20th, 1896.

There has been a fair demand and prices are, on the whole, well maintained. Camphor has sustained a further drop, but is not expected to go much lower. Glycerine is in fair request at recent advance, and the tendency is upward. Otto is easy, as the new crop is expected to give a large yield.

Arsenic unchanged, present high rates remaining firm. Opium unaltered, but prices are likely to advance. Pilocarpine slightly easier again. Mercurials and quicksilver unaltered. Sulphur advanced early in the month, but is now receding. Veratrine is scarce and dearer. Salol has had a big drop in value, owing to competition amongst principal makers. English extracts, such as belladonna, hyoscyamus, etc., are likely to be dearer, as the hot weather has dried up much of the crop. Mitcham oils are also on the up-grade from the same cause. Cod-liver oil is weaker, and it seems as if it will droop further.

The annual profit of the Suez Canal is £3,000,000.

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UNITED STATES HEALTH REPORTS (Official Endorsement, June 19, 1895, page 10.)

"In the interest of the masses for whom these Reports are compiled, the United States Health Reports have examined and investigated many preparations having for their object the cure of the tobacco habit, but among them all we have no hesitancy in giving the editorial and official endorsement of these Reports to the remedy known as **Uncle Sam's Tobacco Cure**, manufactured by the Keystone Remedy Co., at 217 LaSalle Street, Chicago. We have demonstrated by personal tests that this antidote positively destroys the taste and desire for tobacco in ten days, leaving the system in a perfectly healthy condition, and the person using the same forever free from the habit.

"In the light of our examinations and tests of **Uncle Sam's Tobacco Cure**, we are but performing a duty we owe the public when we endorse the same, and stamp it as the crowning achievement of the nineteenth century in the way of destroying a habit as disgusting as it is common (for only \$1.00), hence we earnestly advise you to write them for particulars."

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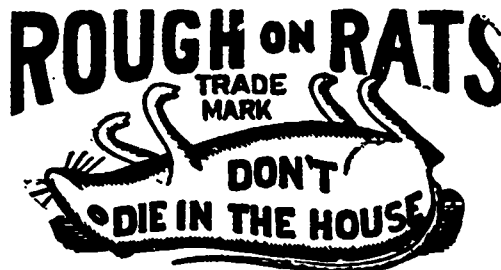


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Flies, Water Bugs,
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Gophers, etc.

Gone where the Woodbine Twineth.

"Rough on Rats" pays the retailer 100 per cent., and is the most extensively advertised article in the world. It is now "the" staple with the trade and public in United States, Canada, Mexico, Central and South America, Great Britain, France, Germany, Africa, Australia, India, East and West Indies, etc., etc. Sells the world around.

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