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ESTABLISHED 1890.

A Monthly Journal of Chemistry, Pharmacy and Materia Medica.

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Vol. V—No. 2.

MAY, 1894.

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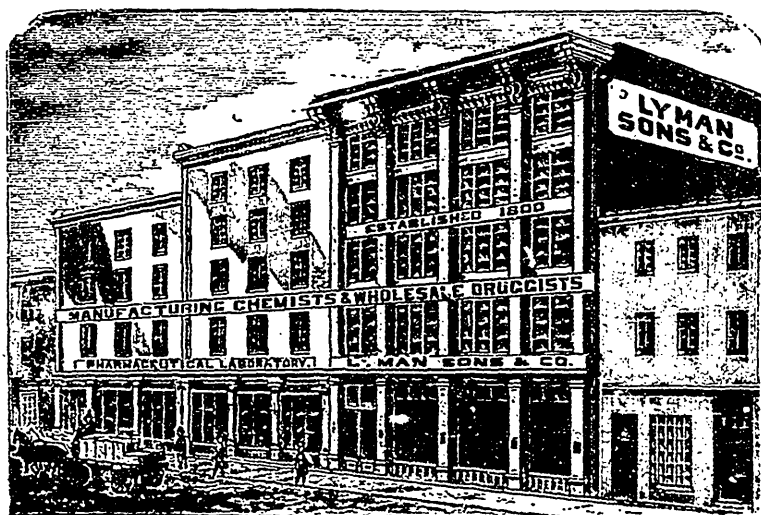
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Are warranted to give **IMMEDIATE RELIEF** to those suffering from
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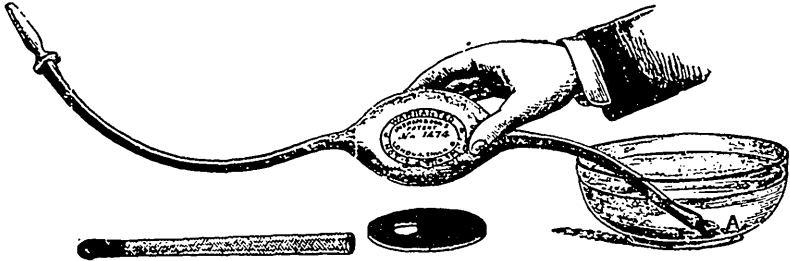
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N.B.—It having come to the notice of Messrs. ROBT. GIBSON & SONS, that some makers are not only closely imitating their label, but are actually putting their goods in Gibson's bottles, Chemists are respectfully informed that every original bottle of Gibson's is capsuled, and moreover, every Drop and Tablet is stamped "Gibson," without this none is genuine.

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Imitation is the Highest Form of Flattery.

Owing to the many imitations of our Patent Enema, we are compelled to warn all who wish for a **GENUINE INGRAM'S ENEMA**, to refuse any that does not bear the No. 1474.



It will take years of practice for fresh hands to make this Enema—it being far more difficult to manufacture than the ordinary Barrel Enema.

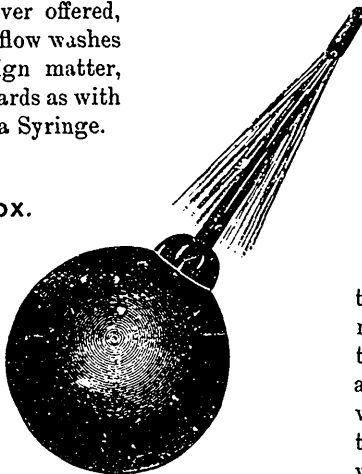
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1474

The New Back-Flow or Reverse-Current Ball Urethra SYRINGE.

Acknowledged to be the most efficient Urethra cleanser ever offered, as the action of the Back-flow washes and drives out all foreign matter, instead of sending it inwards as with the old-fashioned Urethra Syringe.

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Tightly compress the Ball with the thumb and fingers, place the vulcanite pipe in the liquid, then release the Ball, which becomes quite full and prevents any air being injected with the liquid; insert the Pipe into the urethra and compress the Ball, when a perfect syringing and cleansing takes place.

NEW
Ingram's Patent Seamless Collar or Rim Teat,

THE BEST

Soothing Teat

in the World.



PATENTED
No. 22458

Patented in France, No. 22745, April 7th, 1892.

IN ENGLAND
DEC. 23RD, 1891

AMERICAN PATENT
APPLIED FOR.

Made in the same sizes as the ordinary Teats, viz:—
Small, Medium and Large.

ADVANTAGES :

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- 2.—The Rim (AA) prevents the Teat swelling when in use.
- 3.—Entirely prevents air entering the mouth.
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- 6.—Its soothing properties are unrivalled.
- 7.—It is made of Absolutely Pure Rubber, Tasteless and Free from Smell.
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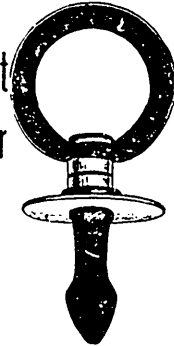


Fig. 30
In two
sizes,
Small
and
Large.

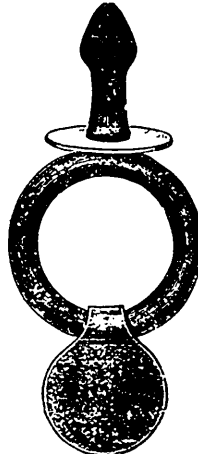


Fig. 31

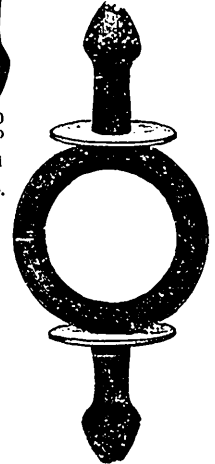


Fig. 32

The best Soothing Teat in the world.

The above is also made up in the following styles of

Soothing Toys. . . .

THE RESPIROREGENERATOR

— OR —

Perfect Inhaler.



Patented in England, 16th August, 1892.

PATENT No. 14518



HEIGHT OF WATER. _____

Directions for using the Inhaler.

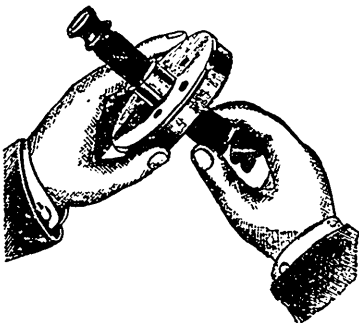


Fig. 1

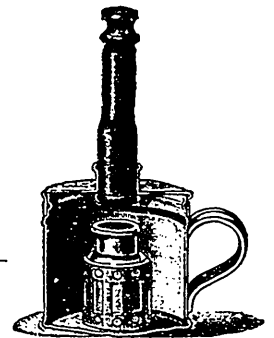


Fig. 2

1. Take the lid off the Inhaler and pass the mouth-piece through the hole from the inside, drawing it tight, as shown in Fig. 1.
2. Remove the stopper of the glass bottle and pour the drug or medicine to be inhaled into the bottle, and place same in the Inhaler, as shown in Fig. 2.
3. Fill the Inhaler with hot water up to the top of the perforated tube, replace the lid of the Inhaler, and apply the mouth-piece to the mouth and inspire or breathe in freely.
4. If a strong vapour is required, pull the indiarubber tube closer down to the neck of the glass bottle containing the medicine.
5. When again requiring to use the Inhaler, remove the stopper, and simply re-fill the Inhaler with hot water as before, or if more convenient, the water can be made hot in the Inhaler.

N.B.—Procure the drug or medicine most suitable for your complaint from your own doctor.

ADVANTAGES :

1. When the patient has finished inhaling, the stopper of the bottle has only to be replaced, and no more of the drug is evaporated or wasted, which is a great advantage when expensive drugs are being used, as in ordinary inhalers the drug is mixed with the water, and consequently thrown away with it.
2. No mistakes can occur in the strength of the dose of drug or medicine, and it is immaterial how much drug is put into the glass bottle.
3. These advantages prove this Inhaler to be the most reliable and the most economical, and therefore the cheapest in the market

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Packer's
Tar Soap is
undoubtedly
the best
Shampooing
agent known.
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the hair, but
makes it soft
and glossy.



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FOR CHILDREN CUTTING TEETH.

IN USE OVER 50 YEARS.

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Stamp affixed to each packet

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To Druggists outside of the Cities
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Send your Jobber an order for 3 doz. **NERVOL** at 1.75 per dozen, and he will send you a HANDSOME SILK EIGHT STEEL RIB UMBRELLA, one that you will be proud to carry.

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JOHN T. LYONS, Cor. Craig & Bleury Streets, MONTREAL

PATENTS

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TOOTHACHE
INSTANTLY.



(A SWELL AFFAIR.)

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Rhum du Saint Père

THAT excellent brand is a blend of the very best Rums of Martinique. It possesses an unrivalled aroma and is highly appreciated.

LYMAN, SONS & Co.

Agents.

NOW READY THE NEW AND REVISED
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Fifth Edition, Thoroughly Revised, in accordance with the new U. S. Pharmacopœia and issued under the official authorization of the Committee of Revision. In one magnificent imperial octavo volume of 1910 pages, with 320 engravings. Cloth, \$7.25. Leather, \$8.00. With Ready Reference Thumb-Letter Index, Cloth, \$7.75. Leather, \$8.50.

The revised edition of The National Dispensatory not only presents all the information contained in the latest U. S. Pharmacopœia, but also the Pharmacopœias of Great Britain, Germany and France have been laid under tribute for all data which might prove of interest or use to the pharmacist. It is accordingly especially rich in Pharmaceutical and Clinical information, with formulas, tables, etc., gathered from all official sources. As an encyclopædia of the latest therapeutical knowledge, it deals with each official drug, all the new synthetic remedies of value and with the official preparations now so largely in use. Pharmacists will appreciate its systematic descriptions of *matéria medica*, its clear explanations of chemical and pharmaceutical processes and tests, its illustration of important drugs and of the most approved apparatus. Indispensable therapeutical information as to the efficacy of drugs is given through the text, and is placed at instant command in a special Therapeutical Index, which together with the General Index, covers more than one hundred treble-columned pages containing 25,000 references.

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"I beg to express the high appreciation in which I hold this very comprehensive work. For both student and practitioner in medicine, as well as in pharmacy, this book must prove of the greatest value."—February 18th, 1894.

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Prepared strictly according to the formula
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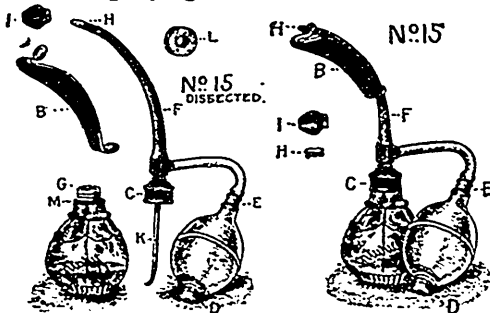
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USUAL DOSE—Half a Wineglassful.

MEAGHER BROS. & CO.,
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 \$6.25 per Case of 1 doz. Bottles.

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CENTURY · ATOMIZER
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FOR THE **BLOOD**

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The Great
German Remedy

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The Great South American Nervine Tonic

cures all Nervous Diseases and Stomach Troubles by its direct action on the nerve centres located in or near the base of the brain.

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for Rheumatism and Neuralgia absolutely cures in from one to three days.

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relieves Distressing Kidney and Bladder Diseases in six hours, and speedily effects a cure.

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DRUGGISTS' SHELFWARE.

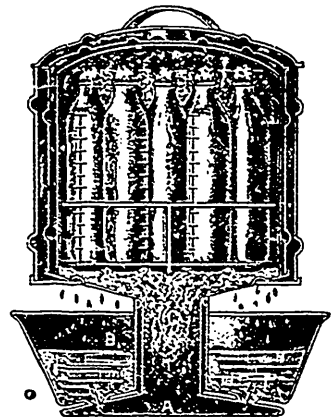
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The only Label Factory in Canada.

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AN ARNOLD STEAM STERILIZER

Should be in every House
where there is a Baby . . .

These Sterilizers can now be used for sterilizing milk at high and low temperature.

They are recommended by the best physicians everywhere.

DO YOU KEEP THEM ? . . . If not, write your Wholesaler for information.

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STRENGTH.
STRICTLY PURE.

PEROXIDE

- OF -



HYDROGEN

MANUFACTURED BY

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By a special process, for Medicinal and Surgical purposes

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

IMPORTANT NOTICE.

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

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NON-IRRITANT.



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I. B. SEELEY & Co.

For Twenty Years exclusive Manufacturers of

Hard Rubber Trusses, Supporters and Pile Pipes,

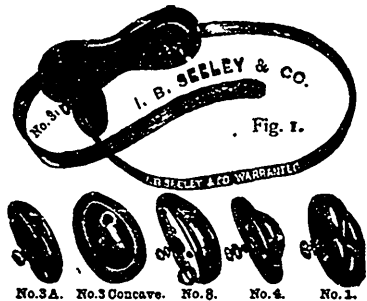
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Will successfully retain the most difficult form of HERNIA or RUPTURE with comfort and safety, thereby resulting in a radical cure. Impervious to moisture, may be used in bathing; and fitting perfectly to form of body, are worn without inconvenience by the youngest child, most delicate lady, of the laboring man, entirely avoiding all sweaty, sour, padded unpleasantness, being light, cool, cleanly, and always reliable. Endorsed by leading Surgeons, Physicians, Medical Colleges, both here and in Europe. Over 100,000 applied in Philadelphia.

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is an OLD and WELL TRIED REMEDY, and for over FIFTY YEARS has been used by millions of mothers for their CHILDREN while CUTTING TEETH with perfect success. It soothes the child, softens the gums, reduces inflammation, allays all pain, cures wind colic, is very pleasant to the taste, and is the best remedy for diarrhœa. Sold by druggists in every part of the world. PRICE TWENTY-FIVE CENTS A BOTTLE. Be sure and ask for MRS. WINSLOW'S SOOTHING SYRUP and take no other kind, as no hers will find it the Best Medicine to use during the teething period.

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The waters from these Springs have been recommended by the leading doctors in the United States as very beneficial in cases of affections of the nervous system. The waters belong to the alkaline class, and can be used as a remedy for Gout, Rheumatism and Stone in the Bladder.

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CURES WHERE ALL ELSE FAILS.
Best Cough Syrup. Tastes Good. Use
in time. Sold by druggists
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Piso's Remedy for Catarrh is the
Best, Easiest to Use, and Cheapest.
CATARRH
Sold by Druggists or sent by mail,
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The highest grade of petroleum jelly, chemically pure, sweet, and odorless. Put up in all sized packages, from one to fifty pounds.

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DICK'S BLOOD PURIFIER is no sham made up to sell only, but is prepared from the best material. One package of Dick's Blood Purifier we confidently believe contains more real medicinal strength and virtue than ten times its weight of any other Powder in the market. It tones up the system, imparts new life and vigor, and is adapted for the cure of worms, loss of appetite, roughness of the hair or coat, stoppage of water and bowels, all coughs and colds, inflammation of the lungs and bowels, recent founders, swelling of the glands of the throat, horse distemper, hide bound, botts, soury, loss of end, horn distemper, black tongue, &c., and also will loosen the bowels, and in recesses effect a cure. In fact there is no disease among Horses and Cattle where Dick's Blood Purifier is not called for, and by its timely administration will save the lives of many valuable animals.

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Dick's Blood Purifier,	50c
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Full line kept in Stock and sold at Manufacturer's

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CHEAP, HARMLESS AND EFFECTIVE.

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

NON-POISONOUS AND NON-CORROSIVE.

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

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

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

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

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

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ROBERT WIGHTMAN, DRUGGIST, OWEN SOUND, ONT.

SOLE AGENT FOR THE DOMINION.

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

For Infants over Three Months, Invalids and Convalescents.

Milk Granules with Cereals

— IS THE —

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ITS MERITS ARE

Perfectly Sterilized Milk,
The Finest Selected Barley and Wheat.
The whole partially digested combining to make an exceedingly Palatable and Nourishing Food.

PREPARED BY

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STICK } 4, 6, 8, 12, 14 and 16 Sticks to the lb.
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Why? It removes Dandruff with 3 applications.

- " It makes the hair soft and pliable.
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- " It is of a nature peculiar to itself.
- " It is pleasant to use—Clear as crystal.
- " It possesses a most agreeable and delicate odor.
- " Men, women and children endorse it.

Price for Anti-Dandruff,
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We trust there will be no cutting.

DR. L. A. SMITH & CO.



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Nine Gallon Cask of Alcoholic Beer from a brewery will cost you \$4.00, but eight gallons of beer made from . . .

MASON'S EXTRACT OF HERBS

can be obtained for 25c plus a pound or two of sugar and a little yeast.

WE ARE ALSO MAKERS OF

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Extract of Herbs, Ginger Ale Extract, Ginger Extract, Hop Extract, Foamine, Horehound, and Wine Essences.


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Trade supplied by **LYMAN, SONS & CO, MONTREAL**
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Fragrant, Delicious  Coffee in a Moment!

BY  LYMAN'S FLUID COFFEE.

Samples, (equal to 5 cups)	\$0 35 per doz.	Retail at \$0 05
¼ lbs. (equal to 25 cups)	2 00 "	" 0 25
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Lbs. (equal to 100 cups, or 4½ galls W M)	6 75 "	" 1 00

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At this time of the year you cannot afford to be without "ANTI-MOTH" PAPER. A ready seller.

CHAPMAN'S IMPROVED

Anti-Moth Paper

The value of "ANTI-MOTH" PAPER as a protector of Woolen Goods, Furs, etc., from moths, has been fully proved by the increasing demand and sales each year

Its success has, of course brought many imitations into existence.

The **Genuine Anti-Moth Paper** is clean and will not soil the hands or the most delicate white Woollens and Furs.

It is pleasant in odor, and has the hygienic and medicinal properties of the Pine Tree.

It is **better and cheaper than Camphor** or any of its worthless imitations.

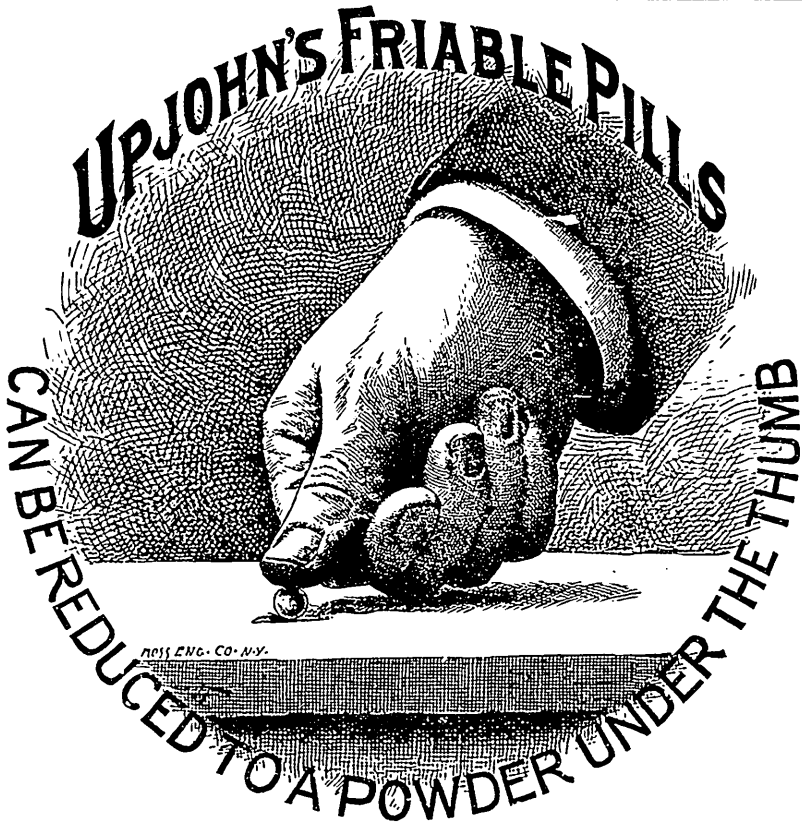
Retail Price,	10 cent packets, 3 for 25c.
Price per dozen,	75c.
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" 5 " 6.50 per gross.

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Manufacturing and Dispensing Chemist,

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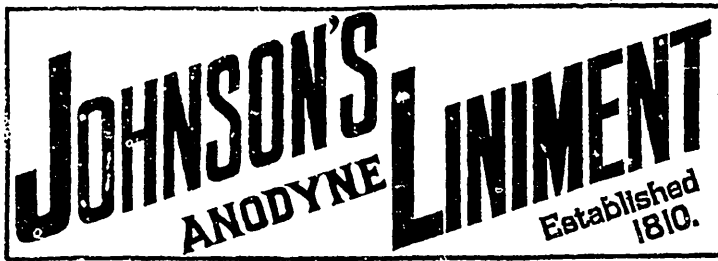
GREEN MOUNTAIN

Pills, Salve,
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<p>Geo. Tucker's Green Mountain Salve has no equal for rheumatic pains, weakness of the sides & back, ladies' ailments.</p>	<p>Geo. Tucker's Botanic Syrup warranted to cure colds, influenza and whooping coughs.</p>	
<p>ARRAPAHOO OR Geo. Tucker's GREEN MOUNTAIN BALM THE WELL KNOWN INTERNAL - EXTERNAL REMEDY</p>		
<p>\$5000 REWARD FOR BETTER PATENT MEDICINES SOLD BY ALL RESPECTABLE DRUGGISTS AND GROCERS SOLE AGENTS</p>	<p>THE SAFEST, SUREST AND MOST SPEEDY RELIEF FOR ALL NERVOUS AND INFLAMMATORY ACRES AND PAINS. IT HAS NO EQUAL ITS ACTION UPON THE NERVES IS REALLY ASTONISHING; IT STOPS PAINS AS IF BY MAGIC IT SHOULD BE IN EVERY FAMILY FOR IT IS TRULY A DOCTOR IN YOUR HOUSE IT GIVES IMMEDIATE RELIEF. TRY IT. DIRECTIONS ON EACH BOX</p>	<p>THOUSANDS OF PERSONS SUFFERING FROM VARIOUS DISEASES, IMMEDIATELY HAVE RECOURSE TO GEO. TUCKER'S INDIAN REMEDIES 429 CRAIG STREET MONTREAL.</p>
<p>LYMAN, Sons & Co. WHOLESALE DRUGGISTS SIPAUL STREET MONTREAL</p>		

Chocolate
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PREPARATIONS



ORIGINATED BY AN OLD FAMILY PHYSICIAN.
 GENERATION AFTER GENERATION HAVE USED AND BLESSED IT.

Every Mother Should have Johnson's Anodyne Liniment in the house for Croup, Colds, Sore Throat, Tonsillitis, Colic, Cuts, Bruises, Cramps and Pains, liable to occur in any family without notice. Delays may cost a life.

Every Mechanic, or person exposed to accidents or injury, Base-Ball players, etc., should keep it near at hand; for it acts promptly, is Soothing, Healing and Penetrating. When once used always used.

Every Traveller Should have a bottle in their satchel. It can be used Internally or Externally in more cases than any other medicine. Cures head-aches if inhaled.

Every Sufferer From Rheumatism, Sciatica, Neuralgia, Nervous Headache, Diphtheria, Coughs, Catarrh, Bronchitis, Asthma, Cholera-Morbus, Diarrhoea, Lameness or Soreness in Body or Limbs, Stiff Joints or Strains will find in this old Anodyne relief and speedy cure.

THE REASON WHY—Generation after Generation have Used and Blessed Johnson's Anodyne Liniment, is because it cures when all other remedies fail. It was devised and used for years in the private practice of old Dr. Johnson, to treat inflammation liable to afflict any person on earth; and which cause the danger in all the above troubles. The medical advice around each bottle is worth ten times the price.

How to Use Economically. Advice sent free. All who buy direct from us, and request it, shall receive a certificate that the money will be refunded if not abundantly satisfied. Price, 35 cts. by mail; 6 bottles, \$2.00. Express prepaid to any part of the United States or Canada. Duty also paid. **I. S. JOHNSON & CO., Boston, Mass.**

DOMINION OF CANADA PRICE LIST.

— FOR —

Johnson's Anodyne Liniment,
 Parsons' Pills,
 Sheridan's Condition Powder.

EACH INVOICE SUBJECT TO CONTRACT.

Goods to be Invoiced in all cases after December 1, 1893, as follows:—

JOHNSON'S ANODYNE LINIMENT	—\$2.00 per doz. without rebate.		
PARSONS' PURGATIVE PILLS	— 1.50	“	“
SHERIDAN'S CONDITION POWDER.	Small— 1.50	“	“
	Large— 8.00	“	“

REBATE IF PAID IN 4 MONTHS.—To Retailers for orders amounting to \$20.00 or more, 5 per cent.

To Jobbers “ “ \$120.00 “ 12½ per cent.

QUANTITIES as above may be made up of any one or more articles at the long prices, but in all cases must amount to \$20.00 and \$120.00 or more respectively.

FOR SPOT CASH we shall allow 5 per cent. discount extra after rebate as above has been deducted. Extra 5 per cent. not allowed after 10 days.

MONTREAL PHARMACEUTICAL JOURNAL.

VOL. V—No. 2.

MAY, 1894.

\$1.00 per annum.

The Montreal Pharmaceutical Journal.

171 St. James St., Montreal, Canada.

JOSEPH E. MORRISON, Editor.

Subscription, \$1.00 per Annum.

Advertising Rates will be made known on application.

All remittances, matters intended for publication, new advertisements or changes should be addressed,

MONTREAL PHARMACEUTICAL JOURNAL.

P. O. Box 1144, Montreal.

F. L. BENEDECT, Secretary.

THE MONTREAL COLLEGE OF PHARMACY.

The reports presented at the annual meeting showed a very satisfactory state of affairs. The number of students was larger than in previous years, the attendance at lectures was better, the institution of sessional examinations having had the effect of stimulating the students to greater diligence and attention. The financial statement showed that after necessary repairs and alterations, and payment of the interest and an installment on the principal of the mortgage a balance of \$577 remains to the credit of the College. The Executive Board and officers are to be congratulated on this excellent state of affairs, which is due to a large extent to the interest they have shown in, and the watchfulness they have exercised over the business of the institution as the President aptly put it, the members of the Board have displayed as much interest in the affairs of the college as they would in their own businesses, and the re-election of the old Board with the exception of one member who refused nomination, shows that the members of the college consider that its interests are safe in their hands. Although the College has increased its facilities there is still much to be done to bring it up to the proper degree of efficiency,

among other improvements we would suggest the institution of junior and senior classes as one of the first, projection lanterns for the botany and materia medica courses, and also in view of the fact that the microscope is daily becoming more important in the detection of adulterations and as the science of botany cannot be properly studied without the aid of the microscope, a course of practical microscopy should be instituted in connection with the botany course.

In the course of his address the President drew attention to the small number of Montreal druggists who were members. This should not be so, every licenciate should be on the books as having paid his subscription, he should willingly subscribe the annual fee to keep up his Alma Mater, he should consider the present and future interests of pharmacy, the requirements of which will be more varied and exacting than in the past, and without the existence of the College, how will these requirements be fulfilled? Every druggist owes it to himself and to his neighbours, that he should do his part in keeping up the College which many now throw into the hands of a few. The College is certainly in a prosperous condition and there is no fear of its closing up, but we wish to draw attention to the fact that it could be in a much better position, better fitted with all the necessary appliances, and second to none, if all the retail druggists of Montreal would do their duty towards it. In many cases it is simply neglect and forgetfulness which prevent the fee being sent it, and now that our Montreal readers have been remind that the annual fee is due, we hope our advice will be followed and the amount forwarded without delay to the secretary.

THE AMERICAN PHARMACEUTICAL ASSOCIATION CONVENTION, 1895.

The question of inviting the A. P. A. to hold their annual convention of 1895 in the city of Montreal was brought before the College at the annual meeting by Messrs. Morrison and Lachance, both of whom are members of this Association, for the purpose of eliciting an expression of opinion. After considerable discussion, which showed that the majority were in favor of extending the invitation, it was referred to a special committee which would confer with the Provincial Association so that both bodies would act together in the matter. The members of the committee will leave no stone unturned to bring the matter to a successful issue, but the pharmacists of Montreal will also have to do their share by subscribing towards the expenses which will necessarily be incurred.

The American Pharmaceutical Association is one of the strongest bodies of this kind in the world, consisting of pharmacists from every part of North America. Its membership roll include the names of such men as Proctor, Maisch, Remington, and many other well known pharmacists who have made American scientific pharmacy what it is to-day. Among the Canadian pharmacists who have been or are members of it we might mention Prof. W. Saunders, now in charge of the Ottawa Experimental Farms, who is one of the ex-presidents of the society, and was formerly a valued contributor to the annual proceedings; H. R. Gray, of Montreal; J. E. D'Avignon, of Windsor, Ont.; S. Lachance, of Montreal, and many others whose names escape us at present—all of them well and favorably known in Canadian pharmacy. But the Canadian membership should be much larger, and if the invitation of the Montreal pharmacists be accepted it will be greatly extended, and one of the objects for which the association was founded, namely, "to unite the educated and reputable pharmacists and druggists of America," will be carried out as it has not been heretofore, as no meeting has been held in Canada since 1876.

The value of the convention to the pharmacists of Montreal will be very great. It will induce an *esprit de corps* in which we are sadly lacking; it will show the public, more forcibly

than any other object lesson, that pharmacy is not only a business but also a profession; that pharmacists can devote time to the elucidation of knotty questions on chemistry and the allied sciences as well as to dollars and cents; it will demonstrate to the public that pharmacy is something more than merely the handmaid of medicinæ; and the presence of such a representative body of eminent scientists cannot fail to raise the whole profession in the eyes of the general public. It will be the first time this body will have met in Montréal, and we have no doubt it will be productive of much good in every way. The A. P. A. has not met in Canada since the convention of 1876, which was held in Toronto, and the druggists of Montreal, now that the matter has been brought before them, will strive to give their American brethren a right royal welcome if they accept the invitation which will be offered to them at the Asheville convention, Sept. 3.

On the meeting of the College Board, Messrs. W. S. Kerry and Morrison were appointed a committee to confer in reference to what may be necessary and advisable as to the supply of microscopes and projection lanterns.

THE presentation of a valuable microscope to the College by Mr. S. Lachance, is an example of generosity which should be more generally followed. Donations of books, apparatus, and museum specimens are always welcome.

IN the death of Prof. Hugo. C. W. Martin, the Chicago College of Pharmacy loses an able teacher, and the Illinois State and American Pharmaceutical Associations an active member. In the fight of the Chicago druggists against the Telephone monopoly and the cutters as in every movement to better the condition of pharmacists he was always in the front fighting with pen and tongue in defence of their interests. We extend to the bereaved family our sincere sympathy in their hour of trouble.

SOMETIME since we sent out a number of letters requesting an expression of opinion on Prof. Attfield's paper on "An Imperial Phar-

macopœia," and regret to say that it does not seem to have aroused much interest as most of the responses so far received, indicate that the writers are too busy to look into the matter, or do not seem to care anything about it. However one letter which we publish in this issue, from Mr. J. E. D'Avignon, of Windsor, expressed the opinion of one whom we believe to echo the sentiments of all Canadian pharmacists who have studied the question.

MR. D'AVIGNON'S opinion on pharmaceutical matters is of great importance, since he is thoroughly *au fait* with all that concerns the profession in both the provinces of Quebec and Ontario. He was one of the founders of the Quebec Association, and for the last twelve years has been a member of the council of the Ontario College, is a member of the American Pharmaceutical Association, and a leading druggist of the most American town in Canada, namely Windsor, Ont., so that what he says about Canadian pharmacy, and the British and United States Pharmacopœias are the opinions of a man thoroughly competent to judge, and in some respects the most competent in Canada.

FROM THE AMERICAN PHARMACEUTICAL ASSOCIATION.

DEAR SIR :

The committee on membership desire to call attention to the following circular, containing some extracts from the Constitution and By-Laws.

The aim of the association is to unite the educated and reputable pharmacists and druggists of America in the following objects :

1. To improve and regulate the drug market, by preventing the importation of inferior, adulterated, or deteriorated drugs, and by detecting and exposing home adulteration.
2. To encourage proper relations between druggists, pharmacists, physicians, and the people at large, which shall promote the public welfare, and tend to mutual strength and advantage.
3. To improve the science and art of pharmacy by diffusing scientific knowledge among apothecaries and druggists, fostering pharmaceutical literature, developing talent, stimulating discovery and invention, and encouraging home production and manufacture in the several departments of the drug business.
4. To regulate the system of apprenticeship

and employment, so as to prevent, as far as practicable, the evils flowing from deficient training in the responsible duties of preparing, dispensing, and selling medicines.

5. To suppress empiricism, and to restrict the dispensing and sale of medicines to regularly educated druggists and apothecaries.

6. To uphold standards of authority in the education, theory and practice of pharmacy.

7. To create and maintain a standard of professional honesty equal to the amount of our professional knowledge, with a view to the highest good and greatest protection to the public.

Every pharmacist and druggist of good moral and professional standing, whether in business or on his own account, retired from business, or employed by another, who, after duly considering the objects of the association and the obligations of the constitution and by-laws, is willing to subscribe to them, is eligible to membership.

The business of the association, which is not of a scientific character, between the times of meeting, is in charge of a counsel composed of 17 members ; the acts of said council, however, are subject to revision by the association.

The annual dues payable by each member are \$5 00 and this is the only expense connected with membership (initiation fee not being required) unless a certificate of membership is desired, which can be procured from the treasurer upon payment of \$5.00.

Aside from the enjoyment of pleasant social features which form a part of the annual reunions of the association, personal attendance at the meetings is amply repaid by the opportunity of participation in the discussions of the numerous scientific, commercial and legislative matters brought before the different sections.

Every member in good standing is entitled annually to receive gratuitously a bound volume of about 1,000 pages or more, containing a full account of the proceedings of the annual meeting, including the various papers read and discussed and also the Report on the Progress of Pharmacy, which latter is recognized as a most valuable addition, being a thorough digest of every thought and labor in the pharmaceutical world. This volume which is carefully compiled by the permanent secretary of the association is alone worth the amount of the annual contribution and in the course of years becomes a most important part of the pharmacist's library.

Organized in 1852 with 18 members, the association has now a membership of over 1,600, but even this number represents only a small percentage of those actively engaged in the field of pharmacy. By special resolution, the annual meetings are held alternately in large cities and desirable country resorts, thus afford-

ing a most agreeable variety for recreation. During the past forty years all sections of the country have been visited from Toronto to New Orleans and from New York to San Francisco. This year the association will meet during the month of September at that most delightful mountain resort, Asheville, North Carolina, so well and favorably known to all tourists. It is hoped that a large attendance of new members will be present.

Any member of the committee will be glad to give additional information if desired.

All applications for membership must be accompanied by the amount of one year's dues (\$5.00) in advance and should be so forwarded to the secretary of the committee on membership, Geo. W. Kennedy, Pottsville, Pa. If more convenient they may be sent through the special members of the committee appointed for the respective States and Provinces.

COUNCIL COMMITTEE ON MEMBERSHIP.

Chas. Caspari, Jr.—Baltimore, Md., Chairman.
 Leo Eliel—South Bend, Ind.
 Chas. M. Ford—Denver, Col.
 Wm. C. Alpers—Bayonne, N. J.
 W. G. Smith—Asheville, N. C.
 Geo. W. Kennedy—Pottsville, Pa., Secretary

SPECIAL AUXILIARY COMMITTEE.

For Alabama—P. C. Candidus, Mobile.
 " Arizona—Clemens L. Eschman, Phoenix.
 " Arkansas—W. W. Kerr, Russellville.
 " California—Prof. W. M. Searby, San Francisco.
 " Canada, Province Ontario—John Lowden, Toronto.
 " Canada, Province Quebec—S. Lachance, Montreal.
 " Colorado—Chas. S. Kline, Denver.
 " Connecticut—Chas. A. Rapelye, Hartford.
 " Delaware—John M. Harvey, Wilmington.
 " District of Columbia—Saml. L. Hilton, Washington.
 " Florida—Henry C. Cushman, Pensacola.
 " Georgia—Henry R. Slack, La Grange.
 " Idaho—A. O. Ingalls, Murray, Shoshone Co.
 " Illinois—T. H. Patterson, Chicago.
 " Indiana—Josiah K. Lilly, Indianapolis.
 " Iowa—Mrs. Rosa Upson, Marshalltown.
 " Kansas—Mrs. M. O. Miner, Hiawatha.
 " Kentucky—Dr. Wiley Rogers, Louisville.
 " Louisiana—A. K. Finlay, New Orleans.
 " Maine—Edw. A. Hay, Portland.
 " Maryland—Prof. D. M. R. Culbreth, Baltimore.
 " Massachusetts—Prof. W. L. Scoville, Boston.
 " Michigan—A. S. Parker, Detroit.
 " Minnesota—Jas. C. Henning, Stillwater.
 " Mississippi—J. C. Means, Natchez.

For Missouri—Prof. H. M. Whelpley, St. Louis.

" Nebraska—Jas. Reed, Nebraska City.
 " Nevada—W. A. Perkins, Virginia City.
 " New Hampshire—A. C. Preston, Portsmouth.
 " New Jersey—Geo. W. Parisen, Perth Amboy.
 " New Mexico—Jas. O. Kinnear, Demming.
 " New York—C. M. Mayo, New York.
 " North Carolina—Henry R. Cheers, Plymouth.
 " Nova Scotia, New Brunswick and Prince Edward's Island—F. C. Simson, Halifax.
 " Ohio—Louis C. Hopp, Cleveland.
 " Oregon—Geo. C. Blakeley, The Dalles.
 " Pennsylvania—Prof. F. Ryan, Philadelphia.
 " Rhode Island—Henry J. Alfreds, Providence.
 " South Carolina—
 " South Dakota—I. H. Keith, Lake Preston.
 " Tennessee—J. O. Burge, Nashville.
 " Texas—L. Myers Connor, Dallas.
 " Utah—Frank A. Druehl, Salt Lake City.
 " Vermont—H. A. Chapin, Brattleboro.
 " Virginia—E. R. Beckwith, Petersburg.
 " Washington—G. Kellog, Seattle.
 " West Virginia—E. L. Boggs, Charleston.
 " Wisconsin—John A. Dadd, Milwaukee.
 " Wyoming—Dr. Thos. G. Maghee, Rawlins.

Trade Notes.

R. N. Knight, druggist, St. John, N.B., has made an assignment.

John Reed has again embarked in the drug business in Vancouver, B.C.

The drug store of Alex Barnett, Hillsboro, Ont., was destroyed by fire April 16th.

J. K. Sutherland has purchased the branch drug store of H. McDonald & Co., Vancouver, B.C.

J. T. Pepper, of Brussels, has purchased the drug stock of the late J. J. Hall, Woodstock, Ont.

Edward Evans, Jr., of Evans, Sons & Co., Liverpool, England, arrived in Montreal last month and left on his return May 4th.

C. Williams, O.C.P., medalist, 1892, intends opening a new drug store in Goderich, Ont., about the 15th inst. Mr. Williams is a native of that town, and although this is the fifth store in town he will doubtless get his share of trade.

Mr. John F. Howard, the well-known pharmacist of Winnipeg, celebrated the arrival of a little stranger, May 16th. It is a girl. THE JOURNAL extends congratulations.

Correspondence.

To the Editor of THE MONTREAL PHARMACEUTICAL JOURNAL.

SIR,—Replying to your letter of recent date: I have read Prof. Attfield's able paper on *An Imperial British Pharmacopœia* with a great deal of interest, and no doubt most Canadian druggists feel, as I do, how important it is to the pharmacists and physicians of the Dominion.

There are so many preparations named in the P.B., which are not used at all in Canada, while some of those used here, are not included in the B.P. At the meeting of Ontario College of Pharmacy, last August a special committee, of which the writer was chairman, recommended that the president and vice-president (and others if thought best) of the Council, should act as a committee in conjunction with the committees of other colleges and associations, to confer upon the establishment of a uniform standard for all Pharmaceutical preparations for the whole Dominion. (See Can. Ph. Journal for August, 1883, page 6.)

It has, at different times, been suggested that we should have a Canadian Pharmacopœia, and it should be the legal standard for the Dominion.

I do not think it would be practicable or advisable.

Indeed, the Ontario Pharmacy Act and Dominion Inland Revenue Act recognise the B.P., as the legal standard. It is true, that it has recently been demonstrated, that there is ground for doubt, as to whether the B.P. is really a *compulsory* legal standard for the preparation of medicines in the Dominion—under Inland Revenue Act. Why not then, have an *Imperial Pharmacopœia*, a *Pharmacopœia Britannica*, not only for Great Britain, but also for the "*Greater Britain*"?

The committee appointed by the Canada Medical Association, seems to favor the idea, and to heartily endorse Prof. Attfield's views—and if pharmacists are agreed upon it, there should be no great difficulty in carrying out the plan.

If the needs of Canadian pharmacists cannot be incorporated in the B.P. (because some of them may not be useful to the pharmacists of the Mother Country—other Colonies or India)—why not have the formula peculiarly useful to us, printed in form of an appendix, to be used only in Canada, but to be equally with the B.P. proper the legal standard for pharmaceutical preparations for the Dominion?

Certain pharmaceutical Journals of the U.S., have remarked that Canadians use the U.S. Pharmacopœia nearly altogether, which is, of course, an absurd statement—but, though

we do adhere pretty closely to the B.P., we also use a few of the formulas of the U.S.P., for preparations not mentioned in the B.P., and for which we have an occasional demand, for the filling of prescriptions from the United States.

I think that Prof. Attfield's suggestion as to reports on the progress of pharmacy, being forwarded from all parts of the Empire, by representative pharmacists, for submission to the Pharmaceutical Committee of the Medical Council, is an excellent one, and I also think that in the Dominion we should have a committee selected from the different provinces, for the purpose of assisting Prof. Attfield, by arranging and forwarding to him, suggestions sent in by Canadian pharmacists, as to eliminations, alterations and additions, which may be deemed desirable.

The same course might be followed by the other colonies and by India.

I have always thought that the B.P. has been too much in the hands of the medical men, considering that it is more of a standard for pharmacists than for physicians, though the last edition showed that pharmacists had been consulted, and we are assured that in the next edition, their influence will be still more marked.

As the law, in Great Britain, now stands, the matter is altogether (wisely or not) in the hands of the Medical Council of Great Britain, but that body seems to appreciate the necessity, as well as courtesy, of requesting the assistance of pharmacists.

I would like to see the Metric weights and measures adopted in the next edition of the P.B. The Metric system is now in use by most scientific men, and is recognized as the standard in nearly every country but Great Britain.

It might be advisable, perhaps, for the first edition at all events, to use both the present and the Metric system, the course adopted in the U.S.P., 1890. It need not make the volume any more bulky, as the *spacing* is now greater than necessary.

British people are notoriously conservative and loth to change, but it is to be hoped that they may see the desirability of some of the changes advocated.

J. E. D'AVIGNON.

Windsor, Ont., May 15th, 1894.

Prof. Wilbur L. Scoville, of the Massachusetts College of Pharmacy, has been appointed co editor, with Mr. D. O'Gorman, of the New England Druggist.

Dr. Harvey Attfield, M.A., son of Prof. Attfield, has been appointed English Quarantine Officer at Suez.

THE OILS AND OLEO-RESINS OF THE UNITED STATES PHARMACOPEIA, 1890.

COMPILED BY ALBERT N. DOERSCHUK, KANSAS CITY, MO.

The accompanying tableau of the oils and oleo-resins of the U. S. P. cannot fail to be of value to students and pharmacists generally, as it contains in condensed form all the necessary information concerning these bodies. Anyone desiring copies can obtain them by applying to Dr. H. M. Whelpley, editor *Meyer Bros. Druggist*, St. Louis, Mo., and remitting five cents.

SECTIONS.
I. Olea Volatilia.
II. Olea Fixa.
III. Oleoresina.

CLASSIFICATIONS.
1. Carbo-Hydrogen Oils.
2. Oxygenated Oils.
3. Nitrogenated Oils.
4. Sulphuretted Oils.
5. Empyreumatic Oils.

Official Title.	Official English Title and synonym.	Origin.	Process.	Yield.	Class.	Sp. Gr. at 15° C.	Chemical Composition.	Medical Properties and Uses.	Adult Dose in C. C.
Oleum Etherium	Ethereal Oil.	Alcohol & Stronger Ether.	Chemical fractionation and solution.	2.5 p.c. of Alcohol.	2	0.810	Ethyl Sulphate (C ₂ H ₅) ₂ SO ₄ . Polymeric forms of ethylene C ₂ H ₄ . Stronger ether (C ₂ H ₅) ₂ O.	Stim. Nervine. Antispasmodic.	0.6 to 0.15
" Amygdalinum.	Oil of Bitter Almond.	Bitter Almond.	Maceration with water and subsequent distillation.	0.1 to 1 p.c.	3	1.06 to 1.07	Benzoyl Hyaloid, (C ₇ H ₆ O). Benzoic Aldehyde. Benzoyl COH. 8 to 12 p.c. Prussic acid.	Sedative. Anodyne. Antispasmodic.	0.3 to 0.9
" Ambrum.	Oil of Amber.	Amber.	Distillation.	1.4 to 3.12 p.c.	2	.98 to .99 at 17.5 C inc. g. with ager.	Anethol, C ₁₀ H ₁₂ . C ₁₀ H ₁₆ .	Carminative. Antiepileptic.	
" Auranti Cortex.	Oil of Orange Peel.	Fresh peel of Citrus vulgaris (L.) or Citrus Aurantium. Lib.	Expression.	2.8 p.c.	2	0.85	Flavonarin, (C ₂₂ H ₂₀ O ₂). Heperidene, C ₁₅ H ₂₄ . C ₁₀ H ₁₆ . C ₁₃ H ₁₆ O ₃ , C ₁₅ H ₁₆ O, C ₂₀ H ₃₀ O ₃ .	Stimulant. For flavoring.	1.0 to 3.0
" Auranti Florum.	Oil of Orange Flower.	Fresh flowers of Citrus vulgaris (L.) or Citrus Aurantium. Lib.	Distillation.	2 to 4 p.c.	2	.875 to .89	C ₁₀ H ₁₆ with oxidized hydrocarbons. Colorless when fresh.	In perfume.	
" Bergamotum.	Oil of Bergamot.	Blend of fresh fruit of Citrus Bergamula. Bisco.	Expression.	2 to 3 p.c.	2	.88 to .885	Bergapten, (C ₁₇ H ₁₆ O ₅ or C ₁₇ H ₁₆ O ₃). Bergaptenol, (C ₁₇ H ₁₆ O ₂). C ₁₀ H ₁₆ O ₃ , C ₁₅ H ₁₆ O ₃ , C ₂₀ H ₃₀ O ₃ , C ₁₀ H ₁₆ .	Stimulant. Antiepileptic.	0.19 to 0.32
" Bala Volatile.	Volatile Oil of Betula.	Betula lenta. Lib.	Distillation.			1.17	Methylsalicylate, C ₁₁ H ₁₂ . C ₇ H ₆ O ₃ . Salicylic acid.	Extremely. In Ezema.	
" Cadinum.	Oil of Cade.	Wood of Juniperus oxycedrus. Lib.	ditto			0.99	Composition analogous to oil of tur.	Stim. In Cholera. Antispasmodic.	0.3 to 1.25
" Cajuputum.	Oil of Cajuput.	Leaves of Melaleuca Leucadendron. Lib.	ditto	4 to 6 p.c.	2	0.89 to .92	Cajuputen, C ₁₀ H ₁₆ . Capiputor or hydrate cajuputen, (C ₁₀ H ₁₆), C ₁₂ .	Carminative. For flavoring.	0.06 to 0.6
" Card.	Oil of Caraway.	Caraway.	ditto	2.5 to 7.8 p.c.	2	1.06 to 1.067	Carvene, C ₁₅ H ₂₄ . Carval, C ₁₀ H ₁₆ O.	Corrigent.	0.12 to 0.36
" Caryophylli.	Oil of Cloves.	Cloves.	ditto	1 p.c.	2	0.97	Eugenin, eugenic acid, or eugenol, C ₁₀ H ₁₂ O ₂ . A salicylic compound, Carophyllin, C ₁₀ H ₁₆ O, or C ₉ H ₁₂ O ₂ . C ₁₅ H ₁₄ .	Antheimetic.	0.24 to 0.5
" Chenopodii.	Oil of Chenopodium.	Chenopodium.	ditto				C ₁₀ H ₁₆ , C ₁₀ H ₁₆ O.	Cardiac Stimulant. Carminative. Powerful Antiepileptic.	0.06 to 0.18
" Cinnamonum.	Oil of Cinnamon.	Cassia Cinnamonum.	ditto	0.2 to 2 p.c.		1.055 to 1.065	Hydrate of Cinnamyl or Cinnamic aldehyde, C ₉ H ₁₀ O. Cinnamic acid C ₉ H ₈ O ₂ . Hydrocarbons.		

SACCHARINE IN PHARMACY.

At the request of Fahlberg, List & Co., F. Lutze, of Berlin, prepared for the Wiesbaden Exhibition in connection with the 60th meeting of German naturalists and physicians an excellent compilation of Pharmaceutical Saccharine Preparations, on which the author Herre F. Lutze, reports as follows:

In order to facilitate the utilisation in general of saccharine as a sweetening substance in the making-up of doctor's prescriptions, it seemed to me advisable to reduce it at once for this purpose to forms, the sweetening value of which bears a certain proportion to Sacchar. album and Syr. simplex. These forms will serve as a guide in prescribing, physicians being thus enabled to judge of the quantity of saccharine requisite for sweetening in separate cases; prescriptions will unquestionably be greatly facilitated thereby. I prepared for mixtures a saccharine solution in dilute alcohol and for powders a saccharine mixture with mannite, both being in such proportions that 1 gm of the solution or of the mixture (powder) corresponded in sweetening capacity with 10 grms sugar or 15 grms syr. splx. I propose the acceptance of these two saccharine mixtures as a standard to go by and to denominate them respectively Solutio saccharini and sacch. mixtum pro recept. These two saccharine mixtures are to be found under these signatures in the exhibition; any objection to their use in prescription is not likely to be raised, for the indifferent vehicles used in their preparation must be considered perfectly irrelevant owing to the minute quantities in which it is necessary to add them to medicines.

The following formulæ exhibit the character of both mixtures.

- 1) Quin. sulf 0.5
Acid. sulf. dil. q. s. ad sol.
Ol. menth. pip. gtt. V.
Sol. saccharini 10.0
Aq. destill. ad 100.
- 2) Chloralhydrat 5.0
Tr. Cort. Aur. 2.5
Sol. Saccharini 5.0
Aq. Destill. ad 100.
- 3) Sod. salicyl 5.0
Cognac 20.0
Sol. Saccharini 5.0
Aq. Destill. ad 150.
- 4) Acid. hydrochlor 1.0
Sol. Saccharini 5.0
Mucilago Gummi Arab. 30.0
Aq. Destill. ad 200.
- 5) Flor. Koso. Pulv.
Saccharin. mixt. aa 10.0
Ol. de cedro. gtt. XII.

- 6) Rad. rhei. pulv.
Saccharin. mixt. aa 10.0
Ol. Foeniculi gtt. IV.
- 7) S. bicarbon.
Acid. Tartar. aa 9.0
Saccharin. mixt. 2.0
- 8) Fol. sennae plv
Rad. liquir. plv. aa 20.
Frct. Foeniculi plv.
Sulfur. lot. aa 10.
Saccharin. mixt. 6.0

The medical mixtures prepared according to the above formulæ are also shewn in the exhibition in order to furnish proof of the perfect and convenient substitution of saccharine in prescription in the place of sugar. The two last of the above mixtures represent at the same time the pulv. acrophorus and the pulv. liquiritiæ comp. in the pharmacopœia, both being reduced to half their volume owing to the substitution of saccharin mixt. in place of sugar.

With a view to demonstrating the further utility of saccharine in pharmacy I have further prepared a number of other medicaments all of a more or less unpleasant taste with the above saccharine mixtures or pure saccharine, and have selected and exhibited the subjoined preparations as representatives of the separate groups of medicaments, and have added to some of them, according to quality and taste, some essential oils, etc., as additional correctives.

TINCTURES.

Tinct. Strophanti.—Tinct. chinæ comp.—
Tinct. anticholerica.—Tinct. valerianæ.

LIQUORS.

Liquor ferri acetici.—Liquor ferri albumin.

MEDICINAL WINES.

Vinum chinæ.—Vinum chinæ ferratum.—
Vinum coca.—Vinum condurango.
All without the addition of glycerin.

OILS AND BALSAMS.

Ol. jecoris Aselli.—Ol. ricini.—Balsam.
copaivæ

EXTRACTS.

Extr. filicis. aeth.—Extr. hydrastis. canadens.
—Extr. cascariæ sagradae.

PILLS.—WAFERS.—PASTILS.

Pilul. Rhei.—Pilulæ aloes.—Tabletæ stro-
phanti.—Tabletæ rhei.—Trochisci chin.
sulf.—Trochisci chin. sulf. c. cacao.

With the above collection of pharmaceutical preparations I hope to have shown in outline the use of saccharine in pharmacy.

MONTREAL COLLEGE OF PHARMACY.

The annual meeting of this body took place on Thursday, 10th inst., when the reports of the year's work were presented.

The report of the Executive Board stated that during the past year the attendance had been much larger than in any previous year, and that the system of sessional examinations resulted in more attention being paid to the lectures, although at first some of the students were opposed to it through a misunderstanding, which had been corrected. The board also reported that as the only student who obtained the necessary number of marks for the gold medal had been unsuccessful in a previous attempt he was therefore ineligible, and consequently it would not be given this year. The financial standing of the college was very good, a considerable amount having been paid on account of the mortgage, while several sums had been paid for repairs and necessary alterations.

The President, in his address, referred to the satisfactory condition of the finances of the college, and paid a compliment to the retiring board for the zeal and energy which they had displayed in looking after the interests of the college. He also referred to the increase in the number of students and the manner in which the lectures had been attended, and stated that the new board would go into the question of purchasing new and improved appliances which were needed in order to keep up with the advance of science.

The reports having been adopted, the prizes won by the students were then distributed.

Second Year Chemistry.—W. Lyman.

Second Year Materia Medica.—W. Lyman.

Botany.—H. W. Reynolds.

First Year Chemistry.—N. Langlois.

First Year Materia Medica.—Jas. Franckum.

Minor Examination.—Jas. H. Goulden.

The election of officers was then proceeded with. During the counting of the ballots, a motion was presented by J. E. Morrison, seconded by S. Lachance, that the College invite the American Pharmaceutical Association to hold its 1895 convention in Montreal. After considerable discussion, which was participated in by the mover and seconder, Messrs. Chapman, Jackson, Tremble, Muir and others, it was finally decided to leave the matter to a committee composed of Messrs. Morrison, Lachance, Chapman, Jackson and Scarff, which would confer with the Pharmaceutical Association of the Province of Quebec and the Montreal Chemists and Druggists' Association to secure joint action of the three bodies in the matter.

The scrutineers, Dr. T. D. Reed and C. E. Scarff, then reported the following elected for the ensuing year:

President—D. Watson (re-elected for the seventh time.)

Vice-President—S. Lachance.

Treasurer—A. Manson (re-elected for the tenth time.)

Secretary—E. Muir (re-elected)

Executive Board—Messrs. J. R. Parkin, W. H. Chapman, A. J. Laurence, J. E. Tremble, W. S. Kerry, C. J. Covernton, J. E. Morrison, A. D. Mann and E. Giroux, Jr.

There being no further business, an adjournment was made to one of the lecture rooms, where light refreshments were served and a pleasant hour was passed.

Nova Scotia Notes.**SMUGGLING A COSTLY DRUG.**

One evening recently U. S. Customs Inspector George C. Andrews arrived in Bangor with William C. Sutherland, of River John, N. S., whom he had arrested at Vanceboro for smuggling phenacetine from the provinces into the United States. When arrested, Sutherland had among his effects 191 ounces of the drug, worth in this country about \$200. Sutherland was given a hearing before U.S. Commissioner Hamlin. He pleaded not guilty, and in default of \$300 bail, was sent back to jail.

New Brunswick Notes.

Walter P. Stickney has left Cockburn Bros., St. Andrews, and accepted a position with the Thompson Medicine Co. of Calais, Maine.

The Prince Edward Island Government has placed an annual tax of \$15 upon commercial travellers, and the fine for evading this tax is \$500.

PROF. LAWSON TAIT tells us that there are certain orchids that secure the fertilization of their stigmas by making bees drunk. In no other way could they get these insects to cut up the necessary antics to carry the pollen to the proper place. Every such flower is a veritable liquor saloon, licensed by nature. The beverage supplied is distinctly alcoholic.

STEREOCHEMISTRY has begun to extend its dominion over the inorganic world. Hitherto it has been confined to organic substances. Dr. Werner shows that the isomerism of the numerous compounds of cobalt, platinum and other metals with ammonium resolves itself into a perfectly simple problem if we assume a tridimensional arrangement of the radicles within the molecules. With platinum, for instance, its atom is considered the centre of a regular octohedron, the six corners of which hold the various radicals. The possible changes of positions of the radicals in relation to each other answer exactly to the number of isomers known to exist.

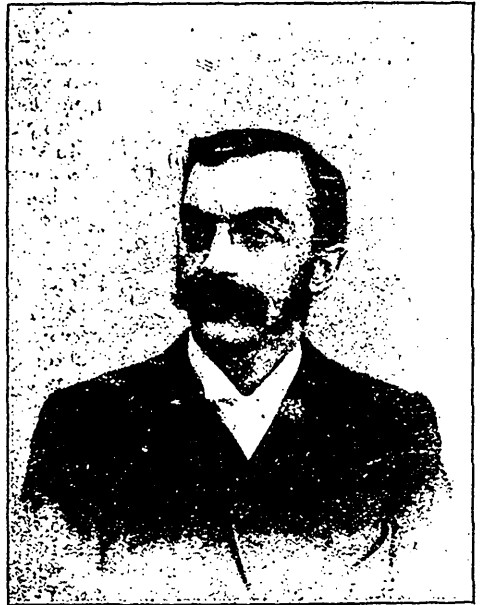
MEMBERS OF THE EXECUTIVE BOARD OF THE MONTREAL COLLEGE OF PHARMACY.



WILLIAM S. KERRY.

William S. Kerry, junior partner of Kerry, Watson & Co., is a son of Jno. Kerry, one of the founders of the Quebec Pharmaceutical Association and of the Montreal College of Pharmacy, and bids fair to carry on the traditions of the family and firm in their connection with the higher aspects of pharmacy.

W. S. Kerry was born in Montreal and after passing through the High School, entered the study of pharmacy with Kerry, Watson & Co., at the same time following the lectures at the Montreal College of Pharmacy. He received his diploma in 1879, after passing a brilliant examination. For some years he travelled for the firm, but relinquished it for indoor work, and has since taken his share in furthering the interests of the firm and also of the College and the Association, with both of which he has been prominently identified for some years, having been one of the preliminary examiners from 1888 to 1893, member of the council of the Association '92-'93, and also of the Executive Board of the College since 1888. To Mr. Kerry and Mr. Chapman, is due the credit of introducing the present system of written preliminary examinations which is an improvement on the method formerly in use.



W. H. CHAPMAN.

W. H. Chapman, was born in Bristol, England, in 1859, was educated at Manchester Grammar School, where he greatly distinguished himself, gaining a free scholarship, and three Queen's prizes in chemistry, physics and electricity. He was then apprenticed to Alf. Bird, of Birmingham, the original inventor of baking powder, for five years. During this period Mr. Chapman attended evening lectures at the Midland Institute, where he also made his mark by winning Queen's prizes in advanced Organic Chemistry and botany, and a certificate in analysis, he then went to London, and after some time spent at one of the London Colleges, he passed the minor and major examinations of the Pharmaceutical Association of Great Britain. This is a remarkable record and one to be proud of, securing so many Queen's prizes, and passing both minor and major examinations before reaching the age of 22.

In the fall of 1882, Mr Chapman came to Canada, as assistant to Mr. H. F. Jackson, afterwards clerking with J Lewis and W. A. Dyer & Co. In 1884 he commenced business on his own account, having bought out Messrs. Baillarge & Co., corner of Craig and Bleury streets., which estab-

ishment he sold out to Mr. Jno. T. Lyons, in 1887. Mr. Chapman then opened a store on St. Catherine street West, and a short time after a branch store at Côte St. Antoine. Since his arrival in Canada, Mr. Chapman has been an active member of the Association and College and has always been prominent in every action taken to raise the status of pharmacy in the Province of Quebec, and has also been very successful in the business aspect of his profession. He was a member of the Board of Preliminary Examinations for two years and suggested the change from the former unsatisfactory oral examination to the present system. He has been a member of the Council of the Association and of the Executive Board of the College since 1886, with the exception of one year, when he declined nomination, and is also a member of the Board of Examiners, on which he generally takes physics or dispensing.

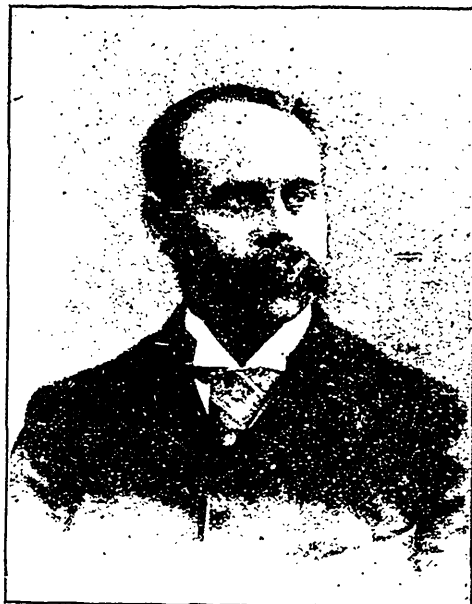


CHAS. E. SCARFF.

Chas. E. Scarff, the well known St. Catherine street pharmacist, is a native of England, and came to this country with his parents while a child and was educated in Ontario. After serving an apprenticeship of five years at the drug business he entered the house of Lyman Bros. & Co., of Toronto, where he remained some years and then came to Montreal in 1877 to take the position of head clerk in the Medical Hall, which he retained for eleven

years, resigning in order to engage in business for himself.

Mr. Scarff has earned a high reputation as a capable pharmacist, and is now the owner of a most prosperous business, which has been built up by strict attention to his duties, his dispensing trade being one of the best in the city, and the sale of his specialties is also of considerable extent. Mr. Scarff has always found time to take an active interest in pharmaceutical matters, both as a member of the College and also of the Association. He has been on the Board of Preliminary Examiners for three years and has been a member of the Executive Board of the College for some time.



A. D. MANN.

A. D. Mann was born in Montreal, and, after passing through the usual course at private schools, entered the service of Messrs. Kerry, Watson & Co. in 1868, with whom he remained for about 18 years. After passing his final examination in 1887 he bought out the business of Messrs. M. G. Edson & Co., corner of Mountain and St. Antoine streets, where he still remains.

Mr. Mann has been one of the most active members of the college since he joined, and since the purchase of the new building has been a member of the Permanent Building Committee. He has also served on the Executive Board for the last six years, and was elected member of the Council of the Pharmaceutical Association last year.

LINIMENTUM SAPONIS.

Abstract of a paper read by Mr. J. T. Hornblower to the Liverpool Chemists' Association, April 19, 1894.

The preparation is, under some form or other, as old a preparation as the Pharmacopœia contains; sometimes taking the solid form of opodeldoc, but more generally the liquid one of the ordinary liniment. The chief ingredient, *sapo durus*—hard soap or white Castile soap—is an oleopalmitate of soda. The B. P. gives certain characters and tests for this soap as regards color, consistence, ash, behavior to litmus, and solubility in spirit. On the last point it is stated that the soap is soluble in rectified spirit—presumably cold spirit, as no mention is made of using heat. I certainly must take exception to this. I have never had a sample of hard soap soluble in cold spirit. Perhaps I have not waited long enough for it to dissolve, but really, if it were going to do so at all, it should do so in two or three days. I suppose it must be taken to mean "by heat," as in the U.S.P.—the *élite* of Pharmacopœias—it is given as "soluble in water and alcohol, but more readily with the aid of heat." I show two bottles, each containing 40 grains of soap and 1 oz. of spirit, and though they have been mixed some days solution has not yet taken place. There is also another bottle of the same mixture which was heated, and although all dissolved, yet on cooling some soap deposited.

There have been two or three suggestions as regards the making of a better soap for this liniment. The incomplete solubility of olive-oil soap is due to its not being entirely an oleate, but containing a certain amount of palmitate, &c., and this will necessarily vary as the oil does from which it is made. To remedy this Mr. C. H. Wood, in 1870, proposed making a soap from almond oil instead of olive. This makes a very good and soluble soap, almond oil being very rich in olein, and the only objection I can see to its being used is that there is soap already official and that it is considered suitable. The price of almond oil may be an objection.

In 1874, Professor Tichborne, in a paper to the Pharmaceutical Conference, advocated the use of oleic acid for making the soap. His process was to dissolve soda carb, 4 oz. in water, 8 oz. by heat, and then add oleic acid 8 oz. When all effervescence has ceased the resulting oleate of soda was dissolved in spirit, the other ingredients added, and the liniment finished off. The advantages claimed for this process were that all the soap was in solution, and that in a perfectly neutral state, for if excess of soda had been used, the spirit would have precipitated it. This formula would undoubtedly work well, and has apparently

much to commend it; but, unfortunately, oleic acid is an article which is very prone to change, and certainly not for the better, consequently the resulting soap may sometimes be very objectionable.

The last reference to a soap for this liniment was in 1882, when it was advocated by Mr. George, an American, to make it from oleic acid and caustic soda; the oleic acid being previously made by decomposing Castile soap, and then purifying with oxide of lead, etc. This process would be a practical impossibility with the average chemist. It frequently falls to my lot to prepare large and unexpected quantities of this liniment, and many times I have been annoyed at the time taken to dissolve the soap and the large proportion left behind. Thus, in an experimental trial with as good a specimen of hard soap as I could get, I used 2 oz. of the specimen, and macerated in the menstrum of 16 oz. spirit and 4 oz. water for a week, then filtered off. The result was that 124 grains, or 14 per cent. of the soap was undissolved. Thinking this too much to be insoluble, I made a small quantity of soda soap from a very fine sample of olive oil, and although this was much more soluble than the ordinary soap used, still it was not all soluble.

I have always favored the making of this liniment from a good soft soap, this being relatively more soluble than a hard soap, and, so far as I can see, there is no real reason why it should not be done, because—

(1) It must be equally efficacious in a liniment, the only use of which I believe to be lubricant and stimulant, for surely the substituting of a potash for a soda base cannot make a material difference. Dr. Pereira, in his "Materia Medica," says, in speaking of the tendency of soap liniment to saponify, "On this account druggists usually substitute common soft soap. The only objection to this is its unpleasant smell."

(2) It is easier made, a potash soap dissolving more freely than a soda one.

(3) Although it may be possible to make a soda soap which is far more soluble than a good trade one, and though the corresponding potash soap may not be regarded by some as much more soluble than the soda one, soft soap is altogether a more soluble article.

(4) Many chemists already use soft soap.

(5) According to the late Professor Kedwood the samples of potash soaps which he examined when he was making experiments with lin. terebintho, were singularly free from caustic alkali, though they all contained carbonate. This is important, because by treating such a soap with the spirit necessary to form the liniment the carbonate would be left undissolved.

(6) There is yet another reason, though

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3000	10.50	.75
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6000	21.00	1.40
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For medical Testimonies respecting their value see the following works: "The Electro-Homœopathic Remedies," by R. M. Theobald, M.A., M.R.C.S.; "The Cancer Controversy," by Samuel Kennedy, Esq., L.R.C.S.L.R.C.P., formerly M.R.C.S.E.; "The Mattei Remedies," by A. Toddard Kennedy, Esq., and "The Principles of Electro-Homœopathy," revised by C. Stirling Saunder, L.R.C.P. Also the Pamphlets and Articles by Prof. Pascucci, M.D., Dr. Ackworth, Dr. Clement Conti, Dr. Coli, Dr. Pusreck of Chicago, Dr. Montaniri, etc

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EXTRACTS DOUBLES ET TRIPLES

some may take exception to it, and that is the extra loss in filtering a liniment containing a considerable amount (in bulk) of undissolved matter. Of course, if this were of a heavy granular nature the loss would not be so great, but in this case the matter left on the filter is so gelatinous that the liquid cannot drain away. In my case I always press the filters and so save what I can, but in cases where you only have to make half a gallon or so it may not be considered worth while, and though the loss will, of course, be in proportion, yet it still remains.

What I have to suggest, then, as the outcome of my note, is the change from hard to soft soap for making the liniment. As to the formula to be adopted, I, of course, leave it to the proper persons to deal with it, as some other points would have to be considered, most notably the tests for soft soap as at present existing in the B.P. The present color is undoubtedly wrong, and Professor Redwood acknowledged the error, as the 1864 Pharmacopœia gives color as "yellowish-white," though the actual color will, I think, possibly depend to a certain extent on the amount of water contained. Then a test would have to be introduced controlling the alkalinity, as in the U.S.P.—*Chemist and Druggist*.

PHARMACOLOGY OF COD LIVER OIL.*

BY M. PATIEN.

Cod liver oil has been much employed for many years both as a food and as a medicine, some physicians regarding it a very easily assimilated food; others, although taking into consideration its food value, look upon it particularly as a medicine by virtue of the curative effects of haloids contained in it and the alkaloidal and other bodies obtained from it by M. Gautier.

Cod liver oil is obtained not only from *Gadus morrhua*, which is caught off the coast of Newfoundland and Iceland, but also from *G. cellarius* and *G. carbonarius*, which are found near the coasts of Norway, England and Scotland, and *G. merlangus*. It is sometimes mixed with the oils obtained from sharks' livers, but the most common adulteration is the addition of vegetable oils and oils obtained from the seal, dolphin or young whale.

Bouchardat considered cod liver oil, and on the method of extraction depends the therapeutic, chemical, and physical properties of the oil. According to the Codex, the fresh livers should be cleaned from adhering membranes, cut into small pieces, and heated over

a water-bath, then the oil is pressed out, and

*Abstract of a lecture before the Paris Societe de Therapeutique translated for the Montreal Pharmaceutical Journal.

after standing for some days is filtered through paper; the resulting product is of an amber color. This process is not used to any great extent, as it gives an oil which does not contain any of the principles which a good cod liver oil should contain.

In Norway and Denmark the fresh livers are thrown into steam-jacketed kettles, which are then filled with water and heated by a water-bath or by a jet of steam; the oil which separates is almost colorless or of a light greenish yellow. After several days' standing the livers undergo a sort of fermentation, after which the oil which separates has a yellow color, and as the fermentation continues, the livers are boiled with water, which causes the separation of a brownish, nauseating oil which is used only for certain manufacturing purposes.

The liver is richest in oil towards the autumn, thereby rendering the oil liable to be changed by atmospheric action, some simply press the oil from livers in vessels in which the air has been replaced by inert gases such as hydrogen, nitrogen, carbonic dioxide.

According to De Jongh, cod liver oil contains gaduine, oleine, margarine, butyrine, acetine, biliary acids and coloring matters, phosphoric and sulphuric acids, lime, magnesia, soda, iodine, bromine, chlorine and phosphorus.

The average specific gravity of cod liver oil by the membranes

As the preparation of the oil takes some time as an agent of calorification, and in addition to its thermogenic effect, it also has a dynamic action, by which patients become stronger and fatter, while at the same time respiration becomes stronger and the appetite increases. These effects, which are not produced by any other fatty body, are due to the principles contained in the oil; they are due not only to the iodine and phosphorus compounds, but also to the bodies isolated by Messrs Gauthier and Mourgues: namely the alkaloids butylamine, amylamine, hexylamine, dihydrotoluidine, aselline, morrhaine and morrhucic acid. Yellow oil contains about 50 centigrams of these alkaloids to the kilogram, white oil contains at 15° C. is .928, at -8, C. (17.6° F.) it thickens and becomes of the consistence of honey; dolphin, seal and whale oils congeal at 0° C. (32° F.) The rise of temperature on the addition of sulphuric acid is greater than with other oils.

This oil possesses all the properties of fatty bodies, but it is more easily assimilated than other fats; it may be given in much larger doses and its use may be continued for longer periods, properties due to the presence of the biliary elements, which facilitate absorption, by modifying the physical condition of the oil, and thus allowing it to be more easily absorbed but traces, as it is expressed before the

leucomaines of the biliary tissue have entered into solution. It is only in the second step of the preparation that the livers undergo a kind of autodigestion during which the biliary coloring matters are liberated and dissolving in the oil, give it a yellow color. It must here be remarked that this autodigestion is not a putrefactive process, since the oil is of an acid reaction, whereas it would be alkaline, due to the presence of ammonia and methylamine, which always accompany putrefaction. It is only later that this takes place, when the brown oil, which should be used only for industrial purposes, is collected.

According to Gauthier and Mourgues it is to morrhaine and morrhucic acid that cod liver oil owes its properties as a diuretic and diaphoretic, and morrhaine forms about two-thirds of the total alkaloids; morrhucic acid, which is the body called *g aduine* by De Jough, is contained to the extent of five or six times the quantity of alkaloids, the latter is not poisonous, morrhaine only slightly, the other alkaloids more so. These alkaloids exist in combination with phosphoric and phospho-glyceric acids to form lecithines.

According to Bouillot, who has tried the action of the total alkaloids of cod liver oil, combined with morrhucic acids, this mixture has strong diuretic and ureopoitic properties, the excess of urea excreted showing that these principles stimulated intra-organic oxydation.

As regards the indications for the use of cod liver oil, in tuberculosis it increases the assimilation of starchy and albumenoid matters, it facilitates the oxydation of the toxines secreted by the *Bacillus tuberculosis*, and at the same time causes the elimination by the urine of the toxines which have escaped oxydation.

To mask the disagreeable odor and taste, it should be aromatized with a few drops of oil of bitter almond or eucalyptus. The capsular form is of no value, as patients cannot take sufficient to be of any value. Oils, the taste of which have been changed by chemicals or to which alkalies have been added, should not be used, because the natural acids being saturated, the alkaloids are liberated, the fatty matter saponified, and the iodine and phosphorus thrown out of their organic combinations, and none of the succedanei so far proposed can equal the natural oil in its effects on the system.

The latest addition to pharmaceutical Journalism is the *Alumini Journal*, published by the Alumini Association of New York College of Pharmacy. Judging from the list of editors which is composed of the names of men prominent in American pharmacy, the *Alumini Journal* should take a high place in the pharmaceutical literature.

La Pharmacie a Quebec.

Sic vos, non vobis mellificatis, apes!

Le commerce de pharmacie, à Québec, subit actuellement une crise qu'il était facile de prévoir depuis longtemps. Pharmaciens, photographes, épiciers, &c, annoncent la vente des remèdes brevetés et autres marchandises considérées comme appartenant au commerce pharmaceutique, à des prix plus bas que content ces articles achetés à la douzaine. Certaines personnes étrangères à la pharmacie vendent aussi au rabais, pour l'usage des médecins, des teintures et autres drogues fabriquées par des mains profanes spécialement pour ce commerce à bon marché.

En un mot, la pharmacie n'est plus aujourd'hui le domaine du pharmacien qui a fait des études spéciales et qui n'a obtenu son droit de pratiquer qu'après des examens sévères: le commerce de la pharmacie appartient aujourd'hui à quiconque veut l'exercer.

Les causes de cette crise sont connues:

1^o Défectuosité de la loi de pharmacie qui permet de sévir contre le pharmacien de détail sans pouvoir atteindre le commerce pharmaceutique de gros, commerce que le premier venu peut exercer sans qualification aucune.

2^o Vente par les propriétaires de remèdes brevetés ou par les pharmaciens de gros aux photographes, épiciers, marchands généraux et autres aux mêmes prix qu'aux pharmaciens.

Dans le premier cas, il appartient à l'Association Pharmaceutique de la Province de Québec de prendre les mesures nécessaires pour arriver à l'application des mêmes lois et des mêmes règlements à tous ceux qui font la vente des drogues.

D'un autre côté, il serait facile aux propriétaires des remèdes brevetés et aux pharmaciens de gros de faire disparaître la cause de la vente de leurs marchandises à vil prix. Le plus simple raisonnement leur démontre que leurs intérêts sont intimement liés à la pharmacie de détail et que c'est en protégeant celle-ci qu'ils se favorisent eux mêmes.

DR. J. A. HAMEL, *Pharmacien.*

Prof. T. E. Thorpe, F. R. S., has been appointed principal chemist for the English Inland Revenue Laboratory at Somerset House, replacing Dr. Bell, C. B., F. R. S., who has retired after 40 years in the Inland Revenue service as assistant chemist and as chief. Prof. Thorpe has a world wide fame as a chemist, having been professor of chemistry at the Royal School of Mines, and the Yorkshire College at Leeds, but is best known as the author of *Thorpe's Analysis, Inorganic Chemistry*, and as editor of *Thorpe's Dictionary of applied chemistry.*

AMERICAN PHARMACEUTICAL ASSOCIATION.

The American Pharmaceutical Association has sent the following circular to its members:

To the Members:—

As your committee of the Scientific Section of this association, we desire to call your attention to your responsibility in connection with your membership: and would urge that you give immediate attention to the matter of contributing to the Scientific department of our association in the coming year. We would strongly urge that you should not dismiss the matter from your mind and leave your work until the time of approaching the meeting of '94, but at least start in the work at once. It is to be hoped that you will select a subject which has a special interest to you, and report the same to the chairman of this committee at an early date. If we can be of any assistance whatsoever, call upon us freely, and we will be happy to serve in our capacity in any way that you may command. It is gratifying to state that a number of encouraging letters have already been already received from members who promise to contribute papers. Our coming meeting evidently will be an enthusiastic one. The queries are intended to be merely suggestive, and it is to be hoped that the different members in glancing over this advance list—which may be the only one sent out—will find something that will interest them, or, suggest to them something else which will be more acceptable.

LIST OF QUERIES PROPOSED.

1. The Ferric Hydrate process of assay. With which drugs does it give uniformly satisfactory results?
2. Peroxide of Hydrogen solution is always furnished of an acid character. Is it allowable to remove this acidity before dispensing, and can it be done without certain injury to the preparation?
3. White Castile Soap. Is its quality as good as formerly? What is the character and composition of the imitation on sale in many pharmacies?
4. Ung. Zinci. Oxidi as prepared by the formula of U. S. P. becomes hard and tough. Would it not be advisable to diminish the proportion of zinc oxide and modify the process with the purpose of securing a chemical union of zinc with the fatty acids?
5. It is said that *Grindelia squarrosa* is sold largely instead of *G. robusta*. To what extent is this true? Is the substitution a serious one?
6. The employment of many remedies in the effervescent form has of late years become very popular. Could not the same remedies be given to better advantage with carbonic acid

and water?—an article easily furnished at all times by the pharmacist; and should not Carbonic-Acid Water be restored to its place, in the pharmacopœia and its use encouraged?

7. How do the various commercial brands of Bismuth Subgallate compare with one another and with Dermatol?
 8. Do the so-called elegant preparations of Cod Liver Oil, from which the oil has been removed, possess any therapeutic value?
 9. Write an essay on the application of Acetone in pharmaceutical processes in the place of Alcohol or Ether.
 10. Do the "Pepsin Gums" so freely advertised contain any pepsin?
 11. What is the quality of the Reduced Iron dispensed by pharmacists?
 12. Can Ginseug (*Panax quinquefolium*) be cultivated? Has it been attempted?
 13. The names of Medicinal Plants of commercial value that are gathered in North Carolina. Their value and relative amount sold in this country and exported.
 14. What relationship, if any, exists in the drug between the alkaloids hydrastine and berberine?
 15. With what acid, if any, are the alkaloids hydrastine and berberine combined in the drug?
 16. Is the poisonous constituent of *Rhus toxicodendron* altogether destroyed when the plant is dried?
 17. *Anemone pulsatilla* is valued in medicine. Does the plant depend on *anemonin* for its value?
 18. Is there any drug action in *nux vomica* that cannot be obtained from the alkaloids, strychnine and brucine.
 19. To what degree does the resin of podophyllum represent the therapeutical force of podophyllum?
 20. What advantages, if any, can tablets offer over pills, either sugar or gelatin-coated?
 21. To what extent do the official plant preparations known as tinctures and extracts deteriorate?
 22. Does *Rhubarb* contain a cathartic principle identical with the cathartic acid of senna?
 23. What is the condition of the lard oil of the market?
- For these titles we are indebted to various members who have forwarded them to your committee. *Select one, or name one more acceptable; and let us hear from you.*
- L. E. SAYRE, *Chairman*, Lawrence, Kansas.
 CHARLES M. FORD, *Secretary*,
 700 15th Street, Denver, Col.
 F. S. HERETH, *Associate Member*,
 194 Randolph Street, Chicago, Ill.

THE VALUE OF WATER ANALYSIS.

Abstract of a lecture by W. P. Mason, Rensselaer Polytechnic Institute, Troy, N. Y.

A water analysis is really not an analysis at all, properly so called, but is a series of experiments undertaken with a view to assist the judgment of determining the potability of the supply. The numerical results of a water analysis are not only unintelligible to the general public, but are not always capable of interpretation by a chemist, unless he be acquainted with the surroundings of the spot whence the sample was drawn, and be posted as to the analytical methods employed. It is very common for water to be sent for analysis, with the request that an opinion be returned as to its suitability for potable uses, while at the same time all information as to its source is not only unfurnished, but is intentionally withheld, with a view of rendering the desired report unprejudiced in character. Such action is not only a reflection upon the moral quality of the chemist, but it seriously hampers him in his efforts to formulate an opinion from the analytical results.

For instance, a large quantity of common salt is a cause of suspicion when found in drinking water, not because of any poisonous property attached to the salt itself, but because it is usually difficult to explain its presence in quantity, except upon the supposition of the infiltration of sewage; yet an amount of salt sufficient to condemn the water from a shallow well in the Hudson Valley could be passed as unobjectionable if found in a deep-well water from near Syracuse, N. Y. A knowledge of the history of the water is no less important in order to interpret the remaining items of the water analysis. Some time since a water was sent from Florida to this laboratory for examination and found to contain 1.18 parts "free ammonia" per million. Much "free ammonia" commonly points to contamination from animal sources, and had it not been known that the water in question was derived from the melting of artificial ice made by the ammonia process, the enormous quantity of ammonia found would have condemned it beyond a peradventure. As it was, the water was pronounced pure, the other items of the analysis having been found unobjectionable.

Analytical results which would condemn a surface water are unobjectionable for water from an artesian well, for the reason that in the latter case high figures in "free ammonia" or "nitrates" are capable of an explanation other than that of sewage infiltration. Even though such water should have at a previous period come in contact with organic waste material, yet the intervening length of time and the great distance of underground flow would have fur-

nished abundant opportunity for thorough oxidation and purification.

"Deep" samples taken from the same lake, at the same spot and depth, will greatly vary in analytical results if the temperature of the water at the several dates of sampling, should be markedly different, owing to the disturbing influence of vertical currents.

Again, suppose it is desired to determine whether or not the water of a large stream is contaminated with upstream sewage as to be unfit for a town supply. An analysis of the water taken from the site of the supposed intake would very probably be valueless, because the enormous dilution to which the admitted sewage would have been subjected would remove from the analytical results everything of an absolute character. Examinations of any real value in such should always be of a comparative nature. Samples should be taken above and below the point of contamination, and again at the proposed intake. If the difference between the first and second samples, which is a measure of the pollution, be maintained, or nearly so, at the point of the intake, then the water should be condemned no matter how completely the analytical results fall within the limits of the so-called standards of organic purity.

As Nicholas has well said, "It is a great mistake to suppose that the proper way to consult a chemist is to send a sample of water in a sealed vessel with no hint as to its source. On the contrary, the chemist should know as much as possible as to the hint and source of the water, and if possible should take the sample himself." In taking samples for so important a matter as a town supply, the chemist should unquestionably personally superintend their collection; but for individual outlying waters, printed instructions have to be frequently depended upon. Those issued from the laboratory are as follows:

Directions for taking a water sample:

Large glass-stoppered bottles are best for sampling, but as they are seldom at hand a two-gallon new demijohn should be employed, fitted with a new soft cork. Be careful to notice that no packing straw or other foreign substance yet remains in the demijohn, and thoroughly rinse with the water to be sampled. Do not attempt to scour the neck by rubbing with either fingers or cloth. After thoroughly rinsing fill the vessel to overflowing, so as to displace the air, and then completely empty it.

If the water is to be taken from a tap, let enough run to waste to empty the local lateral before sampling; if from a pump, first pump enough to empty all the pump connections; if from a stream or lake, take the sample some distance from the shore, and plunge the samp-

ling vessel a foot and a half below the surface during filling, so as to avoid surface scum.

In every case fill the demijohn nearly full, leaving but a small space to allow for possible expansion, and cork securely. Under no circumstances place sealing wax upon the cork, but tie a piece of cloth firmly over the neck to hold the cork in place. The ends of the string may be afterwards sealed if necessary.

Bear in mind throughout that a water analysis deals with material present in very minute quantities, and that the least carelessness in collecting the samples must vitiate the results. Give the date of taking the sample, and as full a description as possible of the soil through which the water flows, together with the immediate source of possible contamination.—*Engineering News*.

PHARMACEUTICAL NOTES FROM THE FRENCH JOURNALS.

TEST FOR GLUCOSE IN URINE.—A reliable test for the presence of sugar in urine has been found by Guirini, a Hungarian pharmacist. It consists of a solution of acid propionic (2 per cent.) in the official solution of soda of the Austrian Pharmacopœia. When ten drops of the suspected urine are poured into 5cc. of this solution and the mixture boiled for 30 seconds, the color changes to a deep blue in the presence of even one-tenth per cent. of sugar, normal urine being colored green. The reaction is based on the fact that propionic acid is reduced to indigo in the presence of sugar at the boiling point.—(*Journ. de Pharm. d'Anvers*.)

BORO-SALICYLATE OF SODA is prepared by M. P. Adams (*Bull. de la Soc. de Chim.*) by boiling together in a flask with return condenser 62 gm. (one molecule) of boric acid, with 160 gm. (one molecule) of sodium salicylate in 350 gm. of water; the resulting syrupy liquid by evaporation in shallow dishes leaves an amorphous, transparent mass. This boro-salicylate of soda dissolves in four times its weight of cold water and in its own weight of water at 40° C. (104° F.). It exists as a combination and not as a mixture, since it does not act on litmus, curcuma, or any of the ordinary tests for boric or salicylic acids. Boro-salicylic acid does not exist in the free state, because on treating the boro-salicylate with an acid a mixture of boric and salicylic acids is obtained.

EHRLICH'S TEST FOR TYPHOID FEVER AND PNEUMONIA is formed of two solutions as follows:

SOLUTION NO. 1.

Acid Sulphanilic.....2 gm.
Acid Hydrochloric 0.50.
Dissolved in 1 litre of distilled water.

SOLUTION NO. 2.

Sodium nitrate .50 dissolved in 100 gm. of distilled water. Mix 5cc. of solution No. 1 with 1cc. of solution No. 2, and add an equal volume of urine saturated with ammonia. In a case of typhoid fever or pneumonia a red coloration is produced, and on shaking the froth also is colored; on standing for 24 hours a green precipitate is formed.

In typhoid fever this reaction appears after the end of the first week and disappears between the second and third week. This reaction is not produced in gastro-intestinal catarrh.

ASSAY OF ACONITE.—M. Keller in *Schweitz Wochenschs.* By treating aconite root with ether the author has obtained .87 to 1 per cent. of crude alkaloid in the form of a partly crystalline, flaky mass. To separate the crystallized aconitine from the amorphous base, the mass is lixiviated with small quantities of ether, which dissolves out the latter and leaves the former as a white crystalline powder. From 0.282 of crude alkaloid taken 0.230 of crystallized alkaloid was obtained. A solution, obtained by dissolving the crude alkaloid and adding water to produce slight turbidity and then adding alcohol to dissolve the precipitate, on spontaneous evaporation yielded the pure alkaloid in colorless crystals.

PASTILLES OF EXTRACT OF KOLA.—Almost all extracts may advantageously be mixed with chocolate in the preparation of pastilles. The following formula produces an excellent preparation of agreeable taste:

Extract of Kola.....	1 gr.
Powd. Chocolate.....	10 "
Powd. Milk Sugar.....	1 "
Syrup	q s.

Triturate the extract and milk sugar, so as to form a pulverulent mixture, then add the chocolate and enough syrup to form a mass which is then divided into 10 pastilles.—M. F. Gay in *Rev. Pharm. de Gand*.

Journal Notes

The Anchor Medicine Co. of Quebec have opened a branch establishment in Montreal at 1626 Notre Dame street, which will be under the superintendance of Mr. Gustave Piché.

R. N. Kn. it, drugs, St. John, N.B. has assigned with liabilities of \$5,000. He had only limited trade, and of late years has found it difficult to compete with younger men.

NOVA SCOTIA.

Business has been backward this spring in all lines owing to the cold weather caused by more than usual quantities of ice in the gulf.

Moncton, N.B.—C. T. Nevins has returned, having spent a well earned holiday in Boston.

QUANTITATIVE WORK FOR BEGINNERS IN CHEMISTRY.

BY W. A. NOYES.

In most chemical laboratories the work which is given to beginners is chiefly or altogether of a qualitative nature. In many schools and colleges the work begins with a study of the qualitative properties of a series of chemical elements and their compounds, chiefly of gases and metalloids. In other schools the students begin at once with the study of qualitative analysis. A large majority of students never get beyond this first stage, and it is safe to say that they acquire but a very slight knowledge of real chemical work. The work which is done in scientific and technical laboratories and in chemical factories consists almost entirely of quantitative analyses or of the preparation of chemical substances carried out in an accurate quantitative manner. Indeed we are accustomed to say that the science of chemistry began with the use of the balance, and we all recognize the extreme importance of quantitative relations in most of our chemical work.

We must keep in view several objects in selecting the laboratory work for beginners. First, they should become personally acquainted with the appearance and properties of a number of the chemical elements and their compounds. The acquisition of a large amount of knowledge of this kind is desirable, but we may easily make the mistake of endeavoring to impart too much. A few topics exhaustively studied will prove of greater value than a superficial study of a great many. This is especially true of qualitative tests with solutions. A beginner can apply a great many such tests in a comparatively short time, but unless his powers of discrimination and of memory are very unusual, he will retain only a confused recollection of his work. A second object is to secure a training in delicate and accurate manipulation and in the use of different forms of apparatus. A third object is to fix in the mind of the student knowledge which may have been imperfectly acquired by watching the demonstrations of a lecturer or by the study of a text book. Some teachers carry this thought so far that they seem to imply that no knowledge of a topic can be really acquired by the student until he has demonstrated it by personal experiment. Indeed I have heard some teachers contend that they would not allow a text book in the laboratory, but would have their students acquire all of their knowledge at first hand by their own experiments. Such a principle, if logically carried out, could never take the student beyond the stage of alchemy, for the student of to-day is no better able to develop a science of chemistry for himself than was

the old alchemist. And if you direct his experiments in such a way as to develop and elucidate the science as it is now known, you have forsaken the principle just as much as though a text book were used.

It seems to me that such views arise from a mistaken conception of the real nature and purpose of laboratory instruction. After all the method of personal experiment is a very slow and laborious method of acquiring knowledge. Only a very small fraction of our knowledge of a science, if that knowledge is by any means adequate, has been acquired in that way. It is true that the method is absolutely essential for beginners, and I do not think any of us get beyond the need of it. The man who never uses a balance or handles a test tube will not for very long be a strong factor in the advancement of chemical science. But the method of laboratory instruction is essential, not because knowledge cannot be acquired in other ways, but because at the start the imagination of the student is deficient, and it is only by means of personal experiments of his own that he can acquire the ability to understand and appreciate the experimental work of others. The memory is also deficient, and the personal work on a subject may be of great value for that reason as well. But the things which we should endeavor to secure in laboratory instruction are, first, such an acquaintance with experimental methods as shall enable the student to thoroughly grasp the solid experimental basis of the science and give him the mental habit of referring everything back to the rigid experimental test; and second, the ability to do accurate and independent experimental work himself. No student can demonstrate for himself more than an infinitesimal number of experimental facts in comparison with the vast array of such material which has been accumulated.

If the principles which I have suggested are correct, we should endeavor to secure as thorough a knowledge as possible of experimental methods, and neatness and accuracy in laboratory technique rather than the illustration of as large a number of details as possible. These results can be secured more fully by a series of quantitative problems than by a large amount of merely qualitative work. I do not mean by this that qualitative work is not necessary and desirable as well, but for the beginners, especially, quantitative work is of more value. In order to make my meaning more clear I will give a few illustrations. One of the earliest problems that I give is the determination of the weight of a liter of hydrogen essentially by Regnault's method. A bulb containing about one half a liter and bearing a three-way cock is exhausted with a Buusen pump and the residual pressure de-

terminated with a manometer. The bulb is then weighed, using a sealed counterpoise of nearly the same volume, then filled with hydrogen, temperature and pressure noted, and weighed again. The results obtained by careful work are usually one or two per cent. too high. A similar determination of the weight of oxygen gives results with a far smaller percentage error. The determination of the amount of oxygen in potassium chlorate by heating about a gramme of the salt in a small porcelain crucible placed within a second gives a good illustration of the law of constant proportion. The preparation of perchlorate can be made to furnish a considerable amount of valuable instruction. The capacity of a bottle holding about two liters is determined, a calculation of the amount of potassium chlorate required to give oxygen enough to fill it when only the first stage of the reaction is used is made, and the experiment performed. Then the potassium chlorate and potassium perchlorate are separated and the latter is purified by crystallization. A study of the qualitative reactions which distinguish potassium chloride, potassium chlorate and potassium perchlorate is made and the tests to establish the purity of the last are applied. Finally a determination of the amount of oxygen in potassium perchlorate gives, in connection with the last problem, an illustration of the law of multiple proportion. I will give but one further illustration—the determination of the relative atomic weights of hydrogen, chlorine and silver. A known weight of pure silver is dissolved in nitric acid, precipitated with hydrochloric acid and the silver chloride weighed on a Gooch crucible. In a dilute hydrochloric acid the amount of hydrogen is determined by allowing 10 c. c. of it to act on an excess of zinc in an appropriate apparatus, the hydrogen being measured in a gas burette, accurate corrections being made for temperature, pressure, and aqueous pressure. In another known volume of the same acid the chlorine is determined by precipitation with silver nitrate.

By a careful selection of problems it is possible to give the student, within a reasonable time, practice in the careful use of the more common forms of chemical apparatus. In other words, the student can make a beginning at working as a chemist instead of doing scarcely more than play with bottles and test tubes. Among other advantages of this method of instruction is the fact that the results which are obtained are usually a fairly good criterion by which to judge of the care with which the student has worked, and the student soon finds that careless work will not give good quantitative results. Also the student dwells long enough on a problem so

that many details become thoroughly fixed—a result that is rarely obtained in qualitative work, except by means of many repetitions. I am aware that there are some practical difficulties in the way of carrying out the methods which I propose, especially in the matter of apparatus, but these difficulties are not nearly so great as they appear at first sight, and I am sure that they are not greater than those which have been overcome in many of our physical laboratories.—*Jour. Am. Chem. Soc.*

CHLORINE.

At a recent meeting of the London section of the Society of Chemical Industry, Mr. F. Bale read a paper on the "Commercial Production of Chlorine by the Ammonia-Soda Process." The outline of the process is given in the following abstracted description of the various stages of the preparation. At the outset, ammonium chloride in powder is mixed with magnesia in powder, and heated in a series of retorts one above the other. The ammonia is evolved in a downward direction through exits at the bottom sides of the retort; the volatilization of ammonium chloride being thus prevented. The ammonium chloride powder is mixed by stirrers, revolving through the cylinders. When the ammonia has been evolved, superheated steam is passed through the mixture; passages being opened for it by the revolving stirrers; and a strong current of hydrochloric acid is evolved. The mixture above stated, after the ammonia is evolved, may be agglomerated by spraying a solution of ammonium chloride, and stirring sufficiently to allow of the subsequent passage through it of superheated steam after the ammonia is evolved. The pure hydrochloric acid thus evolved is then dried by a current of strong sulphuric acid, descending a Glover tower, heated up in a Cowper stove, and passed into a Deacon furnace containing peroxides, made into marbles, and heated up to a temperature of 550° C., when a strong current of chlorine is evolved, which can be used at once for the manufacture of bleach. Two thirds of the hydrochloric acid thus used become fixed as chloride, from which it may be removed as dilute chlorine by heated air, or as hydrochloric acid by steam. The hydrochloric acid so obtained is passed into a series of cylinders containing peroxides, and strong chlorine may be obtained as before. As a continuous process for the production of chlorine, the author proposed to mix the hydrochloric acid gas evolved, as above described, in proper proportions with air; both having been previously dried, and heated to the required temperature, when a continuous current of dilute chlorine is obtained of 40 per cent. or more, from the bottoms of the cylinders, and which is prac-

tically free from hydrochloric acid if the drying has been carefully done, and so may be used at once for the production of bleaching powder. Mixtures of hydrochloric acid gas, air and steam may also be used with more or less advantage, the gases evolved being afterward treated in separate cylinders, which for this purpose may be connected on the principle of the Hargreaves cylinders—*Scien. Amer.*

CHICAGO COLLEGE OF PHARMACY.

I enclose biography of the late Prof. Martin together with resolutions adopted by our Faculty upon his death.

Hugo Wm. Courad Martin was born at Fond du Lac, Wis., March 8th, 1853.

At the age of seventeen he entered the employ of Huber & Co., of Fond du Lac, remaining with them three years

He came to this city in 1873, and clerked for L. Scrieber and afterward with C. M. Weinberger. Mr. Martin graduated from the Chicago College of Pharmacy, in 1875, and after graduating joined the College becoming one of its most active members.

He was married on May 4th, 1878, to Miss Lena Amelia Kirchner.

In the summer of 1879, Mr. Martin opened a pharmacy at State and Harrison Sts., where he continued until his death.

He served two terms as a trustee of the Chicago College of Pharmacy, resigning in 1892, to enter the Faculty as director of the Dispensing Laboratory a position he occupied until his death.

An earnest advocate of organization, Mr. Martin led the local druggists in their fight against the telephone companies and later against the cutters

He was a member of the Am. Ph. Assoc. and for a year the secretary of the Ill. Ph. Assoc. An efficient and popular instructor, an aggressive and enterprising pharmacist and a thorough gentleman, Prof. Martin leaves hosts of friends to mourn his untimely decease. He died Sunday, April 29th, after a short illness of appendicitis. He was buried in Gracelo Cemetery, with Masonic rites. He leaves a wife and two children.

WHEREAS, we the members of the Faculty, of the Chicago College of Pharmacy, are for a second time this year called upon to take cognizance of the reaper Death in our midst, and

WHEREAS, while we all wait in humble innocence, the final decree of an inscrutable Nature, we can only bow in submission, express our sorrow for him, who has preceded us to that "undiscovered country from whose bourne no traveller returns," and to extend sympathy to the near and dear ones who are left mourning, awaiting the great summons, be it therefore

RESOLVED, that in the death of our able

colleague, Prof. H. W. C. Martin, not we alone, but the whole pharmacal world, have lost a most earnest, modest and kind-hearted friend, one rapidly advancing to recognition in scientific and literary attainments, and whose conscientious and industrious discharge of his duties, endeared him to his many pupils, and secured the esteem of all who knew him.

RESOLVED, that we tender our profound sympathies to the family of our departed co-laborer, in this their hour of affliction, mourning with those who mourn, as we in the past shared with them in the time of sunshine, the pleasure of association,

RESOLVED, that a written copy of these Resolutions be forwarded the family of the deceasee, that they may be entered upon the records of this body, and that that copies be furnished the various pharmacal journals for publication, F. M. Goodman, Dean, C. S. N. Hallberg, J. A. Wesener, N. Gray Bartlett, F. S. Hereth.

A SKETCH OF PHARMACY LEGISLATION IN QUEBEC.

During the early years of the Montreal Chemists' Association the subject of Pharmaceutical Legislation had often been mooted. At the regular meeting of this association, held Oct. 1, 1868, Dr. J. Baker Edwards delivered an address on Pharmaceutical Education, giving an account of the establishment of the various Colleges of Pharmacy in America, and concluded with a suggestion for the creation of a college in connection with the Montreal Association.

At the meeting of March 18, 1869, a sketch of a Pharmacy Bill was presented for discussion; this, having received careful attention at several meetings, was finally prepared for the Local Legislature and presented at Quebec December, 1869.

This maiden bill was entitled "A Bill to incorporate the Quebec College of Pharmacy." It provided for the examination, licensing and registration of chemists by the board of the college. It exempted physicians, and did not make any provision for teaching. This bill met with strenuous opposition from the medical men in committee, and was so badly mangled that the chemists withdrew it.

In 1870 an Act to incorporate the Pharmaceutical Association of the Province of Quebec was prepared. Its preamble set forth that certain persons had been associated together, under the name of the Montreal Chemists' Association, for the purpose of advancing chemistry and pharmacy and now desired the "powers" of an incorporated body.

This Act in no way affected keeping open shop, and it was provided that "persons holding a license from the College of Physicians

and Surgeons of Lower Canada, or from any College of Chemistry and Pharmacy recognized by the law of Great Britain," might be made members without examination. The Act contained nothing likely to provoke opposition, and being in fact only an incorporation act, it went through without difficulty.

The College of Physicians and Surgeons, being a powerful body, jealous of its privileges, and having great influence by its numerous members in the House, the chemists found that it would be necessary to come to some arrangement with the College or their chances of obtaining satisfactory legislation would be well-nigh hopeless.

An interview was obtained with the governors, when the deputation of chemists was invited to formulate its requirements, put them in writing, and submit them to the College for consideration at a future time. In September, 1873, a letter addressed to Dr. W. E. Scott, President of the College, and signed by Nathan Mercer, was printed and circulated among the governors. This letter was explanatory of the intentions of the chemists if they were allowed to obtain an Act of Parliament incorporating a College of Pharmacy with compulsory powers of examination, and the control of pharmacy transferred to it.

The letter concluded with the humble remark: "However desirable it is that such an Act should be passed, we would not apply for it until we had in the first instance obtained the approval of your College."

After several conferences, the Medical College, being satisfied that the chemists had made proper provision for professional education, signified that its opposition to the wishes and aspirations of the apothecaries had been converted into gracious consent.

In 1875 the pharmacists obtained the long-sought-for powers "for regulating the qualifications of persons who may carry on the business of pharmaceutical chemists and for the regulation of the sale of poisons," in the "Quebec Pharmacy Act of 1875." This Act amended the Pharmacy Act of 1870, and vested the power of examination in the Council of the Pharmaceutical Association. It had a short schedule of poisons, and physicians, wholesale dealers and veterinary surgeons were exempt from its provisions.

Under this Act the first examination was held in Montreal, April, 1875. Messrs. Wallace Dawson, R. H. Bryson, and J. C. Gordon being the first diplomates.

In 1879 the Montreal College of Pharmacy, which had been carrying on the educational work as a voluntary body, was incorporated.

The Act of 1875 was worked for ten years, during which time a number of defects and de-

fective definitions became apparent, and in 1885 an amended Act was obtained, which interpreted the terms "apprentice," "member," "council," "register," "druggist," &c., &c. It gave the power to elect honorary members, added history and geography to the preliminary examination, and required three years practice before taking the Minor examination. Pharmacists are required to furnish the Registrar annually, in May, a list of their employes. A new schedule was added of common drugs which store-keepers might sell; this contained crude carbolic acid and Paris green.

Medical men were still unaffected by pharmaceutical legislation, and a further amended Act was obtained in 1890. The new conditions here introduced included the creation of a board of trustees to hold real property, increase of penalties, physicians keeping open shop, to pay the registration fee for licentiates, and in the cities of Montreal and Quebec, to cease the practice of medicine on becoming pharmacists, remaining exempt from examination however, dealers in photographic supplies to be classed with wholesalers. The schedule of poisons was extended, and the list of permissible drugs abrogated. A new paragraph specified Paris green and London purple as saleable when properly labelled and in well secured packages.

We have thus briefly sketched the legal enactments under which pharmacy has been and is now practiced in the Province of Quebec. As to the influence of these on the status of pharmacy, and for the protection of the public, there can be no doubt it is beneficial. The large number of persons thronging the portals of pharmacy who are unable to pass the little examination, which is the only bar to entrance, will give some idea of the unsatisfactory and dangerous condition of things which would exist were pharmacy an open trade.

What is wanted now, it seems to us, is the stiffening of the examinations and a rigid enforcement of the law. In the preliminary we would like to see algebra substituted for history. As it is, a student only half right in the elementary rules of arithmetic will pass, and such an one does not create the confidence desirable in those who have the dispensing of powerful poisons. How can he proceed to the scientific study of chemistry, much of which is in algebraic form?

To lower the standards to meet the weakness of the applicants is not to be thought of. A strict application of the law is only justice to those who conform to it, and is in the interest of public safety. That all has not been accomplished that could be wished is only the common experience of those who strive to bring about a better state of affairs.

T. D. R.

EXERCISES FOR STUDENTS.

No. 12. A mass of quartz contains some gold, and twice as much silver. The mass weighs 12 pounds and has Sp. Grav. 3.3654. Find the quantity of precious metals it contains. Gold, sp. grav. 19, Silver, sp grav. 10, quartz, sp. grav. 2.5.

No. 13. A 10-pound block of iron at 32°F, is placed in 4 gal. of boiling water: find the equilibrium of temperature, supposing no heat to be lost. Specific heat of iron .114.

No. 14. How much pure potassium chlorate would be required to produce enough oxygen, to fill a straight cylinder 5 inches x 3 feet internally, at 32°F, and 2 atmospheres.

ANSWERS.

No. 6 13 oz. of 7½% = .975 oz. Morph, 8 oz. of 9% = .72 oz. Morph. 27 oz. of 11½% = 3.105 oz. Morph., total 48 oz. containing 4.8 oz. Morph. The only difficulty here is to find quantities which give 48 oz. averaging 10%. Alligation will not supply the figures required. Let $a + b + c = 48$, then $7\frac{1}{2}a + 9b + 11\frac{1}{2}c = 480$, and $7\frac{1}{2}(a + b + c) = 360$, deduct and $\frac{1}{2}b + 4c = 120$; make $b + c$ as small as possible, to have a large, and $a = 13$, $b = 8$, $c = 27$.

No. 7 Being odorless and neutral, the elements are combined, and the powder can only be a mixture of K Cl. and Na Cl Method same as usual No. 3.

Ans - K Cl 1.49 grain, Na Cl 1.3 grain.

No. 8. 105 - .33 = 72, 72°F = 40°C.

$$\left(\frac{40 \times \frac{1}{273}}{273} \right) \cdot 744 = 1 \frac{853}{853}$$

Ans.—1 gallon. The increase in volume being counter-balanced by the increased pressure.

CHICAGO COLLEGE OF PHARMACY.

The thirty-fourth commencement exercises of the Chicago College of Pharmacy were held at the Grand Opera House on Thursday afternoon, April 26th, '94, at 2.30 o'clock. Opened by an overture, "Welcome," with an excellent musical programme interspersed throughout the numbers, President Thiele introduced the first speaker, Mr. Bodinson, who delivered the salutatory address in a masterly style. Prof. Goodman followed with a humorous sketch of "Student Life," and then President Emil Thiele conferred the degree of Graduate in Pharmacy upon the forty-eight candidates. Prof. Hallberg next delivered an eloquent practical address on "Castanea Visca," showing how the pharmacist was peculiarly fitted for many of the offices and positions of trust which are now held by lawyers, worse than that—politicians, and worst of all—prominent

business men. The prize microscope, donated by Mr. Biroth, was awarded to Mr. R. Breves by Prof. Goodman, who regretted the fact that he had not another one to give Mr. Thorburn, whose work equalled Mr. Breves, but lacked somewhat the extreme nicety thereof. Mr. Thorburn then delivered a valedictory address, which held the audience spell-bound from beginning to end, and will not be easily forgotten by those who had the pleasure of hearing the same. The following is the list of the successful candidates, those whose names are marked with an asterisk being awarded honorable mention:

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|--------------------|--------------------|
| J. A. Anderson, | W. M. Nachtway, |
| W. B. Behrens. | H. A. Nielson, |
| *F. P. Bodinson, | R. W. O'Brian, |
| (G. W. Bohn, | G. S. Orth, |
| L. O. Brechwoldt, | W. A. Plice, |
| *Rudolph Breves, | G. H. Rah fs, |
| S. Lee Caine, | C. A. Roark, |
| T. Francis Cannon, | W. H. Rudder, |
| J. W. Chladek, | J. F. Schefcik, |
| A. H. Christenson, | Fr Seward, |
| R. S. Collins, | O. U. Sisson, |
| C. C. Cook, | F. H. Spiller, |
| *W. E. Coolbaugh, | C. L. Stillman, |
| C. E. Cress, | Jno. Stuchlik, |
| H. A. Delfosse, | *W. A. Stuchlik, |
| E. L. Fitch, | *J. E. Thomas, |
| H. E. Gross, | *A. D. Thorburn, |
| *O. Ha-lenberg, | A. E. Trischman, |
| Fred Hunsche, | H. H. Weissenborn, |
| Ph. Jacobus, | F. B. Wendt, |
| *A. O. Kaczoroski, | G. A. Wiley, |
| C. L. Kranse, | *F. S. Wilson, |
| J. A. Lorenz, | R. E. Yarnley. |
| R. H. MacKenzie, | E. C. Zobel. |

The fourteenth annual reception and banquet, tendered the 34th Graduating Class by the Alumni Association of the Chicago College of Pharmacy, was held at Schiller Recital Hall, Thursday evening, April 26th, '94. A brilliant representation of the gentle sex was present, the grand march began at 9, and the banquet was served at 10. After the toasts were responded to in a manner which highly pleased the participants, fair and otherwise, all again repaired so the hall, where dancing was indulged in until an "early" hour. The toasts responded to were as follows: "Our Fair Visitors," by Dr. J. A. Lydston; "Medicine, the Law and the Ministry," by E. L. Reeves, LL.B.; "The Class of '94," by A. D. Thorburn; "Pharmacy of To day and Yesterday," by Prof. C. S. N. Hallberg.

The menu comprised the following:

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|---|----------------------------------|
| Oysters, Half Shell. | Consomme Royal. |
| Olives. | Radishes. |
| | Pickles. |
| | Boiled Salmon, Sauce Hollandais. |
| | Pomme Parisienne. |
| Tenderloin of Beef, a la Mignon Sauce, Bearnaise. | |
| French Peas, | Pineapple Sherbet. |
| | Roast Spring Chicken on Toast. |
| | Tomato and Cucumber Salad. |
| | Asparagus. |
| | Wesselrode Pudding. |
| Fruit. | Cheese. |
| | Coffee. |
| | Assorted Cake. |

MICROTOMY.

The art of microtomy is really the finest of all fine arts. Indeed, so exquisitely delicate is it that it would seem to have hitherto escaped even the subtle appreciation of the amateur, who rangeth where he listeth, knowing all things and believing all things. The public is unfamiliar with the name of the art; the fame of the microtometist is not noised abroad. Those who appreciate the little glass slips with 'Cole Deum' thereon, the quaint motto of the elder Cole, are less in number than those who gather walking sticks or rejoice in the tracing of brasses, says the *Pall Mall Budget*.

Indeed, collecting is almost unknown, though why people should collect stamps and leave these things alone surpasses our imagination. A day will come, however, when slides for the microscope by the early masters who are even yet living will be as eagerly sought and fondly treasured as were even book plates or violins. Pity it is they worked in Canada balsam, which has the trick of decay.

It is even possible that the reader needs to be told what this microtomy may be. It is, poor soul, the delightful art of cutting inconceivable thin sections of very conceivable substances. There is nothing one may not cut, save one's friends—your fingers always volunteer of their own accord, sooner or later; but some things are unlawful (as, for instance, the coin of the realm,) and some are not convenient (as the tail of a live lion). Moreover, the thing cut must be mounted cunningly on a glass slip, for the end for which the section exists is to be examined under a microscope.

If one would see some microtometist's work, let him seek a medical student possessed of a microscope. The same will show him a number of glass slips three inches long, perhaps, by three-quarters wide. These will be labeled—one "Muscle," another "Sciatic Nerve," a third "Scalp of a Child," and a fourth "Cat's Liver." Such names do not lead one to anticipate art and beauty, and this makes the art and beauty all the more charming.

In the centre of each of these slips, covered by an extremely thin circular disk of glass, he will see a little slice of matter, the size, perhaps, of the head of a tin tack or smaller, and so thin as to be altogether transparent. This is, let us say, your cat's liver etherealized by the microtometist. Under the microscope it has the air of a circular stained glass window; the "cells" of the liver form an interlacing tracery of golden pink, and the diverse blood vessels, of which there are three sorts, appear, if injected, as branching shapes of crimson, blue and other sweet and pure colors, even such as the Madonnas of the old masters were. The scalp may be even more delightful, with its hair like stout brown masts, a greenish cucicle and sunset tinted sub-dermal tissue below.

It is obvious that with such an infinite variety of material the microtometist must needs have a great variety of instruments. Some things he cuts with a common razor in his hand; such must needs be of a firm consistency, neither flabby nor brittle. Some again—larger things—he cuts with a plane. Little things he cannot hold he embeds in wax or carrot or the pith of the elder, and so gets a fingerful that may be grasped and cut. A soft substance, such as human muscle, he hardens by the immersion of a lump of it in a suitable fluid; or he takes it fresh and almost living, and freezes it firm upon a metal slab by means of ether.

A rock is cut into thin slices by a lapidary's wheel, a rotating disk of steel made keen by rubbing diamond powder on the edge, and these slices are stuck to a piece of glass and gradually rubbed thinner and thinner upon emery powder of increasing fineness, and finally upon rouge. Powdery things like sand grains the microtometist overcomes by embedding in hard substances. He particularly dreads and rejoices over such brittle substances as coal. One would expect mere blackness of coal even at its thinnest, but there are certain coals from Scotland which, when cut, reveal myriads of little flattened cases of a streaky orange or lemon yellow, the spore shed long since by the trees which perished to form our coal seams.

There are in London, perhaps, half a hundred or more human beings who live by this unknown art. One we know of plies his trade in a little den high above the roar of the Strand. He sits at his window facing the light, watch glasses and little shallow dishes full of stains around him, microscope and micrometer ready to hand, sometimes amid a heavy aroma of ether from the freezing microtome, and sometimes reminding one oddly of pine trees and wide mountain slopes, with the resinous smell of his Canadian balsam. All about him are little bottles—innumerable little bottles—labeled "skin of toad," "orange pips," "pine inflorescence," "lancelot," "kitten's lung," "tumor," and the like, or, rather, unlike, some of them fit ingredients for the brew of the witch. One whole shelf presently catches the eye, labeled "Mrs. Webster," and in smaller letters the part of Mrs. Webster is specified.

He relates a grewsome story in a tone of pathetic regret; how this Mrs. Webster was a landlady of his who died suddenly—"poor old lady"—and was "post mortemed" by a confidential friend. "So I took these little mementos," he says, waving his hand at the shelf. It is a grim and sordid fate for a landlady that she should be peculated by her own lodger and retailed at 6d., 9d. and 1s. a slice, according to the choiceness of the parts. But there

are those who suspect our microtometist of having obtained his human material in a legitimate way from the dissecting room, and having created his Mrs. Webster for literary effect.

Still the jumble of matters in the corpulent little bottles upon his shelves remain odd enough; pickled organisms from the deep sea are side by side with scraps of plant, root and stem, and the moral remains of a pet puppy; while a fruit that grew and ripened in a jungle in Borneo shares a bottle with some cubic inch of substance that was once part of the vestiture of a human soul in a London hospital. Sooner or later they will come to the knife edge and the glass slip. Our microtometist is, indeed, on the level of Shakespeare. All being pays its tribute to his art; he makes it clear and brilliant for us, using his stains and media not to hide but to display, making truth truer and the visible plain. His work is a veritable microcosm—a summary of the world.

The ordinary microtometists who cut sections for the medical students, as a rule, do little in the direction of cutting rocks. This has a special technique, and is practiced chiefly at the greater geological schools—at the Royal School of Mines, for instance. It is almost impossible to convey an idea of the appearance of sections of some granite rocks when seen in polarized light. Let the reader think of the tints of a film of gas refuse floating on water, of the spectrum thrown by a glass prism, of fire opal, of the mother-of-pearl, of old stained glass windows, of Burne Jones at his best. All these, and more also, will he see in such a rock as picrite or dunite. A day will come when artists will seek these things and learn a thousand delights of coloring from their study, for microscopic sections may be collected for their beauty, for their technical excellence, thinness, and so forth, for their historical interest and for scientific importance.

EXPANSION AND SPECIFIC GRAVITY OF WATER REFERRED TO 15° C. AS NORMAL TEMPERATURE.

(Dr. Chas. O. Curtman, St. Louis, in *Pharmaceutical Era*.)

Water is in its state of greatest density at 4° C., and hence this degree has been generally assumed by physicians as the norm for comparison of volume with other liquids of the same temperature, or, in other words, for determining the specific gravity of liquids with water as a unit. The measuring of volumes occupied by liquids, and the graduation of vessels for this purpose has also been referred to this temperature as a norm. But, as every one knows, it is by no means agreeable to do such work at 4° C., and hence the practice has long since departed from the conditions prescribed on theoretical grounds, and a somewhat higher temperature has been chosen as norm for the

graduation of volumetric and areometric instruments. After various oscillations in the temperature to be used, that of 15° C. has, by general consent, gained the preponderance and in conformity with this usage, the U. S. Pharmacopœia has made this temperature the basis for its volumetric assays and for the tables of specific gravity. From this alcohol alone makes an exception, 15.555° C. (60° F.) being retained on account of its being adopted for that article by the United States custom house. For the purpose of facilitating calculations for reducing volume and specific gravity to a normal temperature of 15° C., the following little table has been prepared. It is absolutely correct for pure water only, but may serve very well for all kinds of aqueous solutions, volumetric reagents, urine, etc., as their expansion and contraction, and therefore their specific gravity, are almost absolutely proportional to those of pure water at the same temperatures. Hence corrections may be easily made in measurement of such liquids at other temperatures than that at which the instruments have been graduated.

Thus, the volume of 1,000 cubic centimeters of water measured at 15° C. expands at 25° C. to 1,002.045 cubic centigrams, and therefore a volume measured at 25° C. must be divided by 1.002045 to give the correct reading for 15° C.

The specific gravity of 1.020 indicated by the urinometer at 25° C. must be divided by 0.997958, as given in the table, to obtain the specific gravity of the urine at 15° C., which results in 1.022. To obtain the specific gravity or volume which aqueous liquids measured at 15° C. would assume at other temperatures, the amount must be multiplied by the figures of the table. To reduce the specific gravity or volume of such liquids, measured at different temperatures, to that at 15° C., the amount must be divided by the figures of the table.

Volume and specific gravity of water at different temperatures compared with water at 15° C. equals 1.000000.

°C.	Volume.	Specific Gravity.
10.....	0.999412	1.000587
11.....	0.999504	1.000495
12.....	0.999511	1.000389
13.....	0.999729	1.000270
14.....	0.999860	1.000139
15.....	1.000000	1.000000
16.....	1.000158	0.999841
17.....	1.000319	0.999680
18.....	1.000507	0.999493
19.....	1.000700	0.999299
20.....	1.000902	0.999098
21.....	1.001115	0.998880
22.....	1.001335	0.998664
23.....	1.001563	0.998439
24.....	1.001799	0.998205
25.....	1.002045	0.997958
26.....	1.002301	0.997704
27.....	1.002565	0.997441
28.....	1.002839	0.997169
29.....	1.003118	0.996888
30.....	1.003409	0.996602

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EXTRACTS FROM THE MARKET REPORT OF GEHE & CO., DRESDEN, APRIL 1894.

CAMPHORA. Under influence of the sharp competition of refined camphor in blocks imported from Japan, which found a good reception, Hamburg refiners felt induced in the beginning of October to bring their quotations for blocks down to 25 grams in conformity with that of bells. In further succession three more general reductions in price have taken place on 1st January, 8th February and 15th March.

CASTOREUM. In the public sale of the Hudsons Bay Company held in London on 13th December only a small quantity of 1085 lb. Canadian castor has been offering, against 1,300 lb. in 1892, 1,600 lb. in 1891 and 1,845 lb. in 1890. The prices obtained were the highest ever paid, and those for better qualities doubly as high as in 1891. The quantity offered for sale shows, compared with that of former years, a decline of about 50 per cent., not taking into account the sale that used formerly to take place in August of each year, which, however, had to be discontinued merely for want of stock. The Moscovite castor, since years almost uncared for, comes again in better demand, owing to its comparatively lower price. The old stocks may be considered as used up, and the quality now offering is still a rather fresh and moist one.

ERGOTA. Although ergot in the past year has been abundantly grown in Russia, as good as nothing has been collected. The large corn crop occupied all hands, so that no attention was paid to ergot, chiefly also on account of the low prices ruling for the latter, at which gathering did not appear worth while. Spain had in return a good crop, evoking correspondingly ample offers, which compelled owners to put their high demand on a more moderate footing. Austria-Hungary and Germany also offered ergot abundantly, thus preventing want to become perceptible, in spite of the deficiency of the formerly important supplies of Russia.

HERBAE MEDICINALES. The consequence of the unfavorable crops in most of the medicinal herbs were with some articles less unpleasantly perceptible than it was at first feared. In peppermint especially is, in spite of the short outturn in England and Germany, no want yet to be observed. The high prices which were asked for the first cut in Thuringia frightened the consumption in favor of the lower valued quality coming from France and Russia, so that later on the second cut with a moderate crop found no market. In general the high quotations for peppermint have had a paralysing influence upon the demand. The

consumption kept back as much as possible, and the brisk business evoked for export by the cholera in the latter years did not set in. The remaining stocks therefore will suffice to cover wants until the new crop comes in. In narcotic herbs the deficiency in many parts could, by better crops in others, partly be made up for, only higher prices had to be granted than in the previous year.

OLEUM AURANTII, BERGAMOTTAE ET LIMONIS. The favorable prospects for the crop of fruits have come true. Bergamots and lemons had a very rich yield, supplying an abundance of raw material for the preparation of essences, and thus causing naturally a further reduction in value of the latter. Particular circumstances associated thereto made the decline in price more severe, such as the keeping back of the United States of North America as the principal customer through the heavy crisis in business there, the bad state of Italian exchange rate, the great distress in Sicily, all of which pressed inexorably peasants and producers to quick realization of their stocks. Under these influences prices for oleum bergamottae have further lost 20 per cent. since autumn last, those for oleum limonis even 30 per cent. and arrived thus at a state in which they have not been for years, and the production does not appear to be paying. The crop of oranges was smaller than in the previous year; nevertheless also the oleum aurantii dulcis could not abandon the market lowering influences. Its price went also down by about 20 per cent.

OLEUM ROSAE. Otto of roses maintained its high value. The consumption got accustomed to it and felt after all more inclined to pay the high price, the more the probability of a decline disappeared by the decrease of stocks. It is of course too soon to speak with definiteness about the views for the coming crop. According to reports from the producing districts it is claimed that, in consequence of the warm springlike weather in January till February the rose trees in the Balkan states have extraordinary quickly developed, whereby the danger of damage by late frosts has considerably been raised.

RADIX RHEI SINENSIS. The outturn of the last crop of Chinese rhubarb gives satisfaction regarding quality; in quantity it might have been larger, fine Canton and Shensi in large pieces being out of stock in China for some months. The only quality on offer is inferior highdried. We hope soon to receive advice of direct shipments of this year's rhubarb for our firm, the new season commenced in January.

ACIDUM CARBOLICUM. The diminished consumption of carbolic acid last year was very

keenly felt, causing a decrease in the imported and exported quantities, as well as a reduction in price. In spite of the fact that disinfecting remedies were less used than in 1892 on account of the milder attitude of the cholera, the real reason for the lessened demand might be based upon the fact that of late other disinfectants such as creolin, cresolin, solveol, solutol, and lysol have been taking its place.

CHLORAL HYDRAS. The prices for chloral hydras have been raised by the united manufacturers to about 6d a pound; however, no large business has been done at that price, owing to the existence of manufacturers who, outside of the association, sell this article cheaper. The public has taken up a very mistrustful attitude towards the chloral hydras-conventions, which is quite natural, considering how often, particularly with regard to this article, conventions have been made and dissolved again.

CHLOROFORM. The brisk competition between the chloroform manufacturers has brought it so far as to screw the price down lower than it has ever been before. Whilst the consumption of chloroform increased from year to year in Germany, it has greatly diminished abroad, which may be explained by the fact that elsewhere, especially in England and America, ether, not chloroform, is used for narcosis.

COCAINA. The yearly crop yield of coca leaves in Peru is estimated at 20,000 cwt., half of which is used by the population for chewing or preparing raw cocaine, whilst the other half is exported, particularly to Germany for being worked into cocaine. Of late the arrivals of coca leaves and raw cocaine have become tardy, which has caused the prices to rise considerably.

CODEINA has, compared with last year, been much more in demand, and thus given the cause of lively sales at rising prices, particularly the last few months. Such high prices at which it formerly used to be offered are now to be considered as excluded, since manufacturers by means of artificial production are no longer dependant on the mother leys of the morphia manufacture, and thus its value always fluctuates in proper comparison to morphia.

MORPHINUM. The opium crops after having yielded an abundant outturn for a series of years, a materially smaller quantity was harvested in the last one, causing a considerable advance in its prices and those of morphia. As a further reason for the rising of prices it must be considered that in the United States it is planned to re-introduce a duty of one dollar pro lb. for opium, which has already been manifested in the project of the new tar-

iff-bill. In consequence of this a speculative tendency developed in the market, almost compensating for the effect of the duty, if any, in the prices of opium. Also the unfavorable reports about the state of the seeds have steadied the market, though it is still too soon for a definite judgment of the result of the new crop.

The Indian opium crop was also unfavorable, causing smaller exports to China than usual.

The importation of foreign opium to China has altogether materially diminished, not only on account of the value of dollars having exceedingly risen owing to financial measures taken by the Indian Government, which furthered the consumption of home produce, but also because people begin to get more accustomed to home opium, since some may be brought out of the interior without passing through the foreign custom-houses and thus enhancing prices by exorbitant duties.

QUININAE SULFAS Whilst the arrivals and sales of China barks were tolerably counter-balanced last year on the London market, in Amsterdam the bark transaction were carried on in a less normal proportion. The total amount of bark offered for sale had an equivalent of 217,992 ko. of sulfate of quinine, whilst the parity of 149,633 ko. was sold. It is therefore not to be wondered at if the prices for Quinine were screwed down to a lower level. At the same time success has, however, been obtained from the trials made in the respective manufacturing spheres to regulate the prices of quinine, insofar as manufacturers agreed in taking common steps and in raising the prices by about 30 per cent. The general situation has not been much altered thereby, the bark importers being still unlimited in taking their measures; in fact things have not yet come so far that people might have a right to speak of a maintenance of the present stand of prices for a length of time, the high prices on which the convention firmly holds having naturally an encouraging effect on foreign competition. It must, on the other hand, be granted that this state of things in the quinine market has inasmuch been considerably cleared, as partakers are now better informed of the extent of second hand stocks, about which a mysterious darkness existed for a long time. It was found out that the stocks of quinine in the London warehouses, which form the chief part of the second hand quantities, and which were estimated at 5 million ounce amount, according to a publication of the Docks department, to only about 3,227,000 oz. This news could not fail to exert special influence on speculators, who needed to be buoyed up by expectation, which had forsaken them for a long time in the quinine business.

REVIEWS.

Squire's Companion to the British Pharmacopœia. Sixteenth edition.

The latest edition of this standard work is just to hand, and it fully keeps up the reputation earned by previous editions, and contains all the latest information. In a work of this character, however, it is almost impossible to avoid errors or important omissions; for instance, the solubility of boric acid in glycerine is given on page 14 as 1 in 4, and on page 276, 1 in 10; mercuric chloride on page 276. 7.5 parts in 100, and on page 300, 2 in 3 of glycerine; benzoic acid, page 13, 1 in 30, and page 276, 1 in 10 glycerine; sodium biborate, page 276, 60 in 100, page 136, 1 in 1 of glycerine. Under lactic acid we notice that attention is drawn to the difference between the B. P. volumetric test and the specific gravity, but apparently Wilbur F. Scoville's explanation of this difference has escaped the notice of the editors. Liq. ferri perchloridi fortior is said to contain 20% of iron; this should be 15%. While several unofficial iron preparations are noticed, the tincture of citrochloride of iron, which is a popular preparation and mentioned in the National Formulary, is not noticed.

Several errors of the B.P. are pointed out, thus: Creosote does coagulate albumen, and is practically without effect on polarized light. Liq. plumbi subac. contains 27% of lead and not 24%... which is in accord with our calculations.

Under jalap, it is recommended to lower the requirement of resin to 7%, while on another page it is said jalap has been found to contain 50% resin, which we presume is a misprint for extract. Canada balsam is said to be more soluble in rectified spirit than in absolute alcohol, which is not in accord with our experience.

Under licorice, no mention is made of the incompatibility of ammonium chloride and the remedy for it. Under Easton's syrup, the old formula is given, no mention being made of the excellent formula of Wright, in which the iron phosphate is made by solution of the wire in phosphoric acid, which in our hands has always given excellent results.

Hydrogen Peroxide.—Ten or 20 volumes is said to be stable at ordinary temperatures, which is contrary to our experience, as we have not yet found a sample of this article which contained the full proportion of available oxygen after being opened for a few days.

We have noticed these errors in looking over the book, and have also noticed that in other respects in the extent and variety of the notes, and collection of references to current literature of medicine and pharmacy, it is very complete and ahead of anything previously attempted. We consider that no pharmacist can

say his library is complete unless it contain a copy of the sixteenth edition of "Squire,"

The "Moving Day" number of the *Pharmaceutical Era* is one of the best examples of pharmaceutical journalism which has ever been published. The literary contents contain some valuable articles relating to the profession, while with pardonable pride the history of the journal since its appearance seven years ago, is traced up to the present issue. The artistic engraving on the covers and distributed through the letter press is equal to anything we have seen, and illustrates very forcibly the gigantic strides made in this class of literature in the past decade. D. O. Haynes & Co. are well known as energetic journalists, but in this issue they surpass themselves and easily take first place in the ranks of American pharmaceutical literature.

A New Method for the Titration of Cherry Laurel Water and Hydrocyanic Acid.

M. Deniges (Journal de Pharmacie et de Chemie) proposes the following method, which he claims is without the objectionable features of Liebig's or Buignet's processes, especially as the end reaction is very sharp, and its exactness is not affected by differences in the composition of the fluid. Take 100 cc. cherry laurel water, add 10 cc. of ammonia, and if the mixture becomes cloudy from formation of hydrobenzamide add 5 cc. of alcohol to clear it, then add a few drops of solution of potassium iodide. Then drop in decinormal solution of silver nitrate, till a permanent cloudiness is produced. Each cc. of silver solution used corresponds to .0054 of hydrocyanic acid. For the acid of the Codex 5 cc. are diluted with 100 cc. distilled water, to which is then added 10 cc. of ammonia, and continue as for cherry laurel water. For potassium cyanide 1 gm. is dissolved in 1 litre of distilled water, of which 100 cc. are taken for titration.

VASELON is a new product which has been brought out as a rival to vaseline. It is according to A. M. Villon (La Monde Pharm.) a solution of stearone and margarone in a neutral mineral oil. The stearone is prepared by distilling commercial stearine with lime, (75 parts of stearic acid and 25 parts of lime) in a cylindrical retort. The margarone is prepared by distilling beef tallow with lime in a similar manner to stearone. Fifteen parts of margarone and five parts of stearone are dissolved by the aid of heat in 100 parts of purified, odorless mineral oil, the resulting ointment resembles vaseline but is not so transparent. It is white, odorless and neutral, and is not attacked by acids or other chemicals, and possesses all the properties of vaseline.

CITY ITEMS.

Messrs. C. J. Covernton & Co. are busy renovating, and will have one of the handsomest shops in the city when completed.

There have been many complaints of hard times, but judging from the improvements made and projected in many of our city stores, it does not seem as if all were suffering in this way.

Mr John T. Lyons is also immersed in the troubles of improvement. Painters, paper-hangers, etc., are hard at work. Mr. Lyons intends that his will not be the least among the many well-fitted pharmacies of which Montreal can justly be proud.

Among the latest modern stores in Montreal the branch establishment of John Lewis on St. Catherine street west takes a foremost place. The entire establishment is fitted throughout in quartered oak which, with the two handsome mirrors, presents a beautiful appearance. The dispensing department, upon which Mr. Lewis specially prides himself, is about the most complete in the city. An extension 20 feet deep has been built, necessitated by the constantly increasing business, so that at present this establishment is one of the most commodious and handsomely fitted in Montreal.

On the Stability and Preservation of Dilute Solution of Mercuric Chloride.

(M. VILLON, Comptes rendus de l'Academie des Sciences.)

The author has found that a solution of mercuric chloride 1:1000, made with distilled water, becomes decomposed in a short time, varying from one to three days, a white precipitate being formed which gradually increases in volume.

This solution placed in a test tube in a part of the laboratory in which the temperature varied from 15 to 25° C. after seven days contained only .57 grams, whereas the same solution kept in a glass-stoppered bottle contained .97 grams after seven days and .67 after the lapse of 220 days. As regards the effect of coloring matters, Mr. Villon found that indigo-carmin and fuchsine has a certain preservative effect, since solutions colored with these substances exposed in open vessels, that containing indigo-carmin had lost only .22 in 220 days, while that containing fuchsine had lost .25, and one containing the uncolored solution had lost .33.

The addition of 1% of hydrochloric acid, or 10% sodium or potassium chloride prevents the formation of any precipitate, and the solution remains perfectly clear.

CRUDE CARBOLIC ACID.

BY H. W. JAYNE, PH.D.

The composition and methods of preparation of the crude carbolic acids of commerce appear to be so little understood by pharmacists generally that it seems as if a few remarks about them, from one who has practical knowledge of their manufacture, might be of interest to those present.

Many text-books state that crude carbolic acid is prepared by repeatedly distilling a portion of the coal-tar, until a fraction is obtained boiling between 170—190°C., which is then extracted with a strong solution of caustic soda. This method is not used at present in large works here or abroad.

While it is possible to obtain a fraction rich in acids by repeated distillation, yet the total yield is less, for a certain amount is lost in each distillation, either by volatilization, or by being destroyed by contact with the heated sides of the still.

In this country, as a rule, the tar is distilled in two fractions. The first consisting of all the lighter portions is called the light oil, and is collected until a sample of the oil that runs from the still sinks in water. The whole fraction when mixed has a gravity of from 0.94 to 0.99. The second fraction consisting of about 20 per cent of the tar, constitutes the creosote—or heavy oil—commonly called dead oil. The residue left in the still is soft pitch. In some cases the first portions of the dead oil are collected separately, in order to obtain a fraction as rich in acids as possible, which is then known as carbolic oil. The light oil which boils between 90 and 250° C. contains from 4 to 10 per cent. of acids, and therefore nearly all of the carbolic acid, or true phenol, boiling at 182°.

The dead oil contains from 10 to 20 per cent of phenol; the carbolic oil, if made, sometimes shows as high as 30 per cent. These oils contain also a certain amount of carbolic acid, but the proportion is much less than in the light oil.

In Europe, where most of the crystal carbolic acid is made, the fractions are collected differently. The first portion running from the still containing most of the benzol and toluol is called crude naphtha or first runnings. The second portion, which is collected as long as the distillate is lighter than water, is called light oil or second runnings, and is very rich in phenol. The third fraction constitutes the carbolic oil. The portion to be extracted is agitated with a weak solution of caustic soda; about 10 per cent is the right strength. If a strong solution is used, many impurities contained in the oils, especially naphthaline, are also dissolved and contaminate the finished acids. After agitation the mixture on standing

separates into two layers—the upper consisting of the extracted oil—the lower the the solution of carbolate of soda. This latter is drawn off, and on acidifying with either sulphuric or hydrochloric acid, the tar oils are liberated, and float on the surface as an oily layer, holding more or less water in solution; depending on the nature of the acid present. For convenience in consideration, we will arbitrarily divide the crude acids into two classes.

(1) Crude acids for the manufacture of crystal carbolic acid.

(2) Crude acids for disinfecting purposes.

Acids of first class are not a regular commercial article in the United States, as there is only one firm manufacturing crystal acid, but in Europe, especially in England, they are prepared on a very large scale. As their value depends on the amount of crystal acid they contain, they are sold by test. Crystal carbolic acid being the first of the series of phenols, has the lowest boiling point. Therefore, the boiling point of a crude acid is to a great extent an indication of its value.

In England, an arbitrary method has been devised by Lowe, which gives an approximate idea of the value of these acids. A sample (say 100 cc.) is distilled in a retort or flask. At first water passes over, then an oily liquid. When 10 cc. of this latter have been collected, the receiver is changed, and the next 62½ cc. collected apart. The residue in the retort is cresylic and higher acids. The 62½ cc. obtained as a second fraction is cooled, and the solidifying point ascertained by a thermometer placed in the liquid. These crude carbolic acids are sold as 50°, 60° or 70° acids, meaning thereby that the second fraction of 62½ cc. crystallizes at 50°, 60° or 70° F. That containing the most crystal acid showing the highest melting point.

A good quality of 60° English crude carbolic acid distilled as follows:

PER CENT.

To 180,	17 (11" .. water)
" 185,	21
" 190,	71
" 195,	88
" 200,	93
" 205,	95

The portion representing the 62½ cc. distilling between 184° ¾ and 193°

A very good grade of light oil must be used to obtain such an acid; if a higher fraction of the tar is extracted, the acid obtained shows a correspondingly higher boiling point.

The following acid was extracted from the first portions of the dead oil:

PER CENT.

To 180,	14 (11% water)
" 190,	20
" 195,	55
" 200,	74
" 205,	82
" 210,	88
" 220,	91
" 230,	93

The 62½ cc. of this acid does not crystallize until cooled to 25° F. If insufficient soda is used, it would be possible to extract, even from an oil of this nature, a certain amount of acid rich in phenol. Phenol has a greater affinity for soda than its homologues, therefore, if one half the soda necessary for complete extraction is used, the solution will contain a greater proportion of phenol than if the material was extracted completely.

This is clearly shown by the following experiment. A sample of oil was treated with three equal portions of weak caustic soda solution, the last portion extracting the oil completely.

Each solution was neutralized with sulphuric acid, and the resulting acids distilled. In order to show their composition more clearly the result is calculated after deducting the water present.

	First Portion. Per Cent.	Second Portion. Per Cent.	Third Portion. Per Cent.
To 180,	6	—	—
" 185,	30	—	—
" 190,	74	1	—
" 195,	86	41	2
" 200,	91	71	16
" 205,	94	83	54
" 210,	—	87	73
" 215,	—	91	84
" 220,	—	—	88
" 225,	—	—	92

The first portion is equal to a 60° acid, and contains a large amount of phenol, the third portion, none at all. To prepare crystal acid from these crude materials, they are carefully rectified in large iron stills, the watery portions separated, and the fractions from (say) 180° cooled, the phenol crystallizes and is drained from the liquid portions. The crude crystals thus obtained are then carefully refined. As the crystal carbolic acid has a much higher value than the other acids, it is in the interest of the manufacturer to remove it as completely as possible. The remaining liquid acids are sold as "crude carbolic acid 100 per cent.," as they are entirely soluble in caustic soda solution, excepting traces of naphthaline and other impurities.

The lowest grade of crude acids known as 10, 15, 20 and 25 per cent., are simply unextracted portions of the heavy oil, containing

this amount of tar acids. The higher grades, 50, 60 and 70 per cent., are prepared by adding 100 per cent. to the lower grades.

As the heavy oils used in mixing these acids contain a large number of bodies, these are of course present in the commercial acids. The most important of these are the pyridine bases and naphthaline. The former gives to certain acids a rank, disagreeable smell. The latter is generally present in large amounts, some oils consisting of more than half crude naphthaline. In cold weather this naphthaline is deposited, and as the liquid portions are drawn off, it finally remains in the barrels as an oily mass, which will not again become liquid, thereby occasioning a serious loss to the purchasers. It does not appear to be generally understood that these acids consist largely of oil, for it is a common occurrence to find disinfecting acids in bottles, labelled with directions for mixing with water, when a test shows that it is entirely soluble in water, and contains only a small percentage of acids.

Many methods of testing crude carbolic acids have been proposed, which apparently ignore the large per cent. of oil present.

An instance of this is the method recently proposed by Seiler, and which has been extensively copied by journals throughout the country.

His method is to weigh 100 grams of the sample in a large beaker, adding milk of lime (obtained by slaking 200 grams of lime) and diluting to one liter. The whole is placed on a water bath and stirred for an hour, after which the same amount of water is added, when cold it is filtered, washed with fresh water and filtered again. The acid is liberated by hydrochloric acid, salt being added to the solution to remove as far as possible the acid dissolved in the liquor. It is then separated and weighed. He sums up the result of his investigation by stating that an acid sold as 25—30 per cent. showed only 1 to 3 per cent.; a 40—60 per cent. acid gave 3 to 5 per cent.; a 50—80 per cent. and a 90—100 per cent., 80 per cent. From this he concludes that commercial acids contain considerably less than stated, and that the lower grades are worthless.

To one acquainted with the nature of crude carbolic acids, the defects of this method are at once apparent. The slaked lime on mixing with the acid forms an oily mass, from which it is nearly impossible to extract any acid. Lime is too weak a base to extract the last portions of acid from the oil, and the voluminous liquid, amounting with the wash waters to about three liters, dissolves a large percentage of the acid even when saturated with salt.

It will be noted that the crude acid said

to contain the larger amounts, gave better figures than the lower grades, which was to be expected, as there was about the same amount dissolved in the salt solution from that acid that should have given 25 cc. of acids, as from that which should give 100 cc.

As these crude acids are only for disinfecting purposes, and as cresylic and the higher acids are now recognized to have the same, if not better, disinfecting properties than phenol, it does not seem necessary to determine any other point than the total per cent. of the acid they contain. No simpler method can be devised than the well known one of shaking a certain quantity of the material in a graduated vessel, with weak caustic soda, and noting the decrease in volume. To verify the result the soda solution can be acidified and the tar acids measured. The amount liberated is always less than that indicated by the decrease of the volume of the oil, owing to the solubility of the acid in the salt solution.

For this I would recommend a 100 cc. burette, divided in tenths, and furnished with a glass stop cork. It is filled to the 100 cc. mark with 10 percent of caustic soda solution; 25 to 50 cc. of the acid to be tested is then added, the burette closed with a cork and well shaken. On allowing to stand, the decrease in the volume of oil is readily measured; 50 cc. of the strength indicated is sufficient to saturate 12 cc. of 100 per cent. If it is necessary to add more soda the already saturated solution can be readily drawn from the burette and another 50 cc. added.

Frequently the percentage of naphthaline in low grade acids is so great that it separates from the liquid as soon as the acids are removed; as this prevents an accurate reading, it is necessary to add 10 to 16 cc. of benzol to dissolve the deposit.

In some cases the acids are contaminated with tarry or resinous bodies, which dissolve in the caustic soda, rendering the solution so dark that it is impossible to see the line separating the two liquids. In this case it is advisable to distil another 25 cc. portion nearly to dryness in a small flask, considering the distillate as 25 cc., and repeating the test. The entire operation requires but a few minutes, and the results of many hundred trials show it to be accurate enough for general purposes.

A mixture of equal parts of heavy oil and cresylic acid was made and tested by the above method. The contraction showed 49½ per cent. of acid present, the liberated phenols gave 49 per cent. The same mixture tested by Seiler's lime method gave only 22 per cent., every precaution being taken to insure a good result.

Another mixture prepared with 25 per cent of acid, gave 24½ per cent. by extraction, and 24 per cent. of phenols set free. The lime method gave but 6 per cent.

The Pharmacopœia requires that 50 volumes of a crude acid mixed with 950 parts of water, should not leave undissolved more than 5 volumes, or 10 per cent. It is difficult to understand for what reason such an arbitrary test is required. Fifty cc. of insoluble residue in 1000 cc. of solution is difficult to measure with accuracy, particularly as the acid often adheres in fine globules to the sides of the measure. This may seem a small objection, yet it is very important when the acceptance or rejection of a large lot of acid depends on it.

A sample of excellent 60° crude carbolic acid was tested by the method of the Pharmacopœia, and answered its requirements, about 4 volumes remaining undissolved. Another portion of the same acid was then dissolved to remove the small amount of tarry matter and about 11 per cent. of water present. This fine, light-colored acid showed by the Pharmacopœia test 15 volumes or 30 per cent. insoluble. In other words, an acid containing all the best portions of the first sample, and having 15 percent. more value as a disinfectant, would not stand the test.

A sample of distilled cresylic acid, free from water, distilling to

	PER CENT.
190,	12
195,	70
200,	88
205,	97

gave 25 volumes or 50 per cent. insoluble. It was found necessary to add 75 per cent. of crystal carbolic acid (melting point 35°) to 25 per cent. of the above cresylic acid, before a mixture could be obtained which would give a satisfactory result.

As the Pharmacopœia requires an acid for disinfecting purposes only, and not for preparing crystal acid, it is useless to require such a high per cent. of phenol, and it would undoubtedly be to the purchaser's interest to buy an acid free from water. If the water is to prevent the use of the higher boiling phenols, which are very little soluble in water, the difficulty could be overcome by the following requirements:

It should not be soluble in less than 15 parts water at 15° C., and the aqueous solution should not have an alkaline reaction. It should dissolve in 10 per cent. caustic soda solution, leaving not over 5 per cent. insoluble. Should not show over 2 per cent. water, and 90 per cent. should distil under 225° C.—*American Journal of Pharmacy.*

SANITARY CHEMISTRY.

By VICTOR C. VAUGHAN, Ph. D., M.D., Dean of Medical Department, University of Michigan.

Much has been said in recent years of the work which should be done in sanitary science by the chemist. Many municipal and a few State Boards of Health regularly employ chemists. It may not be out of place to make a few statements concerning the need of such employment and the works which these chemists should be called upon to do.

Boards of Health are created and supported for the purpose of preventing sickness and death. We now know that about eighty per cent. of the deaths occurring annually are from preventable causes. Foes to man's health and happiness are all about us. They float in the water we drink, they feed on the food we eat, and they contaminate the air which we breathe. It is the duty of boards of health to detect the presence of these dangers, to remove them when possible, and to warn the public when desirable. Much can be done in all of these directions by a board supplied with scientific experts whose entire time should be devoted to the work.

In the first place, the sanitary chemist must be more than a chemist, he must be a bacteriologist as well. Some one may ask why the work of the chemist and that of the bacteriologist should not be divided and an expert in each branch be employed. To this it may be answered, divide the work as much as you please, employ as many persons as may be needed. Too little money is given to our boards of health. The number of experts at their command is too small. The safety of the people should always be the supreme law and is worthy of first consideration. We have no foreign foe who could possibly inflict upon us the injury, suffering and death which typhoid fever will cause during the next twelve months. We need an army of scientific experts to protect the people from disease and death. However, the man who undertakes to do the chemical work which should be carried out daily by every board of health in our large cities will fail unless he be a bacteriologist as well as a chemist. Pathogenic germs are only chemical poisons which are capable of indefinite growth and multiplication and the most deadly chemical poisons are the products of bacterial activity. The man who studies these poisons successfully must know them in both conditions, their living and in their dead forms. With this hasty introduction, I will proceed to mention some of the lines of work which the chemist in the employ of a municipal board of health should, in my opinion, carry out.

About fifty thousand persons die annually in the United States from typhoid fever and more than ten times this number are sick with

this disease. The greater number of these cases are due to the drinking of infected water. For these reasons the public water supply of a city should be most zealously guarded. The reward which comes from this care is greater than that afforded by riches, it consists of health and happiness. The chemist should make weekly and at certain seasons of the year daily examinations of drinking water. The typhoid germ can be quite easily detected and it should be recognized at its first appearance in the water. The chemist should not wait until there are cases of typhoid fever before he looks for the germs in the water supply, but he should detect the germs before there is an epidemic of the disease, or, better still, he should guard the water that the admission of such germs becomes impossible. In case of infection of the water supply, the board of health should immediately warn and advise the public. Suppose that a city takes its drinking water from a river which flows through a populous country. Cities and villages, manufactories and farm houses are constantly pouring their waste into the river, either directly or indirectly through its tributaries. The composition of the water supplied to this city varies from day to day and the chemist should watch these variations as the mariner watches wind and cloud. The water may be perfectly safe to-day, and to-night a rainfall may wash the typhoid-laden accumulations from the privy vault of a farmer into the river, and to-morrow the water may contain a most virulent poison. I think therefore, that I cannot be accused of exaggeration when I say that the public water supply of every city should be examined at least once a week. In certain instances these examinations should be made even more frequently. Since I desire to make this paper as practicable as possible, I will mention some of the conditions which, in my opinion demand very frequent examination of the water supply. In doing this I will again suppose the city is taking its water supply from river a flowing through a populous country above the city. In such a case the following are, in my opinion, conditions which should justify very frequent examinations:

First—The known existence of typhoid fever or any other water-borne disease in any of the districts drained by this river or its tributaries above the city. Had the authorities at Grand Forks, North Dakota, had their water supply examined daily as soon as they learned that typhoid fever was prevalent at places located above them on the river from which they were taking their water supply, much sickness might have been prevented and many lives might have been saved, and the city would not have had the sad experience it has been having for the past few

months. This is equally true of many other places which could be mentioned.

Second.—The known contamination of the river with any sewage, even when such sewage is not known to contain any specific infection, within a distance of forty miles of the intake of the water supply. In some cities the authorities have shown their deplorable, and I might add criminal, ignorance of sanitation by contaminating their water supply with their own sewage. They have done worse than the fabled bird which befouled its own nest; they have polluted their own drinking cup.

Third.—The presence of an unusual number of people on the river or body of water from which the water supply is taken. There are many cases of walking typhoid fever and any one of these may contaminate the water supply. Moreover, it is altogether probable that many people become immune to this disease, and the germ may exist in the excretions of these persons, who are not only free from the disease, but in perfect health.

In the second place, the sanitary chemist must give much time, attention and skill to the milk supply. It cannot be denied that milk and water are the two deadly drinks. More than one-fourth of the children born to the civilized world die before they reach five years of age. A larger per cent of the diseases with which these children are afflicted come from the milk which they drink. Many saprophytic germs produce chemical poisons by their growth in milk. These poisons induce the summer diarrhoeas which cause the fearful infantile mortality in our large cities during the hot months of summer. The bacteriologist cannot distinguish these germs from those which are harmless. The chemist must be able to detect the chemical poisons. At the same time he must be enough of a bacteriologist to make and to carry out rules for the control of the milk supply. Some of the poisons which are formed in milk by these saprophytic germs are basic in character and belong to that class of putrefactive products designated as ptomaines, while others are albuminous bodies and resemble in their deadly action the venom of poisonous reptiles. It is not adulterated milk or diluted milk that causes this high death-rate—it is polluted milk. Besides these saprophytic germs, certain specific micro-organisms may be present in milk. Among these we may mention the germs of tuberculosis, diphtheria, scarlet fever and typhoid fever. The typhoid germs are most probably introduced into the milk in the majority of instances with water which is used in diluting the milk. The tubercle germs may come from using the milk of tuberculosis animals or from the infection from tuberculosis milkers or other persons engaged in the care or transportation of milk. The diphtheria and scarlet fever germs often

find their way into milk from persons who are recovering from these diseases. Epidemics of all of these specific diseases may frequently be traced to the milkman. By careful attention to the milk supply of a large city, many hundreds of lives may be saved annually.

Attention to poisonous milk is of more importance than estimations of the amount of fat or other constituents. However, the last mentioned work is not without its value. Many children are wholly dependent upon milk for their daily food. If this milk is diluted, the child may literally starve to death. This is the reason why municipal authorities frequently forbid positively the sale of diluted or adulterated milk. This prohibition is certainly a just one. The parents should not be allowed, even if they desire, to feed their children upon a food which is not sufficiently nutritious.

Probably next in importance to the water and milk supply, the chemist should give his attention to the public markets, and especially to the meat supply. Meat may be the bearer of infection and the cause of disease in the following cases: First, when the animal from which it has been derived is diseased. It is a well-known fact that anthrax, tuberculosis and other specific diseases may be transmitted to man by the eating of the flesh of diseased animals. Second, the meat may become infected by the person handling it. Tuberculous persons should not be allowed as employes in meat markets. The dust of rooms occupied by tuberculous persons becomes infected with the specific poison and this may settle on pieces of meat which are sold and consumed, and may cause disease. Third, even the flesh of healthy animals may undergo putrefactive changes in which a whole class of chemical poisons is formed. Among these poisons are some which are most deadly. This explains why sickness so frequently follows the consumption of canned meats. In the process of canning, the contents of the can are not completely sterilized and the meat undergoes a slow putrefaction by the formation of these highly virulent poisons. The chemist should be able to isolate these poisons and to demonstrate their action upon small animals.

In addition to his work on food and drink, the sanitary chemist must be able to detect impurities in the atmosphere and to recognize the presence of sewer gas and other contaminations. Certainly the amount of work which the sanitary chemist in the employ of a municipal board of health may be called upon to do is unlimited. Unfortunately, the public generally does not at present appreciate the great saving of life which might be accomplished by these means. However, the time will come when we will spend quite as much money, time and energy in combatting disease as we do in protecting our country against foreign foes.

Experiments in Freezing Alcohol.

The success attending Prof. Dewar's experiments in the freezing of absolute alcohol has a peculiar interest, in view of the fact that 200° C. was the utmost limit of cold reached or obtained by man, viz., by the use of liquid oxygen. Prof. Dewar allowed some liquid ethylene to flow through a brass tube surrounded by solid carbonic acid and ether, and, when this cooled, it was passed into a large test tube, in the middle of which was placed a glass tube, with a flattened bulb at the end, the bulb being full of absolute alcohol. The evaporation of the ethylene was then accelerated by the use of the air pump, and the alcohol was frozen into a mass as clear and transparent as crystal. The tube containing it was turned bottom upward, and as it melted it assumed exactly the consistence of glycerine, flowing in a sluggish way down the sides of the tube. Ether requires less cold than alcohol to freeze it, and in several of Prof. Dewar's experiments ether ice formed on the sides of the glass vessels. Besides this the warm air of the theater was constantly condensing as snow or hoar frost on some of the vessels used in the experiments, and the chief difficulty of the occasion was the projecting of the experiments on the screen by the electric light, so that all present might see what was taking place.

H. Trimble, Ph. M., Professor of Analytical Chemistry, at the Philadelphia College of Pharmacy, has been appointed to succeed the late Prof. Maisch as editor of the American Journal of Pharmacy. Prof. Trimble is already well known as an earnest worker in the field of chemical research, and is no stranger to readers of the American Journal of Pharmacy, as he has been for years one of the most able contributors to its columns, and we have no doubt will prove a worthy successor to the late editor.

Free Want Department.

Druggists in need of apprentices and help generally, are invited to make free use of this department, and all persons seeking situations in the drug trade are cordially invited to do likewise. Advertisements of business for sale will also be inserted free of charge.

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EXPERIMENTS WITH MORPHINE'S NEW ANTIDOTE.

BY F. L. HARDING, PH. B., M. A. C. S.

Professor of Pharmaceutical Chemistry at the New Jersey College of Pharmacy; Chemist of N. Y. & L. B. Railroad, etc.

The entire world in general, and scientific circles in particular, probably were surprised by the announcement appearing in the *N. Y. Herald*, under the date of Jan. 21st, relative to the discovery (?) of a chemical antidote to the toxic effects of morphine and its salts in the shape of potassic permanganate, which is well known for its phenomenal powers. Quite naturally, criticisms mingled with certain expressions incident to such new ideas, were volunteered; but the fact needed confirmation in the shape of *practical proof*, and not criticism based entirely upon theoretical ideas not deducted from actual experiments.

Looking at the matter from this point of view, I began a series of chemical and physiological experiments,—first using morphine sulphate and the permanganate separately, and then conjointly, in different animal media. As regards the physical properties and physiological actions of each of these salts separately, nothing need be said here. My experiments were conducted as follows:

PHYSICAL EXPERIMENTATION.

The oxidation power of potassic permanganate on organic matter is well known; and, as natural water (not distilled) would be the vehicle for the administration of this antidote in cases of poisoning, the following experiments were made to ascertain the loss of permanganate in attacking the organic constituents naturally present in water:

4 fl. oz. (119 C.c.) of water used each time,

Kind of Water.	Temperature.	Time required.	K ₂ Mn ₂ O ₈ required to produce a permanent tint (after oxidation)
Hot	100° F (37.7 C)	5 min	1.250 grain [0.00026 Gm.]
Artesian	60° F (15.5 C)	"	1.300 " [0.00022 "]
Well	58° F (14.4 C)	"	1.150 " [0.00013 "]
Well near a cess-pool	64° F (17.7 C)	"	1.50 " [0.0013 "]
River	42° F (11.1 C)	"	1.40 " [0.00108 "]
City	45° F (18.3 C)	"	1.200 " [0.00032 "]

PHYSIOLOGICAL EXPERIMENTATION.

Experiments were then made to note the action of the permanganate on animal tissues, and to obtain a rough idea of the approximate amount of K, Mn, O₈ decomposed under conditions usually existing at times of poisoning by morphine, *before* the antidote exerted its influence upon the death-dealing agent,—taking into consideration the reductions resulting

from the organic matter naturally present in all waters, the presence of organic dust adhering to the vessels, and the action from the contact with the mucous membranes traversed, from the mouth to the pyloric orifice of the stomach.

4 fl. oz. (119 C. c.) of city water, concentrated $\frac{1}{2}$, with $\frac{1}{2}$ grain (8 (tg.) of KO₂Mn₂O₈ in solution.

Trials.	Results.
Introduced into mouth, agitated for 30 seconds, gargled for 15 seconds, allowed to rest 15 seconds, and expectorated.	Loss of color not complete, oxidation of mucus, etc., with enough organic matter left for further oxidation.
Drinking of same on empty stomach, with ejection by emesis.	Loss of color almost complete.

It was found that the amount of potassic permanganate really decomposed (as regards the animal tissues) is not so great, or the reaction so quick, as has been generally supposed. The conclusion arrived at is, that in 4 fluid ounces of water, 1 grain of potassic permanganate is amply sufficient to protect, so to speak, the further addition of the salt, and thus insure its action on the alkaloid.

CHEMICAL EXPERIMENTATION.

My next steps were as follows: On Thursday, Feby. 15th, having partly fasted the previous day and taken a good cathartic, I ate a dinner at 12.30 P. M., consisting of two hard-boiled eggs, two pieces of sausage, and bread, and a glassful of milk; I allowed three hours for digestion, my health being in very good condition. At 3.30 P. M., I took 12 drops of fluid extract of ipecac in tepid water as an emetic, and ejected the gastric contents, measuring a little over a pint [473 C.c.], into a dialyzing apparatus, and allowed the dialysis into sterilized water to continue for 24 hours, maintaining the fluid at a temperature of 100° F. [37.7 C] and in a covered condition.

The diffusate, which was acid in reaction from HCl, was then concentrated on the sand-bath, covered, and preserved in well-covered glass vessels previously sterilized at 100° F. [37.7 C.] until used.

Next, the colloidal magma was filtered at 100° F and covered; the filtrate was collected in a sterilized receiver, and kept at 100° F, like the diffusate, in a covered condition, until used; it contained HCl, free pepsin, undissolved and partly changed albuminoids, partly digested starches, etc.

I now had the contents of my stomach at the normal temperature, but in a putrified and divided condition. Experiments were begun with each part, first separately and then conjointly; dividing each solution into four parts, and then introducing 4 grains [26 Ctg.] of

morphine sulphate and 5 grains [32 Ctg.] of $K_2 Mn_2 O_8$ under various conditions, as shown below :

Chemical examination, in physiological media at normal temperature.			
Media	Description.	With 5 grs. $K_2 Mn_2 O_8$.	With 4 grs. Morph. Sulph. and 5 grs. $Mn_2 O_3$.
Diffusate.	Aqueous solution: clear, with peculiar odor due to soluble peptones, as indicated by biuret reaction.	Reaction at first slow, color passing from deep purplish red to dirty reddish gradually, with a dirty reddish precipitate settling very slowly; supernatant liquid giving no reaction for peptones.	Reaction instantaneous within 40 seconds: peculiar brownish precipitate settling quickly; clear supernatant liquid, bright yellow in color, giving a reaction for peptones.
Filtrate.	Slightly viscous fluid, opalescent; acid albumins and albuminoids, as proved by chemical tests.	Reaction slower than above; the color changes more slowly—pepsin, &c., having some retarding action.	Reaction slower than above; precipitate not forming for 3-5 minutes; color deeper; supernatant liquid giving reactions with tests for peptones, etc., but less strongly.
Diffusate and Filtrate.	As above.	As above.	As above, but reaction intermediate between the two.

It will be seen, from these experiments, that potassic permanganate has a greater affinity for morphine than for soluble peptones, when both are present in the same solution; and that the reaction is slightly retarded by pepsin, and other matter.

We now come to the most interesting part of the experiments, in that I assume a case of poisoning by the introduction of 4 grains [26 Ctg.] of morphine sulphate into a mixture of 4 fl. oz. [119 C. c.] each of the diffusate and of the filtrate at a temperature of $100^\circ F$ [$37.7^\circ C$], thus representing the contents of my stomach. After 60 minutes had elapsed, a solution of 5 grains [32 Ctg.] of potassic permanganate in 4 fl. oz. [119 C. c.] of common water was added. Reaction as above described ensued. The contents of the flask (or stomach) were then thrown upon an asbestos filter and strained, and the resulting magma divided into two parts, one of which was kept at $100^\circ F$ [$37.7^\circ C$.] and mixed with the filtrate and with a 4-oz. mixture (new) of the above diffusate and filtrate, to be used subsequently (x). The other portion of the magma was washed, shaken with a solution of chemically pure lime in distilled water, when the resulting liquor showed evidences of the presence of *dioxymorphine*; but, as dioxymorphine—the peculiar fawn-colored precipitate obtained under certain conditions in the morphimetric assay of opium—is unstable and easily dioxidized, I mixed the liquor with the mixture referred to above (x), for the following reasons: Granted that dioxymorphine is formed, we

must bear in mind the fact that the HCl of our stomachs is strong enough to attack the free alkaloid, thus forming a soluble hydrochlorate of morphine; but the soluble manganate of potassium—one of the products of the decomposition of oxidation—immediately acts upon the newly formed alkaloidal salt, forming an insoluble *while* manganate of morphine, which I have obtained upon each of the three occasions and demonstrated the identity of. An advantage of the stomach, in this formation of hydrochlorate of the alkaloid, over my operations, lies in the peristaltic action—mechanical agitation—naturally present there.

The following are my conclusions: In a case of morphine poisoning where antidotal treatment with $K_2 Mn_2 O_8$ is applied, there takes place, *first*, oxidation of organic matter; *secondly*, liberation of manganese binoxide and soluble potassium manganate; *thirdly*, the dioxymorphine formed is deoxidized; *fourthly*, mechanical agitation with free HCl; and, *fifthly*, action of soluble potassic manganate on the new morphine salt, resulting in the formation of an insoluble precipitate.

It might be of interest to note that 1 grain of $K_2 Mn_2 O_8$ will precipitate the whole of 4 grains of morphine, but it is expedient to add 4 grains more of the permanganate; and that the reaction is quicker when the stomach contains nearly all peptones, than when a conglomerate mixture is present—as in the case right after eating.—*Merck's Report*.

LONG BRANCH, N. J.

AMERICAN PHARMACEUTICAL ASSOCIATION.

Section on Legislation and Education.

QUERIES FOR THE MEETING TO BE HELD AT ASHEVILLE, N. C., SEPTEMBER, 1894.

1. Should students of pharmacy be required to give evidence of having had experience in a drug store before permitting them to graduate or register, regardless of quantity or quality of knowledge possessed?

2. Should such students give their whole time, during college years, to study, or divide it between attending college and working in a store.

3. Can a minimum standard of time of attendance and quality of pharmaceutical education be adopted by American colleges? Will each college kindly consider this question and send a representative to the Asheville meeting to debate it?

4. How can we get the pharmacy laws of the various states more uniform in their requirements?

5. What objections can be urged against bestowing the degree of Doctor in Pharmacy upon

graduates in pharmacy who take a post-graduate course?

6. Describe special devices for simplifying or illustrating various points in the study of pharmacy and cognate sciences.

7. Outline the benefits derived by classes in pharmacy visiting in a body large laboratories, manufactories and pharmaceutical warehouses.

8. What can the American Pharmaceutical Association do toward improving such parts of the patent and trade mark laws as have a bearing on pharmacy?

9. Are registered clerks, by virtue of their registration, officers of the State and, if so, is not the State instead of the employer responsible, before the law, for their serious mistakes?

10. Should graduates in pharmacy be compelled to pass the examinations of boards of pharmacy before being registered?

11. What principles should guide boards of pharmacy in framing their examination questions?

12. How can dull and lazy students, in colleges of pharmacy, be kept as near as possible abreast of the work done by the intelligent and diligent?

13. How can colleges of pharmacy be placed upon a purely educational basis, instead of being conducted for the money they can make?

14. Should any candidate be permitted to graduate in pharmacy before he is able to apply the tests and assays of the United States Pharmacopœia?

15. What should be the minimum limit of knowledge in microscopy before being permitted to graduate?

16. What should be the minimum limit of knowledge in botany before granting a degree?

17. How much knowledge of materia medica should be required of every graduate in pharmacy?

18. Should candidates for graduation in pharmacy be able to make all preparations, a process for which is given in the United States Pharmacopœia?

19. Where, in pharmacy teaching, are the limits between practical and impractical knowledge, and what constitutes a practical examination?

20. Would it be a loss or a gain to pharmacists to compel would-be apprentices to pass a board of pharmacy examination on their general education before permitting them to begin work in a drug store?

21. Should boards of pharmacy publish from time to time, in the pharmaceutical press, their past examination questions as a guide to future candidates of the nature of the subjects upon which they are expected to pass?

22. Describe an ideal laboratory for the teaching of practical pharmacy.

23. Give a set of rules for the government of students at colleges of pharmacy.

Volunteer papers on any subject within the scope of this section are desired, either from members or non-members of the American Pharmaceutical Association.

R. G. ECCLES,
Chairman,
191 Dean st., Brooklyn, N.Y.

H. M. WHELPLEY,
2342 Albion Place, St. Louis, Mo,

L. C. HOGAN,
Secretary,
6443 Yale st., Englewood, Ill.

The Punster and the Chemist.

"I want some consecrated lye," he slowly announced as he entered the chemist's shop. "You mean concentrated lye?" suggested the proprietor, as he repressed a smile.

"Well, maybe I do. It does nut-meg any difference. It's what I camphor, any way. What does it sulphur?"

"A shilling a can."

"Then you can give a can."

"I never cinnamon who thought himself so witty as you do," said the chemist in a gingerly manner, feeling called upon to do a little punning himself.

"Well, that's not bad, either," laughed the customer, with a syrupidious glance.

"I ammonia novice at the business, though I've soda good many puns that other punsters got the credit of. However, I don't care a copperas, far as I am concerned. Perhaps I shouldn't myrrh-myrrh. We have had a pleasant time, and I shall carraway—"

It was too much for the chemist, and he collapsed.—Ex.

Queries Proposed by the A. P. A.

The scientific section of the American Pharmaceutical Association has proposed the following additional queries as subjects for papers for the Asheville meeting:

Give the easiest method of identifying pure olive oil.

What aloins are at present found in commerce and what is their source?

How can retail pharmacists economically recover the alcohol from drugs exhausted by percolation?

How does acetic acid compare with alcohol as a menstrum in exhausting drugs for extracts or alkaloids?

How does acidimetric analysis compare with the use of Mayer's solution for estimation of alkaloidal salts?

Give the best method of subduing or avoiding emulsion in assaying alkaloidal drugs.

PRICES CURRENT.

MAY, 1894.

Acetum cantharides	lb	\$0 60	
" colchici corm	lb	50	
" ipecac	lb	40	
" opii	lb	1 20	
" scillæ	lb	12	
Acetanilid	lb	90	oz. 15
Acid. acetic glac. . . . .	.lb	50	
" " fort. . . . .	.lb	15	carboy 14
" benzoic German	oz	15	lb 1.75
" " " ozs. Hwds		25	Bulk 20
" boracic	lb	18	pulv. 20
" butyric conc.	oz	30	lb 3.75
" camphoris	oz	60	
" carbolic No. 5 Cal.	gl	1 50	
" " common	gl	90	
" " cryst	lb	40	10 lbs 35
" " No 1 Calverts.	lb	2 25	
" " No. 2 "	lb	1 40	
" " " "			10 lb tms 1.10 lb
" chromic	oz	10	lb 1.00
" chrysophanic	oz	30	
" citric	lb	65	
" " pulv.	lb	70	
" gallic	oz	10	lb 1.25
" hydro bromic dil.	lb	45	
" hydrochloric.	lb	5	carboy 2½
" " C.P. s.g. 1.19.	lb	25	Wins. 20
" hydrocyanic P B.	doz.	90	in 1 oz. 10c per oz.
" " Scheele's doz.	do	1 00	do 10c do
" hypophosphor.	lb	1 10	
" hydrofluoric (in patent			½ lb bottles .50 ea.
ceresine bottles)			1 lb " 1.25
" lactic dilutum	lb	1 15	
" " conc. pur.	lb	2 75	
" nitric	lb	15	Wins. 12 carboy 8½
" " C.P. s.g. 1.40.	lb	30	Wins 25
" oleic pur.	lb	45	
" osmic	gm	1 75	
" oxalic	lb	12	50 lb 10
" perchloric.	oz	35	
" phos. dilut.	lb	17	Whr. qt. 14
" " cone S.G. 1.5.	lb	50	
" " glac. pur stick	lb	1 20	
" " syr s.g. 1.750	lb	55	
" picric	lb	75	
" pyrogallic Schering's	oz	40	8 oz. 35
" pyroigneous	lb	10	gall 50
" salicylic	lb	2 00	
" sulphuric	lb	4	cathey 2½
" " CP s.g. 1.84.	b	25	Wins. 20
" " pur Eng	lb	20	Wins. 18
" " aromat.	lb	65	
" sulphuros	lb	12	
" tannic	lb	80	5 lb 75
" tartaric pulv	lb	40	10 lbs 38
" valerianic	oz	40	
Aconitina exot.	gr	4	60 gn. 3
Adeps benzoatus	lb	35	
Æther S. G. 735	lb	40	Whr. qt. 35
" acetic	lb	55	do 40
" butyric	oz	15	lb 1.50
" chloric	lb	65	Whr. qt. 60
" Anæsthetic tin 500 gms		1 50	each.
" " 250 "		80	" Squibbs
" " 100 "		40	"
" " L. S & Co			
		1 lb tins 1.00	each
		½ lb tins 0.55	"
		¼ lb tins 0.30	"
Alcohol brl.	cash	3 85	10 gall 4 15 5 gall 4.20 1 4.25 in s/c

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Corn & Wart Cure

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1 doz., \$1.65; gross, \$18.00.

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Alcohol absolut.....lb	1 00	Wr. 90
“ methylated.....gal	2 00	Brl. 1 75 cash
Aloes Barb opt.....lb	30	10 lb 25
“ pulv.....lb	35	do 32
Aloes Cape.....lb	15	10 lbs 18
Aloes Cape pulv.....lb	25	do 23
Aloes Socotrina.....lb	60	do 55
“ pulv.....lb	70	do 65
A oin.....oz	30	
Alumen lump.....lb	3	brl 1 ½
“ pulv.....lb	4	brl 2 ½
“ chrom.....lb	15	
“ exsiccata.....lb	20	
Alumnol.....25 gr	50	each
Ammonii benzoas, from gum oz	25	lb 3 00
“ bromid.....lb	65	
“ carb.....lb	15	
“ kegs.....lb	11	
“ pulv.....lb	20	
“ resub.....lb	55	c. b.
“ chlorid.....lb	12	100 lb 10 ½
“ gran.....lb	12	100 lb 11
“ pulv.....lb	13	
“ pur.....lb	25	
“ hydrosulph sol.. lb	40	
“ hypophosph.....oz	25	lb 3.00
“ iodid.....oz	45	lb 5.50
“ molybdas.....oz	25	
“ monocarb.....lb	35	
“ nitras gran.....lb	32	25 lb 30
“ crist.....lb	35	25 lb 30
“ oxalas pur.....lb	75	
“ phosph.....lb	1 25	
“ salicylat.....oz	40	lb 4.75
“ sulphas com.....lb	9	pur 25
“ valerian.....oz	40	
Amygdala amara.....lb	50	
Amyl nitras.....oz	15	
“ nitrite.....oz	15	
“ valerian.....oz	35	
Amylum pulv.....lb	9	cwt. 8
Annatto Hispan opt.....lb	60	
“ Fullwood ½ oz & 1 oz lb	1 00	
Antim crocus pulv.....lb	20	
“ nigrum pulv.....lb	12	50 lb 16
“ oxid.....lb	65	
“ sulphurat precip.....lb	50	
“ tartarat pulv.....lb	45	10 lb 42
Antikamuita.....oz	1 30	
Antipyrin Kuorrs'.....oz	1 10	5oz 1 05 10-25oz 1.00
“ Swiss.....oz	1 00	5 ozs .95 1 -25oz 90
“.....lb	12 75	
Apiol green.....oz	65	
Apomorph hydroch.....gr	2	5 and 10 grain tubs.
Aqua anethi.....lb	10	
“ anisi.....lb	10	
“ aurantii flor trip lb	25	Win qt 20
“ camph.....lb	10	
“ carui.....lb	10	
“ cassia.....lb	10	
“ cinnami.....lb	20	
“ destillata.....gl	12	carboy 10
“ floride.....gl	5 00	
“ lauro cerasi.....lb	25	Whr qt 20
“ mentha pip.....lb	10	
“ rose.....lb	25	Whr qt 20
“ sambuci flor.....lb	25	
Argenti chloridum.....oz	2 50	
“ iodide.....oz	2 50	
“ nitras cryst. L. B. & Co.oz	85	9.50 lb cash
“ fus (4 to oz)oz	1 00	
“ oxidum.....oz	2 40	
Aristol.....oz cartons	1 85	
Arsenicum alb. pulv.....lb	10	
“ rub.....lb	15	

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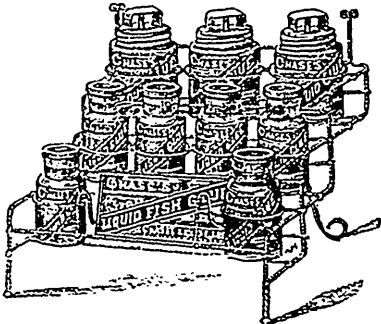
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Arsenici bromid.....oz	40	
“ iodid.....oz	60	
“ tersulph pulv.....lb	25	
Asphaltum exot.....lb	15	100 lbs 12
Atropina pure.....dr	1 00	
Atropina sulphas.....dr	80	oz 4 00
Auri chloridum (15 gr).....doz	3 60	400 3 Doz 3.75
Baccæ aurantii.....lb	25	
“ capsici.....lb	25	pulv. 30
“ cassia.....lb	35	pulv. 40
“ cubebæ.....lb	60	
“ pulv.....lb	65	
“ juniper.....lb	8	10 lb 7
“ juniper pulv.....lb	12	10 lb 11
“ xanthoxylon.....lb	50	
“ pimentæ.....lb	12	
“ pulv.....lb	14	25 lb boxes 13
Balsam canad.....lb	45	Winch. 40
“ copaibæ.....lb	75	Whr. qt. 70
“ peruvian.....oz	2r	lb 2.00
“ totlu.....lb	60	
arii carb pu.....lb	35	
“ chlorid pur.....lb	25	
“ hypophos.....oz	25	
“ nitras exsic.....lb	20	
“ nitrate C. P.....lb	35	
“ sulphate pur.....lb	50	
“ sulphide.....oz	10	
Bath Pipe.....lb	40	
Bay rum St. D.....gal	3 75	sec. 2.75
Beberinæ hydroch.....dr	50	
Beberinæ sulphas.....oz	90	
Benzine refined.....gal	40	
Benzoyl Guaiacol.....oz	2 00	
Bismuthi carb.....lb	3 00	
“ citras.....oz	20	
“ et ammon-cit.....oz	35	lb 4.50
“ salicylas.....oz	35	
“ subgallas.....oz	35	
“ subiodid.....oz	50	
“ subnitras.....lb	2 65	10 lb 2.55
“ valerian.....oz	50	
Bismuthum (metal).....lb	3 25	
Bole armen.....lb	6	
Borax.....lb	11	keg 9
“ pulv.....lb	12	do 10
Bromine.....oz	20	
Bromoform.....oz	40	
Cadmium.....oz	10	lb 1.20
Cadmii bromid.....oz	20	lb 2.25
“ iodid.....oz	45	
“ sulphas.....oz	20	
Caffeina pur.....oz	25	
“ citras.....oz	25	
Calamina præparata.....lb	7	
Calci bromid.....oz	20	lb 2.25
“ carb. præcip.....lb		V. Creta precip
“ chlorid. crys.....lb	25	
“ fusum pure.....lb	30	
“ fused crude.....lb	15	
“ hypophosphis.....lb	1 40	
“ iodid.....oz	50	
“ lactophosph.....oz	15	lb 2.00
“ nitras.....lb	75	
“ phosphas præcip.....lb	20	
“ sulphas.....lb	4	
“ sulpho-carbolas.....lb	2 50	
“ sulphid.....lb	50	
“ sulphis.....lb	18	pulv. 20
Calx chlorinata.....lb	5	keg 4 brl. 3½
“ in packets 1 lb	7, ½, 8, ½ 9	
Camphora Amer.....lb	70	brl 65
“ cakes.....lb	75	case 70
“ Ang. Hd's.....lb	70	
“ oza.....lb	75	
“ flowers.....lb	80	
“ Dutch.....lb	65	

Camphor monobromid.....oz	20	
Cantharide. Russian.....lb	1 40	pulv. 1 50
“ Chinese.....lb	—	do 75
Cantharidine.....grain	8	
Cap papav. alb.....100	1 00	
Carbo animalis pur. pulv.....lb	12	
Carbo ligni.....lb	6	
Carbo ligni pulv.....lb	10	brls 5 60 each
Carbon bisulphidum.....“	20	Whr qt 15 drums 12
Carmine.....oz	40	lb 5.25
Caryophyllum, Zanzibar.....lb	18	22 Pulv.
Caryophyllum, Amboya.....lb	25	
“ Penang.....lb	50	
Cassia fistula.....lb	30	
Castoreum.....oz	1 40	
Cera alba.....lb	65	sec 45
“ paraffin, opt.....lb	25	50 lb 20
“ “.....lb	18	50 lb 13
“ flav opt.....lb	40	secs 85
“ lithographers.....lb	50	
Cerii oxalas.....oz	10	lb 1.20
Cetaceum.....lb	55	10 lb 50
Cetrar Iceland.....lb	16	
Chirata Incis.....lb	45	
Chloralamid.....oz	35	
Chlorodyne Lyman's.....lb	2 00	
Chloral Hydrate recryst.....lb	1 10	
Chlorof pure Smiths 1 lb g.s. bs. lb	90	Whr. qt 80
“ D. F. & Co's pur.....lb	1 80	5 lb 1.75
“ meth.....lb	85	5 lb 80
“ blue label.....lb	1 00	2lb. bottle 9'c lb.
“ Merck 1 s.....lb	65	
“ 28-lb tins.....lb	55	
Cinchonidin sulph.....oz	15	Hds. 20
Cinchoninae murias Hds.....oz	18	
“ sulphas.....oz	18	
Cocaine hydrochlor crys.....oz	8.00	
Cocculus Indicus.....lb	10	pulv 20
Coccus cacti S. G.....lb	40	pulv 45
Codeina pure.....dr.	1 00	oz 6.50
“ Phosphat. e.....dr.	1 25	
“ Sulp.....dr.	1 00	oz 6.50
Colchici corn.....lb	30	
Collodium.....lb	65	
“ vesicans, P. B.....lb	2 25	
“ flexile.....“	65	
Colocynthis 1. r. c select.....lb	60	pulv 85
Confectio rosæ Gallic.....lb	50	
“ sennæ.....lb	40	
Cortex aurantii Ang.....lb	70	
“ coml.....lb	15	
“ opt. ¼ s.....lb	20	
“ canellæ.....lb	20	pulv 25
“ cascara sagrada.....lb	25	
“ cascarrilla.....lb	25	
“ cassiæ.....lb	13	pulv 18, 25 lb box 16
“ cinchop flav.....lb	90	pulv. 1.00
“ coml.....lb	30	pulv. 35
“ rub quill.....“	60	pulv. 70
“ granat fruct.....“	20	
“ radicis.....“	60	
“ limonis ang opt.....“	65	
“ com.....“	16	
“ mezerel.....“	25	
“ myrica (bayberry).....“	20	
“ pruni virginianæ.....“	15	20 lbs 12
“ quillaiæ.....“	15	grd. 20 pulv. 25
“ sassafras.....“	15	pulv. 22
“ ulmi.....“	16	pulv. 16 grd 14
Creolin, Pearson's.....“	60	
Creosot. Ang (Morson's).....oz	20	lb 2.25
“ (Bechwood) Merck's lb	2 00	
“ French lb	2 75	
“ white, from coal tar lb	75	
Creosote Carb.....oz	1 25	
Creta gallic.....lb	18	
“ “.....lb	5	bgc. 3½

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This valuable combination, although effectual in destroying Worms, can do no possible injury to the most delicate child. Successfully used by physicians and found to be absolutely sure in eradicating Worms. Retail price, 25 cents a box. THE CURTIS & BROWN MFG CO., Ltd. Proprietors, 217 Fulton Street, NEW YORK, N.Y.

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Fluid Flowing only through Glass.

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SIZES & QUANTITIES	
NO. 1	60'S DRY POWDER
NO. 2	60'S WET POWDER
NO. 3	60'S DRY POWDER
NO. 4	60'S WET POWDER
NO. 5	60'S DRY POWDER
NO. 6	60'S WET POWDER
NO. 7	60'S DRY POWDER
NO. 8	60'S WET POWDER
NO. 9	60'S DRY POWDER
NO. 10	60'S WET POWDER

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Creta præcip.....	lb	10	keg 8
Creta præparata	lb	5	50 lbs 4
Crocus stigmat amer.....	lb	65	
“ “ Valent.....	oz.	80	Alicante 65c. oz.
Croton chloral-hydrate.....	oz	45	
Cudbear.....	lb	20	
Capri ammonio-sulphas ...	lb	1 00	
“ chloridum pur.....	lb	60	
“ nitras pur	lb	60	
“ oxidum nigr. pur.....	lb	1 75	
“ “ coml.....	lb	50	
“ sulph.....	lb	7	keg 5 brl 4½
“ sulph recryst.....	lb	25	
Caprum scales	lb	40	
Curare.....	grain	6	
Curio powder.....	lb	35	
Cusso “	oz	10	
Damiana.....	lb	40	
Daturine, pure xtls.....	gr	10	
Dextrine, white.....	lb	10	50 lb 8
“ yellow.....	lb	9	“ 7
Diapente.....	lb	30	
Diastase.....	oz	1 25	
Digitaline.....	oz	50	each
Diuretin “Knoll”	oz	1 75	
Dolichos pruriens pubes.....	oz	60	
Duboisin, pure Amp 5 gr. tube		60	each
“ sulphate.....	gr	12	
Eikonogen.....	25 gm. tins	40	each
Elaterium.....	dr	35	
Ergota.....	lb	90	pulv. 1.00
Ergotinum Bonjean.....	oz	75	
Ergotine Bonjean Gen. 30 gm		2 00	
Eserine sulph 5 or 10gr. tube.gr		10	
Ethyl, Benzocate.....	oz	40	
“ Bromide.....	oz	35	
“ Butyric.....	oz	15	
“ Chloride.....	tubes	35	each
“ Iodid.....	oz	75	
“ Knanthylate.....	oz	1 00	
“ Succinate.....	oz	60	
“ Valerian.....	oz	50	
Eucalyptol.....	oz	25	lb 3 50
Europhen.....	oz	2 00	
Exalgine.....	oz	1 25	
Extract, acon. (rad. alco.) ..	oz	35	lb 4 80
“ aloes barb.....	lb	75	
“ “ pulv.....	oz	10	lb 1.25
“ “ socot.....	“	10	lb 1.25
“ anthemides.....	“	20	lb 2.50
“ belladon ang.....	“	25	lb 3.50
“ “ pulv.....	“	25	lb 2.50
“ “ aqueos.....	oz	15	lb 1.50
“ Belladon alcoh.....	oz	25	lb 3.00
“ calumb.....	oz	25	lb 3.25
“ cannabis indicæ.....	oz	25	lb 3.00
“ cascara sagrada.....	oz	25	lb 3.50
“ cinchona flav.....	oz	25	lb 3.50
“ colchici.....	oz	20	lb 2.60
“ “ acet.....	oz	15	lb 2.00
“ colocynth co.....	oz	25	lb 3.00
“ “ pulv.....	oz	20	lb 2.50
“ conii.....	oz	10	lb 1.00
“ conii pulv.....	oz	20	lb 2.50
“ copaibæ resin.....	oz	15	lb 1.50
“ digitalis.....	oz	20	lb 2.50
“ “ pulv.....	oz	30	lb 3.50
“ ergotæ pulv.....	oz	60	
“ gentiana.....	lb	45	
“ filicis maris ether.....	oz	25	
“ hamamelis dest	gr	1 25	
“ glycyrrh mol.....	lb	0 75	
“ “ pulv.....	lb	0 75	
“ hellebor nig.....	oz	25	
“ hæmatoxyli.....	lb	80	
“ hyocram.....	oz	20	lb 2.5. 0

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AN IMPROVED LINT,

MORE ABSORBENT. MORE EASILY APPLIED.

Lintos is a new absorbent fabric made of Absorbent Cotton felted into thin sheets. Every fibre thoroughly cleansed, sterilized and anti-septic. Can be readily formed into Bandages, Pads, Tampons or any desired form of dressing

Is a substitute for
GAUZE,
COTTON,
BANDAGES,
NAPKINS,
SPONGE,
TOWELS,
&c. &c.

ADVANTAGES OVER LINT.

Greater absorbancy.

Tears Readily

No loose Fibres to stick to Wounds
or Clothing.

Covers 50 per cent more surface than same weight of Lint.

Notwithstanding these advantages Lintos is no higher in price than ordinary Lin'.

Order from you - Wholesaler.

Price by single pound 55c. per lb. net.

Sample and Literature on application to

THOS. LEEMING & Co.,
MONTREAL.

Sole Agents for JOHNSON & JOHNSON

TO DRUGGISTS

WE RESPECTFULLY CALL ATTENTION TO OUR SPECIALTY

Gibson's • Golden • Malt • Tablets

. . . This is a confection of the highest standard, and rapidly growing in favor on account of the recognized purity, great excellence, and delicious flavor. It is an article druggists can safely recommend

Price : 1/5 -lb. Bottles, per dozen, \$4.80
each - 1.80

For Sale by the Wholesale Drug Trade.

• • • •

GIBSON MALT TABLET CO.,**TORONTO.****PRODUITS SPECIAUX**

.... POUR

Injections Hypodermiques,

—PRÉPARÉS PAR—

J. MOUSNIER, DE SCEAUX, FRANCE.

Pharmacien de l'école Supérieure de Pharmacie de Paris.

Eucalyptol, Eucalyptol Gaiacolé, Eucalyptol Gaiacolé et
Iodoformé, Eucalyptol Créosoté, Eucalyptol Iodoformé,
Eucalyptol à l'Hélinéine, Eucalyptol Phosphoré,
Phosphate de Soude, Ergotinine, Hypophosphite
de Strychnine, Quinine, Chlorure double de fer
et de Quinine, Salicylate de fer. Sparteine.
Menthol, etc., etc.

Injections Ségardiennes.

Suc Testiculaire.

Substance Grise.

Extract hyoscyam aquos . . . oz	10	lb 1.00	Ferri sulphas commercl. . . lb	2	brl 1.00 gross
“ “ pulv . . . oz	25		“ “ exsic . . . lb	2	
“ “ exot . . . oz	15	lb 1.50	“ “ pur . . . lb	7	10 lb 6
“ ignatia amara . . . oz	60		“ sulphid . . . lb	15	
“ ipecac acetic . . . oz	1	50	“ valerian . . . oz	25	
“ jaborandi . . . oz	60		Ferrum dialysatum . . . oz	40	
“ jalapæ . . . oz	25	lb 3.50	“ redactum . . . lb	75	
“ “ pulv . . . oz	35		“ tartaratum . . . lb	80	10 lb 75
“ krameria . . . oz	25	lb 3.50	Flor. anthem. opt, French. . lb	35	
“ lactucæ . . . oz	20	lb 2.20	“ “ Roman . . . lb	30	
“ logwood . . . lb	11	(15 & 30 lb boxes)	“ “ German . . . lb	30	
“ logwood 1 lb pkts. . lb	15	(30 lb boxes)	“ arnicæ . . . lb	25	
“ “ ½ lb pkts. . lb	17	“	“ lavand . . . lb	15	pulv 25
“ “ ¼ lb pkts. . lb	16	“	“ rosæ gall . . . lb	1	75
“ “ asst. pkts. . lb	16½	“	“ “ white . . . lb	75	
“ lupuli . . . oz	25	lb 3.00	Folia aconiti . . . lb	25	pulv. 40
“ malt . . . lb	25		“ belladon . . . lb	25	pulv. 35
“ mezerei æther . . . oz	60		“ buchu . . . lb	25	
“ nucis vomic. . . oz	40	lb 5.40	“ cocæ green . . . lb	75	
“ “ pulv. . . oz	40		“ conii . . . lb	20	pulv. 35
“ opii . . . oz	90	lb 13.50	Folia digitalis . . . lb	20	pulv. 35
“ opii pulv . . . oz	1	00	“ eucalypti glob. . . lb	18	
“ “ liquid . . . lb	1	25	“ hyoscy. exot. . . lb	25	powd. 40
“ papaveris . . . oz	16	lb 2.25	“ jaborandi . . . lb	90	
“ physostigmatis . . . oz	2	00	“ maticæ . . . lb	40	
“ podophylli . . . oz	25	lb 8.00	“ pnlegii . . . lb	20	
“ quassia . . . oz	20	lb 2.40	“ sennæ alex . . . lb	60	
“ rhamni frang. . . oz	50	lb 5.00	“ “ tenny . . . lb	20	15, bale 16, 12.
“ ramni pulv . . . oz	40		“ “ pulv . . . lb	25	
“ sarsæ jam . . . oz	30	lb 4.00	“ uvæ ursi . . . lb	12	
“ rhei E. I. . . oz	21	lb 3.50	Fruct. anethi . . . lb	30	
“ sarsæ jam co. . . oz	28	lb 3.25	“ anisi German . . . lb	15	
“ sarsæ hond co . . . oz	20	lb 2.75	“ “ pulv . . . lb	20	
“ stramonii fol. . . oz	20	lb 2.50	“ “ Star . . . lb	45	
“ stramonii pulv . . . oz	25	lb 3.00	“ capsici . . . lb	27	10 lbs 25
“ taraxaci . . . lb	50		“ “ pulv . . . lb	30	“ 28
“ valerian . . . oz	15	lb 2.00	“ carni . . . lb	12	“ 11
“ veratri viride . . . oz	45		“ “ canad . . . lb	11	“ 10
Fabæ physostigmatis . . . lb	50		“ carni pulv . . . lb	18	
“ tonca para . . . lb	1	00	“ conii . . . lb	30	
“ “ surinam . . . lb	1	75	“ coriandri . . . lb	10	bag 7½
“ “ angostina . . . lb	2	75	“ “ pulv . . . lb	18	
“ vanillæ short . . . lb	3	00	“ fœniculi . . . lb	15	pulv 20
“ “ medium . . . lb	5	00	Fuller's earth . . . lb	4	100 lb 3
“ “ 7½ in . . . lb	6	50	“ “ pulv . . . lb	6	100 lb 5
Fehling's solution . . . lb	1	00	Gallæ cornulæ . . . lb	28	bag 25
Fel bovinum purificat . . . oz	20	2.00 lb	“ cornulæ pulv . . . lb	30	grd 28
Ferri ammon chlorid . . . lb	60		Gasoline, 76° . . . gal	60	
“ “ persulph (iron alum) . lb	40		Gelatine, black label . . . lb	35	10 lb 30
“ “ protosulph . . . lb	25		“ bronze label . . . lb	40	“ 35
“ “ tartras . . . lb	75		“ silver “ . . . lb	45	“ 40
“ arsenias . . . oz	15	lb 1.60	“ gold “ . . . lb	60	“ 55
“ bromidum . . . oz	20	lb 2.00	“ pink gold label . . lb	75	
“ carb. precip . . . lb	15		Glue, black . . . lb	12	
“ carbonas sacch. . . lb	30		“ amber . . . lb	15	
“ citras soluble . . . lb	65		“ white . . . lb	20	
“ et ammonii citras . . lb	70		“ cooper's . . . lb	39	
“ et quin. cit., 4% . . . oz	15		Glycerine (double dest) 1260 deg . lb	20	6 lb tin 16 case 15
“ “ . . . lb	1	75	Glycerine Price's . . . lb	70	Wt. qt. 65
“ “ 10% . . . oz	20		Grana paradisi . . . lb	20	
“ “ . . . lb	2	50	“ “ pulv . . . lb	30	
“ “ P. B. . . oz	25		Guaiacol . . . oz	80	
“ “ . . . lb	3	00	“ carb . . . oz	1	75
“ “ Hd's . . . oz	25		Guarana pulv . . . lb	3	00
“ “ amorph . . . oz	15		Gum acacia turc elect. . . lb	65	
“ “ . . . lb	1	75	“ “ med . . . lb	50	
“ “ et strych. cit., oz	35		“ “ sorta . . . lb	35	
“ “ Hd's, oz. . . oz	40		“ “ pulv . . . lb	75	
“ et strych. citras 1% . oz	15	10 oz 13 lb 1.75	“ ammon in guttæ . . . lb	50	
“ hypophosphis . . . oz	20	lb 2.50	“ asafetid. opt. . . lb	45	sec. 35
“ iodide . . . oz	40		“ “ pulv . . . lb	40	
“ lactas . . . lb	75		“ benzoin opt . . . lb	75	
“ perchlorid . . . lb	35		“ catechu nig . . . lb	12	20 lb 11 pulv 25
“ phosphas . . . lb	85		“ catechu pallid cubes . lb	16	10 lb 15
“ pyrophosph . . . lb	30		“ copal . . . lb	75	
“ succinate . . . oz	35		“ damar . . . lb	30	

SHIRLEY'S No. 42 MENTHOL CONE.

admittedly the best selling in the world.



The case is of celluloid pink lettered in aluminum, and the cone takes off with the lid. Nothing to equal it, has ever been brought out.

Sells in London @ 3/9 doz
 also, No. 41, 6d flat celluloid. 3/9 "
 4tc 1/ " " " " " " " " 6/9 "

We can supply Menthol Cones to retail from 1d upwards, and give a few leading shapes.

No. 110P. 1d pedestal, 7/6 gro.	No. 8P. 6d aconr boxwood	3/8
114P. 2d " 14 "	111 1/ " "	5/-
107F. 3d " 1/10 doz.	112 6d Flat.	3/3
	17 F 1/ " "	5/6
109 4d " 2/6 "	6d Roller Pattern.	3/6
113R. 6d reversib	3/3 " 4d "	2/6
9CR 1/ " 5/	The Roller is unbreakable.	

All above prices are those obtained in England.

SHIRLEY BROTHERS,
 15 Whitecross St., E.C., LONDON, ENG.



Father Matthew Remedy, Dr. Sey's Remedy, Audette's Hair Promoter, Indigenous Bitters, Persian Lotion

— AND **Capilline,**

For Sale by all Druggists.

S. LACHANCE

Proprietor,

MONTREAL.

Laboratory for the United States :

ROUSE'S POINT, N.Y.



MUNN'S LIQUID GLUE

IS WARRANTED TO MEND LEATHER, WOOD CROCKERY GLASSWARE ETC. AND IS PRONOUNCED BY ALL AS THE STRONGEST, CHEAPEST AND BEST.

MUNN'S Glue is packed in 1 oz. and 2 oz. bottles, Cans, Pails and Bottles.

STEWART MUNN & CO., Board of Trade **MONTREAL.**
 Building,

Celebrated Brand of
 Cognac Brandy ○ ○ ○ ○ ○ ○ ○ ○

FAUSTIN FRERES,

○ ○ ○ ○ ○ ○ ○ ○ As shipped in all the
 Markets of the World.

**THE BEST VALUE IN BRANDY
 SUPPLIED FOR THE PRICE!!!**

Agents ——— **LYMAN, SONS & Co.,** ——— **MONTREAL**

Gum elemi..... lb	45	
“ euphorb. pulv..... lb	40	
“ galban opt..... lb	3 50	
“ gambogia..... lb	1 05	pulv 1 20
“ guaiaci..... lb	65	Sec. 40 pulv 50
“ juniper..... lb	45	
“ kino..... lb	1 10	pulv 1 20
“ mastiche select..... lb	1 25	
“ myrrh. ture opt..... lb	70	
“ “ “ sorts..... lb	45	pulv 65
“ olibani..... lb	25	
“ sang. dracrnis..... lb	45	reed 90
“ “ “ pulv..... lb	75	
“ scammon. aleppo } lb	6 50	
“ opt. (pulv) }		
“ scammon resin..... lb	3 75	
“ seedlac..... lb	40	
“ shellac, orange..... lb	40	
“ “ bleached..... lb	40	50 lb 35
“ spruce..... lb	30	10 lb 25
“ sterax liquid.....	50	
“ “ dry..... lb	50	
“ thus..... lb	15	
“ tragacanth Ribbons..... lb	90	
“ “ Alleppo opt lb	75	
“ tragacanth Alleppo No.2. lb	60	
“ “ pulv. opt. lb	90	
Gum cotton.....	70	1 oz box
Hæmogallol, 10 gm. vials....	60	each
Hæmol “ “.....	35	“
Homatropine Hydrobrom..... gr	30	
Humulus lupulus..... lb	20	assorted packages
Hydrarg. bicianid..... oz	30	
“ bisulphate..... lb	90	
“ iodid rubr..... oz	40	lb 4.50
“ “ virid..... oz	25	lb 3.50
“ oxyd. flav..... lb	1 50	
“ “ rubr..... lb	1 10	
“ perchlor..... lb	90	pulv. 1.00
“ subchlor..... lb	1 00	
“ sulph flav..... lb	1 50	
“ “ alb..... lb	30	
“ “ c suloh..... lb	1 00	
“ tan nas..... oz	35	
“ ammon..... lb	1 20	
“ c. creta..... lb	60	
“ oleas..... .5% lb	55	
“ “ “ 10% lb	65	
“ “ “ 20% lb	80	
Hydrargyrum..... lb	30	10 lb 70
Hydrastine alicaioid C.P..... dr	50	
“ hydrochlor C.P. dr	50	
Hydrastinine mur..... grammie	1 25	
Hydrochinone..... oz	35	lb 4 50
Hydrogen peroxid, Penchot's. l lb		doz. 8 00
“ “ “ ½ lb		“ 6 00
“ “ “ ¼ lb		“ 4.50
Hyoscine, hydrobrom, 5 gr. tub. l	75	each
Hyosciamine..... gr	25	sulph gr 35
Hypnon, pure..... oz	1 50	
Ichthyoe. inc. Brazil..... lb	2 40	
“ “ “ oz packets	2 25	dozen
“ “ Russian..... lb	5 25	
Ichthyol, Merck's..... oz	40	½ lb 5.50 lb
		½ lb 5.25 lb
		1 lb 5 00 lb
Indigo Madras opt..... lb	75	sec 65
“ “ pulv..... lb	90	
“ Pasto..... lb	20	
Idsect powder D. atian..... lb	35	25 lb 28 66 lb 27
Iodoformum..... oz	40	lb 5.90
“ præcip..... oz	40	lb 5.90
Iodol..... oz	1 40	
Iodum crude..... oz	30	lb 4.50
“ rsub..... oz	40	lb 5.25
Jalapin ang..... oz	1 00	lb 13.50



PENNYROYAL WAFERS

33 1/3 % of PROFIT.

6 YEARS in Canada and United States, and sales largely due to their merit. Often imitated. Costs you \$8.00 per dozen. We desire to establish and advertise local druggists as agents; quick sales and profit thus insured to such agencies. Get this advantage for yourself by writing to the SOLE MANUFACTURERS, **EUREKA CHEMICAL CO., DETROIT.** No duty to pay.

COUNT OF
St. Michel Wine,

The world renown TONIC.

Prescribed by the most eminent Doctors.

Over 25,000 certificates states its success to cure . . .

WEAKNESS, DEBILITY, POVERTY OF BLOOD, DYSPEPSIA, INSOMNIA, LOSS OF APPETITE. CHRONIC DIARRHOEA and BLOOD DISEASES.

A WINEGLASSFUL TAKEN DAILY IS SUFFICIENT TO RESTORE HEALTH.

PRICE, large bottle, \$1.00.


MONGENAI, BOIVIN & CO.,

Sole Agents for Canada, MONTREAL.

SPECIAL OFFERS



Canary Seed

A large Consignment
just received 

Hemp Seed

In Double
Bags.

Millet Seed

. . . WE HAVE BEEN APPOINTED AGENTS FOR CANADA FOR . . .

KIRK'S SOAPS

Our travellers will visit you shortly with a full line of samples.

LAUTIER'S PERFUMES In one pound or half
pound bottles.

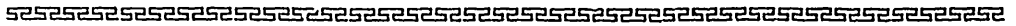
LYMAN, SONS & CO.,
MONTREAL.

Kamala	lb	60	
Koussou	oz	10	
Kava Kava	lb	90	
Lactopeptin ozs.....	doz	8	50
" " ½ lbs.....	lb	10	50
Lactucarium aug.....	oz	70	
Lanolin	lb	85	
Lapis calam. præp.....	lb	7	
Lapis pumicis select.....	lb	8	ordinary 6
" " pulv.....	lb	7	100 lb 5
Leptandrin	oz	45	Keiths 50
Lichen Hibern opt.....	lb	20	Sec 15
Licorice Corig.....	lb	35	
" Solazzi.....	lb	45	
" Zuvia.....	lb	30	
" Windsor, 4,8 or 161.5lb	lb	35	25 lbs 3)
" Y & S. stick.....	lb	35	
" Pellets Y. & S.....	lb	40	
Licorice Pellets M. & R.....	lb	40	
Lignum guaiaci rass.....	lb	7	
" quassia incis.....	lb	10	50 lb 9
" sant flav. grd.....	lb	65	Rub 10
Liniment aconiti.....	lb	90	Whr. qt. 80
" belladon.....	lb	95	" 85
" camph.....	lb	55	
" camph comp.....	lb	60	Whr. qt. 55
" iodi.....	lb	1	50
" opii.....	lb	90	
" saponis co.....	lb	45	
" " c pot iod.....	lb	90	
" terebinth.....	lb	30	
Liquorammon. acet conc.....	lb	35	
" an.mon fort s. g. 880lb	lb	12	12 Whr. qts. 10
" antim. chlor.....	lb	22	W. qt. 20
" arsenicallis.....	lb	10	pt, Whr. qt. 8
" arsenii et hyd. iod.....	lb	25	W. qt. 20 (Donovans)
" Ferri Acet.....	lb	35	
" " Ft.....	lb	60	
" ferri dialysatus.....	lb	40	W. qt. 35 lb
" " perchlor fort.....	lb	12	Whr. qt. 11
" " pernit.....	lb	14	
" " persulph.....	lb	25	
" hydrogenii perox.....	lb	35	
" plumbi subacet.....	lb	12	Whr. qt. 10
" potassæ.....	lb	7	
" santal flav comp.....	lb	1	50
" sodii chlor.....	lb	16	
" strychnaine.....	lb	50	Whr. qt. 45
Lithii bromid.....	oz	25	
" carbonas.....	oz	25	lb 3.20
" citras.....	oz	20	lb 2.75
" hippurate.....	oz	1	50
" iodid.....	oz	50	
" salicylat.....	oz	30	
Litmus.....	lb	60	
Lucilline.....	1 lb tins	20	each
".....	5 lb "	90	"
".....	10 lb "	1	60
".....	25 lb tubs	14	lb.
".....	50 lb tubs	13½	"
Lupulinum.....	lb	60	
Lycopodium.....	lb	80	
Lysol.....	¼ kilo bottles	75	each
Macis.....	lb	1	20 pulv 1.30
Madder compound.....	lb	10	carbony 9
" Dutch.....	lb	12	hri 10
Magnes citr. gran. Bishop.....	lb	80	7 lb 75
" " Lyman.....	lb	35	
" calcined.....	1 lb tins	50	
" " " bots.....	lb	65	
Magnesi carb levis 1 oz pkt lb	lb	22	10 lb 20
" " " 2.....	lb	20	" 18
" " " powd.....	lb	25	1 lb tins
" chloride.....	lb	30	
" sulphas.....	lb	3	Brl. 1.50
Magnesium, wire or ribbon.....	oz	75	Powder 50

Maltopepsin ¼ lb bots.....	lb	5	85
" bots.....	doz	6	35
Mangan chlorid.....	lb	50	
" oxyd. nigr.....	lb	10	hrl. 7½
" sulph. pur.....	lb	60	
Mauna flak select.....	lb	1	75
Maranta Bermuda.....	lb	45	10 lb 42
" Jamaica.....	lb	15	
Mel. canadensis.....	lb	15	10 lb 14
Menthol.....	oz	50	lb 7.50
Morphinæ acetat.....	oz	2	15 10 ozs. 2 00
" hydrochloras.....	oz	2	15 " 2 00
" sulphas.....	oz	2	25 " 2 10
Moschus, in grain.....	dram.	5	50 4.50 3.50
Myrtol.....	oz	1	00
Naphtha mineral.....	lb	50	
Naphtha vegetable.....	lb	60	
Naphtaline recombined.....	lb	30	
Naphthol Beta.....	oz	10	lb 1 .40
" Bengoate.....	oz	40	
Nickel sulph cryst.....	lb	75	
" ammon. sulph.....	lb	35	
Nux. areca select.....	lb	20	pulv 35
" kola.....	lb	50	
" myristica (limed).....	lb	90	pulv 1.00
" " opt.(unlimed).....	lb	1	00
" vonisia.....	lb	12	pulv 25
Olio Resin Capsici.....	oz	85	
" Cubeb.....	oz	50	
Ol. absinth.....	oz	40	lb 4.75
" amygd. dulc.....	lb	50	Whr. qt. 45
" essent. sine acid.....	oz	50	
" pruss.....	oz	50	
" anethi Ang.....	oz	35	lb 4.50
" anisi.....	lb	2	75 Whr. qt. 2.50
" anthem Ang.....	oz	2	00
" auranti.....	lb	3	25 Winch. 3 00
" bergam super.....	lb	4	00
" buchu.....	oz	3	00
" cadi.....	lb	35	Whr. qt. 30
" cajeputi.....	oz	10	lb 1.00
" carui.....	lb	2	50
" caryoph.....	lb	1	25
" cassia.....	lb	1	50
" cedri opt.....	lb	75	Whr. qt 70
" chaulmoogra.....	oz	20	
" cinnamomi ver.....	oz	1	70
" citronellæ.....	lb	80	bot. 70 lb
" cocoanut.....	lb	15	
" cognac.....	oz	1	75
" Colegno.....	oz	60	
" conii.....	spruce.....	lb	70 Whr. qt. 65
" copaiba.....	lb	1	25
" coriandri.....	oz	70	
" crotonis.....	oz	10	bot. 1.20 lb
" cubebæ.....	oz	40	
" cumini.....	oz	40	
" erigerontis.....	lb	3	25
" eucalypti.....	lb	1	25
" fœniculæ dulc.....	lb	1	50
" gaulther.....	oz	25	lb 3.0
" " synthetic.....	lb	2	00
" geranii rox.....	oz	50	
" " super.....	oz	1	00
" juniperi bacc.....	oz	15	lb 2 00
" " lig.....	lb	60	Whr. qt. 55
" lauri.....	lb	40	
" lauri essent Bay.....	oz	40	lb 5.00
" lavand ang.....	oz	2	00
" " exot.....	lb	3	50 sec 2.50 1.50
" limonis super.....	lb	2	25 copper 2.10
" macis.....	oz	25	lb 3.50
" menth. pip. Amer.....	lb	4	25 Whr. qt. 4.00
" " " English.....	oz	1	00 lb 14.00
" " " Japan.....	lb	4	75

We · Pay · Express · Charges

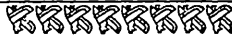
TO THE RETAIL TRADE OF CANADA.



PRICE LIST

—OF—

T. A. Slocum & Co's Remedies.



. . . Having found in the past that some retailers have been unable to procure small supplies of all our remedies from their Wholesaler, we offer to supply such cases in future direct, and to **prepay charges** on all **cash** orders of \$3.00 and over. Goods can be obtained from any Wholesale Druggist or direct.

TERMS, CASH; 5 per cent. DISCOUNT.

	Dozen.	Sold at		Dozen	Sold at
Dr. Slocum's Psychine, large.....	\$28 00	\$3 00	Dr. Slocum's Compound Pennyroyal Tea ..	\$ 2 00	\$ 25
Dr. Slocum's Psychine, small.....	14 00	1 50	Dr. Slocum's Worm Wafers.....	2 00	25
Dr. Slocum's Oxygenized Emulsion, large..	7 50	1 00	Dr. Clark's Catarrh Cure.....	4 00	50
Dr. Slocum's Oxygenized Emulsion, small..	3 00	35	Dr. Clark's Pile Ointment.....	7 50	1 00
Dr. Slocum's Coltsfoot Expectorant.	7 50	1 00	Dr. Clark's Regulative Pills.....	4 00	50
Dr. Slocum's Celery and Quinine Bitters...	4 00	50	Dr. Clark's Lightning Liniment..	2 00	25
Dr. Slocum's Regulative Pills.....	4 00	50	Peach Bloom Skin Food.....	7 50	1 00
Dr. Slocum's Magnetic Plasters.....	2 00	25	Dr. James' Horehound Expectorant.	2 00	25
Dr. Slocum's Iron Blood Pills.....	2 00	25	Abrusine Corn Solvent.....	2 00	25

All orders receive prompt attention. Remit by Post Office Order, Express Order or Registered Letter. Postage stamps taken for amounts less than \$1.00,



Address all Monies and Letters to

T. A. SLOCUM & CO.,

186 Adelaide Street, West, TORONTO, CANADA

Ol. menth virid.....oz	25	lb 3.50	
" morrhua Newf.....gl	90	to 1.00	brl. 85
" " Norweg.....gl	1	20	brl. 95
" " Nfld. by Nor- weg. process }	1	00	kegs 18 ga's 85
" myrbane.....lb	30	Whr. qt. 25	
" myristica.....oz	30	bot. 25	
" neatsfoot, pale.....gl	1	25	
" neroli, opt.....oz	4	00	
" olive sublime salad .gl	2	50	
" olive sublime salad 1 gal			original tins incl 2.50 each.
" " green.....gl	1	40	brl. 1.20
" " " opt.....gl	1	50	brl. 1.35
" " yellow.....gl	1	40	brl. 1.15
" " yellow opt.....gl	1	50	brl. 1.25
" " (Salad American)gl	1	30	brl. 1.15
" origani.....lb	85		
" " Sec.....lb	50	Winch 45	
" palma select.....lb	15		
" patchouli opt.....oz	1	25	
" petit. gran.....oz	75	Sec 45	
" picia.....lb	12	Whr. qt. 10	
" pimenta.....oz	25	lb 3.20	
" pini silvestris.....lb	1	50	
" palegii hed.....lb	2	25	
" rapii.....gl	1	00	
" rhodii.....oz	80		
" ricini E. I.....lb	11	case 8 1/2 tins 9 1/2	
" " Gal water pale..lb	12	brls 8 1/2	
" " Virgin.....oz	15	tins 13	
" " Ital.....lb	20	tins 18	
" rosmarini exot.....lb	70	W. qt. 65	
" ruta.....oz	25		
" sabina.....lb	1	30	
" sambuci vir.....lb	30		
" santali ang.....oz	50	lb 7.50	
" " " W.I.....oz	40	lb 5.00	
" sassafras.....lb	70	Whr. qt. 65	
" sem santon.....oz	25	lb 3.20	
" sesame.....gl	1	35	case 1.25
" sinapis essent.....oz	65	lb 8.50	
" sperm.....gl	2	00	
" spike.....lb	25		
" succin. rect.....lb	65	Whr. qt. 60	
" tanaceti opt.....oz	30	lb. 4.25	
" terebinthina.....lb	50		
" " coml.....gl	65	brl. 58	
" theobromatis.....lb	55	(tablets)	
" valerian.....oz	1	00	
" verbenæ.....oz	10	bot. 9	
" vini.....oz	25	lb 3.50	
" y'ang-ylang.....oz	7	00	
Opium Turc.....lb	4	75	
" " pulv.....oz	40	lb 5.75	
Os sepia.....lb	25	select 40 pulv 35	
Otto rosa Doupsi.....oz	7	00	
" virgin.....oz	9	00	opt 11.00
Panc'reatine, Morson's.....oz	1	00	
" Merck's.....oz	35		
Papoid.....oz	3	25	
Paraffinum durum.....lb	20	50 lb 15	
Paraldehyde.....oz	20	lb 2.25	
Paris Green.....100 lb irons	14		
" " " 25 lb "	15		
" " " 1 lb tins	18		
Pellaterine Tannate.. . gm	45		
Pepsin.....lb	225		
" " pur. sol pulv. Merck's..lb	3	00	
" Merck's scales.....lb	5	00	
" ang. coml.....oz	30	lb 3.50	
" Boudault's.....oz	1	20	
" medicinal Morson's..oz	85		
" porci Morson's.....oz	2	25	
" sacchar.....oz	25	lb 3.50	
" Jensen's scales " ..oz	1	25	
" Armour's.....oz	90	lb 12.00	

TURKISH DYES.

..... Seventy-four Colors
..... Fast Shades

BRAYLEY, SONS & CO.
MONTREAL.

Rheumatism Quickly Cured

—BY—
DR. NELATON'S POWDER.

Sent free by mail on receipt of \$1.

LAVIOLETTE & NELSON,

Dispensing Chemists,
Corner Notre Dame and St. Gabriel Sts.,
MONTREAL.

BOTT'S MALT PREPARATIONS.

Pure Malt Stout and Wine of Malt

Recommended strongly by prominent
Physicians all over the Country.

FOR SALE BY ALL DRUGGISTS.

Obtainable Wholesale from Messrs. **LYMAN, SONS & CO.**
at the following prices:

Pure Malt Stout, \$1.60 per doz.
Wine of Malt, \$2.60 "

WALTER R. WOHAM & SONS,
Agents.

**IMPORTANT INFORMATION FOR
RETAIL DRUGGISTS.**

"CARTER vs. CARR."

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

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

The Court granted a perpetual injunction—with costs.

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

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

SUBSTITUTION IS UNLAWFUL.

Do not be guilty of it.

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

Yours very respectfully,

CARTER MEDICINE CO.
Murray Street,
NEW YORK.

SMALL PILL.	CARTER'S LITTLE LIVER PILLS.
—o—	
SMALL DOSE.	
—o—	
SMALL PRICE.	
A POSITIVE CURE FOR SICK HEADACHE.	

J. M. FORTIER'S

Cigars

Are the Leading
Sellers in the Dominion!



TO GAIN AND RETAIN CUSTOM, DEALERS
SHOULD KEEP UP THEIR STOCK OF THE
CELEBRATED

"Creme de la Creme"

"Pete" "Mirosa"

La "Sonadora"



J. M. FORTIER, Dealer in **Raw Leaf Tobacco,**
High Grade **Creme de la Creme Cigar Co,**
141 to 153 ST. MAURICE STREET, MONTREAL.

**THE
HEARLE
M'FG' CO.**



Successors to

J. G. HEARLE,

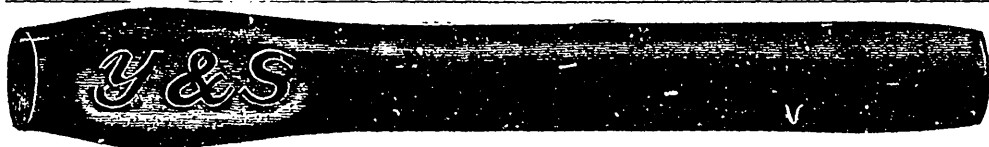
TOILET SOAP MAKERS,

**84 St. Urbain Street,
MONTREAL.**

WE are pleased to announce to the
Drug Trade of Canada that our
well known make of TOILET SOAPS can
now be had from all the leading whole
sale houses.

Petrol Barbadians.....	..lb	15
Petroleum, see Lucilline		
Phenacetine Bayer.....	oz	45 lb 6.50
Phenocol.....	gm	25
" Hydroch.....	25 gms	1 50
Phenolphthalein.....	oz	1 00
Phosphorous... 11 lb tins..	lb	85 1 lb bots 1.00
Pil. hydrarg.....	..lb	70
Pilocarpin Hydrochlor ..	gr	10 5 or 10 tubes
" nitras	gr	10 5 or 10 tubes
Pipe clay.....	..lb	5 100 lb 4
Piperinæ.....	oz	1 00
Piperazin Bayer, ½ oz bottle.	oz	3 75
" tablets... 10x16 gr		2 40 each
Piper alba.....	..lb	20 pulv 22
" Cayenne.....	..lb	25 10 lb 20
" nigrum.....	..lb	17 pulv 19 25 lb 17
Pix Burgund bladders.....	..lb	10 20 lb 9
Platinum Bichlor.....	oz	8 90
" " 10% solut os		1 25
" Foil	gm	55
" Wire	"	45
Plumbi acetas brown.....	..lb	10 50 lb 9
" " Xtls .....	..lb	12 50 lb 10
" " C. P.....	..lb	25
" iodid.....	oz	35 lb 4.50
" nitras coml.....	..lb	16
" oleas.....	..lb	1 00
" oxyd pulv.....	..lb	9 keg 7½ (litharge)
" " rnb.....	..lb	8 keg 6 (red lead)
Podophyllin resin.....	oz	35
Potassa caustica sticks.....	..lb	55
" sulphurata.....	..lb	35
Potassii acetas.....	..lb	45 gran 50
" bicarbonas.....	..lb	16
" " pulv.....	..lb	17
" bichromas.....	..lb	15 keg 12½
" binoxalas.....	..lb	23 10 lb 22
" " pulv.....	..lb	25 10 lb 23
" bitart .....	..lb	30 keg 24 brl 23
" bromid.....	..lb	60 5 lb 55
" carbonas.....	..lb	14 10 lb 12
" carbonas pearl ashes	..lb	10 100 lb 9
" chloras.....	..lb	27 keg 25
" " pulv.....	..lb	28 keg 26
" chlorid. pur.....	..lb	30
" chromas.....	..lb	60
" citras neutral.....	..lb	70
" cyanid. C. P.....	..lb	1 00
" " gold plater	..lb	75
" " fused .....	..lb	45
" hypophosph.....	..lb	1 50
" iodid.....	..lb	4 00 5 lbs \$3 75
" nitras.....	..lb	10 112 lb keg 7
" nitras pulv.....	..lb	11 (Gran) 10 keg 7½
" " C.P. Mercks.....	..lb	30
" oxalas, neutral.....	..lb	25
" permangan pur.....	..lb	35 10 lb 30
" pruss. flav.....	..lb	35
" " rubr.....	..lb	75
" silicas.....	..lb	30
" " Liq.....	..lb	20
" sulphas.....	..lb	12 pulv 13
" sulpho-cyanid.....	oz	15
" sulphocarb.....	..lb	1 90
" sulphuret.....	..lb	35
" tartras.....	..lb	80
Potassium.....	oz	3 00
Propylamine.....	oz	75
Pulv aloes c. canella.....	..lb	40
" antimionialis P. L.....	..lb	60
" catechu comp.....	..lb	70
" cinnam comp.....	..lb	75
" cretas aromat.....	..lb	1 20
" " " c. opid.....	..lb	1 50
" " comp.....	..lb	50

Pulv cretas comp c. opid ..	..lb	76
" cretas c. camph.....	..lb	25 10 lb 20
" glycyrrh comp.....	..lb	30
" ipecac comp.....	..lb	1 40
" jalap comp.....	..lb	76
" kino comp.....	..lb	1 25
" rhei comp.....	..lb	75
" sapo cast.....	..lb	25
" " " alb.....	..lb	35
" scammon comp.....	oz	30
" seidlitz Howards.....	..lb	25 7 & 14 lb
Pyoktannin.....	25gms	1 25
Pyridin Purias.....	oz	20
Quassine, ½ oz vials.....	oz	4 00
Quininae bisulph.....	oz	50
" bromid.....	oz	76
" citras.....	oz	80
" hydrobrom.....	oz	1 00
" hydrochlor	oz	60
" hypophos.....	oz	1 50
" iodid.....	oz	1 00
" phosphas.....	oz	75
" salicylas.....	oz	65
" sulph German.....	oz	40 100oz tin 27 25 oz 28
" " Howards.....	oz	45 100 oz 40
" " " 4 oz	oz	40
" sulphocarbolas.....	oz	1 50
" tannate	oz	50
" valerian.....	oz	75
Rad. aconiti.....	..lb	20
" " contus.....	..lb	25 pulv 30
" anchusæ.....	..lb	20
" angelicæ.....	..lb	30 pulv 35
" arctii (turdock).....	..lb	15
" belladon.....	..lb	18 contus. 30
" calam. aromat.....	..lb	30
" calumb.....	..lb	20 pulv. 20
" curcumæ Madras.....	..lb	10 " 12
" galangal minor.....	..lb	15
" " pulv.....	..lb	25
" gentian, select.....	..lb	10
" " ground.....	..lb	12
" " pulv.....	..lb	15
" ginseng.....	..lb	4 50
" glycyrrh decort.....	..lb	25 10 lb 22
" " incis.....	..lb	60
" " dec't pulv.....	..lb	60
" " sicut.....	..lb	10 bundles 12
" " grd.....	..lb	12 brl. 11
" helleb alb.....	..lb	12
" " pulv.....	..lb	16 keg 14 br. 13
" ipecac.....	..lb	2 00
" " pulv.....	..lb	2 25
" iridis Florentine.....	..lb	50
" " " pulv.....	..lb	60
" jalapæ.....	..lb	45
" " pulv.....	..lb	55
" kramenæ opt.....	..lb	30
" pareira brava.....	..lb	40
" pyrethri.....	..lb	35
" rhei E. I. opt.....	..lb	1 25 cubes 1.00
" " " sec.....	..lb	75
" " " elect opt.....	..lb	2 25 fingers 1.50
" " pulv elect opt.....	..lb	2 50
" " " E. I. opt.....	..lb	1 25
" " " " sec.....	..lb	80
" sanguinarie.....	..lb	14 pulv 16
" sarsæ Hond.....	..lb	45 incis 50
" sarsæ Jam.....	..lb	70 " 75
" " Mex'can.....	..lb	18 20 lb 16
" scil'æ sicc.....	..lb	12
" " pulv.....	..lb	30
" senegæ.....	..lb	65
" spigelia.....	..lb	45 pulv 65
" sumbul.....	..lb	90
" taraxac sicc.....	..lb	18 10 lb 15



PURE CALABRIA "Y. & S." LICORICE,

4, 6, 8, 12 and 16 to pound.

"Acme" Licorice Pellets, in 5-pound Tin Cans.

Tar, Licorice and Tolu Wafers, in 5-pound Tin Cans.

Licorice "Y. & S." Lozenges,

In 5-pound Tin Cans and 5-pound Glass Jars.

"Purity," Pure Penny-Licorice

100 and 200 Sticks in a Box.

Ringed Licorice, 17 Sticks to a lb.

MANUFACTURED

EXCLUSIVELY BY

YOUNG & SMYLYE,

Where did you see this Advertisement?

BROOKLYN, NEW YORK.

SIMPLE BUT SURE.

SOMERVILLES'

M. F. COUGH

**C·H·E·W·I·N·G
G·U·M,**

Five Cents per Bar.

Twenty Bars on a Handsome Standing Card.

The Wholesale Trade have it.

Price 65 cents per Card.

C. R. SOMERVILLE, LONDON, ONT.

Rad tormentillæ.....lb	25	
" " pulv.....lb	35	
" Siegib. Afric. u. b.....lb	16	20 lb 15 bag 13
" " " pu v.....lb	18	30 lb 16
" " " Jam. u. b.....lb	25	11 23
" " " bleached. lb	30	10 lb 28
" " " pu'v opt. lb	30	10 lb 28
" " " sec. lb	25	
Reslu flav.....lb	4	brl 4.00 280 lbs.
" " pulv.....lb	5	50 lb 4
Resorcin xtls.....oz	25	lb 3.00
" resublim.....oz	50	
Rhizoma arnica.....lb	30	contus 40
" cimicifuga.....lb	15	
" podophyll.....lb	14	
" serpentaria.....lb	55	pulv 90
" valeriana.....lb	15	pulv. 22
Rouge—Jewellers.....lb	75	
Rubidium chloride.....gm	40	
Saccharine.....dram	20	oz 1.20
Sacch. lactis pulv.....lb	30	
Sago perlat. parv.....lb	6	bag 5½
Sai prunelle glob.....lb	20	
Salicinum.....oz	20	lb 2.75
Salipyrrih.....50 grms	2	50 each
Salol.....oz	40	lb 5 50
Salophen B. yer.....oz	1 50	
Santonium.....oz	20	lb 2.75
Sapo Castile Alb Contis...lb	16	box 15
" " " Shell.....lb	12	" 10
" " " Virgin.....lb	12	" 10
" " " " cakes box, 5 00		
" " Mottled opt...lb	12	box 11
" " " com...lb	10	" 9
" " " cakes gross	4 75	
" mollis ang.....lb	10	20 lb 8
" " German Green. lb	35	
" " Green opt.....lb	55	
Scammonia resin pulv.....lb	3 75	
Scoparii cacumin.....oz	25	
Secale Cornut.....lb	75	
Sem canary.....lb	6	bag 3½
" cardam.....lb	1 75	1.50 & 1.25
" cardam decort.....lb	1 00	
" " pulv.....lb	1 50	
" celery.....lb	25	
" chenepodii.....lb	25	
" colchici.....lb	55	pu'v. 65
" cydonia.....lb	50	
" cymini.....lb	20	pulv. 25
" fœnugræci.....lb	5	
" " pulv.....lb	7	ground 6 brl 5
" hemp.....lb	5	bag 4½
" hyoscyam.....lb	60	
" jambul.....oz	15	
" lini sifted.....lb	4	brl. 3½
" lini crushed.....lb	5	brl 4
" " " No. 2.....lb	4½	brl 3½
" " " No. 3.....lb	4	brl 3½
" lobelia inflata.....lb	50	pulv 55
" maw.....lb	15	10 lb 14
" millet.....lb	6	bag 5
" punkin.....lb	25	
" n ai.....lb	8	bag 7
" santonica.....lb	18	pulv. 28
" sinapis alb.....lb	12	
" staphisagria.....lb	35	
" stramonii.....lb	25	
Soda caustica stick.....lb	45	
" caustica cake.....lb	40	
" crystals.....lb	2	brl 1.25 per 100 lb s
" tartarata.....lb	28	
Sodii acetat pura.....lb	25	
" arsenias.....oz	10	lb 1.20
" benzoas.....oz	16	lb 1 50
" bicarb. pulv Morson's lb	10	
" " " Hd's.....lb	16	14 lb 15
" " pulv. coml... lb	4	keg 2 75



My Window Attracts Customers.

It is decorated with the new Hanger-Signs for

Tutti • Frutti.

SEND FOR FREE SPECIMEN WHILE THEY LAST.



ADAMS & SONS CO.,

11 & 13 Jarvis St,

TORONTO, Ont.

WAMPOLE'S  Now in stock at all Wholesale Druggists.

Granular Effervescent Bromo-Pyrine,

Large size, \$9.00 doz Small size, \$2.25 doz.

(Trade Mark) Medium " 4.75 " Sample " 8.50 gros

1 lb. Bottles, 2.37 lb.

Comp.Sy. Hypophosphites, \$8.50 ^{PER DOZ.} \$3.17 ^{5 PINTS}

Tasteless prep'n Cod Liver Oil, 8.50 3.17

Syrup Hydriodic Acid 8.50

Hypno-Bromic Co. (True Hypnotic)

1 lb. Bottles, \$25.67 Doz.

½ " " 12.64 "

¼ " " 7.37 "

Tasteless preparation Cascara Bark,

12 oz. Bottles, \$7.00 Doz.

Asparoline Compound 8.50 "

Alvinine Suppositories, ^{Per Doz. Boxes,} \$4.00

^{Per Doz. Boxes,} 2.75

Glycerine Suppositories, ^{Per Doz. Boxes,} 3.17

^(Adult Size) 3.17

White Pine Com , 5 pt. bottles 2.65

Per dozen 6.85

PREPARED SOLELY BY

HENRY K. WAMPOLE & CO.,

Manufacturing Pharmacists,

PHILADELPHIA, U.S.A.

CANADIAN BRANCH:

36 & 38 LOMBARD ST., TORONTO

Highest Awards

PARFUMERIE

At all Exhibitions

ED. PINAUD,

7 Boulevard d Strasbourg,
PARIS.

ED. PINAUD'S latest Exquisite Perfumes:

- PAQUITA-LILY,
- AURORA-TULIP,
- ACACIA DE FRANCE,
- FRENCH PANSY
- VIOLETTE
- DE PARME.



FOR SALE BY
LYMAN, SONS & CO.

THE GENUINE

EAU DE COLOGNE,

Distilled strictly according to the original recipe of the
Inventor, is manufactured by

Johann Maria Farina Julich Place No. 4,
Cologne o/Rhine

Patented Purveyor to H. R. H. the Prince of Wales, and to
several other Imperial and Royal Courts.

This EAU DE COLOGNE was distinguished with prize-medals
and diplomas at the Exhibitions of all nations in London
1851, New York 1853, London 1862, Oporto 1865,
Cordova 1871, Vienna 1873, Santiago (Chili)
1875, Philadelphia 1876, Cape Town 1877,
Sydney 1879, Melbourne o, Boston
1883, Calcutta 1884, Adelaide 1887,
Melbourne 1888-89, and at
Kingston (Jamaica) 1891.

I beg all consumers wishing to obtain the genuine
Eau de Cologne, distilled strictly according to the
original recipe of the inventor, my ancestor, to pay
special attention to my firm:

Johann Maria Farina Julich Place No. 4

Patent Purveyor to H. R. H. the Prince of Wales, and
to several other Imperial and Royal Courts.

WALTER BAKER & CO'S

Soluble
25252525252525

Chocolate.

2525252525252525

THIS is a preparation for the special use of Druggists
and others in making Hot or Cold Soda. It forms
the basis for a delicious, refreshing, nourishing, and
strengthening drink.

It is perfectly soluble. It is absolutely pure. It is
easily made. It possesses the full strength and natural flavor
of the cocoa bean. No chemicals are used in its prepara-
tion.

Samples furnished to Druggists on application.

The trade is supplied with one, four, or ten
pound decorated canisters.

WALTER BAKER & CO.,

Dorchester, Mass., U.A.

BRANCH HOUSE:

6, HOSPITAL STREET, MONTREAL.

"THE BEST OF AMERICAN"

PLANTEN'S CAPSULES,

H. PLANTEN & SON,

ESTABLISHED 1838

NEW YORK

Manufacturers of Highest Grades
SOLUBLE HARD & ELASTIC CAPSULES

Improved French Pearls and Globules.

SOME SPECIALTIES:

SANDALWOOD, ERIGERON, CREASOTE, TEREBENE,
COMPOUND SANDAL, IODIDE ETHYL, WINTER-
GREEN, APIOL, MALE FERN, ETC.

Planten's Sandals

ARE CELEBRATED THE WORLD OVER

Empty Capsules—Powders, 8 sizes; Liquids, 8 sizes; Rec-
tal, 3 sizes; Vaginal, 3 sizes; Horses and
Cattle, 6 sizes; Veterinary Rectal, 3 sizes.

Capsules for Mechanical Purposes.
Special Recipes Capsuled,
New kinds constantly added.

Send for formula list of over 250 kinds.

Sold by all Druggists.

Beware of Substitution.

Sodii bisulphis.....lb	25			Terpinol.....oz	30		
" bisulphas pure.....lb	30			Terra Japonica (Gambic) . lb	0		
" bromid.....lb	65			Thallin Sulphate pure dm	40		
" carb. recryst.....lb	15			Thiol liquid.....oz	49		
" carbonas pur.....lb	3 50			Thymol.....oz	40		
" chlorate xtis.....lb	5'			Trional-Bayer.....oz	1 25		
" c r s.....lb	1 00			Trioli.....dec	90		
" hypophosphis.....lb	1 40			Triticum repens.....lb	20		
" hyposulphis.....lb	5	kg 112	bs 3 00	Troch acid carbonic.....lb	75	L. T. H. 1 60	
" iodid.....oz	40	lb 5.50		" " tannic.....lb	75	L. T. H. 1 60	
" nitras pur.....lb	25	coml 8		" acouite L. T. H.....lb	90		
" oxalas.....lb	50			" Bath pipe.....lb	45		
" phosph pur.....lb	15	pu'v 25		" black currant Gibsons lb	90		
" salicylas.....lb	2 00			" boracic acid L. T. H. lb	90		
" silicas xtis.....lb	15			" Bronchial P. D. & Co.,		5 lb can 1 75 each	
" " solut conc.....lb	10			" cachou dwf bouquet lb	52		
" sulphas.....lb	3	brl. 1 1/2	Hds 5 [cr. 4.	" " floral gems.....lb	52		
" " exsicc. pulv.....lb	15			" camphor.....lb	75		
" " pur recryst.....lb	30			" capsici Gibson's T.....lb	65	Domestic 35	
" su'phid.....lb	60			" catechu.....lb	80	T. H. P. 1 00	
" su'phis.....lb	7	pulv. 8		" chlorodyne.....lb	65	Gibson's 90	
" su'pho carbonas.....lb	1 10			" coltsfoot.....lb	40		
" valerian.....oz	50			" cubeb T. H. P.....lb	90		
Sodium.....oz	40			" gelatine.....lb	60		
" molybdate.....oz	49			" glycerin [jnjubes].....lb	75		
" succinate.....oz	35			" guaiaci L. T. H.....lb	1 10		
Sol. acid osmic 1%.....oz	1 50			" ipecac.....lb	75		
" cocain 4%.....oz	60			" kramariae, L. T. H.....lb	1 25		
" nitro glycerin 1%.....lb	1 75			" lactusse, L. T. H.....lb	1 25		
Somatose—Bayer, 2 oz tins. oz	70			" licorice (pipe).....lb	35		
Sozoidol of Zinc.....oz	1 50			" lime fruit tablets bot		Gibson's 1.20	
Sparteim sulph.....dr	40			" mentha pip.C.S. Gibson's lb	70	1 lb bottles 80	
Spice pickling.....lb	40			" mentha pip [No. 1] . lb	65		
Spt. aetheris comp.....lb	60			" mentha pip [XXX] . lb	50		
" " nit S. G. 845. lb	65	Whr. qt. 60		" morphing.....lb	1 00		
" ammon. arom.....lb	60	" 55		" " et ipecac.....lb	1 00		
" " foetid.....lb	85	" 65		" mosch Gibson's T.....lb	80		
" camphor.....lb	70	" 65		" opii.....lb	75		
" chlorof. S. G. 871.....lb	70	" 65		" paregoric.....lb	70		
" cinnam.....lb	2 00			" pontefract.....lb	30		
" menthae pip.....lb	1 10			" potass. ch'or.....lb	50	Tablets 60	
" methylated.....gl.	2 00	Brl. 1.75	cash	" pyrethri L. T. H.....lb	90		
" myristicas.....lb	90			" rose Gibson T.....lb	80		
" rectificatus 65 o/p.....gl	4 25	5 gl 4 20	in a/c.	" sedative L. T. H.....lb	30		
" " ".....Brl	3 85	cash.		" to'c.....lb	70		
" vini gall.....gl	4 75	opt. 6 50		" tussi [cough].....bot	1 20	Gibson's	
Spongia usta.....lb	2 50			" " " Watsons. tin	1 25	[Preston's]	
Stanni chlorid. crist.....lb	40			" vermifuge.....lb	50	worm	
" oxid (putty powder). lb	50			" voice [jnjubes].....lb	85		
Stannum gran.....lb	50			Uranii acetas.....oz	60		
Stearin.....lb	15			" nitras.....oz	60		
Strontii nitras exsicc.....lb	20	10 lb 15		Urethane.....oz	60		
" chloridum xtis.....lb	30			Veratrina.....oz	1 75		
Strychnina cryst.....oz	1 00	10 oz 90		Verdigris.....lb	35	powd 40	
" sulph.....oz	1 20	in 1/2 oz lots		Vinum rubrum [port].....gl	3 00	qr. cask 2.90	
Styrax liquid.....lb	50	25 ext. a		" " opt.....gl	3 50	" 3 25	
Succes conii.....lb	75			" " xericum [sherry] gl	1 75	" 1 65	
Succes limæ fruct W. I.....gl	90	brl 80		" " opt.....gl	5 00	" 2.75	
" rhamni.....lb	25			" " " fit c.....gl	3 50	" 3.25	
" scoparii.....lb	70			Witch Haze' extract.....gl	1 50	5gals 1.25	
" taraxaci.....lb	65			Whiting.....lb	1	brl 60c per 100 lb	
Sulphonal—Bayer.....oz	35	lb 4.50		Zinci acetas.....lb	45		
Sulphur Lac.....lb	12	10 lb 11		" bromid.....oz	25		
" precip (B. P.).....lb	20	10 lb 15		" carb.....lb	35		
" rotund.....lb	3	brl 2 1/2		" chlorid. sticks.....oz	15	1/2 lb 45, lb 75, bt. free	
" sublim.....lb	4	bag 110 lbs 2 1/2		" iodid.....oz	60		
" vivum.....lb	6	10 lbs 5		" oleas.....lb	1 20		
Sulphuris iodid.....oz	40			" oridum Howard's r n lb	70		
Svapnia, 1/2 cz bottles.....oz	5 00			" " Coml.....lb	15	10 lb 12	
Tamarindus, W. I.....lb	14	10 lb 12		" phosphas pur.....lb	1 25		
Tapioca flake.....lb	8			" phosplid.....oz	60		
" pearl.....lb	8			" sulphas com.....lb	6	10 lbs 5	
Terbenc.....lb	75			" " pur Merck's lb	9	g & 10	
Terbinth canadensis.....lb	45			" sulphocarb.....oz	10	lb 1.00	
" chian.....oz	35			" valerian.....oz	30	lb 4.00	
" Venet.....lb	15			Zincum granulatum.....lb	30		
Terpine Hydrat.....oz	20						

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5 and 10 grs. in each drachm.

ANTIPYRIN with	2½ grs.	} in 1 dr.
SODA SALICYLATE	2½ grs.	
ANTIPYRIN with	5 grs.	} in 1 dr.
CAFFEINE CITRATE	1 gr.	
ANTI-FERRIN	5 and 10 grs.	} in 1 dr.
CAFFEINE CITRATE	1, 3 & 5 grs.	
"HYDROBROMATE"	1, 3 & 5 grs.	} in 1 dr.
EXALGINE	1, 2 & 5 grs.	
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IRON and ARSENIC	4 grs. & 3 mins.	
LITHIA CITRATE	5 grs.	} in 1 dr.
LITHIA BENZOATE	5 grs.	
LITHIA SALICYLATE with	5 grs.	} in 1 dr.
SODIUM BROMIDE	5 grs.	

PIPERAZIN.

5 grs. in each drachm.

LITHIA SALICYLATE	5 grs.	} in 1 dr.
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PHENACETIN	5 grs.	} in 1 dr.
PHENACETIN with	5 grs.	
QUININE	1 gr.	} in 1 dr.
PHENACETIN with	3 grs.	
SODA SALICYLATE	3 grs.	} in 1 dr.
POTASH CITRATE	10 grs.	
SODA BICARBONATE	10 grs.	} in 1 dr.
SODA SALICYLATE	5 & 10 grs.	
SODA SULPHATE	10 grs.	} in 1 dr.
SODIUM BROMIDE	10 grs.	
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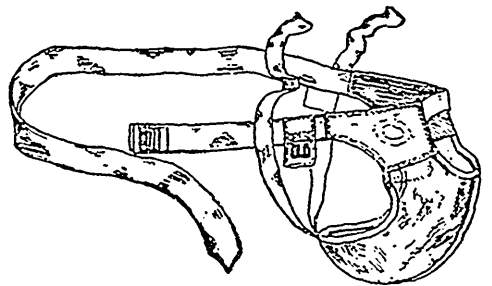
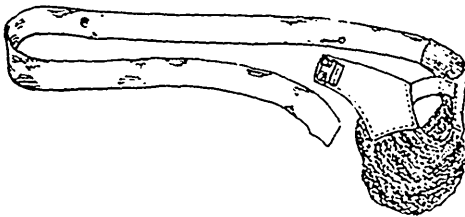
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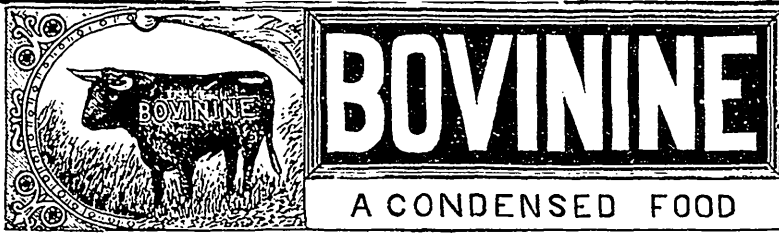


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