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Fraser Jas. D. B. & Son

ESTABLISHED 1890.

A Monthly Journal of Chemistry, Pharmacy and Materia Medica.

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

Vol. VI—No. 9.

DECEMBER, 1895

Terms: \$1.00 per annum.

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Swayne's Ointment.

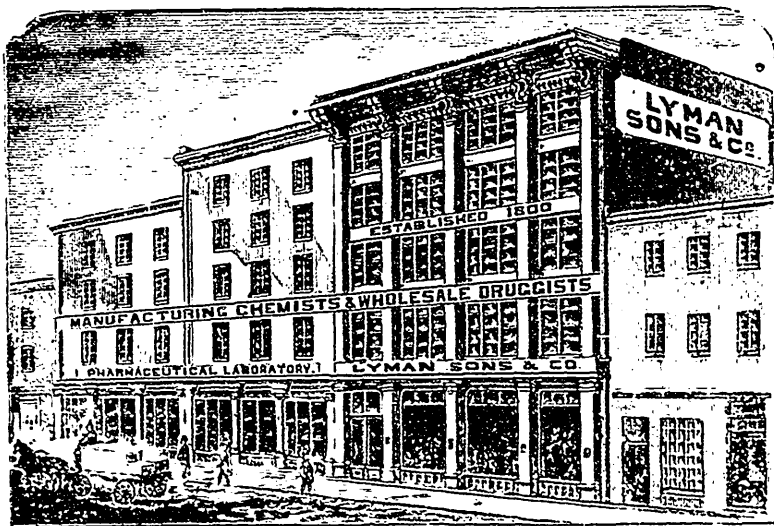
Peuchot's Peroxide Hydrogen.

Packer's Tar Soap.

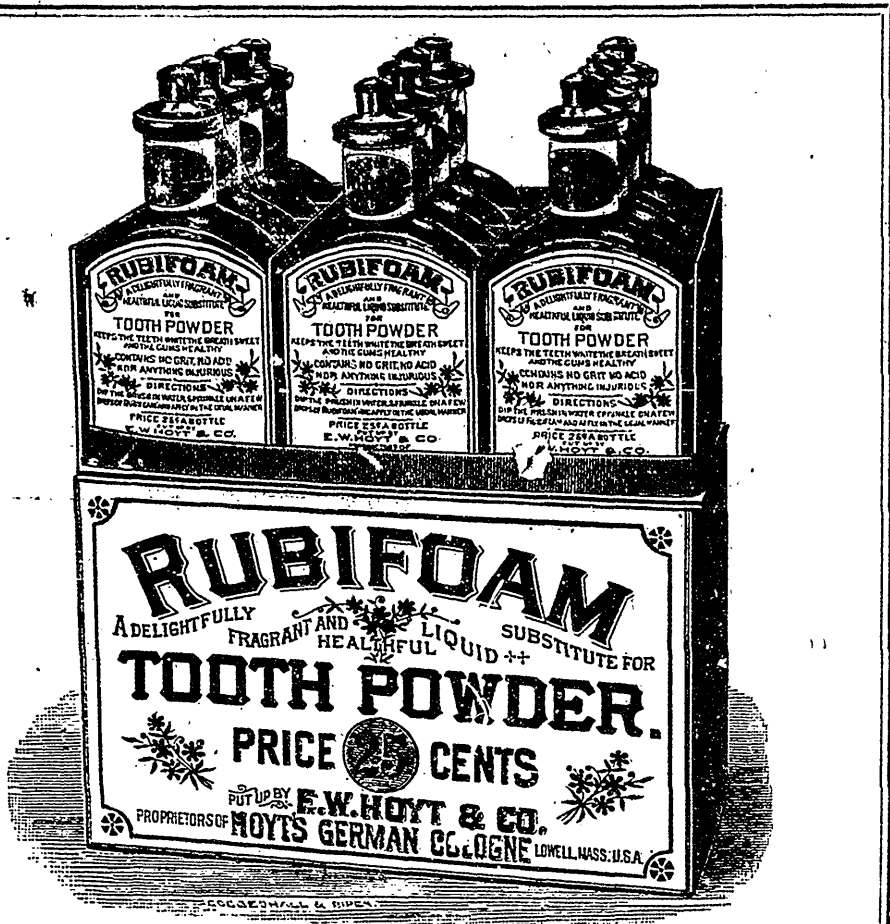
Giles' Liniment.

Malto Peptonized Porter.

Winslow's Soothing Syrup.



Hance Bros. & White's 10 Cent Preparations.



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RUBIFOAM

in box set on top of its cover, as it should be shown on dealer's counter or show case. Rubifoam is only put up in one size, retailing for 25 cents.

Price to Dealers\$2.10 per doz.

" "\$24.00 per gross.

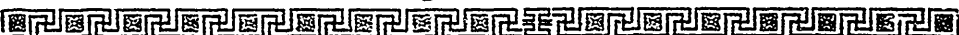
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LYMAN, SONS & CO., Manufacturers' Agents for the Dominion of Canada, MONTREAL, P. Q.



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THE PIONEER MANUFACTURERS OF _____

**Medicinal and Surgical Plasters,
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We have no Successors.—Our Prices are NOT higher than others, whilst the superior quality of our Manufactures makes them.
THE STANDARD OF THE WORLD.

OUR NEW CATALOGUE
SHOWS OVER : : : :

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Plasters. Strengthening Plasters. Ready-
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**Absorbent Cotton, Plain and Medicated.
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In SEABURY'S Patent air-tight containers, whereby the full percentage of medication is retained.

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[Anchor Weakness Cure.]

A Stimulating, Restorative and Digestive
TONIC.

DOCTORS RECOMMEND IT.

Extracts from a few Certificates.

"I consider that this preparation is the BEST RESTORING TONIC which we can give to all who suffer from WEAKNESS whatever may be the cause."

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DR. NELSON'S PILLS

will cure Paleness and Poverty of the Blood.

WEBER'S CAPSULES

are guaranteed to Kill the Tape Worm.

Address to all Druggists.

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Star Brand Condensed Milk,

AND

Allworth's Evaporated Cream.

Allworth's Condensed Milk is free from any adulteration, and guaranteed strictly pure.

It is rich, unskimmed Milk, obtained only from healthy Cows.

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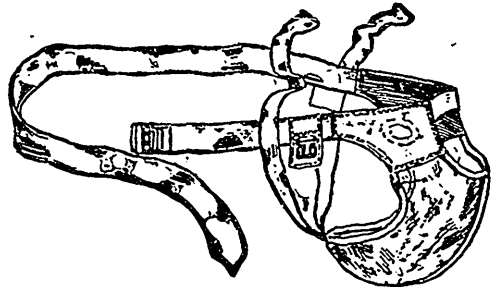
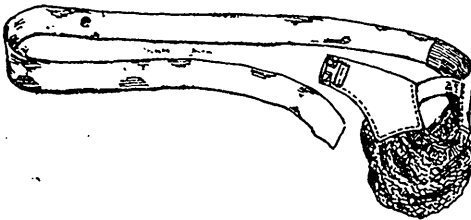
FOR

MONTREAL.

D. Marshall & Allworth, Proprietors.

AYLMER, ONT.

Suspensory Bandages



The Ware Manufacturing Co.,

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Our Goods are carried in stock by LYMAN, SONS & Co.



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Gives better satisfaction, has the largest sale of any Ointment in the United States.

It is warranted to cure the worst case of PILES or the most obstinate SKIN DISEASE.

Its merits are being steadily brought before the public by liberal and persistent advertising, and under no circumstances will its proprietors allow legitimate competition to capture its well merited laurels.

CHEMISTS and DRUGGISTS will find **SWAYNE'S OINTMENT** a valuable addition to their Stock, and our

WHOLESALE AGENTS FOR CANADA,

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MONTREAL,

Are prepared to furnish the trade either in Dozen, One Gross or Five Gross lots, on the most favorable terms.

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DR. SWAYNE & SON, 36 South Seventh Street, PHILADELPHIA, U. S. A.

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Gibbons' 
Toothache Gum.

65c PER DOZEN.

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J. A. GIBBONS & CO.,
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"Creme de la Creme"
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CIGARS AND CIGARETTES.

Are for sale in every store in the City.
Give them a trial and convince yourself
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Manufactured by **J. M. FORTIER, Montreal.**

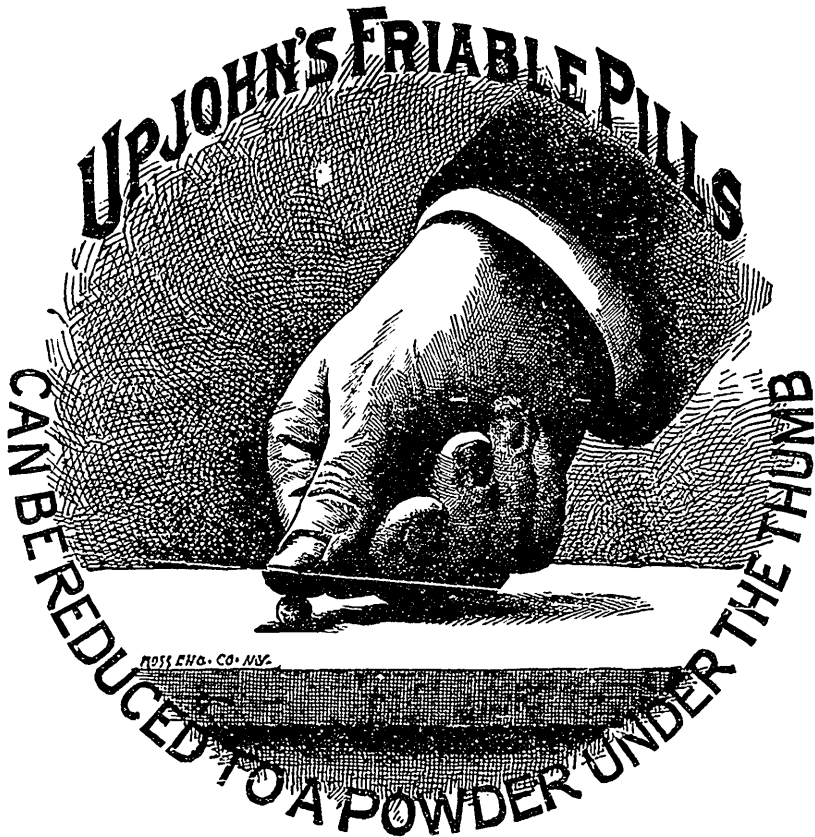
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Are warranted to give **IMMEDIATE RELIEF** to those suffering from
COLD, HOARSENESS, SORE THROAT, Etc.

They allay irritation and produce a soothing effect upon the vocal organs. Public
Speakers and Singers find them of great value in clearing
and strengthening their voices.

None Genuine unless the letters "R. & T. W." are Stamped on each Drop.

R. & T. WATSON, Wholesale Confectioners,
75 FRONT ST. E., - TORONTO.



DRUGGISTS' CONFECTIONERY

ROBERT GIBSON & SONS

Medicated Lozenge Manufacturers,

CARLETON WORKS, ERSKINE STREET, HULME, - - MANCHESTER, ENGLAND.
And 1 GLASSHOUSE YARD, ALDERSGATE STREET, - - LONDON, " "

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SUPERIOR BOILED SUGARS

Have gained a high reputation everywhere. They are put up in 1 lb., 2 lb. and 5 lb. bottles. Packed in casks or in 1 doz. cases as required. These sweets are absolutely pure, and we specially recommend

Lime Fruit Tablets, Everton Toffy, Mixed Fruit Drops, Rose Drops.	Acid Drops, Tip Top Tablets, Gibson's Cough Drops, Raspberry Drops.	Lemon Tablets, Malt Tablets, Butter Scotch Drops, Strawberry Drops.
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HIGH-CLASS LOZENGES

OF EVERY DESCRIPTION.

Chlorodyne Cough Lozenges, Chlorodyne Jujubes, Peppermint Lozenges

In every variety of size and strength. Curiously strong, and Mulum in Parvo Mints give the utmost satisfaction. Medicated Lozenges of Pharmacopœia strength.

DIGESTIVE TABLETS,

Voice and Throat Lozenges,

For Singers and Public Speakers.

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ORIGINAL SUGAR WORM CAKES

Have an immense sale, both at home and abroad; will keep in any climate, and give entire satisfaction. Put up in tins containing 3 doz., 6 doz., and 12 doz. cakes.

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THROAT HOSPITAL LOZENGES

(As per T. H. Pharmacopœia.)

All Lozenges are sent out in 1 lb., 2 lb. and 4 lb. bottles. (Bottles free.) Proprietary Lozenges carefully prepared, stamped, and cut to any size or shape.

SOLD BY ALL THE BEST WHOLESALE HOUSES IN CANADA.

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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.

Cleaver's Transparent Soap

The Best and Cheapest Transparent Soap in the Market.

Jubenia Soap.

Marvellous Effect!! Preserves and Rejuvenates the Complexion.

Glycerine and Cucumber Soap.

Most Cooling and Refreshing to the Skin.

Cold Cream and Oatmeal Soap.

Embodies the Soothing and Softening Properties of Cold Cream and Oatmeal.

NATURAL GREEN **CASTILE SOAP** MADE FROM PURE OLIVE OIL.



A Better Soap Cannot be Produced.

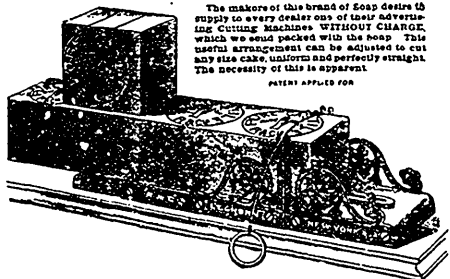
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WITH SOAP CUTTER.

SOAP CUTTING MACHINE.

The makers of this brand of Soap desire to supply to every dealer one of their advertising Cutting Machines WITHOUT CHARGE, which we send packed with the soap. This useful arrangement can be adjusted to cut any size cake, uniform and perfectly straight. The necessity of this is apparent.

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LYMAN, SONS & CO., - Montreal.

CHLORIDE OF SILVER.



DRY CELL BATTERIES

GALVANIC, FARADIC, COMBINED

Sole Agents for the Dominion of Canada.

We would recommend these Batteries for their compactness and portability, cleanliness, convenience and rapidity of action, constant and uniform current, extreme durability, cheapness in use.

LYMAN, SONS & CO.,

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STRENGTH,
STRICTLY PURE.

Peroxide OF



Hydrogen

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A. PEUCHOT,

By a special process, for Medicinal and Surgical purposes.

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

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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Manufacturing Chemist,

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Established 1800.
LYMAN, SONS & CO., } **MONTREAL.**
Wholesale Druggists.

STABILITY, - Non-Irritant.

Fragrant,
Delicious



Coffee in
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FLUID . . .

COFFEE.



Samples, (equal to 5 cups).....\$0 35 per doz.

Retail at.....\$0 05

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Retail at.....\$0 50

Lbs. (equal to 100 cups, or 4½ galls. W. M.)

\$6 75 per doz. Retail at \$1 00

"That Excellent Antiseptic"—*Medical Chronicle*.

Packers' Tar Soap

"In which the well-known soothing and healing properties of Pine-tar are skilfully combined with Vegetable Oil and Glycerine."—*Medical Times*, New York.

Lathers freely, soothes while it cleanses, and is unrivalled for

Bathing and Shampooing.

It is excellent for use in the treatment of Dermatic Diseases, such as chafing, eczema, erythema, seborrhœa, herpes, psoriasis, etc., for cleansing ulcers, foul wounds, fetid discharges, bedsores and similar conditions. It is Antiseptic, does not corrode, but leaves the skin smooth and supple

Invaluable to Travellers. Wards off Contagion.

STEEDMAN'S Soothing Powders,

FOR CHILDREN CUTTING TEETH.
IN USE OVER 50 YEARS.

"JOHN STEEDMAN, Chemist, Walworth,
Surrey," is engraved on the Government
Stamp affixed to each packet.

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.

Price \$8.20 per doz. less 5 p.c.

The Great South American Rheumatic Cure

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

Price \$6.10 per doz. less 5 p.c.

The Great South American Kidney Cure

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

Price \$8.20 per doz. less 5 p.c.

THE BEST GENUINE EAU DE COLOGNE



ALL WHO HAVE TRIED
IT PREFER IT TO ANY
OTHER MAKE.

- IS -



The sale of the 4711 is increasing constantly. No first-class establishment should be without it.



LYMAN, SONS & CO.

This is the Original

Peppermint Flavored

CHEWING GUM



First to Relieve the Distressing Pains of

Dyspepsia

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Heart Burn.

Chew for Twenty Minutes After Each Meal.

The only chewing gum factory open to visitors at all times.

W. J. White, Sole Manufacturer,
Cleveland, O., U. S. A.

PILKINGTON'S

Powdered Lye!

PERFECTLY PURE.

Strongest and best Lye made.
Far Superior to any Solid Lye.

DILLON & CO'S BAKING SODA!

BELL BRAND.

Put up in One Pound Packages.

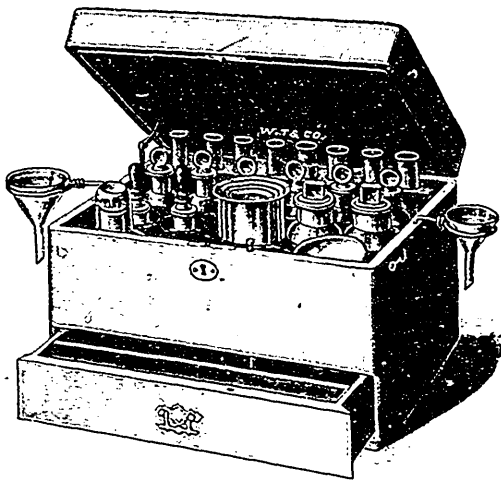
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DEPARTMENT.



Druggists' Specialties.

BOUGIES.		ATOMIZERS.
CATHETERS.		BANDAGES.
CLINICAL.		COTTONS. (Absorbent.)
THERMOM'TRS.		INHALERS.

Ice Bags, = Trusses, = Urinals.



SYRINGES.

Eye, Ear, Nasal, Rectal,
Uterine, Urethral and Hypodermic.

One Quality, The Best, Any Make, Any Size,
One Price, The Lowest.

Send for our Illustrated Catalogue of Surgical Instruments, brimful of Information.

LYMAN, SONS & CO.,
MONTREAL.

PRICE LIST OF

* Dr. J. G. Laviolette's Specialties *

Taking Effect February 1st, 1895.

IMPORTANT REDUCTIONS.

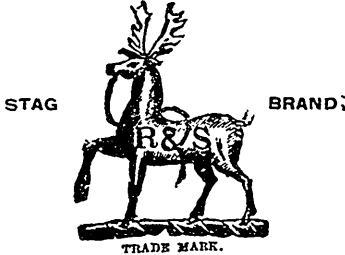
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do do	50c do	3.20 doz.	36.00 do
Anti-Catarrhal Balm.....	25c do	1.60 doz.	18.00 do
Norway Tar Liqueur.....	25c do	1.60 doz.	18.00 do
N. B.—The above specialties assorted in quantities equivalent to one gross of Syrup of Turpentine, 25c size.....			18.00 do

TERMS: 4 Months.

To the Wholesale Trade only: 10 gross of any of the above preparations, assorted, (1 gross Syrup of Turpentine large, equivalent to 2 gross small) \$16.00 per gross net, freight prepaid, subject to 30 days draft from date of shipment. Not less than 10 gross at this price.

Sole Proprietor: J. GUSTAVE LAVIOLETTE, M.D.,
NO. 232 & 234 ST. PAUL ST., MONTREAL, CAN.

ROBINSON'S Surgical Dressings.
- ABSORBENT -



Lints, Absorbent Cotton, Wool Roll Bandages, Antiseptic Dressings.

ROBINSON & SONS, LIMITED,
CHESTERFIELD, ENGLAND, and 55 FANN STREET,
LONDON, E.C.

JACKSON'S
Nutritive Wine,
With Cod Liver Oil.

Easily supported and digested by the stomach.

A marked increase in weight is noticeable after taking a few bottles of this wine.

ARMBRECHT'S
Coca Wine,

For Fatigue of Mind and Body
Nervousness and Sleeplessness.

MEAGHER'S
Orange Quinine Wine

Price, \$5.00 per Doz. Quarts.

To Druggists

Be sure and purchase a supply of

Lyman's Fluid Coffee.

It is being extensively advertised, and you will be sure to have inquiries for it.

SPONGES

The following lines now on hand:

Honeycomb,

Sizes	0	1	2	3	4
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Fine Toilets
AND
Surgeons

Full assortment, prices on application



Capsules Oleum Santal (Midy) always gives satisfaction in Gonorrhœa and Cystitis. The oil is distilled by Midy's process, from the best freshly-cut Mysore Sandal Wood, and is vastly superior to commercial sandal oil, copaiba, cubeba, etc. Original bottles contain 40 capsules of 5 minims each—they are value for money and pay for themselves.

GRIMAUULT & CO., Paris,
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MONTREAL.

In Amenorrhœe of anæmic or chlorotic patients, one capsule 2 or 3 times a day, given a week preceding menstruation, rarely fails to induce a normal flow.

APIOLINE
(CHAPOTEAUT.)

The true active principle of Parsley, differing from the so-called Apioi.
Dispensed in spherical capsules of 20 centigramme.

Original bottles contain 24 capsules.

In Dysmenorrhœa; (congestive and spasmodic) amenable to internal remedies, the suppressed, irregular or painful menstruation is promptly relieved.

M. P. P.

MALTO * PEPTONIZED * PORTER.

The Great Remedy so Highly Recommended by the Medical Profession FOR INVALIDS, CONSUMPTIVES AND DYSPEPTICS.

M. P. P. is especially adapted to the following cases:

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- C. In persons of Consumptive tendencies it has been found to be a most perfect substitute for Cod Liver Oil, the extract of Malt supplying the fat producing elements necessary to the supply of wasted tissue, besides the tonic and stimulating effects.
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- E. It is especially adapted for administration to Nursing Mothers.
- F. In Wasting diseases of Children.
- G. Where there is sleeplessness from flatulence, over-taxed brain and nervous system.

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| Geo. A. Hetherington, M. D. L. M., Royal Hospital, Dublin. | Hon. Dr. J. J. Ross, Pres't of Senate, Ottawa, and Pres't of College of Physicians and Surgeons of the Province of Quebec. |
| J. H. Korff, M. D., Surgeon Manhattan Eye and Ear Hospital, New York. | Dr. Bergin, M.P., Surgeon General of Militia of Canada and President of Medical Council, Ont. 1881-1886. |
| The McMichael Sanatorium for Cancer and Tumor, Chicago | |
| Geo. H. H. DeWolf, M.D., M. B. C.M., Edinburgh. | |

And we refer by permission to the following Medical Men of MONTREAL, among those from whom we have already heard who have tried M.P.P., and testify as to its merits:—

- | | | |
|--|--|-------------------------------------|
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| Dr. W. S. Burland, St. Famille st. | Dr. J. M. Jack, Beaver Hall Hill. | Dr. A. F. Vipond, St. Catherine st. |
| Dr. H. S. Birkett, Stanley st. | Dr. J. B. McConnell, Dorchester st. | The Montreal General Hospital. |
| Dr. F. W. Campbell, Phillips Place. | Dr. J. A. MacDonald, Beaver Hall Hill. | The Notre Dame Hospital. |
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We know of no preparation that has received such universal commendation from the Profession before. It is not a CURE ALL, but will do its work in cases indicated. It will help or cure the Dyspeptic, build up the Invalid, boost or restore the Consumptive, and as a tonic, or for a weak and debilitated stomach it has no equal.

FOR SALE BY ALL DRUGGISTS.

Dr. August Koenig's
HAMBURG DROPS



FOR THE
BLOOD

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 The Great
 German Remedy

...
 WHOLESALE DEPOT

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 International
 Dictionary**

*Invaluable in Office, School, and Home
 New from Cover to Cover*

*Successor of the
 "Unabridged."*



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 Schoolbooks.

Warmly com-
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 of Schools, and
 other Educators al-
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The One Great Standard Authority,
 So writes Hon. D. J. Brewer,
 Justice U. S. Supreme Court.

A College President writes: "For
 ease with which the eye finds the
 word sought, for accuracy of defini-
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 comprehensive statements of facts,
 and for practical use as a working
 dictionary, 'Webster's International'
 excels any other single volume."

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[Ammoniated-Phenylacetamide]

Stimulant, Antipyretic and Analgesic.

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It is stimulating.

It is a Stimulating Expectorant, Analgesic, Antipyretic, Antiseptic, and Cholagogue.

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A Househo'd Panacea guaranteed to cure Sprains, Sore Throat, Bruises, Headache, Stiff Joints, Catarrh, Rheumatism; and all pains, human flesh is heir to. All travellers should have a bottle in their satchel, it can be used internally or externally.

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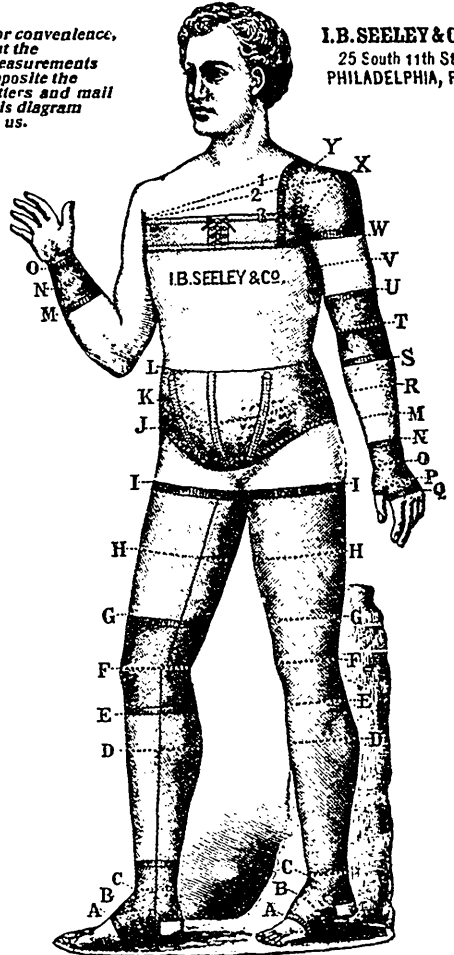
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is an OLD and WELL TRIED REMEDY, and for over FIFTY YEARS has been used by millions of mothers for their CHILDREN while CUTTING TEETH with perfect success. It soothes the child, softens the gums, reduces inflammation, allays all pain, cures wind colic, 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 mothers 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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OR
LIEBIG'S EXTRACT OF MEAT & MALT WINE
 Is a delicious beverage and tonic made from Port Wine,
 Liebig's Extract of Meat, and Extract of Malt.

WINCARNIS
 Is a New Name Registered to prevent fraudulent Imitations.
OVER TWO THOUSAND
 Unsolicited Testimonials have been received from Medical Men.
 IMPORTANT UNSOLICITED TESTIMONIAL FROM
T. POYNTZ WRIGHT, Esq., Medical Officer of Health, New Street, St. Neots.

New Street, St. Neots, January 28th, 1894.
 I have much pleasure in giving you my experience as to the "Meat and Malt Wine" received from you some time since, and in bearing testimony as to its value as a recuperative and restorative agent.
 In the early part of last year my wife was seriously unwell, suffering from loss of flesh and appetite, together with mental and bodily exhaustion, and sleepless-ness. She was under treatment for a considerable time without relief, and I at last determined to try "Wincarnis."
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T. POYNTZ WRIGHT,
 Medical Officer of Health, St. Neots.
WINCARNIS
 Is sold by all Druggists, and Patent Medicine Vendors. Ask for COLEMAN'S "WINCARNIS" or LIEBIG'S EXTRACT OF MEAT AND MALT WINE and see that the word WINCARNIS is on the shoulder of the bottle.

Sole Manufacturers:
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 Sole Proprietors of "Ozmazon," the New Beef Tea, and also Coleman's Crown Imperial Invalid Stout, which is strongly recommended by the medical faculty.

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Tooth Powder,
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Horses and Cattle.



DICKS' 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 foundlers, swelling of the glands of the throat, horse distemper, hide bound, bots, sourry, loss of udder, horn distemper, black tongue, &c., and also will broken the heaves, and in recent cases effect a cure. In fact there is no case of 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 OINTMENT, for Cuts, Burns, Bruises, Saddle Galls, Sores, Flesh Wounds, Scratches, &c.
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Try DICK'S MEDICINES and be convinced of their merit. Ask for them and take no other. Advertising cards and circulars sent on application.

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Prices, 50c & \$1.00 per Box.

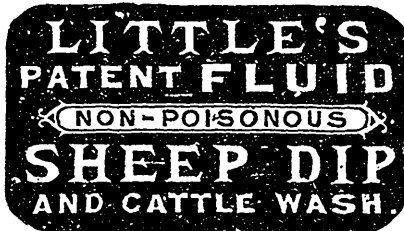
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FOR THE DESTRUCTION OF

TICKS, LICE, MAGE, and all Insects upon
SHEEP, HORSES, CATTLE, PIGS, HOGS,
&c., &c.

Superior to Carbolic Acid for Ulcers, Wounds, Sores, &c.
Removes Scurf, Roughness and Irritation of the Skin, making the coat soft, Glossy and healthy.
Removes the unpleasant smell from Dogs and other animals
"Little's Sheep Dip and Cattle Wash" is used at the Dominion Experimental Farms, at Ottawa and Brandon; at the Ontario Industrial Farm, Guelph, and by all the principal Breeders in the Dominion—and pronounced to be the cheapest and most effective remedy on the market."

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

Sold in large Tins at \$1.00 Is wanted by every farmer and breeder in the Dominion.

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To be had from Wholesale Druggists in TORONTO, HAMILTON and LONDON

The Silver Truss.

The Silver Truss is acknowledged to be the simplest and best fitting Truss in the World.

It is easy to fit,
It is easy to wear,
It is perfectly clean,
It is light and cool

and has no understraps.

It is made by

The Smith Manuf'g Co., Galt, Ont.

We also Manufacture

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"Jersey" Brand Condensed Milk.

Made from Jersey Milk and
Pure Granulated Sugar.
Acknowledged the finest made
where ever used.



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ADEPS LANAE "N.W.K."

A pure neutral wool fat and a perfect ointment base.

Highly recommended by Prof. PAUL UNNA, Dr. HANS VON HEBRA, Dr. P. TAENZER, Dr. R. FRESSENIUS, Prof. RUDOLPH BENEDICT, Dr. H. BECKURTS, Dr. CARL ARNOLD, and others.

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More-economical in price and use than similar preparations. For literature and information apply to the

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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

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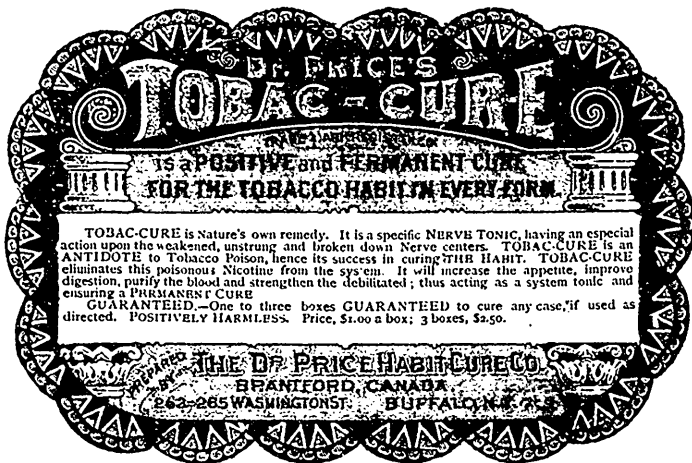
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Extract of Herbs, Ginger Ale Extract, Ginger Extract, Hop Extract, Foamine, Horehound, and Wine Essences.

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THE

Druggists of Canada?

WRITE TO US FOR RATES.

MONTREAL PHARMACEUTICAL JOURNAL

P. O. BOX, 744.

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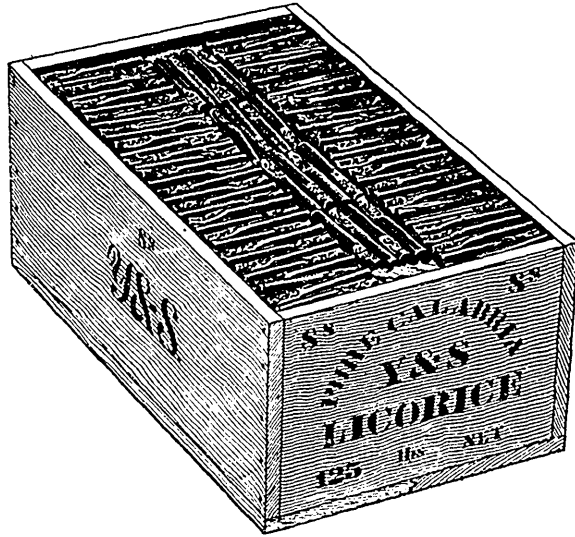
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Green Mountain Balm.....	\$2 00 doz.
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**Terms, 4 months or
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Retail Druggists.

We are packing our **Y. & S. STICK LICORICE**, 4, 6, 8, 12 and 16 sticks to the pound, loose in leaves. It will sell rapidly if displayed prominently in your show windows, and will insure you large profits.

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If your jobber does not keep these goods, write to us and we will direct you where you can get them.

YOUNG & SMYLLIE, Brooklyn, N.Y.

FINE FRUIT TABLETS



ENGLISH FORMULA TABLETS

Have been our specialty and have been a success. Packed in elegant Flint Glass Jars, large glass stopper, the finest package in the Dominion. Also in round jars, similar to English, but made two inches shorter to fit the ordinary shelf. A large variety. List of flavors and prices on application.



G. J. HAMILTON & SONS
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JOHNSON'S ANODYNE LINIMENT

Established 1810.

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.

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.**

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.

DOMINION OF CANADA PRICE LIST.

— FOR —

Johnson's Anodyne Liniment,
Parson's 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.
PARSON'S 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. VI—No. 9.

DECEMBER, 1895.

\$1.00 per annum

The Montreal Pharmaceutical Journal.

171 St. James St., Montreal, Canada.

JOSEPH E. MORRISON, Editor.

Subscription. \$1.00 per Annum.

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

MONTREAL PHARMACEUTICAL JOURNAL.

P. O. Box 744, Montreal.

F. L. BENEDICT, Secretary.



Mr. T. H. Hiseock, for many years chief dispenser for Langly & Co., Victoria, has taken the interest of Mr. F. Cryderman, in the firm of Dean & Cryderman, of that city. Mr. Hiseock is probably one of the best known druggists in British Columbia.

In the article in our last issue on "Weights and Measures," a typographical error makes us give the cubic contents of four imperial gallons as 1009.096 cu. in. and of five wine gallons as 1055 cu. in., when it should have read 1109.096 and 1155 respectively.

Following is the list of officers and also the draft constitution of the "Ontario Society of Retail Druggists." President, G. E. Gibbard, Toronto; vice president, S. Tapscott, Brantford; secretary treasurer, J. T. Pepper, Woodstock; executive committee, W. A. Lloyd, Ottawa; L. W. Yeomans, Belleville; W.

Walsh, Peterboro; I. Curry, Toronto, F. W. Flett, Toronto; C. A. Nettleton, Penetanguishene; W. G. Smith, Guelph; A. J. Greenwood, St. Catherines; R. Ferrah, Galt; C. A. Austiu, Simcoe; W. T. Strong, London; Jno. Parker, Owen Sound; H. O. Fleming, Windsor.

SEC. 1.—This society shall be known as the "Ontario Society of Retail Druggists," and any registered druggist, actually in business on his own account, and over his own name, may become a member on his signing an agreement not to sell patent or proprietary medicines at prices below those intended by the manufacturer, and to sell drugs, sundries and specialties at prices at which they are usually and fairly sold, or as agreed upon by the society, and upon payment to the treasurer of said society the sum of one dollar.

SEC. 2.—The officers of said society shall consist of a president, vice-president, secretary-treasurer, and an executive committee, consisting of thirteen members, representing the thirteen territorial electoral divisions into which the province is divided for the purposes of the Pharmacy Act, such officers and committee to be elected annually, and to meet as often as may be necessary, at the call of the president, for the management of the business of the society, and their expenses shall be paid out of the funds of the society. The executive committee, one month's notice having been previously given, shall also be empowered to remunerate the secretary-treasurer for work done in connection with the society.

SEC. 3.—The society shall meet annually at the College of Pharmacy in Toronto, for the

election of officers, reception of reports from the executive, and for the transaction of other business. Twenty members, including the executive, constituting a quorum.

SEC. 4.—The annual membership fee shall be \$1, but should not this prove sufficient for the requirements of the work, the executive shall be at liberty to make intermediate calls of one dollar per member as often as may be necessary. Such calls, however, not to exceed the sum of four hundred dollars per annum.

SEC. 5.—The objects of this society shall be to safeguard the interests of retail druggists in every way, to establish as far as possible the uniformity in prices, to co operate with manufacturers and jobbers and wholesale druggists, for the prevention of the cutting of prices, and to cultivate a fraternal and kindly feeling between all the members of our profession.

SEC. 6.—This constitution may be altered or amended at any properly constituted annual meeting, by a two-third vote of the members present, previous notice having been given.

CURRENT SCIENCE.

Biographical sketches begin and end the November issue of *Science Progress*, the life and work of Carl Ludwig, late Professor of Physiology in the University of Leipzig, being descanted upon by Professor Stirling, whilst Dr. Sims Woodhead contributes an interesting record of Pasteur's career. Of the first-named it is said that he "did for physiology, as a whole, what Spallanzani did for a great chapter of chemical physiology"; and Pasteur claim to honour, it is stated, will "undoubtedly rest upon the work which he has done in elucidating the questions connected with the ætiology and prophylaxis of specific infective disease." The chemical nature of alloys receives further attention from F. H. Neville; Dr. John Beddoe laments the inadequate attention devoted to anthropological research in India, and comments on anthropometrical investigations in the Bengal presidency by H. H. Risley; J. C. Willis deals with the present position of floral biology; and Professor Hudson Beare contributes a paper on the mechanical testing of iron and steel.

The Ontario Retail Druggists' Association.

The action of the Ontario druggists taken at Toronto the 4th inst. in forming a protective association is none too soon. The extent to which cutting has been carried on in some places is almost incredible to outsiders, and the cutting has not been done by department stores, but by those who should have set a better example, men who have sat on the council of the Ontario College and have held high office therein, one in particular, being especially noticeable. Cutting in some of the Western towns has become a craze, for what benefit anyone can derive from it we cannot conceive. If one druggist commences cutting his neighbors will follow suit, and after a few days of excitement, business will have resumed its usual course, no one sells a bottle more of any of the cut goods, than before but all are out 10, 15 or 25 per cent. on all sales of patents. It is without doubt the most suicidal, senseless policy that any druggist can follow, to imagine that by making a cut, he can attract business. The only result attained in the end is the enmity of his neighbors, and his bank account not a whit the better for it. But the Ontario pharmacists have made up their minds to have an end to it, by combination, and by presenting their grievances to the manufacturers and wholesalers to come to some agreement with which all parties will be satisfied. And if the terms which were partly agreed to will be acted upon, an end will be put to price cutting.

The wholesalers and manufacturers are asked to sell only to retail druggists, and the latter to buy only from the wholesale druggist all sundries, etc., and not to substitute, all of which we think can easily be carried out by all parties. There is no reason why it should not be. The wholesaler and retailer should stand together, the interests of the one are identical with those of the other, when business is good with retailers and he obtains the price he should for all his goods, then he meets his bills promptly, buys more goods and both parties are satisfied, but let some cutter enter the field, and difficulties are encountered, notes are renewed and there is trouble for everyone concerned. So it behooves the wholesaler as much as the retailer to put an

end as far as possible to price cutting. The men who are at the head of the new movement are the leaders of the profession in Ontario, and will carry it to a successful issue if at all possible.

Such action as this was one of those which the writer had in view when agitating the formation of a Dominion Pharmaceutical Association, but there has been so much red tape and circumlocution on the part of those who took up the matter that the association is not yet founded. And it is very appropriate that the only body which refused to join this association, namely the Ontario College of Pharmacy, should have their action repudiated in such an outspoken manner by their constituents. We knew that the druggists of Ontario did not endorse the action of the men who now happen to represent them, and it is a noticeable fact that none of the men prominent in the college are identified with the new movement.

The next step should be the organization of the other provinces on the same lines, that is of provincial associations and we would offer the following suggestions: Let each province organize a provincial association, which will look after affairs in its own boundaries, but with a bond joining it with all the other associations, and for this purpose, have conventions each year to consider all questions of trade, this convention to be formed of delegates from each of the provincial associations, any action taken to be binding on the associations. In this way great results could be obtained if all the druggists of Canada, or at least a large majority, would act together, and as each association would form a unit of the whole, the latter would be more easily handled and controlled. Of course we see many difficulties in the way of carrying out this plan, but we think that it is the most feasible yet offered.

The success which has attended the efforts of the New England Retail Druggists' League should be an incentive to Canadian druggists to follow in their footsteps. As we pointed out in our last issue the majority of the retailers of the N. E. States, all the wholesalers of Boston, Portland, New York, and other

cities of that section have signed the agreement, as well as the manufacturers.

We hope our Quebec province druggists will fall into line with their Ontario brethren and form a protective society on the same lines, for although Montreal is free from cutting, Quebec city is not.

RETAIL DRUGGISTS ORGANIZE.

A PERMANENT ASSOCIATION FORMED TO FIGHT
THE PREVAILING CUTTING OF PRICES
—WHOLESALE AND JOBBERS
IN SYMPATHY.

In response to a circular recently issued by a provisional committee a large number of the retail druggists of the Province gathered at the College of Pharmacy, Gerrard street, yesterday afternoon for the purpose of organizing a permanent association, having for its objects the general furtherance of trade interests, and especially to deal with the prevailing cutting of prices by department stores and others. Mr. S. Tapscott, Brantford, was called to the chair, Mr. J. T. Pepper, Woodstock, acted as secretary, and the muster roll was signed by fully 150 druggists from every section of Ontario. The greatest enthusiasm prevailed in the meeting, and every reference made by speakers to the necessity of prompt, united and determined action was loudly and unanimously applauded.

In opening the proceedings the chairman briefly outlined the situation, and spoke of the draft agreement which had been drawn up by the provisional executive and submitted to the druggists of the province, adding that the response had been hearty, indicating a widespread determination to take action along the lines proposed and to support the movement to organize a permanent association to protect their interests. The secretary read a large number of letters and telegrams from those unable to be present, and also a number of letters from wholesale druggists and jobbers expressing their sympathy with the movement and their willingness to consider any proposition upon which the retailers would as a body agree.

A lengthy discussion followed, in which those present gave expression to the ideas

they held as to the best means by which to attain the object in view. All agree that the drug trade was in bad shape, and that little by little other trades had encroached upon it, while the cutting which was being done on all hands was reducing the profits to such a low ebb that in many places a bare living was scarcely obtainable. Mr. W. A. Karn of Woodstock spoke at length. He claimed that the pharmacy act was as full of faults as a pelican's egg was full of meat, and that though the College Council had done all that could be reasonably expected of it there had not been a proper support and co-operation from the members of the trade, and the only trades which were succeeding to-day were those that stuck together and acted unanimously. The wholesalers and jobbers had shown themselves willing to co-operate, and the manufacturers should be with them also; he was sure they would be if only they stood together. He advised district organization, generous support of the central association now being organized and a loyalty to their common interests as strong and as lasting as the greed of their competitors. (Cheers.)

A consideration of the draft constitution prepared by the provisional executive was then taken up, and after lengthy discussion was adopted, the main clauses being that the organization be called the Ontario Society of Retail Druggists, that any registered druggist actually in business under his own name be eligible for membership who would agree not to sell patent medicines and proprietary articles under the prices intended by the manufacturers, and to sell drugs, sundries and specialties at regular prices. The objects of this society as set forth in the constitution are to safeguard the interests of the trade, to establish as far as possible a uniformity of prices, to co-operate with the manufacturers, wholesalers and jobbers in preventing cutting, and to establish a fraternal and kindly feeling among the members of the profession.

Considerable discussion occurred over the name to be given to the new society, a large number being in favor of calling it a Candian society, but finally a large majority decided for the Provincial title in the meantime.

The election of officers was next taken up, and resulted as follows.—President, G. E.

Gibbard, Toronto; Vice-president, S. Tapscott, Brantford; Secretary-Treas., J. T. Pepper, Woodstock, Executive Committee (one from each electoral district), W. A. Lloyd, Ottawa; L. W. Yeomans, Belleville; William Walsh, Peterboro'; Isaac Curry, Toronto; F. W. Flett, Toronto; C. A. Nettleton, Penetanguishene; W. G. Smith, Guelph; A. J. Greenwood, St. Catharines; R. Ferrah, Galt; Chas. A. Austin, Simcoe; W. T. Strong, London; John Parker, Owen Sound; H. O. Fleming, Windsor.

The officers and executive, with Messrs. J. H. Mackenzie and W. A. Karn, were appointed a deputation to meet the wholesale druggists and jobbers and consult with them upon the subjects which had been under discussion.

The executive was authorized to engage a paid organizer to work in the interests of the society wherever it was thought necessary to do so.

Messrs. R. C. Spohn, Toledo, and N. Hayes, Detroit, were introduced and addressed the meeting in the interests of the Universal Trade Association of Retail Druggists, an organization in the United States having the same objects in view as the Ontario society. Their representations were favorably received and the matter referred to the executive for action.

The society then adjourned to meet again at the call of the chair.—*Globe, Dec. 5th.*

ILLINOIS BOARD OF PHARMACY.

The Board examined a class of sixty-five at their meeting held in Chicago, Nov. 12-15. The following passed for Registered Pharmacists.

Allan Brown, William H. Brown, Joseph L. Champion, Charles J. Grady, John W. Gough, Sol Jack Krone, Howard C. Lisle, George L. Peck, Henry Shapiro, Arthur W. Stadelmann, G. Lebrecht Tanzer, J. J. Wuerth, all of Chicago, and Leverett E. Brainerd, of Elgin, Benson E. Crum, Normal, and J. T. McDill, of Sparta.

The next meeting of the Board for Organization, Examination, and other business will be held in Room 3, State House, Springfield, January 7th, 1896, at 9 o'clock a. m. Chicago meeting, February 11th, 173 39th street, at 9 o'clock a. m.

FRANK FLEURY, *Secretary,*
Springfield.

THE U. T. A. AGAIN.

The last issue of the sheet published by this concern devotes 3 columns of the valuable (sic) space to our editorial of last month, but Mr. Hayes being unable to explain away the statements made, devotes his energies simply to abuse of the writer. But a man who has been enrolled on the books of the Quebec Association since 1877 as apprentice, clerk and licentiate, who has held office in it, in the Montreal College, and in the Am. Ph. A. can feel far beyond the reach of the villification of an unknown individual like this man Hayes, who could not get two reputable druggists who knew him to sign his application for membership in the A. Ph. A.

There is an old Latin proverb which fits his case "whom the gods wish to destroy they first make mad," Mr. Hayes is in the acute insanity stage just now, and destruction is rapidly approaching.

Mr. Henry Miles, who has been connected with our house for twenty-five years during, the last eight of which he has been partner, has retired from our firm and will carry on business on his own account

Our connection with this JOURNAL ceases with this issue, but its publication will be continued by Mr. Miles, in whose success in maintaining the position it has attained, we have the fullest confidence.

LYMAN, SONS & CO.

VALEDICTORY.

With this issue of the MONTREAL PHARMACEUTICAL JOURNAL, my connection with it ceases.

During the three years I have occupied the position of Editor, I have tried to maintain and advance the standing of the JOURNAL and to render it still more worthy of Canadian Pharmacy. If I have not succeeded to the full extent of my ambition, it is to be attributed partly to lack of support from outside contributors and partly to the fact that other claims have prevented my giving as much time to the work as it should have received, but even as it is the JOURNAL has been an important factor in its sphere.

I may have at times uttered opinions at variance with those of my friends, but whatever has appeared in these columns from my pen has been dictated solely in what I considered to be the best interests of the retail pharmacist. Although I have headed this item Valedictory, still I do not expect it to be a final farewell, as I still hope to take a hand in the discussion of questions of pharmaceutical interest.

Respectfully,

J. E. MORRISON.

AGRICULTURAL CHEMISTRY.

BY H. W. WILEY, DEPARTMENT OF AGRICULTURE,
BUREAU OF CHEMISTRY, WASHINGTON, D.C.

Agricultural chemistry is a cosmopolitan science. It was founded by Liebig, of immortal memory.

Its early apostle in France was Boussingault; in England, Gilbert; in America Johnson. It is presumably the science most nearly allied to the sustenance of human life, and thus lies nearer than any other to the heart, or perhaps the stomach of humanity. Its home is wherever a plant grows. Its devotees are found wherever a plowshare turns the soil. Its base lies in the study of the composition of the soil and the constitution of plants. Its superstructure rises high enough to touch the most abstruse questions of mineral and vegetable physiology and metabolism.

Turning from philosophy to facts, we find this science linked indissolubly with the greatest industry of the world. There is scarcely a field or a forest which has not felt the impress of its power. From the field its domain has extended to the factory, and the guidance and advice of the chemist are sought for the further preparation of foods and fabrics for the use of man.

It has also secured a place in the domain of public and advanced instruction, and even the conservatism of the great universities has yielded to agricultural chemistry a prominent place in the curriculum of studies. Both in this country and in Europe, hundreds of special schools and experiment stations are found devoted largely to the service of agricultural chemistry and its coordinate branches of science.

The art of fertilizing the fields, at first purely empirical, has become an exact science. The methods of saving and recovering waste fertilizing products at the present time renders many great industries possible which otherwise would have to yield to the fierce competition which every human endeavor has to meet in this end of the century.

Further than this the paternal efforts of agricultural chemistry extend, and seek to recover from the wind and from the sea the elements of fertility apparently forever lost during the centuries that have passed.

The science of agricultural chemistry acknowledges without stint its indebtedness to the other fields of chemical work. In its very beginning it was the simple use of the principles of mineral analysis, applied to the soil and its products. By this means the parts of the plants which were derived directly from the soil determined, and the surprising fact was thus developed that nearly the whole of the vast product of vegetable growth is a free gift of heaven and to be credited to the soil. This was the point of union between agricultural chemistry and meteorology applied to agriculture. The supply of carbon dioxide and water to the growing plant becomes thus a problem of the profoundest interest to agriculture, and the chemist and physicist have thus been led to study the great problems of precipitation, drainage, and irrigation, as affecting the products of the field. The best methods of disposing of an excess of rainfall, with the minimum loss of plant food due to percolation of water through the soil, are of no less importance. In connection with this, that treatment of the soil, by chemical and physical means, which will best prepare it to distribute the supply of moisture available, to the advantage of the growing plant, has been carefully studied.

Agricultural science has also drawn freely on the resources of organic chemistry. In agricultural products are presented to the student some of the most complicated as well as interesting organic compounds. In the growth of the plant are seen the wonderful resources of the vegetable cell in the way of chemical activity. The most renowned achievements of modern synthetic chemistry have consisted in the reproduction of some of the simpler forms of vegetable organic compounds. It will be admitted that the simple sugars are the least complicated of organic vegetable products, and these have been at last successfully made in the laboratory. The step from a hexose to a hexobiose seems indeed a short one, and yet it has not been taken. Only step by step must we expect the onward progress of synthesis until, for instance, a starch is reached. Yet, in the progress of organic synthetic chemistry already accomplished, great good has come. The exact chemical relations of the sugars to the aldehydes, ketones and polyatomic alcohols have been established, and the bonds which unite the organic chemistry of man to that of nature clearly distinguished.

Not of less practical importance to agriculture has been the recent progress in our

knowledge of that indefinite complex which has so long passed under the misnomer of "nitrogen-free extract." With the exception of the facts that it is not nitrogen-free and that it is not an extract, the name may do well enough. At least some agricultural chemists have an idea of what the term signifies, and to others it serves the purpose of the physician's "malaria," permitting to designate, in a fairly mysterious way, a something of which nothing is known. The constitution of the greater part of this complex body is not known, and the proportions of cellulose and of pentosans which it contains can be determined with a fair degree of definiteness. We should deem it a matter for congratulation to be assured that the day is fast approaching when the agricultural chemist will no longer be called on to determine 40 per cent. or more of a cattle food "by difference."

In late years not only has organic chemistry helped us in the way of a better understanding of the composition of the carbohydrates, but it has also pointed out to us some of the main points in the constitution of those most valuable products, the vegetable proteids.

We are away behind our digestive organs in our understanding of these bodies, and have been accustomed in practical work to place all proteid matter together in a single class. But there is no doubt of the fact that the vegetable proteids differ as much among themselves as those of animal origin, and at last the chemist is able to distinguish between. Even if it should prove their food value, yet it must be conceded that a knowledge of their structural differences, together with the several contents of nitrogen found therein, will prove in the end of the greatest advantage to the agricultural chemist.

The relations of agriculture to pedagogic chemistry have already been mentioned. In many of our public schools it is thought to be quite as important to teach the child something about the life of the field and the orchard as to drill him in the geography of Johore. How plants and animals grow, is a theme which will one day be developed in every school in the land. Naturally, in agricultural colleges, the pedagogic side of agricultural chemistry receives due consideration, but alas! with these institutions it is sometimes *nomen et proclerea nihil*. In these cases, agricultural chemistry must often give way to a heterochronistic psychology.

But, on the other hand, many of our universities have recognized the need of such instruction and have provided properly therefor. Merely material considerations should induce all our higher institutions of learning to provide for advanced instruction in agricultural chemistry; for just now there is, and for years to come there will be, a large demand

for young men well trained in this direction. It will not be many years before it will be required of every well equipped university to provide liberally for the professional education of the young men who are to take charge of the agricultural colleges and experiment stations of the country.

In its relations to bacteriology, agricultural chemistry is also a debtor. In the life history of those minute vegetable organisms which exert so profound a chemical action on many bodies, has been found the solution of the problem of those fermentations which prepare for use the nitrogenous foods of plants. The successive conversion of organized nitrogen into ammonia, nitrous and nitric acids is a process of the most vital importance to plant life. It is true that these activities were exerted for several millions of years without our knowing anything about them; nevertheless, the value of what little knowledge we now possess seems almost the groundwork of scientific agriculture. The micro organisms which nitrify organic nitrogenous compounds, as well as those which act in the opposite direction, viz., in reducing nitrates to a lower form of oxidation, are of the utmost importance to agricultural chemistry. It is not beyond the range of possibility that a barren field may be rendered fertile by securing conditions favorable to nitrification, and then seeding the soil with a few active nitrifying ferments.

Quite true it is, already, that any scheme for an analysis of a soil which leaves out of consideration the determination of nitrifying activity is far from complete. The action of bacteria on the ripening of cream and of cheese is a matter of no little importance. The fermentation of cream and of cheese is already as much of an art as the fermentation of malt in the manufacture of beer. In the curing of tobacco the same activity is discovered, and the day is not far distant when commerce in high-bred tobacco bacteria will be an established fact. In short, we may look forward to the day when the bacteria active in agriculture will be carefully cultivated, and a bacterial herd-book will be found along with those of the Jersey cow and the Norman horse. Agricultural chemistry makes demands on every science which can aid it in the production of food and in the advancement of rational agriculture.

But we may go still a step further, and follow the crude food into the factory and the kitchen. From the knowledge of the action of ferments mentioned above, the great art of food-preservation has been created. The sterilization of food products and their preservation from the further action of destructive ferments, is one of the practical developments of rational agricultural chemistry. This

method of food-preservation is infinitely preferable to that other and simpler process which consists in adding to the food a substance which paralyzes the further action of micro organisms. Happily, agricultural and analytical chemistry have provided a certain method of detecting chemicals thus used for food-preservation. The conversion of foods into appropriate digestible forms, and the study of their nutritive power, mark the final step in agricultural chemistry in its control of food products. In this relation it comes into intimate contact with hygiene and animal physiology thus almost completing the circle of intimate union with nearly all the leading sciences. Intimately associated with this branch of the subject is the control of the purity of the food itself and the detection of the adulteration to which it may be subjected.—*Scientific American Supplement*.

GRANULATED OPIUM.

BY LYMAN F. KEBLER AND CHARLES H. LAWALL.

"We recommend that granulated opium by used in the preparation of tincture and deodorized tincture of opium and that the use of precipitated phosphate of calcium be omitted in their preparation."

The preceding remark is taken from the "Report of Committee on Revision of the U. S. Pharmacopœia," submitted to the American Pharmaceutical Association at their Denver meeting in August.

Granulated opium has been an article of commerce for some few years past, although it never attracted the attention it deserves. The limited number who have become familiar with its use and advantages to speak in the highest terms of its superiority over all other forms of the drug for quickly and easily manufacturing the various galenical preparations in which opium in the primary ingredient.

The percolation of finely powdered opium alone, which was authorized in the Pharmacopœia in 1880, and which was found to be impracticable, was supplemented in the last revision of the same work by the addition of 50 per cent. of precipitated phosphate. This addition is a questionable improvement over the former process, leaving much to be desired in both elegance and expedition. The U. S. Dispensatory, 17th edition (p. 1390), refers to the subject as follows: 'Precipitated calcium phosphate has been added, and finely powdered opium directed in the U. S. P. 1890 process, because much trouble seems to have been experienced in procuring at all times in the market the coarsely powdered opium which was the only kind suitable for use in the U. S. P. 1890 process.'

The coarsely powdered opium, as it is usually termed, is now easily obtainable and, as its use is constantly increasing, we may fully expect to see it authorized in the next revision of the U. S. P. In appearance it is extremely characteristic, the opium being in the form of small, irregular fragment of nearly uniform size. No methods for its preparation have as yet been published to the writer's knowledge and it is probable that its manufacture will be conducted by those are able to handle it in large quantity, as is the case of powdered opium.

The use of granulated opium is characterized by its simplicity and ease of manipulation. The process in general is as follows: Into the lower orifice of a cylindrical percolator place a plug of absorbent cotton, introduce the opium loosely, without previous moistening; then press it down firmly and cover it with a filter paper, held in place by a suitable weight. Any desired menstruum can now be carefully poured on, and after due maceration (which may vary from 4 to 12 hours, according to the desire of the operator) percolation may be allowed to proceed, the rate of outflow being so regulated as to exhaust the drug in the most thorough and speedy manner.

A number of experiments were performed with granulated opium in the preparation of the tincture, duplicate assays being made of each sample of the drug before percolation. Experiments were also made, using the U. S. P. 1890 process, the directions being followed as carefully and uniformly as possible, taking similar precautions in previously assaying the drug in each case. The U. S. P. 1890 process was experimented upon to verify, if possible, the results which were obtained by Professor Francis Hemm, and which were reported by him to the Missouri Pharmaceutical Association.

Prof. Hemm used a powdered opium of a well-known make, which, when re-assayed, was found to contain 13 per cent. of morphine. The tincture prepared by him from the above opium, using the U. S. P. 1890 process, contained only one per cent. of morphine, and further percolation of the residue failed to extract more than a trace (.02 per cent.) of the missing alkaloid. Prof. Hemm, in replying to a letter which was written to him, asking for any further information he might have, stated that, in the discussion which followed the reading of his article, the difficulty was attributed to the precipitated calcium phosphate in the official process, as it appears to interfere in some unknown manner with the thorough extraction of the morphine from the opium.

The following experiments, performed by the authors of this article, seem to support this

theory; 10 grammes of powdered opium were assayed in the usual way, and yielded 14.48 per cent. of morphine; 10 grammes of the same sample were mixed with 5 grammes of precipitated calcium phosphate and exhausted, as in the assay method, using diluted alcohol. The resulting filtrates, which amounted to more than 300 c. c., were assayed by the U. S. P. process for tincture of opium, and yielded 1.317 per cent. of morphine, showing a loss of 1.31 per cent.

The table of comparative results will be found at the close of the article. The experiments in detail, were as follows:

No. 1.—100 grammes powdered opium, assaying 14.09 per cent., were used in the preparation of 1,000 c. c. of tincture of opium by the U. S. P. 1890 method. The finished preparation assayed 1.2 per cent. morphine, showing a loss of 2.09 per cent.

No. 2.—50 grammes powdered opium, assaying 13.92 per cent., were used as in No. 1. The resulting preparation assayed 1.195 per cent., the loss being slightly less than in the previous instance.

No. 3.—100 grammes granulated opium, assaying 12.15 per cent., were used, and, after placing the drug in the percolator in the manner previously mentioned, 100 c. c. of water were poured on and allowed to macerate for twelve hours. Percolation was then commenced with diluted alcohol, receiving the percolate into 100 c. c. of alcohol, contained in a graduated receiver; ten hours' time was allowed for percolation, and the assay of the tincture, when finished, showed 1.183 per cent. of morphine, a loss of but 0.32 per cent. This tincture deposited considerable sediment (a defect which was not observed in the subsequent cases where diluted alcohol was used in the preliminary maceration) It was filtered after standing one week, and re-assayed with the same results as before.

No. 4.—In this case 100 grammes of the same drug were operated upon and maceration for four hours with diluted alcohol was allowed. The percolation consumed but six hours in this case, making a total of only ten hours from the beginning of the process to the end. The result of the assay was practically the same as before, being 1.180 per cent.

No. 5 was conducted similarly to No. 4, percolating for ten hours, and using granulated opium which was assayed 14.35 per cent. morphine. 13.70 per cent. of morphine was obtained in the assay of the completed tincture.

Nos. 6, 7 and 10 were executed in precisely the same manner as No. 5, and gave practically identical results.

In Nos. 8, 9 and 11 the only change made was in retarding the rate of percolation so that it covered 24 hours instead of 10 hours. The

assays show a slight increase in the percentage of morphine extracted.

Nos 12 and 13 were additional experiments with the U. S. P. process, the results being no more encouraging than before.

These experiments were all conducted in the most careful manner, using good quality precipitated calcium phosphate and making duplicate assays in nearly every case. The uniformly low results which were obtained by the official process indicate that the objections which have been offered to it are not without good foundation. The maximum loss by this process was 2.42 per cent., the minimum loss was 1.40 per cent. With the granulated opium process the greatest loss was 0.65 per cent, the least being only 0.15 per cent. A comparison of the two methods with reference to elegance and neatness gives immediate preference to the use of the granulated drug. The strictly followed U. S. P. process is anything but neat, and often involves difficulties which have a tendency to disturb the serenity of the operator's temper.

With regard to the rapidity of percolation the tendency of the granulated opium is to allow the menstruum to pass too rapidly, and it must be retarded somewhat in order to obtain the best results. With the official process the case is far different. No choice whatever is allowed the operator, who must submit to the inevitable and allow it to take its own line. Experiments conducted as uniformly as possible, produced widely different results in this respect, and the length of time required for percolation bears no simple relation to the percentage of morphine extracted, unless it be an inverse ratio, for in the instances when the percolate came through with exasperating slowness the loss of morphine appeared to be the greatest.

Summing up the entire work, it has been shown that a finished preparation of tincture of opium can be made by the granulated opium process in ten to thirty-six hours, with a loss of morphine varying from 0.3 to 0.6 per cent., which loss can be reduced by lengthening the time of percolation. The U. S. P. process requires from sixty hours to six days, with a loss from 1.4 to 2.42 per cent. of morphine.

While this was being undertaken inquiries were also made at a number of retail drug stores, in order to ascertain the extent of the use of the official process. Only a small percentage of the persons interrogated follow the process strictly, the majority do not use it at all, preferring to exhaust the drug in a more speedy and thorough manner. Some persons use it with the addition of sand or sawdust to hasten the percolation, in which case the precipitated calcium phosphate might just as well, or better, be omitted; this, however, was not

done; the few who use the process expressed themselves, in most cases, as being dissatisfied with it

The processes of the U. S. P. should in all cases be the best obtainable for their respective preparations. This is not the case with the process for tincture of opium, but it is hoped that a change will be made when the time comes, and we sincerely hope that granulated opium will be the form of drug officially authorized.

TABLE OF COMPARATIVE RESULTS.

Number	Process Used.	Per Cent. of Morphine in Opium.	Per Cent. of Morphine in Tincture.	Per Cent. of Morphine Lost.	Time allowed for Maceration.	Time Consumed in Percolation.
1	U. S. P. 1890	14.09	1.200	2.09	—	6 days
2	U. S. P. 1890	13.92	1.190	1.97	—	2 days
3	Granulated opium.	12.15	1.18	0.32	12 hours	10 hours
4	Granulated opium.	13.15	1.186	0.35	4 hours	6 hours
5	Granulated opium.	14.35	1.370	0.65	4 hours	10 hours
6	Granulated opium.	14.35	1.370	0.65	12 hours	10 hours
7	Granulated opium.	14.35	1.375	0.60	12 hours	10 hours
8	Granulated opium.	13.70	1.355	0.15	12 hours	24 hours
9	Granulated opium.	14.23	1.399	0.35	12 hours	24 hours
10	Granulated opium.	14.35	1.370	0.65	12 hours	10 hours
11	Granulated opium.	11.43	1.308	0.37	12 hours	24 hours
12	U. S. P. 1890.	13.92	1.255	1.40	—	3 days
13	U. S. P. 1890.	14.48	1.206	2.42	—	4 days

—*Am. Jour. of Pharmacy.*

DECOCTIONS AND INFUSIONS.

BY WILLIAM MARTINDALE.

Of these two classes of preparations, thirteen decoctions and twenty-eight infusions are official in the British Pharmacopœia. In the revision of this work some that are not in use will most probably be depleted.

Water being the most easily obtainable menstruum, and, especially if heated, the simplest and most natural agent with which to exhaust a drug of vegetable origin, one or other of these forms would suggest itself as the primitive mode in which to administer such medicaments, but now in many cases they are but used as vehicles for more definite and active drugs.

In domestic use, the tea, coffee, and cocoa, which are used as our commonest beverages, are prepared by these processes freshly for each time of use. By this means we get an aroma and flavour which no other method of treatment will give us, although attempts have been, and are, made to prepare liquid forms of these that can be kept indefinitely, to meet the tendency of the age, which is to have preparations of this nature ready and convenient for use.

To meet the foregoing want in regard to drugs, concentrated decoctions, infusions, and liquid extracts have been manufactured, and

now meet with a large demand. But these preparations, I consider, have their parallel in the essence of coffee, etc., that I have referred to; they lack the flavour of the freshly-made articles.

In preparing tea for a beverage, one point of its advantage is that we do not completely exhaust it of all its soluble constituents by infusing it too long, thus no other process of treating it has proved so successful.

In the case of drugs we have not exactly the same parallel as in tea; for the sake of uniformity in strength we wish to get our infusions to contain, in most cases, as much of the extractive of the drug as the water will dissolve. To avoid, therefore, the use of diluted concentrated preparations, for which I hold there is no defence except that otherwise they take a considerable time to prepare, which is inconvenient to the patient, and to meet the wish of those who desire to supply these classes of medicaments freshly made, I have endeavored to show that the time of infusion may be shortened in most cases without interfering with the degree of exhaustion of the drug obtainable by longer treatment. I present, in tabular forms, the results of experiments carried out with this view, in which there are shown the amount of extractive obtained by the B.P. process, and that of a shorter time which I would suggest. The residues were obtained by evaporation in a water bath and finished in a water oven.

It is also desirable that, with exceptions, they should be prepared of the uniform strength of 1 in 20. This may cause some variation of dose, but it is considered that it would be an advantage to have most of them of this strength, as is done in some of the foreign pharmacopœias, in which one process is adopted for a number of drugs. It is considered better that there should be an individual process given for each decoction and infusion, so as to allow of the state of comminution of the drug being mentioned, and, as they have to be extemporaneously and quickly prepared, the directions should be attached to each formula.

DECOCTIONS.

In addition to making these of the strength of 1 in 20, it is desirable to bring their preparation more into uniformity by boiling for an equal time, say for ten minutes.

I would suggest that, with exceptions, 20 per cent. more menstruum should be used to commence with than the amount of finished product required. The loss of liquid by absorption and evaporation under the most economical conditions, in preparing one pint in a covered vessel, I find is usually not less than 25 per cent., so that there would still be a deficiency to make up by displacement, by

pouring over the contents of the strainer more menstruum to produce the required quantity. In making this, the pharmacopœial quantity, there is no fear, therefore, that the strained decoction, without addition, will exceed the required quantity.

With two exceptions, the compound decoctions of aloes and sarsaparilla, in which covered vessels are ordered on account of the volatile nature of some of the ingredients, I would leave it indefinite whether a covered or uncovered vessel should be employed. I should give preference in most cases to an uncovered vessel, as in a covered vessel vegetable products when boiled in water are apt to froth and boil over, even with the most careful attention. Especially is this the case with decoction of cinchona.

The decoctions of cinchona, in No. 20 powder, pomegranate root bark, in No. 20 powder, pareira, in No. 20 powder, and poppy, bruised, I would recommend to be prepared by such a process as I have suggested, that is, to mix the drug with 24 ounces of distilled water and boil in a suitable vessel for ten minutes, then strain and pour as much distilled water over the contents of the strainer as will make the strained product measure a point.

Decoction of Cinchona.—Although as regards the alkaloidal strength of the decoction, it is, I find from analysis, of equal strength if prepared 1 in 16, or with half this quantity of bark, 1 in 32, if a good bark be employed; yet, as cinchona bark is so variable and now so cheap, it is not desirable to deviate from the uniform strength of 1 in 20 I have proposed. The decoction is a natural preparation of the bark, not truly incompatible with carbonate of ammonium and spirit of sal volatile, with which it is often prescribed. These form combinations largely employed in medical practice, and although failing to exhaust the bark, this is one of the most frequently prescribed of the official decoctions.

Decoction of broom, in which at present the drug is not ordered to be bruised, had better be replaced by an infusion of the bruised drug, and decoction of logwood should be made from the unfermented chips.

Compound decoction of sarsaparilla, if it is to be retained, I would not tamper with, except to make the proportion of sarsaparilla 1 in 10 of product in place of 1 in 8.

Other decoctions, with the exception of decoction of aloes, not being in demand, will probably be omitted.

Compound Decoction of Aloes.—There appears to be bad pharmacy in the present preparation, in that, after making an extract of socotrine aloes by evaporating the "liquors in a current of warm air to dryness," we are

* Pharm. Jour., v., 839. † Engler's Bot. Jahrb., v., 422.

directed to boil it for five minutes in a solution of carbonate of potassium. As, owing to oxidation, the extract will never completely dissolve again in distilled water, I am of opinion that crude aloes might as well be employed in making this preparation, especially if the Barbados (*i.e.*, Curacoa) variety be used. I find that this, if of good quality, is entirely soluble in a carbonate of potassium solution of the strength directed for preparing the decoction. The Socotrine variety is not so, and it is also considered to be less active as a purgative. If the preparation were made to contain 1 per cent. of Barbados aloes, instead of the 1 per cent. of extract of Socotrine aloes now ordered, I think there would be little or no alteration in the medicinal action of the preparation. Solution of the aloes is said to lessen its tendency to cause griping, and the action of the carbonate of potassium seems also to modify the effect of the preparation chemically, as if kept long it is said to lose much of its bitterness. Garrod* and Farre found the resinous matter left in preparing the extract of aloes caused little or no griping; it often proved almost inert. The change from using the crude Socotrine aloes, about 1 in 73 of product, in P.L. 1836, to extract of Socotrine aloes, was made in P.L. 1851. Now the aloes in the preparation seems to me to be over-cooked. I exhibit the decoction made in four ways;—The B.P. with 1 per cent. of extract of Socotrine aloes; with 1 per cent. of crude Barbados aloes; with 1 per cent., and also with 2 per cent. of crude Socotrine aloes. It may be necessary to use more than 1 per cent. of Socotrine aloes in the preparation if this be accepted, so as to retain its present strength; this should not be much deviated from, as it is a domestic remedy, the *Baume de vie* of ancient pharmacy. For this reason also the saffron should be retained, unless the medical authorities wish it omitted. The samples of decoctions of crude aloes were made with Barbados aloes yielding 73.5 per cent., and Socotrine yielding 45.2 per cent. of extract respectively, so that if Socotrine aloes be used, about twice as much of it will be required as of its extract, to keep the decoction of the same medicinal activity. From experience I find that Socotrine aloes is never so rich in extract as the Barbados. As regards the taste of the decoctions, I do not think there is much to choose between them, because the liquorice and saffron cover the taste so as to make them, to me, hardly distinguishable. The purgative action is a medical question. In other respects the present formula proves satisfactory.

* Garrod's 'Materia Medica and Therapeutics'

INFUSIONS.

Besides making these as far as possible of the uniform strength of 1 in 20, I would generally reduce the time of infusing to fifteen minutes. With one exception, that of calumba, I think boiling water should be used as a menstruum, a less heat being insufficient to prevent the tendency to fungoid development. They should while infusing, of course, be stirred occasionally. It would not tend to greater uniformity of the product to make up the quantity lost by absorption. Infusions therefore, at present, should merely be ordered to be strained. It may be a question whether it be advisable to make them of uniform strength, for which there has been a desire expressed, or of nearly uniform dose, as they are now. Infusions of digitalis and quassia would under any circumstances be exceptions. The Infusions of chamomile and simple and compound infusions of orange peel, I would not alter.

In preparing the infusions of buchu, clove, cascarilla, catechu, chiretta, cusparia, ergot, compound genetian, jaborandi, rhatany, hop, matico, quassia, rhubarb, rose, senega, senna, serpentary, bearberry, and valerian, the time might be reduced to a quarter of an hour.

Infusions of chiretta and cusparia, now prepared at 129° F., and infusion of quassia, with cold water, had better be prepared with boiling water. No sufficient reason has been given why boiling water should not be used in these cases, and the latter certainly would tend to prevent the liability to such changes as I have mentioned.

For infusion of buchu the leaves should be simply freshly broken, not bruised too much, else a too mucilaginous preparation is obtained.

The following would be double the strength of the now official preparations.—Infusions of clove, chiretta, ergot, rhubarb, serpentary and valerian, and infusion of catechu would be increased in strength. Infusion of cascarilla would be one half its present strength.

In preparing infusion of digitalis, No. 20 powder might be used to give a greater uniformity of sample and better exhaustion, but the strength of the infusion should not be altered without careful consideration, as it is a preparation on which great reliance is placed medically.

Of calumba a cold infusion is preferable to one prepared with boiling water which takes up the starch and its objectionable. After preparation, it is often heated to the boiling point and strained through cotton wool to separate albuminous matter, without interfering with its flavour or medical activity.

Infusion of kousoo, as it has to be administered without straining, should have its fine-

ness of comminution defined—say No. 20 powder—and the strength reduced to 1 in 20.

Infusion of linseed, 1 in 20, would be slightly increased in strength, and the time of infusion, two hours, might be reduced one half.

Infusion of quassia, being generally used as a vehicle, might be made of the strength of 1 in 100 in the place of 1 in 80, if boiling water be employed.

The strength of infusion of senna, preferably Alexandrian, 1 in 10 should be adhered to.—*Pharm. Jour.*

The New England Retail Druggists Union.

By C. P. FLYNN.

The idea of a union representing all the retail druggists of New England was first presented by Mr. Geo. W. Cobb, of Boston, and through his efforts the prominent druggists of New England were called together Feb. 21, 1894, to consider the project. It was a very large meeting, and it was voted to form the New England Retail Druggists Union. A committee was appointed to formulate a constitution and by-laws, and to bring in a list of names for officers.

On March 16, following, an adjourned meeting was held, and the following officers were elected: President, George W. Cobb; vice-presidents, D. W. Heseltine, Maine; A. S. Wetherell, New Hampshire; C. H. Hyde, Vermont; W. C. Durkee, Massachusetts; Jas. O'Har, Rhode Island; Jas. Duggan, Connecticut; Secretary, C. P. Flynn, Boston; Treasurer, F. M. Harris, Worcester. A constitution and by-laws were then presented and adopted, and the Union was safely launched, with a purpose to do all it could for the prosperity and honor of pharmacy.

In June, 1894, the Union voted to send F. W. Reeves to Vermont for the purpose of organizing that State. His success was complete. As a result, Vermont has now a flourishing State association and a pharmacy law.

In February, 1895, it was decided the Union must take a stand upon certain questions and find out just where it stood. The situation was described in a circular which was sent out to the three thousand druggists of the six New England States. This circular was the first gun, so to speak, of a campaign which has since assumed important proportions. It stated in plain terms the many evils threatening the welfare of pharmacy. It pointed the way for deliverance. It appealed to the spirit and manhood of every pharmacist and asked for his loyal support. The circular served to clear the air and aroused much favorable interest.

On May 16, 1895, the first annual meeting of the Union took place, in Boston. President Cobb felt obliged to decline a re-nomination

because of a press of other matters which could not be ignored, and which would prevent him from giving that attention so necessary to the position. Mr. F. M. Harris was elected president and Mr. Cobb accepted the treasury; J. Allen Rice of Milford was made vice-president for Massachusetts in place of Mr. Durkee. The other officers were re-elected to their several positions.

On June 19, 1895, a joint conference was held in Boston, representing the National League, the Union and the Apothecaries' Guild of Boston. It was then decided to take an aggressive stand and test the power of the Union in New England.

At a first step the Union voted to employ regularly an agent to represent it. It seemed as if one were made to order for the work. In Mr. F. W. Reeves (who is a pharmacist in good standing) the Union was fortunate in obtaining one of the most enthusiastic, loyal able and persevering men ever engaged in any good cause. He has proved his worth. He has left his good business at great sacrifice in an earnest desire to benefit his calling. Would you do it, dear reader?

The next move was to ask the jobbers of New England for their friendly co-operation in this effort to benefit the cause of pharmacy. Some were found who were ready to become our allies at once, and so placed themselves on record. The others have all come in since. The assurance of all but two of the prominent cutters of Boston was also obtained that they were willing to join in a schedule of prices on a profitable basis.

In the meantime, Mr. Reeves was visiting the retailers of New England with gratifying success, and circular matter and correspondence were evidently not thrown into the wastebasket. The work assumed a form of campaign not unlike, in some respects, the recent political one.

Many cities and towns extended invitations to the sturdy orators and workers of the Union, Canning, Cobb, Harris, Draper, Marshall, Rice, Reeves and others, and they were cheered and feasted, and made welcome. On the same day that a political victory was won, the Union also had cause to be thankful, for it was able to count on the alliance of all the jobbers of New England, as well as on that of the most prominent cutter of Boston, leaving but one cutter in Boston not in accord with the objects of the Union. Three days' work in New York by Agent Reeves secured the co-operation of all the jobbers of prominence in New York.

The Union is constantly growing. Its agent will visit all sections as rapidly as possible, and the work of campaigning and organizing local associations will go on. Towns, cities

and counties are organizing everywhere, and are considering schedules of prices in their various associations.

As for Boston, it remains to be seen what can be done. The Union realizes that it has not only the enemies of its good cause to contend with, but that there may be some false friends. If so, the faithful brethren shall know who they are. It is proposed to have a joint committee of arbitration representing the jobber and the Union, to consider such matters as may come before them.

Now, brother pharmacists, the work of the Executive Board of the Union is very great. They are in the harness most of the time, manifestly to the neglect of their own business; but they are going to keep right on till they win, and they ask nothing more than confidence and loyal support. The issue is vital, and if every pharmacist realized all success implies, he would, we believe, contribute liberally to the cause.—*The Spatula*.

A Scheme for Extraction and Separation of Active Principles in Preparations and Nostrums.

BY E. A. RUDDIMAN, PH. M.

This scheme is a condensation of the one given in Blyth's work on Poisons, modified for the use of the general pharmacist.

The most important active substances to be tested for are follows: Alcohol, chloroform, chloral hydrate, carbolic acid, morphine, strychnine, brucine, atropine, quinine, cocaine, caffeine, santonin, cantharidin, lead, mercury, arsenic, antimony and silver.

In making an analysis of this kind, it is advisable not to subject the whole of the substance at once, but to divide it into three or more portions. If it is in the form of a solid mass, first divide as finely as can be done conveniently. In the following directions it will be noted that the principles to be tested for are divided into three groups, viz.: Volatile principles, non-volatile organic principles and inorganic chemicals.

To a portion of the substance to be tested, water is added if necessary, and a sufficient amount of dilute sulphuric acid. This is then subjected to distillation, and the distillation, and the distillate is tested for alcohol, chloroform and carbolic acid (sometimes caffeine is also found in the distillate). Continue the distillation until no more of these substances come over. Now make the contents of the distilling flask distinctly alkaline with potassium or sodium hydrate and again distill. This second distillate is to be tested for chloroform, which has been formed by the action of the fixed alkali on the chloral if present.

To a second portion of the substance to be tested enough alcohol is added to make the mixture fairly strong of alcohol and a sufficient amount of diluted sulphuric acid to make it distinctly though not strongly acid. This is next digested on the water bath for about fifteen minutes and then filtered, while hot. Digest the residue with alcohol and filter. Unite the filtrates, make nearly neutral with ammonia water, and evaporate until the alcohol is expelled. The residue is made up with water so as to measure about fifteen cubic centimeters. See that this is still acid, and filter if necessary. To a very small portion of this filtrate one of the general alkaloidal reagents, such as tannic acid or Mayer's reagent, may be added to see whether an alkaloid is present or not. If a precipitate is obtained, it will be necessary to go through the following manipulations:

To the aqueous acid solution add 15 c. c. of benzol, shake gently so as not to make an emulsion and then let stand until the two liquids have separated. Decant or siphon off the benzol. Wash the aqueous acid solution again with 10 c. c. and the third time with 5 c. c. of benzol, adding these benzol washings to the first. These benzol solutions are to be evaporated in several watch-glasses and tests applied for santonin, cantharidin and caffeine. Chloral and carbolic acid may also be present.

The aqueous acid solution left after washing with benzol is made slightly alkaline with ammonia, and is extracted with benzol in three portions of 15, 10 and 5 c. c. These benzol washings are united, evaporated in several watch-glasses, and the residue tested for strychnine, brucine, atropine, quinine and cocaine.

This aqueous alkaline solution left after washing with benzol is made acid again with dilute sulphuric acid and washed with amyl alcohol in divided portions. These washings are to be evaporated in watch crystals and tests for morphine applied to the residues.

A third portion of the original substances is to be used in testing for inorganic compounds. Before tests can be applied for these the inorganic matter must be eliminated. This may be done in several ways. Perhaps the best is to destroy it with chlorine generated by adding hydrochloric acid and then potassium chlorate in small amounts and heating. It requires considerable time to destroy all of the matter. After so doing, drive off all the chlorine and apply the regular tests. If the matter is destroyed by heating alone there is danger of volatilizing some of the metals.

Reinsch's method is frequently of service where the presence of arsenic, antimony or mercury is suspected. A piece of bright copper foil or gauze is suspended by means of a platinum wire in the mixture containing the or-

ganic matter, and the metal previously acidulated with hydrochloric acid. Heat to near the boiling point, and a deposit will soon form on the copper if one of the above-mentioned metals are present. This deposit may be removed from the copper by heating in a glass tube, or it may be dissolved off and the tests applied.—*Read before Tenn. Drug Ass'n.*

THE MARCH OF IMPROVEMENT.

POPULAR PHARMACY MOVES INTO FINE NEW PREMISES.

An undoubted sign of an improvement in business is when a merchant branches out on a larger scale, showing that his old limits have become too confined for his enlarging scale of operations. C. E. Jones, the druggist, has felt this, for he has now moved into a new store, nearer the new government builds, that for beauty of interior design, elegance of fittings and completeness of appointment, is thoroughly metropolitan. The interior presents a handsome view, an entire departure being made in the design of the store. A handsome oak circular main counter, approached between show cases in heavy oak fittings on either side, faces the window, while behind the cases and counters are substantial wall cases of the same popular wood, appropriately carved, and showing off with good effect the plate glass doors and handsome mirrors, a large one of which is on each side, set off by oak decorative work. The large case behind the main counter, however, attracts the principal attention, as it will be kept exclusively for perfumes and has been appropriately decorated and carved. In the centre is a large mirror 36 x 82 inches. The middle of the store is occupied by a circular settee, over which is a cluster of electric lights, while other lights are placed in various spots, giving a pretty effect. Everything has the stamp of thoroughness and substantiality, and when it is mentioned that the fittings have been put in by the well known firm of Weiler Bros., it is a sufficient guarantee that everything is of the best. Mr. Jones has paid special attention to the arrangement of the dispensary department, where he has found a distinct place for everything, a separate cabinet being kept for poisons alone. A cosy office, lavatory and other departments adjoin the store. Altogether this will be an establishment that for modern appointments and elegance of furnishing will be a marked advancement on anything attempted here. The exterior will be in keeping with the inside, the large plate glass windows being surmounted with decorate work in delicate colored glass.—*Victoria Daily Times.*

BOOKS, ETC., RECEIVED.

The Mortar & Pestle is the name of the journal issued by the Commercial Section of the A. Ph. A. the first number of which has been received.

PROCEEDINGS OF THE VIRGINIA PHARMACEUTICAL ASSOCIATION.

TENTH ANNUAL REPORT OF THE MASSACHUSETTS STATE BOARD OF PHARMACY.

CALENDAR FOR 1896. Published by F. Stearns & Co. This is a unique work of art produced by a new process of photographing in colors, and is one of the handsomest and to those interested in photography one of the most interesting works in this line every published. The variety of shades produced by combinations of the yellow, red and blue is astonishing. The calendar is printed and all the work done by F. Stearns & Co., and is a credit to their press department.

HANDBOOK OF PHARMACY. By Virgil Coblentz, Ph. D., Ph. G., etc. Professor of Pharmacy at the New York College of Pharmacy. Second edition. The publication of a second edition so soon after the appearance of the first is conclusive evidence of the value of the work, and the appreciation with which it has been received by the pharmacists.

The edition contains but few changes, but notable additions are the chapters on Urine Analysis, and the Microscope. The section devoted to the first is very complete, much more so than is usually to be found in work not specially devoted to this subject. The chapter on the microscope is not so complete but will well repay perusal. The work contains 437 illustrations, those on urinary sediments forming a large and valuable portion of them, and is handsomely printed and bound. It is published by P. Blakiston & Son, Philadelphia.

THE ART OF COMPOUNDING. A Text Book for students, and a reference work for Pharmacists at the dispensing counter, by Wilbur L. Scoville. Professor of Applied Pharmacy at the Mass. College of Pharmacy.

This is a work which is not only of value as a text-book, but also as a book of reference for the busy dispenser. Dispensing in all its phases is here thoroughly studied and as Prof. Scoville has had a large and varied experience, the work is of great practical value.

The various forms of medicaments are studied separately and numerous examples of each class are given, taken from every day dispensing work, so that there is hardly an emergency that can occur in dispensing that is not explained, and the solution offered in connection with some of the prescriptions in this work. This work is also published by P. Blakiston & Son, Philadelphia.

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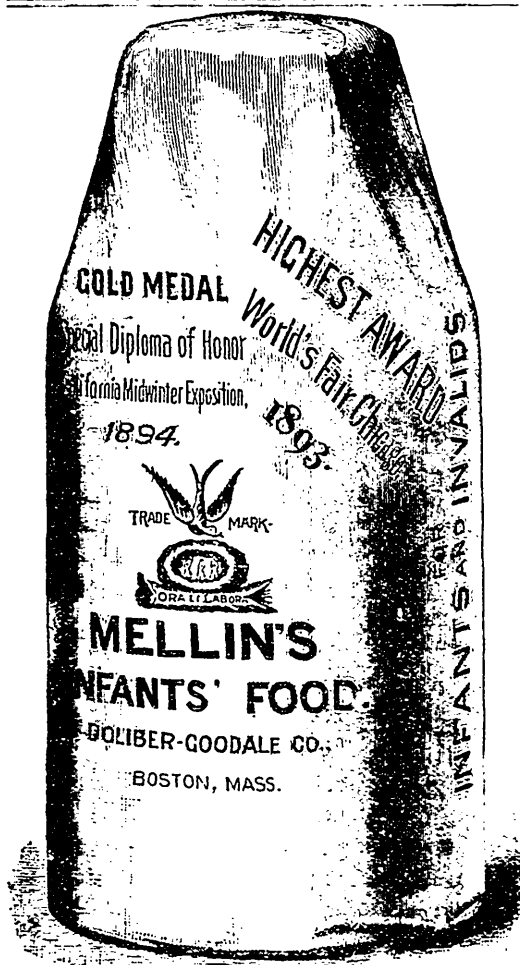
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THE CENTROSOME OF THE CELL.

By PROF. E. A. SHAEFFER.

From an address before the British Association for the Advancement of Science.

I will now invite you to consider with me one or two of the more obscure subjects in the range of physiology, subjects which are however, creating a great, almost an absorbing, interest at the present moment. The first of these subjects relates to the structure and function of every cell in the body. All are aware that the body of every animal and of every plant is made up of minute corpuscles which are formed of protoplasm, and which contain in every case at least one nucleus. The protoplasm and the nucleus form the living substance of the cell. Other substances may be present, but they are, in a sense, outside the nucleus and protoplasm, not incorporated with their substance. Apart from a few details relating to the structure of the nucleus, this was, until quite lately, practically all that we knew regarding the parts composing either the animal cell or the vegetable cell.

There appears, however, to be yet another something which, although in point of size is of very insignificant dimensions, yet in point of function may perhaps be looked upon as transcending in importance, in some respects, both the protoplasm and the nucleus. Not many years ago it was noticed by various observers that in certain specialized animal cells the protoplasm showed a tendency to radiate from or converge toward a particular point, and on further investigation it was found that at this point there was a minute particle. This observation, which began, as we have seen, upon specialized cells, was, after a little while, found to hold good for other and yet other cells, until, at the present time, we believe that in every cell of the animal or plant body such a particle exists.

Now, it may well be asked, why, after all, should so great importance be attached to this observation? To this it may be replied that, in the first place, it is of importance because it shows conclusively that the whole cell is not of a uniform nature, since there is this point within the cell that exerts a special attraction upon the rest of the cell substance; and, indeed, on this account the particle has come to be termed the "attraction particle." And, in the second place, because of the apparent universality of the occurrence of such a particle. And, thirdly because of the fact that one of the most important phenomena exhibited by the cell hinges upon the behaviour of this particle; for it is found that before a cell or its nucleus divides this minute attraction particle begins by itself dividing, and is, in fact, more commonly met with double than

single. Nor is it until the two particles thus produced have evolved, either from themselves or from the substance of the protoplasm or nucleus, a system of communicating fibers, the so-called achromatic spindle, that those changes in the nucleus and protoplasm take place which produce the division and multiplication of the cell. This attraction particle, which is also called the central particle or centrosome, has absorbed so great an interest that, short as is its history, many papers have already been devoted mainly to it, the latest being an elaborate treatise of some 300 pages by Martin Heidenhain.

I shall not here attempt to follow out the details of all these researches, but will be satisfied with putting before you the conclusion which Heidenhain has come to regarding this particle, viz: "that it is morphologically, physiologically, and chemically a structure sui generis; not merely a separate portion of nucleus or protoplasm, but an organ of the cell with definite functions, and having a definite existence of its own. Nevertheless, it is almost as minute an object as it is possible to conceive. In a cell which is magnified a thousand diameters the central particle appears merely the size of a pin point. Yet this almost infinitely small object exerts an extraordinary influence over the whole cell, however large (and the cell may be many thousand times its size); for it initiates and directs those processes which result in the multiplication of the cell, and indirectly, therefore, it is concerned in directing the general growth of the individual, and ultimately the propagation of the species."

STERILIZATION OF MILK.

By PROF. HENRY E. CHAIN, M. Sc.

One of the great sources of infection is milk. Recognizing this fact, and that young children are wholly dependent upon this food, bacteriologists have been able to give to the world a practical method of standardization, by means of which the milk will be rendered absolutely germ-free, thus saving the lives of thousands of infants yearly. A practical method, however, of securing this result was not hit upon in an instant. When it was first suggested in Germany that all milk be sterilized, physicians readily responded, for it was recognized that the diseases of children would thereby yield more readily to treatment. But it does not follow that milk thus sterilized should constitute the only food, for experience in a Philadelphia hospital has shown that where this was practiced a large percentage of the children died; that the weakly children could not thrive upon it. Milk, as it leaves the cow, is already nearly "digested," and intense heat

melts the fats and destroys emulsion; it turns the milk sugar into a caramel; it destroys the starch ferment (infant's saliva containing no ptyalin); the casein will not curdle, and the albumen is coagulable. Milk thus treated, then, is unfit for a steady diet. But the bacteriologist is equal to the emergency, and has succeeded in showing that Pasteurizing renders the milk perfectly effective, and at the same time absolutely harmless. This is based upon the discovery that it is not necessary to bring the milk to the boiling point to destroy the pathogenic organisms, a temperature of 70°C. (158° F.) being sufficient. Thus it is possible to thoroughly sterilize all the food of young children, and at the same time retain the essential properties of that food. The milk, should, however, be used soon after sterilization. Not only are the bacteriologists thus able to guard the children against disease communicated by milk, but the general milk supply has been very carefully studied and precautions advocated, which, if followed, will insure a markedly decreased death list. There appears good reason for declaring that milk acts as a carrier for at least five diseases, viz: tuberculosis, typhoid fever, scarlet fever, diphtheria and cholera infantum.

But it has been shown by these biological specialists that milk may contain myriads of bacteria, and many varieties, and yet be used with perfect safety. For example, remarkably "pure milk tested in Boston was found to contain 2,000,000 bacteria per cubic centimeter (about .06 inch), while in Germany as many as 200,000,000 bacteria have been found in the same small quantity; and yet we are told that of all this vast host probably not one was injurious. Furthermore, from 40 to 50 species have been described that have the power of souring milk. Indeed, the presence of bacteria is essential to produce souring. Thus it is seen that the specialist may have to labor against difficulties in determining the presence of possibly a few bacteria that have the power of producing infectious disease, and his difficulties could be the better appreciated were it realized how nearly alike all these organisms appear. It is only by the employment of most skillful means that it is possible to state positively that an organism thus found is a pathogenic bacterium, and to accurately classify it—*Popular Science*.

The Metric System of Weights and Measures.

A large and influential deputation of the Associated Chambers of Commerce of the United Kingdom, waited upon the Rt. Hon. A. J. Balfour, M.P., First Lord of the Treasury, on Wednesday the 20th inst., by appointment,

to urge upon the Government the desirability of early legislation on the above subject, and to inform Mr. Balfour of the almost unanimous support that the Chambers of Commerce are prepared to give to the recommendations of the Select Committee of the House of Commons, which are as follows:—

- (a) That the Metric System of Weights and Measures be at once legalised for all purposes.
- (b) That after a lapse of two years the Metrical System be rendered compulsory by Act of Parliament.
- (c) That the Metric System of Weights and Measures be taught in all public elementary schools as a necessary and integral part of arithmetic, and that decimals be introduced at an earlier period of the school curriculum than is the case at present.

It was strongly urged by the Select Committee that a bill should be brought into Parliament with the above objects.

The deputation was introduced by Sir A. Rollit, M.P., who stated that sixty-seven Chambers of Commerce were in favour generally of the above recommendations, and that only one was against them. He also laid before Mr. Balfour in a very forcible speech the great inconvenience and loss that is occasioned by our present system, and gave instances where orders from abroad had been lost to this country simply and solely owing to our weights and measures not being in accordance with the metric system. Sir Henry Roscoe also laid great stress upon the benefit to all classes of the community by the adoption of the metric system, and insisted that not merely was it most convenient to the scientific man but also to every class of trade. Sir S. Montague followed on the same lines, and, in fact, all the members of the deputation who spoke were most earnest as to the importance of the matter from every point of view.

In his reply, Mr. A. J. Balfour, with whom was the Right Hon. C. T. Ritchie, M.P., stated that he was fully in accord with the opinions and wishes of the gentlemen present, and he thought that clauses (a) and (c) ought certainly to become law; but he was not sure the time suggested in clause (b), viz., two years, was long enough to make this great change; he, therefore, reserved his final opinion upon that. On the whole the deputation were assured of his personal conviction of the utility of the change; but he could not promise more than that careful attention should be given to the various points which had been so powerfully brought before him by the deputation.

A vote of thanks was cordially given to the Rt. Hon. gentleman for his courtesy and attention.

It will be remembered that Mr. Carteighe, President of the Pharmaceutical Society, gave evidence before the Select Committee on this subject, and pointed out how important it is that pharmacists should be able legally to use the metric system in their profession, and Sir Henry Roscoe (who was Chairman of the Select Committee), in his remarks to Mr. Balfour, stated he was glad to see it was intended in the new British Pharmacopœia to insert the Metrical System of Weights and Measures.

With respect to Mr. Balfour's objections to the term of two years not being long enough to make the system compulsory, no doubt if Parliament thinks so, the time must be extended; but many members of the deputation seemed to think it was desirable to make the transition period as short as possible, consistently with reasonable allowance of time being given, and it is to be hoped the great importance of the subject will entitle it to the early consideration of Parliament.

Is it Necessary that the Pharmacist Should be a Chemist?

Is it necessary that a pianist should have hands!

The average druggist conducts his business without any knowledge of chemistry, and yet very few accidents directly traced to his lack of chemical knowledge seem to be reported. Neither the proprietor nor any one of his employes may have the slightest acquaintance with chemistry; but as no protest is offered by those whom they serve, they might well conclude that the drug business can be conveniently and profitably carried on without any reference to the chemical properties of matter. A man who is entirely innocent of all chemical knowledge naturally fails to appreciate its importance, especially if his own experience has been such as to confirm in him the comfortable belief that he can get along without it. Thousands of men follow the advice of wholly incompetent physicians and take the medicines dispensed by men who know nothing about pharmacy, and other thousands use dangerous quack medicines, with apparent impunity. Thousands of soldiers fight battle after battle without being wounded.

But the intelligent and safe practice of pharmacy is nevertheless impossible without a good knowledge of the laws of chemistry. Such a knowledge of chemistry as is necessary to the pharmacist of to-day and to-morrow can never be gained by mere reading, by attendance upon lectures, or by such instruction and practice as may be obtained in the drug store. Laboratory courses extending over many months, embracing many hundreds of hours of actual practice in well equipped laboratories, under experienced teachers and covering analytical as well as synthetical work, quantitative as well as qualitative examinations, are necessary.

The knowledge and training thus acquired are necessary in the identification of medicinal substances, in the examination of their quality, purity and strength, in the valuation of crude drugs as well as finished preparations, in the making of pharmaceutical products, in the proper preservation of medicines, and in combining one medicine with another. In other words, there is very little pharmaceutical work that can be intelligently performed without a practical knowledge of chemistry. Even in the work of cleaning mortars and other apparatus and implements, a knowledge of the action of acids, alkalies, etc., upon different substances, is of the most direct and practical value.

The apprentice ought to know, before the beginning of his drug-store employment, the nature and properties of acids, alkalies, salts, and other compounds, and their relations to each other. He should also know a good deal about the water-solubilities of the various classes of chemical compounds, and have a general knowledge of certain other important properties of the materials with which the pharmacist is concerned, and which can be effectively studied only from the standpoint of chemistry.

The chemistry not only of *inorganic* but also of *organic* medicinal substances must be familiar to the pharmacist to a considerable extent. The properties of the various classes of chemical constituents of plant drugs must be known to him. He must be able to foretell as well as understand the many chemical results which attend upon his work whether in the laboratory or at the dispensing-table.

A MODERN AMERICAN GALEN.

There is a quaint and original doctor located on one of the islands of Puget Sound, say the *New York Medical Record*. He advertises in posters and placards printed on a home outfit. In one of his announcements he says, "Legs and arms sawed off while you wate without pane. Childreth and tumors a specialty. No odds asked in measles, hooping cough, mumps, or diarrear. Bald head, bunions, corns, warts, cancer, and ingrowing tow nales treated scientifically. Coleck, cramps, costiveness and worms nailed on sight. Wring-wormz, pole evil, shingles, moles, and cross eye cured in one treatment or no pay. Private diseases of man, woman, or beast eradicated. P. S.—Terms, cash invariably in advance. No cure, no pay, P.S. (take notis).—No coroner never yet sot on the remanes of my customers, and enny one hiring me doan't haf to be good layin' up money to buy a gravestone. Come won, come awl." This man is said to do a good business, although you would not expect it, and his patients say he cures diseases and does it thoroughly and quickly.

ENGLISH PHARMACEUTICAL NOTES.

(By our London Correspondent.)

The pharmacopœial committee of the British Pharmaceutical Society is hard at the work of revision. So far, the work is being conducted in Professor Attfeld's laboratory and the laboratories of the various members of the committee. The help of the Research Laboratory, after all, has not been requisitioned as it is thought that they could only assist on questions of pure analytical chemistry which can be as well threshed out in Dr. Attfeld's laboratory. The only serious drawback to the method that has been adopted by the committee of arriving at satisfactory results is one for which they can hardly be held responsible. The most perfect formula, apparently, for a preparation may be worked out in a private laboratory and the product appear everything that is desirable. but the question at once arises, how will the preparation keep? An experience of at least six months as to the keeping properties of some preparations is none too long and this is the difficulty that presents itself to the committee. It is more and more evident that where ideal results are to be obtained, a committee should be slowly but steadily working all the years between the publication of successive editions of the pharmacopœia. But under the present arrangement whereby the General Medical Council derive all the profit from the work and the official connection of pharmacists towards the production is only on sufferance, a voluntary committee working for years is out of the question.

The Committee is making a valiant attempt how far standardisation of drugs and preparations may safely be taken. There is no getting away from the fact that to make standardisation thorough and general throughout the pharmacopœia would throw the preparation of these articles more than ever into the hands of the wholesale manufacturing chemists. The pharmacist who conscientiously makes his pound of tincture or extract every three or four months has often neither the time nor the apparatus to conduct a delicate chemical operation of washing out an alkaloid and regenerating the same before he can take the weight on an accurate balance. It would be as reasonable as to expect him to extract his own quinine. If he had the skill, which in the case of the older pharmacists, is doubtful, it would be a proceeding that would be both costly and tiresome. To the wholesale chemist this is a detail in connection with large quantities that would be more than covered by a slight increase in the prices which he would be able to charge.

There is to be no wholesale attempt at imitating proprietary preparations; chlorodyne,

compound syrup of the hypophosphites and Easton's syrup being probably the only new preparations in this line. The committee is probably well advised in this respect, although many medical men and some pharmacists who hold that the publication of an alterative formula in the pharmacopœia would be a death-blow to the prescribing of many of these proprietaries, will be disappointed. But the fact is that experience does not show that imitating private formulæ is at all successful in the desired direction. It enables Dick, Tom and Harry to make a proprietary of their own that previously existed only in one man's hands or in the hands of a few. Increased consumption follows not through the prescription of the physician but through the recommendations over the counter. And all the while the original preparation receives attention that it never before obtained and its popularity amongst prescribers considerably enhanced by the mere fact that it has been considered necessary to imitate it in the official work.

It is also practically decided to give official recognition to a number of concentrated preparations, such as concentrated infusions, etc. At present Professor Attfeld raises objections to the names by which these preparations are known and favors the title "essences." It is to be hoped, however, that he will not allow academic reasons to prevail over a nomenclature that has been recognized for years and is at least convenient.

Finally, the word "about"—a word as blessed to the chemical manufacturer as "Mesopotamia" was to the old lady—is proving a thorn in the flesh. Certain manufacturers have repeatedly sneered at the indefiniteness implied in this word and have asked that where it applies to limits of impurities, it shall be replaced by definite figures. Well, they would stand a very good chance of having their request granted only it is thought that under the present laws regulating the adulteration of drugs, the manufacturer nearly always escapes and only the retailer suffers. Certainly all the odium of a prosecution falls on the retailer and his only remedy is a civil action against the wholesaler. Now in these days of misguided zeal of unintelligent public analysts, it would be quite possible, should rigid limits be inserted in the pharmacopœia, that an unoffending pharmacist would be hauled into court for some impurity existing in a chemical to the extent of 0.1 per cent. beyond the official figure. Needless to say such an even: is now precluded by the useful word "about" which precedes the exact figure in the present pharmacopœia.

The *raison d'être* of the Anti-Adulteration Association is hardly apparent from the prospectus that has just reached us. It appears to

be another dodge of some needy analysts to raise the wind. Among its objects are: To utilise the Adulteration Acts more energetically so as to expose fraud; to amend and improve the acts; to publish analyses so as to protect consumers: to issue official certificates of purity excellence, etc. At present it is content to receive members at \$2.50 per head. There is stated to be a committee, to whom applications for membership must be made, but these names do not appear on the circulars. Some elaborate rules are drawn up respecting the granting of the association's certificates, that include a yearly examination of samples and the power to take samples at any time in order to see if the articles are maintained at the standard of purity. Perhaps after all it is only an advertising scheme of a hitherto unknown journal "*Health News*" as I see that not only does membership in the association entitle one to a copy of this journal, but it is also intended publishing a list of all firms or individuals holding the association's precious certificates in *Health News*.

Among the names of those elected this month as Fellows of the Royal Microscopical Society, I notice that of the Editor of the *Montreal Journal of Pharmacy*, Mr. Joseph E. Morrison. The society was established in 1839 and incorporated by Royal Charter in 1866. It has some fine premises in Hanover Square, London W., where the ordinary meetings are held. The journal of the society is widely known for its valuable summary of current researches relating to Zoology, Botany and Microscopy and is under the able management of Professor F. Jeffrey Bell, M. A., F. R. M. S., one of the secretaries of the society (with Dr. Dallinger, F. R. S.,) and also a professor of King's College.

Fluctuations in the market this month have not been very extensive. Cream of tartar has a sensational advance, but has since relapsed somewhat. Saffron is also appreciably dearer. Essential oils of Italian and Chinese origin are still on the up-grade. Opium, quinine and camphor are firm at previous rates.

THE EVOLUTION OF PHARMACY.

By J. MACKINOSH CAMERON.

Paper read before the Edinburg Chemists', Assistants', and Apprentices' Association.

In tracing the early stages of pharmacy it is well to remember that the craft for many ages—in fact, up to about the seventeenth century—was incorporated with that of the physician, healer, or medicine man. That individual no doubt directed his attention to the uses of the herbs and animal substances, when incantations and charms had failed to give relief. It

was also common, when the wearing of precious stones as charms had failed, for those ancient worthies, before having recourse to vegetable remedies, to have the charms administered in the form of powder, with a success which varied according to the credulity of the patient. That is to say, in the administration of mineral as well as vegetable and animal substances, an unbounded faith in the supernatural had much to do with the ultimate result.

It may not be out of place to mention some of the drugs in use during several centuries prior to the beginning of the Christian era. In the writings of various ancient authorities, we find references to such plants as cumin, poppy, henbane, cherry-laurel, lettuce, squill, and Solomon's seal. This last plant is supposed to have been discovered by Solomon, and used in combination with a charm as a remedy for epilepsy. Part of the root or rhizome was concealed in a ring and applied to the nose of the patient. Opium or some preparation of the poppy was undoubtedly used at a very early period, for it is conjectured that the potion known under the name of *Nepenthe*, prepared by Helen of Troy, and given to the guests of Menelaus to drive away their care, was none other than a wine of opium. This conjecture receives support from Homer, who states that *Nepenthe* was obtained from Thebes, hence the name given to tinct. opii—Thebaic tincture. The Thebes referred to is the ancient capital of Egypt, not a city of Greece. Cherry-laurel, or the juice of the leaves, was in demand by the priestesses worshipping at the shrine of Apollo, one authority stating that the use of it often occasioned the death of these priestesses. Such a circumstance in modern times would probably be called death from misadventure, due to the indiscreet use of a poison known as prussic acid.

At the time when the Roman Empire was in the zenith of its power, the dispensing of drugs was in the hands of such men as Asclepiades and Galen. The medical world was divided into various schools, whose modes of treatment differed vastly. These different schools took their origin from several Greek physicians, who, on the fall of the Greek Empire, came to Rome about 200 B. C. Before passing from these Greek physicians it might be well to mention on whose treatises on the medical art have been recognised all through the centuries since he lived. I refer to Hippocrates. Although thoroughly appreciating the effect of artificial means in restoring the health of a patient, he strongly believed in the healing power of Nature.

Were the statements of Pliny to be taken literally, it would seem that Rome was at one time in a particularly healthy condition, for he tells us that for 600 years the Empire got

on without a doctor. About the beginning, or perhaps nearer the middle, of the second century there appeared on the stage of medicine in Rome a physician from Pergamos—Galen—from whom came the greater part of European medicine. He believed in the Hippocratic doctrine of humours, which demonstrated that the condition of the body depended upon the proper mixture of the four elements—hot, cold, moist, and dry—and he held that in drugs were to be recognised the same elementary qualities as in the humours of the body, and on the principle of curing by contraries the use of one or other was indicated. As an indication of the superstition existing at this period, Soranus, who was a contemporary of Galen and the biographer of Hippocrates, gravely asserts that honey, which was much in use at that time, owed its virtue to the fact that the bees from which it was procured were hived near the tomb of Hippocrates, rather than to any medicinal virtue contained in itself, and even the virtues which herbs really possess in those days attributed to the planet under whose ascendancy they were collected or prepared rather than to any natural or intrinsic properties of the plants themselves. This no doubt accounts for the fact that at the present day most prescriptions commence with a symbol which is nothing more than a relic of the astrological symbol for Jupiter.

In Europe the period after Galen affords little evidence of any thing but a gradual decline in medicine. We have next to look to Damascus and Bagdad for traces of pharmacy. Schools of medicine in conjunction with schools of pharmacy arose in all the chief Moslem centres on the rise of the Mohammedan empire.

But, instead of following any further the progress of pharmacy in the East, let us now look at the state of affairs as they existed in our own island. It is scarcely necessary to refer to the almost unlimited power possessed by the various priesthoods which existed in this country from the time of the Druids down to the time of the Reformation. We have much evidence to the effect that the medicine of those times was, to a great extent, in the hands of those devotees of religion. We have traced, in a fashion, the story of pharmacy down to the time of the Roman supremacy, and it is to the Romans we are indebted for the little knowledge we possess of the early history of our island. Superstition was then more rampant in Britain, if that were possible, than on the Continent. In fact, an extraordinary faith in the supernatural continued down to the sixteenth century, and even in the nineteenth century, if the truth were told, we are not quite free of it.

We have observed that religion and the early practice of medicine went hand in hand,

and it is necessary to follow the progress of the former to get some insight into that of the latter. The first religious body we have any record of was that of the Druids, who exercised unlimited power not only over the minds, but over the bodies of the ancient Britons. At that time selago, samolus, mistletoe, verbena, and the oak were all held in great esteem for their medicinal virtues. Selago, or fir-club moss, acted as a violent purgative and emetic, and was used at one time in the Scottish Highlands in the form of an ointment, as a counter-irritant for the eyes. Sanolus brookweed or water pimpernel, used in the form of a syrup, acted as a strong purgative, and the leaves had the property of healing wounds or chaps in the skin. The mistletoe, we are told, to be of any use in the art of healing, had to be cut with a golden knife when the moon was only six days old, and after being consecrated by certain forms, was an untailing antidote for various poisons. Verbena or vervain was used in cases of fever, and as an antidote for certain snake-bites. The oak was held in the highest veneration by the Druids, and medicinally its virtues were believed to be very great, as we may gather from the fact that the name signified in their language—all heal. One of their favourite charms was the anguineum, or snake's egg, which was supposed to be produced from the saliva of serpents, and besides its healing properties it got the credit of being able to float against the current.

A modification of this method of effecting cures was apparently all the advance pharmacy made in Britain for several centuries, although such drugs as senna, rhubarb, manna, and cassia, were in use among the Arabians shortly after the downfall of the Romans. We are also indebted to the Arabians for our knowledge respecting camphor, or canfur as they called it, but I wish to deal more particularly with pharmacy in Britain, and it was probably not till well on in the fifteenth century that the afore-mentioned drugs were in use in our island.

When we learn that the literal meaning of the word pharmacy is a practice of witchcraft or a use of medicine, we can readily understand why the two were so inseparable in the curing of disease. The art of healing was practised in Britain by various classes of both sexes, but the monks, from the time of the introduction of Christianity down to the sixteenth century, would probably have the monopoly of dispensing on account of their superior education.

It was not till the beginning of the fourteenth century that the science of chemistry could be said to have done much to aid pharmacy, for prior to that, the sages or philosophers seemed to have devoted their lives to the delusive researches of alchemy, and consequently the

hope of any help to our craft from that science had to be abandoned for a time. When, however, they saw the futility of their efforts in that direction, the superior knowledge of chemistry which they had unconsciously acquired gave a fresh impetus to the progress of pharmacy.

This brings us to that period when the foundations of chemical science were laid in England by Roger Bacon, a Franciscan monk who made some extraordinary discoveries in chemistry, and also believed himself to be the possessor of a recipe for a universal elixir which was a mixture of gold, pearl, sperm-aceti, rosemary, bone, aloes, and the flesh of serpents specially prepared. Thus we have conclusive evidence that pharmacy was being studied diligently in the monasteries at that time, and probably this is the first instance where, in Britain, metallic substances were prescribed for internal use.

The only channels for the diffusion of knowledge throughout Europe at this time being the monks, it was really by their means that a greater acquaintance with the uses of metals in medicine was propagated in England. Experience in this direction has been dearly bought, for these so-called physicians were often nothing more nor less than faddists, who imagined that some rare virtues were possessed by a particular metal, which they prescribed on every possible occasion, evidently with the idea that it would either kill or cure. For example, it was about this time that Basil Valentine, a Benedictine monk, ascribed many virtues to antimony. This he appears to have used somewhat indiscriminately in his experiments on his brother monks, many of whom he cured by killing outright. It is probably due to these faddists, however, that other metals came to be used in medicine about this time, for we read that lead was in use in cases of fever. Several other metals seem to have been used also, but it does not concern us now to know for what particular diseases they were prescribed, as it was not for many years, nay centuries, afterwards that their real properties were accurately defined. In those ignorant times, knowledge was acquired very slowly, and it was only by many years of continual experiment that facts were established regarding the uses of metals in medicine. From what we can gather, the system of prescribing a few centuries ago was that remedies, to be effectual at all, were to be used externally, internally, and eternally.

Pharmacy appears to have made rapid strides when chemistry came to be studied assiduously in the schools of learning, for then systematic experiments were made upon all kinds of plants, with the result that many valuable discoveries were made—perhaps the most im-

portant of these being the emetic principle found in ipecacuanha, and the powerful medicinal properties of Peruvian bark, which ultimately led to the preparation of quinine. The progress of pharmacy had not been without hindrances, however, for in many cases the use of certain drugs was controlled by both Church and State, and several drugs would be discarded for many years, until for some unknown reason a revival would take place and the popularity of those drugs be restored. Hence we see that there existed a fashion in drugs as in the other affairs of life, regulated by the caprice and supported by the authority of a few leading quacks. This has been frequently the occasion of dismissing from practice valuable medicines and of substituting others less certain in their effects and more questionable in their nature. As years and fashions revolve, so have these neglected remedies each in their turn risen again into favour and notice, whilst old recipes, like old almanacs, are abandoned till the period may arrive that will once more adapt them to the spirit and fashion of the times.

It may perhaps be worth mentioning that towards the middle of the eighteenth century a gradual departure was made from the former system of experimenting with drugs. As I have already indicated, the system appears to have been to find a disease for which some particular drug would prove remedial, but physicians now preferred rather to confine their attentions to the most prevalent diseases of the time, and to seek drugs which would alleviate or totally cure these particularly diseases; for example, consumption and gout.

Let us now turn our attention for a brief space to the sale of drugs at that period. I speak of the seventeenth or eighteenth century. As has already been mentioned, it had always been the practice for physicians to dispense their own prescriptions. At that period, however, the physician was one of four distinct classes which represented the two classes known at the present day as doctors and pharmacists. In the first instance there were the physicians, who prescribed the remedies. Secondly, the apothecaries, a body formed about a century before this, who undertook the dispensing of those prescriptions. Thirdly, the chemists who were probably the successors of the alchemists, and prepared those chemicals known in medicine; and lastly the drug-vendors, drug-grocers, or druggists who collected the drugs. The two latter gradually merged into one and came to be recognised as chemists and druggists. The apothecaries were rather a strange mixture, inasmuch as in addition to the dispensing of prescriptions they gradually became prescribers, in short, became medical practitioners dispensing their own

prescriptions as well as those of legitimate practitioners. The art of prescribing was naturally considered by doctors their lawful prerogative, and they showed their indignation by opening several dispensaries where they kept men to dispense their prescriptions. These dispensaries prospered and enjoyed the patronage of the public to such an extent, that there is reason to believe the assistants employed and instructed in them became dispensing chemists on their own account, and some of the apothecaries finding their returns diminishing, took refuge behind the counters of those dispensaries.

It would be exceedingly tedious to go into details regarding the many years of bitter controversy between the apothecaries and the chemists and druggists, as to who were ultimately to claim the right to be legitimate dispensers. Suffice it to say that this prolonged dispute culminated in the formation of the Pharmaceutical Society. From an interesting document recently discovered and exhibited at an evening meeting in Edinburgh last session (*vide Pharm. Journ.* [3], xxv., 964), it would appear that there was no such antagonism between the druggists and apothecaries in Edinburgh as seems to have existed in London. It is much to be regretted that the Society formed by a coalition of druggists and apothecaries in Edinburgh in 1785, did not take a more prominent and permanent position, for had it done so, Scotland would have figured more largely in the history of the evolution of pharmacy than she has done, and would have taken a position more justly in accord with the comparatively advanced state which pharmacy has actually occupied in Scotland for many years.

Contemporary with the schisms which were disturbing the apothecaries and drug sellers in London there had appeared various editions of that valuable book of instructions known as the Pharmacopœia, for the original production of which we are indebted to the College of Physicians in London. The medicinal compounds contained in the earlier editions were chiefly heterogeneous mixtures of substances, some of which neutralised others, and were selected without any reference to scientific principles. Several substances prescribed in those early editions were not much in advance of the unwholesome mixtures used by the ancients. From the first the Pharmacopœia seems to have been divided into two parts, namely, chemical and galenic preparations. We must not run away with the idea that the progress of pharmacy was altogether confined to England, for as early as 1699 we find that Edinburgh possessed a pharmacopœia. That work passed through several editions between the date of its origin and the middle of the

present century, and, although it has now passed out of general use, extracts from it are still to be found in the British Pharmacopœia.

Concerning the progress of pharmacy since the formation of the Pharmaceutical Society, of Great Britain in 1841, there is little need for me to do more than touch upon a few of the outstanding features of its work since that date. To its early efforts we are indebted for the institution of a school of pharmacy and the formation of a regular system of examinations by which students were admitted to enjoy the privileges of membership and thus acquire a legal standing. In 1855 one of its first reforms was a revision of the Pharmacopœia, which resulted in the exclusion of several useless preparations from its pages. In 1868, after years of strenuous effort, the Society was successful in passing the Pharmacy Bill, the terms of which are generally familiar. Since then, although to some the results of the efforts of the Society on behalf of the craft may have appeared more imaginary than real, yet the position of pharmacists nowadays is on a much better footing than ever it has been before, and with the introduction of a compulsory curriculum following upon the extended scope of examination recently introduced there is no doubt but that the chemists of the future will be a much more enlightened body than their predecessors, and by this means be raised in the estimation of the public, on whom, to a large extent, they must depend for the passing of any future Pharmacy Bill. If the progress of pharmacy in the future is to be more marked than in the past, it is a duty devolving upon every member of the craft to assist by all available means the work of that Society which since its institution has become inextricably identified with the evolution of pharmacy in Great Britain.

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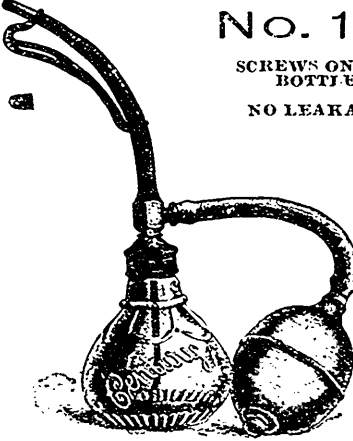
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The hardness of this boride is apparently less than that of the diamond, since it grinds more slowly; but the facets are cut with great clearness, and it is the first example of a definite substance capable of cutting the diamond. This compound, therefore, is harder than silicide of carbon.

Arsenic was sold by the alchemists of the middle ages under the suggestive name of "Succession powders."

ALKALOIDAL ASSAYING.

The next advance in Pharmacy, along the line of preparations made from drugs containing alkaloids as their active constituents, will be the making of extracts and tinctures from drugs of this class by methods that will guarantee the content of an absolute regular percentage of the alkaloids. Each preparation of Aconite, Conium, Belladonna, Hyoscyamus, Stramonium and other potent drugs depending on alkaloids for their medicinal virtues, will contain in any given amount of the finished preparation, a known amount of the active constituent. Such an advance is earnestly desired by the scientific pharmacist, and the medical practitioner would appreciate it beyond measure. The dosage of preparations of this kind would no longer be questioned, as is often the case under the present system of using a given weight of the crude drug to make a pound of extract without considering whether the drug contains one or two per cent of alkaloids. The mere examination of the physical characters of a drug will not prove its medicinal value, especially where its strength depends on the presence of varying percentages of alkaloid. It is readily understood that the same amount of drugs containing one and two per cent. of alkaloids respectively, should not be used in making a pound of extract.

The making of extracts from alkaloidal drugs must be brought to a system—a system of using more of a weaker drug or less of a stronger drug—or what is practically the same, a system of concentrating a weaker extract, or diluting a stronger extract. This system can be successfully carried out by applying some assay process to each individual drug or extraction. As to the manner of

assaying, the method based on volumetric analysis is undoubtedly the best; the gravimetric method is applicable only in such cases where the alkaloid is contained in sufficient quantity to admit of weighing, and generally gives results that are larger than the true amount present. The Pharmacopœia recognizes this method in the assays of opium and cinchona.

The method of titrating with Mayer's reagent is objectional on account of the varying solubility of the alkaloids, according to the volume and temperature of the liquid from which it is precipitated.

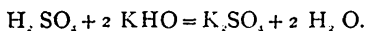
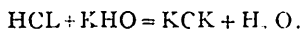
It is a method based on knowing the amount of alkaloid that each c.c. of Mayer's reagent will precipitate, previously ascertained by experimenting with a solution containing a known amount of alkaloid. When the last c.c. of Mayer's reagent added fails to produce a precipitate, the entire number of c.c. used are noted, and calculations made accordingly. The method based on volumetric analysis is genuinely scientific; it is marked by sharp chemical reactions that admit of no doubt, showing the exact amount, whether large or small, of the alkaloid present. It is a method sure to ultimately prevail over the methods of gravimetric analysis and Mayer's reagent.

In comparative assays using the three methods, the results obtained by volumetric analysis are more constant and therefore more satisfactory. In the assay of nux vomica, the Pharmacopœia directs a process on the principles of volumetric analysis, which will serve to demonstrate the exactness of this method. To one who has had no experience in volumetric analysis, the assay of nux vomica as given in the Pharmacopœia reads quite confusedly and needs no little explanation. The primary principle in this process is the chemical union of the alkaloid and a mineral acid in the same manner that an alkali and an acid unite to form a neutral salt. The amount of alkaloid present is calculated by the amount of acid necessary to neutralize it. Alkalies and acids unite in definite proportions to form salts and these proportions are represented in figures by the molecular weights, which correspond to the sum of the atomic weights. The atomic weights of KHO are K₃₉, H₁, add O₁₆, the sum 39 + 1 + 16 = 56, representing the molecular weight. The atomic weights of HCL are H, and CL 35.36, the sum 1 + 35.37 = 36.37, representing the molecular weight. The molecular weights of KHO and HCL, whether expressed in grams, grains or pounds, will unite with each other in the proportion of 56 of KHO and 36.37 of HCL to form a neutral salt.

As the instruments employed in volumetric analysis are calibrated according to the metric system of weights and measures, a volumetric solution of an acid or an alkali is prepared by dissolving the molecular weight in grams in enough

distilled water to make one liter or 1000 c.c. 56 grams of KHO dissolved in enough distilled water to make 1000 c.c. would represent a normal volumetric solution of KHO. 1-10 of 56 grams of KHO in the same amount of water represents a decinormal solution, and 1-100 of 56 grams a centinormal solution. One c.c. of a normal solution contains 1-1000 of 56 grams, or .056 grams KHO, one c.c. of a decinormal solution, 1-1000 of 5.6 gram or .0056 gram, and 1 c.c. of a centinormal solution 1-1000 of .56 gram or .00056 gram of KHO. In like manner 36.37 grams, 3.637 grams and .3637 grams of HCL, in 1000 c.c. of distilled water, make a normal, a decinormal and a centinormal solution of HCL. As 56 grams of KHO and 36.37 grams of HCL neutralize each other, so will 1 c.c. of a normal solution of KHO neutralize 1 c.c. of a normal solution of HCL and 1 c.c. of a decinormal solution of KHO neutralize 1 c.c. of a decinormal solution of HCL.

The preparation of a volumetric solution of H_2SO_4 —the acid used in the assay of nux vomica—illustrates another phase in volumetric analysis. Here only one-half of the molecular weight of H_2SO_4 is used in making the volumetric solution, because the acid has two available atoms of hydrogen for displacement, and, in consequence, requires twice as much KHO for saturation as is required by HCL. This is shown by the following comparative equations:



The atomic weights of H_2SO_4 are $2H = 2$, $S = 82$ and $4O = 64$, the sum $2 + 82 + 64 = 98$, representing the molecular weight. One-half of this weight in grams dissolved in sufficient distilled water to make 1000 c.c. is a normal volumetric solution of H_2SO_4 that saturates c.c. for c.c., a normal volumetric solution of KHO, or a corresponding solution of an alkaloid.

The molecular weight of an alkaloid in grams in 1000 c.c. of aqueous solution, is a normal volumetric solution of the alkaloid just the same as the molecular weight of an alkali in 1000 c.c. of water represents a normal solution of the alkali. The molecular weight of strychnine $C_{21}H_{23}N_2O_2$ is 334, and the molecular weight of brucine $C_{33}H_{36}N_4$ is 394, and as it is assumed in good authority that the two alkaloids are present in nux vomica in equal proportion, the mean of the two molecular weights is taken, $(334 + 394) \div 2 = 364$ which then represents the molecular weight of the alkaloids in determining the amount of total alkaloids in nux vomica. Now, to find the exact amount of nux vomica alkaloids that one c.c. of decinormal solution of H_2SO_4 will neutralize, it is necessary to find the factor a decinormal solution of the alkaloids. The molecular weight of the nux vomica alkaloids

being 364, one c.c. of a solution having a strength of 1-10 of the molecular weight in grams dissolved in 1000 c.c. of water would contain $1-1000 \times 364$ which is .00364 gram. Therefore one c.c. of decinormal H_2SO_4 will exactly neutralize .0364 gram of nux vomica alkaloids. In the assay of nux vomica it is directed that the chloroform menstruum used in treating 2 grams of the extract be evaporated to dryness. The residue is the alkaloidal matter to be estimated. This residue is treated with 10 c.c. of decinormal H_2SO_4 , and the resulting solution is found to be acid in reaction, showing the presence of more acid than was necessary to neutralize the amount of alkaloids present. The excess of acid is then estimated by carefully titrating with centinormal solution of KHO. Just previous to this step a few drops of Brazil wood test solution are added to the acid solution of the alkaloids. Brazil wood, in acid solution, shows no color other than a light yellow, but strikes a distinct pink color in a solution of the faintest alkalinity.

The centinormal solution of KHO is allowed to slowly drop from the burette into the acid solution or alkaloids, until a faint pink color is noticed. A centinormal solution is employed to make the reaction more delicate, and to avoid the addition of an excess of alkali, which is likely to happen when a solution of decinormal strength is used. The c.c. of centinormal solution used are noted, and divided by ten to show the number of c.c. of a decinormal solution that would have been required had a solution of decinormal strength been used. The number of c.c. of decinormal KHO that would have been necessary to titrate back the excess of decinormal H_2SO_4 used in dissolving the alkaloids are then subtracted from the 10 c.c. of acid solution so employed, and the remainder represents the true amount of acid solution that was needed to neutralize the total alkaloids in the 2 grams of nux vomica extract under assay. Knowing that 1 c.c. of decinormal H_2SO_4 saturates .0364 gram of alkaloids, if the amount of acid solution found necessary to neutralize the entire amount of alkaloids should be 8 c.c., the weight .0364 is multiplied by 8, which gives the weight in grams of the total alkaloids in 2 grams of extract. If 2 grams of the sample under assay containing $\times .0364 = .2912$ gram of alkaloids, 100 grams of the extract would contain $50 \times .2912$ gram, which is 14.56 or the percentage.

The instruments needed in pursuing this method of assaying are few in number, a glass separator, a few breakers, a c.c. cylinder for making volumetric solutions, an accurate balance with metric weights, and two burettes, one for alkaline solutions, and one for acid solutions. Both burettes are calibrated into tenth c.c. that is, the space between each c.c. is further divided into tenths to insure an absolute and accurate rearing

OSCAR C. DILLY.

WHAT A PHARMACIST CAN DO.*

BY FRANK EDEL.

The present seems to be the age of headache cures. There seems to be no limit to the number of these preparations and their sale has reached enormous proportions. Their coming is contemporaneous with the advent of Acetanilid, Antipyrine, Phenacetine, and similar goods. The basis of most of the headache powders of the market is acetanilid, it being equally as efficient as any as a medicine, and besides is worth no more by the pound than the others are by the ounce,

Some two years ago, the writer in an article advocating the preparation of a line of special preparations by the pharmacist instead of pushing the sale of patents, recommended several formulas for making headache remedies; these have been copied in the different journals from time to time. These formulas had been thoroughly tried before they were published and subsequent experience with them has only serfirmed the good opinion then formed. As a type of such preparation, one of the formulas is here given:

R Acetanilid.....gr. 3
Salicylate Soda.....gr. 4
Cit. Caffeine.....gr. 1-2

Mix. Make into one capsule or water.

It will be seen at a glance that the combination can be cheaply made. The prices of the preparation given in the current price lists are as follows:

Acetanilid.....	1 lb. carton,	40c
Salicylate Soda.....	1 lb. "	70c
Caffeine Citrated of	1 ounce, "	60c

Thus fifteen ounces of the mixture would costs to prepare \$1.10, and would yield 874 capsules or wafers, providing there was no loss in preparing the mixture and filling the capsules. There would be some loss and order that we figure on the safe side we will say that with \$1.10 worth of the powder we could fill 800 capsules. Capsules cost 70 cents per thousand, or 60 cents for the 800. This would make a total cost of: Compound, \$1.10; capsules, 60 cents; total, \$1.70.

These preparations are usually put up 12 capsules or wafers in a box. If we figure on putting up in boxes or 5 1-2 dozen. If we figure the boxes at \$1.50 per gross, our total cost would be \$2.39 for 5 1-2 dozen or 43 cents per dozen.

These prices are based on regular catalogue prices, and any pharmacist desiring to put these goods up in quantity would have no trouble in discounting them considerably. Thus it will be seen that for 43 cents per dozen, cost of material the pharmacist can prepare ready for sale his own headache capsules. Not only this, but by so doing he is not making a trade on an article that is likely

to have the prices as soon as he has created a demand for same. If it is desired to prepare an effervescent preparation for similar purposes, the following will be found efficient.

EFFERVESCENT BROMANILID COMPOUND.

Acetanilid.....	240 gr.
Caffeine.....	80 gr.
Tartaric Acid	4 1-2 oz.
Brom. Potash.....	1 1-2 oz.
Bicarb. Soda.....	6 oz.
Powd. Sugar.....	6 1-2
Citric Acid.....	1 oz.

Powder each separately and dry thoroughly and mix; put in dry bottles and cork tightly. If it is desired to granulate this preparation, dampen with alcohol and rub through a No. 10 or 12 sieve and dry thoroughly. This preparation will be found very efficient and cheaply and cheaply and easily prepared,

It has been well said that "goods well bought are half sold." This applies as freely to the drug-store as in any other line of business. The fact that a person is a good buyer contributes in no small measure to the success of his business. Much space is being given to the subject of selling goods, of window dressing and of proper methods of advertising, and it may be out of place to call attention to the purchasing of goods. No person who has never kept a stock and price-book will ever be without one, and a person who never kept one can have no proper appreciation of the value of such a book in any in any business. If properly kept, it is a complete record of every purchase, showing.

1. Article purchased.
2. Amount purchased.
3. Price paid.
4. Date of purchase.
5. From whom purchased.
6. Selling price.

And by means of such a book the stock can be easily indexed. It is often a matter of great difficulty to form any proper idea of the proper amount of some goods to purchase; with such a record it would be easy, without it sometimes impossible. It becomes a complete record it would be easy, without it sometimes impossible. It becomes a complete record of all purchases, is at all times easy of access and furnishes the buyer with just such information as is necessary that he should have in order to purchase intelligently. In order to buy intelligently, the buyer must know how such goods sell, in order that he may judge of the proper amount to buy, and especially is it true in drug-store, it is utterly impossible to have such information in many instances without such record. Of course with staple goods which sell regularly it is easy enough, but there are many articles that

must be kept in stock which sell so rarely that unless some such record is kept we can form no proper amount to purchase.

Among pharmacopœial preparations few, if any other, has given the pharmacist as much trouble as Camphorated Soap Liniment. This was true of the formulas of the U. S. P. of both 1870 and 1880, and although we are told the formula of 1890 is an improvement over the old ones, it still seems to be far from satisfactory. The writer believes that the fault was not in the formula but in the soap used.

He has had much trouble with this preparation, but for several years past has never failed to make a nice preparation and has had no trouble with same. The soap he used is the brand known as Conti's White Castile, while with most of the brands he could not make a satisfactory preparation. Lately, the writer has noticed that the Yareta Brand is also recommended. The oleate soda is soluble in alcohol and the palmitate is not. The writer believes that if the pharmacopœial committee would make a soap official that would be pure or nearly pure Sodium Oleate and recommend the use of same in making this preparation, that no further trouble would be found with Camphorated Soap Liniment formulas. The writer has been accustomed, lately, in the preparation of this article to use soap made from oleic acid and soda, following the process recommended by Beringer for making Sodium Oleate, and has found it very satisfactory.

Some years ago, I purchased an engraved quart saltmouth bottle and had the name Perfumed Prepared Chalk engraved on same. I perfumed some prepared chalk with a few drops of Oil Ylang Ylang, filled the bottle with the chalk and set it on the show case. It was astonishing the sale I had for perfumed chalk. Before I set the bottle there, I don't remember of ever selling any.

There is no reason why the pharmacist should not sell baking powders, not the patent preparations but those of his own make. The following formula yields a perfect powder and one on which a good trade can be built up.

Cream Tartar..... 2 parts,
Bicarb. Soda..... 1 part,
Corn Starch..... 1 part,

Mix thoroughly.

This powder will give good satisfaction and when once used will be used again.

With the department stores encroaching on the trade of the pharmacist by selling toilet articles and patents, the pharmacists must seek to enlarge his business in other directions. Flavoring extracts are such goods as the pharmacists can work to advantage, and by making only first-class goods and pushing them, selling at reasonable prices, he can build up a good trade in this line. At some future time, I will devote considerable space to this subject.

Some time ago, while talking with a prominent pharmacist in a city where the department stores were cutting the life out of the prices of toilet goods, I noticed that he carried in stock a considerable stock of a brand of soap I had never seen before. He said he had had a brand made especially for him which was guaranteed of best quality, and that he had had no trouble in working up a nice trade in it, and had not been compelled to meet competition on same. He handled other brands and meet competition on them but pushed his own. The plan he pursued on soap, he said he was gradually extending to other goods such as patents and toilet articles:—Copyright, 1895, by the *Spatula Publishing Company*.

Agar-Agar as a Base in Glycerin Suppositories.

BY FRANK G. RYAN.

Some months ago, E. Lomuller published in *Il Giornale di Farmacia*, a formula directing the use of agar-agar in the preparation of glycerin suppositories.

It was claimed that this substance produced a more satisfactory product than did gelatin, and, on that account, no doubt, the proposed formula has been reprinted in a number of American and foreign journals. But, as no comparison was made between the qualities of the suppositories made with agar-agar and with sodium stearate, which is so largely used in this country, the writer decided to investigate the matter.

Agar-agar is substance obtained from several species of algae. It is known also, as Japanese isinglass. (See United States Dispensatory, seventeenth edition, pages 724 and 1638)

The formula published was as follows:

Agar agar	10 grammes.
Distilled water	200 cubic centimeters.
Glycerin	200 grammes.

Dissolve the agar-agar in the water by the aid of heat, constantly stirring add the glycerin, and strain while hot.

Following these directions, the writer prepared a sample of suppositories from the given quantities. The suppositories, therefore, contained 50 per cent. of glycerin. They were very elastic, and had not sufficient firmness to admit of being easily introduced into the rectum. Such an article would hardly be received with much favor by the physicians of this country. A sample of suppositories containing 75 per cent. of glycerin was then made. These were firmer than those containing 50 per cent., and could be used without much difficulty; however, they did not possess the firmness of those made with sodium stearate.

An attempt was made to produce suppositories stronger than 75 per cent., but it was without good results, as the glycerin had a tendency to separate from the mass upon cooling.

In making the suppository mass it was found better to change the manipulation somewhat. The agar-agar was first soaked with cold water, and the latter expressed. After calculating the amount of water retained, sufficient to supply the proper amount was added. The glycerin was then added, and the whole heated on a water-bath until the agar-agar was dissolved, after which the solution was strained.

The following formula may be used by these directions for a suppository mass containing 75 per cent. of glycerin.

Agar-agar	5 grammes.
Distilled water	45 cubic centimeters.
Glycerin	150 grammes.

On account of the smaller quantity of glycerin contained and the elasticity of the mass, I do not consider the product of this method one that could be used to replace the glycerin suppository now in common use.

The suppositories made with agar-agar have, however, these advantages: they easily leave the moulds, and are not affected to the same extent by exposure as are those containing sodium stearate.

No experiment was made to a certain value of the suppositories made with agar-agar as a laxative.—*Amer. Journ. Pharmacy.*

A Method of Expressing the Degree of Acidity or Alkalinity of Organic and Other Fluids.

By L. M. NICHOLS, M. D.

In laboratory work the necessity frequently arises of estimating the degree of acidity or alkalinity of organic and other fluids, as in the examination of stomach contents. Various methods are in use for expressing the acidity or alkalinity, as in the case of urine, by the terms of an equivalent solution of oxalic acid, and in that of stomach contents by the number of cubic centimeters of a decinormal alkaline solution required to neutralize 100 c.c. These methods are more or less arbitrary and empirical. It would seem desirable that a uniform and rational system should be adopted applicable to all fluids to express the results of volumetric acidimetry and alkalimetry. It is the purpose of this note to present a scheme which I use in my own work with urine and gastric fluid, and which seems admirably suitable for its purpose.

The natural standard is the normal solution. This is the standard adopted in the system here presented, with its acidity or alkalinity, as the case

may be, fixed at the number 1. All other degrees of acidity and alkalinity are expressed by the numbers (decimals or integers) indicating their strengths, relative to the normal solution as 1. This standard may, if deemed advisable, be expressed by the letter N. Thus, an acidity expressed as 0.022 (or 0.022 N) would mean that the acidity of the fluid is twenty-two thousandths that of a normal acid solution; 0.001 N would represent a strength of one-thousandth of a normal solution; a fluid of which 10 c.c. would be neutralized by 4.5 c.c. of decinormal acid would have an alkalinity of 0.045 N; 2 N would represent a strength double normal; decinormal and seminormal solutions would be represented by 0.1 N and 0.5 N respectively. The latter are frequently expressed in fractional form, N-10, N-2.

The system here suggested contemplates an extension of this method of notation to acid and alkaline fluids of all strengths, only the decimal form is more generally convenient than the fractional.

It might also be found convenient, as in tabular matter, to denote acidity and alkalinity by the signs + and — respectively. This method of notation appears to me to be the best for its purpose. It is of universal applicability to all acid and alkaline fluid, and expresses results in a uniform manner. As all normal solutions are of equivalent strength, this method affords a means of direct comparison not only between fluids of the same reaction, but also between acids and alkalis. It is simple, rational and natural, the normal method, as it were, and completely corresponds with the system of normal solutions.

The acidity or alkalinity so expressed is directly proportional to the percentages by weight of acid or alkaline substances present, which may be readily computed by means of normal factors. Thus, a strength of 0.001 N corresponds to 0.003687 per cent. by weight of hydrochloric acid, 0.004489 of absolute oxalic acid, 0.003996 of sodium hydrate, 0.00219 of carbonic oxide, etc., from which the weight percentages can be readily determined.

In any titration, where two fluids are mixed to extract neutralization, the number of cubic centimeters of the other fluid multiplied by its alkalinity. The number expressing the acidity or alkalinity can therefore be easily calculated, in any titration, by the following rule: Multiply the number of cubic centimeters of the test solution used in titration by its alkalinity or acidity, and divide the product by the number of cubic centimeters of the fluid being tested which is employed; the quotient expresses the acidity or alkalinity of the latter. Thus, if it requires 6.8 c.c. of decinormal sodium hydrate solution to neutralize 8 c.c. of stomach contents, the acidity of the latter equals $6.8 \times 0.1 \div 8 = 0.085$.—*From the Medical Record.*

Some of the Answers Received at the Examinations of the Mass. Board of Pharmacy During the Year:—

An applicant, when asked, "How many times has the U. S. P. been revised?" answered, "189," figuring or explaining that "if revised once in *ten* years it must be one-tenth of 1894."

"Laudanum is a stearoptine, and obtained by the spontaneous evaporation of opium."

"Dose of opium half a drachm."

"Cinchona is a root."

In answer to printed query, "Enumerate materials required to make 8 oz. infusion of digitalis," wrote, "Stove and small kettle."

"One troy oz. of iodine oint?" wrote, "Graduate."

"One av. pound of cerate?" wrote, "Scales, stove and kettle."

"The reason for cold process in making syrup of wild cherry is to prevent souring."

"Oleum Ricini is castor oil; an animal oil, and comes from the tail of the castor beaver, and I know what I am talking about." Also said, "Lycopodium was obtained from humulus or hops;" and "the antidote for nitrate of silver was epsom salts, because the salts are a good diuretic and keep the body in good order." This applicant had a very satisfactory paper, but his oral examination was fearful.

"Tartaric acid comes from the earth, is dug out in lumps."

"Cocaine, morphine, codine, are all from opium."

"Would give for a cardiac stimulant, phosphorus; for a depilatory, opium; for a sialagogue, slippery elm."

"Bromine is a liquid of alkaloid; Potass Nit. is a volatile alkali; ingredients in syrup hydriodic acid are Hydrogen, Iodine and Syrup."

Another said they were "Tincture Iodine, sugar and water; Hypo means squirting."

"Why are wedge-wood mortars so called?"

"Because the wood of which they are made is very close."

"Laminæ is animal life."

"Argols are mined in Germany."

"Don't know the source of tartaric acid. Phosphorus is in the form of gas, exists in the air and gathered (don't know how) and cut into sticks."

One candidate, claiming three years' experience, in his written examination answered ten out of the twenty questions, and then added, "I will not take the oral to-day, but will wait until I am down again." His written examination was rated five out of a possible hundred; his drug examination, thirty.

"Castor oil comes from the leaf."

"Tartaric acid comes from the argols, and argols from coal-tar products."

"Ammonia is obtained by firing horses' hoofs."

"The cost of two fluid oz. 4 per cent. solution of cocaine, if cocaine costs six dollars per oz., would be two cents."

"Camphor exudes from the tree, is now found in the earth where the trees grew."

That the examinations are practical, satisfactory and generally approved by the applicants, is shown by the following letters:—

1. "Your notification received, and am pleased, I assure you, to know I was successful. Gentlemen, I thank you for the kind treatment that I have received during my examinations." [Passed on fifth examination.]

2. "Your very welcome letter, stating I had passed successfully, reached me this A. M. And now let me tender my sincere thanks, first for your congratulations, and second for the esteemed courtesy always shown me by the Massachusetts State Board of Pharmacy." [Passed on sixth examination.]

3. "Am pleased to know that I am one of the fortunate ones, although woman's brain is a trifle lighter in weight than those of the opposite sex. Thanking you all for your kindness and courtesy to me, I am yours very truly." [Passed on first examination.]

NEW ACONITE DERIVATIVES.

We mentioned last week that two papers from the Pharmaceutical Research Laboratory were communicated to the Chemical Society on November 7, but were not read, Abstracts of them appear in the Society's "Proceedings" issued on Wednesday. The first paper simply records a new method of extracting piperovatine from *Piper ovalum*, because the method previously described is exceedingly tedious. The second paper is one of the aconitine series. The authors have failed to produce aconitine by the acetylation of benzaconide, and to form benzaconine by introducing a benzoyl group into aconine, but they find that when equimolecular proportions of aconine and benzoic anhydride are dissolved together in chloroform and allowed to stand at the ordinary temperature, reaction occurs with production of dibenzaconine, $C_{24}H_{36}(Bz)_2NO_6$, which is unlike aconine in being insoluble in water and soluble in ether; it crystallises from ether in rosettes of needles, m. p. 265°. They have obtained a *hydrobromide* and *aurichloride* of this, and have also prepared *tetracetyl-aconine* by allowing a solution of aconine hydrochloride and acetyl chloride in chloroform to stand for 36 hours at the ordinary temperature. It is insoluble in water, but readily soluble in ether and in alcohol, from either of which solvents it crystallises in small prisms, m. p. 196°. On hydrolysis aconine and 35 per cent. of acetic acid were formed; the formula $C_{24}H_{36}(Ac)_4NO_6$ demande 35 per cent. of acetic acid.

HOT-SODA SYRUPS.

Coffee, chocolate, ginger tonic, beef tea, clam juice, and lemonade made from the fruit or from lemon juice, when properly prepared, are delicious hot drinks. In serving, a china or silver cup, cut-glass or silver pepper and salt bottles, and silver-plated spoonholder, with bar spoons should be used. These articles should be of attractive appearance, for the popularity of such beverages depends largely upon luxurious surroundings. It is advisable not to make more than one day's supply of most syrups at a time; the fresher the syrup the nicer the drink. The various beverages should be advertised by means of attractive signs hung prominently in the windows and about the store.

COFFEE SYRUP.

- 1.— Coffee (freshly ground) 8 oz.
Sugar 24 oz.
French Brandy (best) 1 fl. oz.
Boiling water 16 fl. oz.

Moisten the coffee with a little hot water and brandy, pack firmly into a percolator, and pour on the boiling water; collect the first pint of percolate, and in it dissolve the sugar.

- 2.— Coffee (freshly ground) 1 lb.
Glycerine 10 fl. dr.
Sugar 7 lb.
Water A sufficiency.

Mix the glycerine with 6 parts of water, moisten the coffee with half a pint of this mixture, and let stand one half hour, then pack firmly into a percolator, and pour on the remainder of the liquid previously heated to nearly the boiling temperature; when this has disappeared from the surface, pour on water until 1 gal. of infusion has been obtained: and in this dissolve the sugar without heat.

- 3.— Mocha Coffee (finely ground) 4 oz.
Java Coffee (finely ground) 4 oz.
Sugar 6 lb.
Hot Water A sufficiency.

Percolate the coffee with hot water until the percolate measures $4\frac{1}{2}$ pts.; in this dissolve the sugar by agitation without heat, and strain.

CHOCOLATE SYRUP.

- 1.— Baker's Vanilla Chocolate $\frac{1}{2}$ lb.
Baker's Commercial Chocolate 1 lb.
Cornstarch 6 oz.
Hot water 2 gal.
Syrup 3 qts.

Dissolve the chocolate in the hot water, using great care not to scorch it; mix the cornstarch with some cold water, and add it to the chocolate after the latter is thoroughly dissolved and brought to a boiling heat, and boil well so that it may be sufficiently cooked to prevent any starchy taste;

strain through a sieve to remove coarse particles. When replenishing the apparatus, the syrup should be strained again, using a coarser strainer. Dispense hot and keep on the counter to reduce the temperature. Put sufficient cream into the cup first; then add enough chocolate syrup to nearly fill the cup, and mix with the stream from the draught-tube.

- 2.— Chocolate (best) $\frac{1}{2}$ lb.
Sugar 3 oz.
Boiling Water To make $\frac{1}{2}$ gal.

Grate or scrape the chocolate fine, and triturate it with 1 oz. of the sugar (this may be done preliminarily, and in larger quantities, if necessary), then, in a large, warmed mortar graduate, form a paste under the pestle by gradual addition of boiling water up to 20 fl. oz.; transfer to a porcelain dish, slowly heat, and, stirring well, gradually add the remaining 2 oz. of sugar and 10 fl. oz. of boiling water, and bring the whole to the boiling-point for 5 or 6 minutes; then remove and stir until ebullition ceases, and again heat and boil for 1 minute. By this means the cacao butter will not separate, and the product will not need straining, only skimming. The attention here is mainly devoted to obtaining a smooth taste at the first step, and in not overheating at the last.

GINGER SYRUP.

- Fl. Ext. Ginger $2\frac{1}{2}$ fl. oz.
Sugar $2\frac{1}{2}$ lb.
Water $2\frac{1}{2}$ pts.

Mix 10. oz. of the sugar with the fruit extract of ginger, and heat on the water-bath till the alcohol is evaporated; then mix with 20 fl. oz. of water, shake until dissolved, filter, and add the balance of the water and sugar; dissolve the latter by agitation.

BEEF TEA.

- 1.— Extract Beef (Cibill's) 8 oz.
Water 8 fl. oz.
Fl. Ext. Celery 1 fl. oz.

Use about half an ounce to a cup of hot water.

- 2.— Extract Beef (Liebig's) 5 oz.
Hot water 1 pint
Tinct. Black Pepper 1 fl. oz.

Mix the beef extract with the water and add the tincture. Use of this about 2 teaspoonfuls to each cup, and fill the latter with hot water. Add salt to suit the taste.

Tincture of black pepper is made as follows:

- Black Pepper (Liebig's) 8 oz.
Alcohol 1 pint.

Steep and filter.

BEEF AND CELERY.

- Extract Beef (Liebig's) 8 oz.
Hot Water 1 pint
Extract of Celery 1 dr.
Caramel 1 dr.

Dissolve the beef in the hot water, and add the celery and caramel. Use a shaker top in the bottle as there is likely to be a sediment which necessitates shaking. In a six or seven-ounce cup shake about 2 teaspoonfuls of this extract, draw on a sufficiency of hot water, add salt to suit the taste, and stir with a spoon.

The extract of celery mentioned in the above formula may be prepared as follows:

Celery Seed 2 oz.
Alcohol.....A sufficiency.

Powder the celery seed in an iron mortar, moisten with a little alcohol, and pack it into a percolator. cover with alcohol (using about 20 fl. oz.), and, when the percolate appears, close the exit of the percolator and macerate for twenty-four hours; then percolate slowly until 1 pt. of percolate is obtained.

CLAM JUICE.

Clam Juice (Bailey's)..... 1 ½ fl. oz.
Hot Milk 2 fl. oz.
Hot Water 4 fl. oz.

Add a pinch of salt, and a little white pepper for each cup.

CLAM BROTH.

Clam Juice..... 1 ½ fl. oz.
Hot Milk 2 fl. oz.

Fill the mug with hot soda, add a sprinkle of salt and white pepper, stir well, and serve.

BOUILLON.

Extract Beef..... 3 oz.
Hot Water 2 pints.
Cornstarch..... 1 ½ oz.
Salt..... 2 oz.

Boil the cornstarch with the water until it is thoroughly cooked; then add the extract of beef dissolved in 8 fl. oz. of hot water; add the salt, and, when dissolved, make the product measure 2 ½ pints. To draw this, use about 1 fl. oz. to a 6-oz. n.ug. and flavor with an essence composed of tincture of summer savory 3 fl. oz., and tincture of capsicum 2 fl. dr.

HOT EGG-PHOSPHATE.

Syrup Lemon..... 1 ½ fl. oz.
One Fresh Egg,
Acid Phosphate Solut 1 fl. dr.

Mix well with a shaker, and fill the glass with hot water from draught-tube. Have the water a few degrees below the boiling point, to prevent the egg from becoming strugy. Serve the phosphate from an essence bottle.

HOT LEMONADE.

Spt. Lemon, U. S. P..... 2 fl. oz.
Sol. Ext. Orange-peel, or
Comp. Spt. Orange, N.F. ... ½ fl. oz.
Limejuice 1 fl. oz.
Citric Acid..... ½ oz.
Essence Nutmeg 3 min.
Syrup To make ½ gal.

This, largely diluted, draws well with carbonated water as "soda lemonade."

COUGH MIXTURES.

1.—Morphine Sulphate 2 grn.
Ammonium Chloride..... 40 grn.
Syrup Tolu 1 fl. oz.
Distilled Water ... To make 8 fl. oz.

Dessertspoonful per dose.

2.—Tartar Emetic..... 1 grn.
Morphine Sulphate..... 1 grn.
Syrup Wild-cherry..... 3 fl. oz.

Teaspoonful per dose.

3—Tincture Sanguinaria..... 2 fl. dr.
Ammonium Carbonate 2 dr.
Syrup Wild-cherry... To make 3 fl. oz.

The above three formulas are taken from the Roosevelt Hospital (New York) formulary.

4.—Fl. Ext. Wild-cherry..... 1 fl. oz.
Fl. Ext. Ipecac..... 2 fl. dr.
Fl. Ext. Squill 2 fl. dr.
Tincture Opium..... 4 fl. dr.
Tartar Emetic..... 2 grn.
Syrup..... 3 fl. oz.
Alcohol..... 6 fl. oz.
Spirit Anise (1 : 8)..... 20 min.
Comp. Tinct. Cudbear 2 fl. dr.
Distilled Water ... To make 2 fl. oz.

Teaspoonful per dose.

5.—Fl. Ext. Wild-cherry..... 2 fl. dr.
Glycerine 6 fl. dr.
Syrup Squill 2 fl. dr.
Syrup Tar To make 3 fl. oz.

Teaspoonful per dose.

6.—Ether..... 3 fl. dr.
Tincture Hyoscyamus 1 fl. oz.
Syrup Wild-cherry..... 2 fl. oz.
Syrup Tolu To make 4 fl. oz.

Teaspoonful per dose.

7—Fl. Ext. Wild-cherry (for Syr.)... 18 fl. dr.
Morphine Sulphate..... 4 grn.
Syrup Squill 2 ½ fl. oz.
Tarwater..... 12 fl. oz.
Sugar..... 20 oz.

Teaspoonful per dose.

8.—Codeine..... 16 grn.
Powd. Ammonium Chloride... 1 oz.
Syrup Ipecac..... 10 fl. dr.
Spirit Nitrous Ether..... 10 fl. dr.
Comp. Fl. Ext. Squill 4 fl. dr.
Syrup Wild-cherry... To make 16 fl. oz.

Dissolve the codeine in about 2 fl. dr. of water, with the aid of a small quantity of diluted hydrochloric acid; dissolve the ammonium chloride in the syrup of wild-cherry, and the squill, the ipecac, the niter, and the codeine solution; mix well.

The dose of this mixture is a teaspoonful every 3 or 4 hours.

- 9.—Potassium Cyanide 1 grn.
Morphine Acetate..... 1 grn.
Vinegar Sanguinaria... 2 fl. dr.
Syrup Tolu..... 1 fl. oz.
Distilled Water..... To make 3 fl. oz.

Teaspoonful every 3 hours.

- 10.—Ammonium Chloride 1 dr
Syrup Squill 4 fl. dr.
Syrup Wild-cherry 4 fl. dr.
Oil Anise 3 min.
Tincture Sanguinaria..... 1 fl. dr.
Comp. Licorice Mixture
To make..... 4 fl. oz.

Teaspoonful every 2 or 3 hours

- 11.—Camph. Tinct. Opium 4 fl. oz.
Syrup Squill 4 fl. oz.
Tincture Cimicifuga 3 fl. oz.
Tincture Sanguinaria 1 ½ fl. oz.
Tincture Benzoin..... 1 ½ fl. oz.
Syrup Ipecac 2 fl. oz.
Syrup Tolu..... 16 fl. oz.

Teaspoonful per dose.

- 12.—Powdered Licorice ½ oz.
Powdered Acacia ½ oz.
Camp. Tinct. Opium 2 fl. oz.
Wine Antimony..... 1 fl. oz.
Spt. Nitrous Ether..... 2 fl. oz.
Water 4 fl. oz.
Fl. Ext. Wild-cherry 1 fl. oz.
Aromatic Elixir To make 16 fl. oz.

Rub the licorice and acacia with the water, add the other ingredients, and filter through absorbent cotton. The dose is a teaspoonful.

A Few Remarks Concerning the Castor Oil Bean.—*Ricinus Communis*—Linn.

D. F. DAVENPORT.

The experiments began by loaning out seed to the farmers in various localities in small lots and giving a guarantee of a price per bushel delivered in any quantity at Americus, after September 1st, 1894. Only one farmer made a return of the seed, and one other was so delighted with the enterprise that he made his own shipments to the Northern market, and this year he has a considerable acreage in their culture. With the others the continued frosts killed the young plants and very few came to maturity.

Sufficient to say, however, the plant assumes an enormous size and yields abundantly in this soil and climate. As to the character of the seed: One large Crusher said that the specimen sent from Sumter county was the finest he ever saw, and that if we could grow Beans like the sample

sent he would give a contract for several thousand bushels.

Just at this time, however, the "Wilson bill" took 50c duty off Castor Beans per bushel, and the West Indies up to date has "out classed" our section.

From meager observations, however, I am sure that if sufficiently understood and extensively cultivated, we have the advantage of that now rebellious district, even as it is!

One thing we must understand thoroughly, and that is their *cultivation*. All depends upon the knowledge of it. A few facts are given gathered from the Saint Louis market, which will be of great benefit to those who expect to engage in the enterprise in this locality:

Almost any soil that will produce wheat or corn, will answer for the castor bean. When it can be had, a sandy loam is preferable. The soil should be dry. Wet, heavy soils are not adapted to its successful culture.

One important fact in connection with the culture of castor beans is, that it is one of the most fertilizing crops raised. In this respect it surpasses even clover. Many farmers say, for fertilizing purposes, a crop raised upon poor land is worth several dollars per acre to the land, on account of the additional fertility gained by it.

PREPARATION OF THE SOIL.

The ground should be put in good condition for the seed as for other crops. One thorough plowing, and three or four harrowings, with a heavy harrow, will be a sufficient preparation.

PLANTING THE SEED.

The ground is now laid off in rows, five or six feet apart each way, except that between every sixth and seventh row, a distance of about eight feet between the rows is left one way, to admit a horse and wagon or slide to pass, to take the beans when gathered. Hot water, somewhat below the boiling point, should be poured over the seeds, and they should remain in this water twenty-four hours before being planted. The temperature of the water will, of course, be gradually reduced to the temperature of the atmosphere. Applying the hot water once will be sufficient. If planted without this preparation, they are a great while in germinating, many of them not making their appearance for three or four weeks. With this preparation they will soon germinate and come up regularly. Some farmers put in each hill one half of those which have hot water poured over them, and one half those which have not; so that if the cut worms destroy the first that come up, a stand may be obtained from the others, which will come up a week or two later. Good, sound, plump seed should be selected for planting. A bushel will plant fifteen to twenty acres. Eight or ten seed should be dropped in each hill. But one, or at most two plants, are to be left in a hill. As the

cut worm is quite destructive to the plants, this number of seeds is recommended, so as to be certain of an even stand. Of course, re-planting can be done; but it is better to avoid it, if possible, by planting plenty of seed. The seed should be planted as soon as all danger of frost is over. The plants are as easily destroyed by frost as our common bean, and, therefore, planting should be delayed till after the first of April.

AFTER CULTURE.

The cultivation of the plants consists in destroying the weeds and grass, and keeping the soil open and mellow. These objects are chiefly attained by using the horse and cultivator, or small plow, working between the rows both ways. It is also necessary to work among the plants with hoes, going over them two or three times, cutting the weeds away from the plants that cannot be reached with the plow or cultivator, and drawing a little mellow earth to the plants, gradually reducing the number to one plant in the hill, though two are occasionally left. One strong, vigorous plant, however, will produce better seed than two in the same hill, and as great a quantity. After the plant is two feet high, it is capable of taking care of itself, and grows rapidly. After heavy rains, however, it is still advisable to work between the rows with the horse cultivator, breaking up the crust that has formed on the surface of the ground, and opening and loosening the soil to derive a greater benefit from the atmosphere. It will be seen that the cultivation is as simple as that of corn, or of the common bean.

HARVESTING THE CROP.

About the first day of July the beans begin to ripen. They are produced in pods or husks, on spikes of various lengths, and should be gathered as soon as the pods begin to turn brown, to prevent loss by their popping out on the field, as beans when ripe pop or burst from the pod quite a distance. They are gathered by cutting off the entire spike. Each plant has a number of these, and they are produced and ripen in succession till frost. Of course only those exhibiting brown pods should be cut. These spikes are then thrown into a wagon or on a slide, passing through the broad rows, and hauled away to the

DRY YARD.

which is made on a piece of land near the bean field, sloping to the South so as to get as much heat as possible from the sun to ripen the beans and cause them to burst from the husks. Cut off the sod, then roll the ground down hard, and make a fence around the yard, by placing boards up against rails laid on crotched sticks or posts; though the fence is not necessary if the yard is made large enough to leave a space outside the beans, of twelve or fifteen feet, as many of the beans will pop that distance; and if the fence is not built, or the space left, many of the beans will be lost in the grass or field beyond the yard.

The spikes are occasionally turned over and exposed to the sun, until all the seeds have left the husks, when the old spikes are taken away and a new supply added. The same process is gone through with the entire crop. Great care should be taken to prevent the beans getting wet. Dirty beans command much less price, and sprouted beans are nearly worthless. When rain is anticipated, rake the spikes into a heap and cover them with strew, plank, or tarpaulins; sweep the beans up; clean them with a fanning mill, and store in a dry place. Do not attempt to pop them out in pops over the fire, as it renders them almost worthless.

BOARD FLOORS.

It will undoubtedly pay most farmers to make board floors for their "dry yard" to "pop out" their beans on. In this way they can keep the beans perfectly clean and free from lumps of hard dirt and small stones which cannot be taken out by a fanning mill or screens. Such a floor can be made cheaply in sections, say 8 feet wide, and 10 feet long, by nailing rough boards planed on one side to 2x4 scantling set on edges to allow air and rain to pass underneath. These sections can be easily moved by waggon. In case of rain the unpopped beans can be raked into one or more piles on parts of the floor, and the other section used to cover them. When the bean season is over they can be used for other purposes, say storehouse for grain, &c., or shelter for animals, and the next season for dry yard floor, and so on. It will probably pay to paint the floor with cheap black paint; black "draws the sun," which will quicken the "popping out" process. The paint will preserve the wood and also prevent the rain from soaking into the floor, thus enabling the farmer to spread his beans again much sooner after the rain is over. No doubt the extra money received for the Castor Bean will soon pay the entire cost of the floor.

After the beans begin to ripen, the field should be gone over once or twice a week until frost. In hot, dry weather, they ripen more rapidly than in cool, wet weather. Children can perform this work, and a large family of children cannot be more profitably employed than in taking care of a crop of castor beans. The work is all light. With a steady horse, children might do all the work.

FROSTED BEANS

are worth from one-half to two-thirds the price of good beans, but must never be mixed with them when sent to the market, as a very few frosted beans in a lot of good will reduce the value very much, from the inability to separate them economically.

YIELD, PRICE, ETC.

The yield will depend much upon the culture bestowed upon the crop, upon the season, and the care exercised in gathering and ripening the seed. From fifteen to twenty-five bushels to the acre is an average yield. Some cultivators will yield con-

siderably more, others less. Farmers will do well to way attention to this crop, for which a certain demand exists, and at remunerating cash prices. It will pay better than raising cotton, corn, potatoes, wheat, barley, or almost any other farm produce. It is not a difficult crop to get to market, can be taken by team, or sent by railroad, with more profit than most crops, as the value is greater for the same quantity.

Castor beans have proven a profitable crop. Present market price is \$1.25 per bushel.

These directions for the cultivation of castor beans are intended to apply to our latitude. It is thought they are sufficiently explicit to enable any one to successfully attempt their culture.

We wish again to urge the farmers and dealers to thoroughly clean their castor beans before shipping to market. Well cleaned beans will always bring more, and it is a disadvantage to all but the railroad company, to pay the freight on dirt, chaff and hulls.

CASTOR BEANS, WEIGHT 46 LBS. PER BUSHEL.

And the principal markets for us are New York City and St. Louis. The freight rate per 100 lbs. in bags or barrels is 79 cents.

There are fixed charges for *inspecting* Castor Beans in bulk as follows: two dollars (2.00) for every bulk car or part bulk car; two (2) cents per sack for every car sacks; three (3) cents per sack on less than car load lots, and that *no* inspection be less than twenty-five (25) cents.

GRADES OF CASTOR BEANS.

Prime Beans are such as are bright and uninjured, and weight not less than forty-one (41) pounds to the measured bushel when cleaned.

No. 2 Beans are such as are bright and uninjured by rain, weight not less than thirty-eight (38) pounds to the measured bushel when cleaned, and shall be valued at five (5) per cent. less than the value of prime beans.

Rejected Beans are such as are slightly damaged by rain, and weight not less than thirty-eight (38) pounds to the measured bushel when cleaned.

No grade Beans are such as are badly damaged by rain, or damaged by frost, or weight less than thirty-eight (38) pounds to the measured bushel when cleaned.

WATER ANALYSIS BY PHARMACISTS.

BY HENRY W. SCHIMPF, PH. G.

Professor of Inorganic Chemistry, Brooklyn College of Pharmacy.

Read at the November meeting of the Kings County Pharmaceutical Society.

Druggists frequently have samples of water submitted to them for analysis and opinions as to their potability.

To put a sample of water through a *complete* sanitary analysis involves considerable time and application, and comparatively few pharmacists

have either the time or the inclination to enter upon such a task.

A complete

SANITARY EXAMINATION OF WATER.

should include a measurement of the following:

1. Color and odor.
2. Total solids.
3. Loss on ignition.
4. Ammonia.
5. Albuminoid ammonia.
6. Nitrates and nitrites.
7. Chlorine.
8. Oxygen-consuming power.
9. Phosphates.
10. Hardness.

It is necessary in some cases to determine the amount of dissolved gases, as well as to make a microscopic examination of the sample.

COLOR AND ODOR.

Water which is distinctly turbid and possesses an unpleasant taste and odor will, of course be rejected on these grounds alone without further analysis.

The odor and taste of water, like its color, are not, however, to be taken as positive indications of its quality. The practical nose can occasionally detect evidences of pollution which may be afterwards verified by a detailed examination.

COLOR ESTIMATION.

may be satisfactorily determined by heating 2 or 4 ounces of water to 100 degrees F. in a closed flask and shaking. The distinctive odor may be at once recognized on withdrawing the stopper.

ESTIMATION OF TOTAL SOLIDS

The total solids are determined by evaporating on a water bath 100 cc. of the water in a weighed platinum dish. The dish and contents are then placed in an air oven and heated to 212 degrees F., or until the residue ceases to lose weight.

Finally, it is cooled under a desiccator and weighed. The increase in weight of the dish represents approximately the total solids contained in the water taken.

But the figure thus obtained for total solids does not truly represent the sum of the organic and mineral matters, since much of the former as well as some of the latter is volatilized during the evaporation. Thus the figure is often lower than the actual weight; while, on the other hand, certain salts retain with great tenacity their water of crystallization, and in this manner bring about an error in the opposite direction.

It will be seen then that the determination of total solids is only an approximation and little real value can be attached to it. The organic and the inorganic matter present may either of them be injurious or not. An unusual amount of total solid residue may indicate pollution, though no *absolute* maximum or minimum of quantity can be assigned as a limit of safety. An arbitrary

maximum limit of 60 parts per 100,000 has, however, been fixed by sanitary authorities.

LOSS ON IGNITION.

Though the mineral constituent must be taken into account to some extent in judging of a water, the organic matter is of far greater importance. The organic matter probably constitutes the really injurious constituents, and the determination of their quantity and character is of chief importance. It was naturally supposed that by igniting the residue of total solids the organic matter would be burned out, and the loss of weight would then represent the amount of organic matter originally present; but as water usually contains some earthy carbonates, which upon ignition are deprived of carbonic acid gas and other salts which are decomposed or wholly volatilized, the loss on ignition does not truly represent the organic content. The loss on ignition should never reach 50 per cent. of the total solids.

OXYGEN CONSUMING POWER.

Potassium permanganate, as is well known, readily yields up its oxygen in the presence of a strong mineral acid, oxidizing many salts and organic matter. This property led to the idea that this salt might be used for burning up (chemically speaking) the organic matter in water, and that the quantity of permanganate used could be relied upon as a means of measuring the organic matter in water. A high oxygen consuming power usually indicates the presence of organic matter, and the process is therefore of considerable importance.

THE DETECTION OF ORGANIC MATTER.

The process is conducted as follows: Five 1-pint bottles, perfectly clean and provided with stoppers, are placed side by side. Into each is placed 250 cc. of the water and 10 ccm. of diluted sulphuric acid. Into the first bottle is introduced 2 ccm. of potassium permanganate solution, into the next 6, 8 and 10 cc., respectively. The bottles are examined hourly and the discoloration noted. If all are discolored at or before the end of the fourth hour an additional 10 cc. of permanganate solution should be added to each bottle. With ordinary waters the permanganate in the first, and probably the second, bottle will be decolorized; and the greater the amount of organic matter present the more rapid will be the decolorization. This method has the advantage over some others in that the rate of oxidation can be readily observed, something which is considered by some analysts to be of more importance than the actual amount of oxygen consumed. It must, however, be kept in mind that nitrites, ferrous salts, sulphides, etc., take up oxygen in the same way as does organic matter. The permanganate solution used in this process is of such strength that each 1 cc. represents 0.0001 gm. of oxygen.

ESTIMATION OF CHLORINE.

This may be estimated by the use of decinormal or centinormal silver nitrate solution, but analysts generally use a solution of such strength that each 1 cc. will represent 0.001 gm. of chlorine.

THE PROCESS.

Into a beaker put 100 cc. of the water to be examined, followed by a few drops of neutral potassium chromate, which is the indicator, and add the silver nitrate solution from a burette until the precipitate assumes a reddish tint, indicating that all the chlorine has been thrown down. Each cubic centimeter of silver nitrate solution used to produce the color reaction represents 0.001 gm. of chlorine. *Example:* If 4 cc. of silver nitrate solution are required, the 100 cm. of water contains 0.004 gm. of chlorine.

IMPORT OF CHLORIDES IN WATER.

Food contains considerable amounts of chlorides, and still more is added by way of condiment in the shape of salt. The chlorine thus taken into the system is discharged in the excreta and is found afterward as a constituent of sewage; hence the presence of large quantities of chlorine in water is taken as an indication of pollution by sewage.

The chlorine itself is not a dangerous constituent of water, and is in fact always present, but if it is found in large quantities (over 5 parts per 100,000) it is looked upon as an unfavorable indication. Nevertheless, too much dependence must not be placed on the chlorine content as a means of estimating the purity of a water, since a dangerous contamination of organic matter may exist in the water without its presence being indicated by chlorine.

The maximum amount of chlorine per 100,000 given by the Rivers Pollution Commission is 21.5, the minimum 6.5 parts, though over 5 parts per 100,000 is taken as an unfavorable sign. But various conditions affecting the proportion of chlorine in potable waters must be taken into account; such as the nature of the strata through which the water passes, proximity to the sea, etc. A well near the sea may contain much chlorine and still be free from pollution.

AMMONIA AND ALBUMINOID AMMONIA.

When organic matter decomposes spontaneously it first forms ammonia, then nitrites, and finally nitrates. Thus the presence of ammonia in water is generally conceded to indicate decomposing organic matter, and hence its determination is an important detail of the sanitary examination of water.

PROCESS FOR THE DETECTION OF AMMONIA.

Introduce into a clean glass retort 500 cc. of the water to be tested, together with about 5 ccm. of a 20 per cent. sodium carbonate solution. The consider is now attached and the distillation started. When 50 cc. of distillate passes over,

it is transferred to one of the color comparison cylinders and 2 cc. of Nessler's reagent added; a yellow color is produced which develops more fully on standing the intensity of coloring being proportionate to the amount of ammonia present.

The color produced is exactly matched by introducing into another cylinder 50 cc. of pure water and an accurately measured quantity of standard ammonia chloride solution and 2 cc. of Nessler's reagent, as before. According as the color so produced is deeper or lighter than that obtained from the water other solutions are prepared for comparison containing smaller or larger proportions of ammonium chloride until the color is exactly matched.

The distillation is continued and successive portions of 50 cc. of distillate are taken and tested until the liquid no longer reacts with Nessler's solution. The sum of the figures obtained from the several distillates gives the total ammonia in the 500 cc. of water taken.

THE ALBUMINOID AMMONIA.

is estimated by adding to the water left in the retort 50 cc. of an alkaline permanganate solution and resuming the distillation, the ammonia in each 50 cc. of distillate being estimated as before.

NITRATES AND NITRITES.

Five hundred cc. of the water is acidulated with oxalic acid and equal parts of this are poured into each of two wide-mouthed bottles. Into one of these bottles is put a copper-zinc couple, made by taking a piece of sheet zinc and rolling it into a loose coil and immersing it in a dilute solution of copper sulphate until coated with a black, spongy coating of copper.

Cork both bottles, and at the end of 24 hours remove 50 ccm. from each bottle and treat each with Nessler's solution, as directed under Ammonia.

The nitrates and nitrites are completely reduced to ammonia by the copper-zinc couple, and the difference between the two figures obtained gives the ammonia due to reduction of the nitrates and nitrites.

Each molecular weight of ammonia so obtained stands for one molecule of nitrous or nitric acid; hence the result includes both of these, if present, so that the nitrites must be separately estimated and deducted.

To estimate the nitrites it is advantageous to use an acid solution of metaphenyldramine. This gives, with nitrous acid, a yellowish brown color, and a comparison can be made with a solution containing a known quantity of sodium nitrite, in exactly the same way as ammonia is estimated by Nessler's solution.

PHOSPHATES.

Sewage contains large amounts of phosphates, but water usually contains alkaline or earthy carbonates which precipitate the phosphates. Therefore, drinking water contains but very small

quantities of phosphates, if any, and its absence indicates purity. The estimate is usually approximate and is made by means of ammonia molybdate.

HARD WATER.

The hardness of water—that is, its soap destroying power—is due principally to the presence of calcium salts. Hard water is very wasteful of soap and bad for boilers. It is not necessarily unhealthful for drinking though it is said to often cause the formation of calculi in the human system. The principal importance attached to hard water in a sanitary analysis is its bearing upon the question as to whether or not the water is polluted with sewage.

TEMPORARY HARDNESS.

which is due to the presence of calcium or magnesium bicarbonates. This form of hardness is got rid of by boiling the sample, which reduces the bicarbonates to insoluble carbonates which are precipitated, and in this way removes the hardness.

PERMANENT HARDNESS

is due to salts which are not removable by boiling, such as the sulphates.

ESTIMATING THE HARDNESS.

The method generally used to estimate the hardness of water is that known as Clark's

A solution of pure Castile soap in diluted alcohol is prepared of such strength that each ccm of the soap solution represents about .001 gm. of calcium carbonate. This is a convenient strength, because if 100 ccm. of water are operated on each cc. of soap solution will represent 1 part of CaCO_3 in 100,000 parts of water, which is spoken of as 1 degree

Measure 100 cc. of the water into a well-stoppered half pint bottle, and add the soap solution 1 ccm. at a time from a burette, shaking the bottle after each addition of soap solution until a soft lather is obtained, which, if the bottle is at rest, remains continuous over the whole surface for about five minutes.

If more than 10 ccm. of soap solution are required, a smaller quantity of water should be taken—say 25 to 50 ccm.—and made up to 100 ccm. with distilled water and the quantity of soap solution then used multiplied by 2 or 4.

English chemists usually operate upon 70 ccm. of water instead 100 cc. Each cc. of soap solution then represents 1 grain per imperial gallon (70,000 grs.), or 1 degree of hardness.

Permanent hardness, or hardness after boiling, is determined by boiling a measured quantity of water briskly for half an hour, adding distilled water from time to time to make up the loss by evaporation. Then allow to cool, make up to its original quantity with recently boiled distilled water, filter and test in the manner described above. By deducting the permanent hardness from the total hardness we obtain the temporary hardness.

TRADE NOTES.

SOME OBSERVATIONS REGARDING
THE THERAPY

— OF —

AMMONOL SALICYLATE, AMMONOL BROMIDE,
AMMONOL PEPTONATE, AMMONOL
WITH CODEINE, ETC.

By CYRUS EDSON, M.D.,

President of the Board of Pharmacy, Past Health Commissioner of New York City and New York State.

One of the first things a physician must do when called to treat a suffering patient is to relieve pain. Until within the past few years a therapeutic sacrifice had to be made in the majority of cases to attain this result. Our mainstay for analgesia was the opiate, and it was often contra-indicated by conditions underlying the cause of the painful symptoms. The discovery of the coal-tar synthetical products, and particularly Ammonol, has changed all this. Now we can relieve painful symptoms, and at the same time effect a powerful curative action on the underlying conditions. For instance, in rheumatic fevers the painful joints and muscles are the most distressing symptoms. Formerly we were frequently compelled to resort to morphia in order to give our patient relief quickly, but morphia retards waste and tends to prevent the elimination of products that are a more or less direct cause of the pain. Now, by combining salicylic acid with Ammonol, the pain is quickly removed after giving two powders of ten to twenty grains of the Ammonol Salicylate, and the eliminative process are stimulated; more than this, the Ammonol exerts a synergistic effect over the entire range of the effect of the salicylic acid. The compound resulting from the combination of the two is alkaline and far more effective than the sodium salicylate; moreover, it is tolerated easily by the most delicate stomach and can be given when other salicylates cannot be born.

DO DRUGGISTS HAVE BABIES?

It occasionally happens: and those babies get the best of everything without regard to cost per dozen or per cent of profit. No druggist talks himself into taking home an inferior article because it costs less than the best. Not much. He recommends only the best for *his* baby. If it be a food—he gets the best, but the trouble is to tell which of the numerous bests is the best. If it be a nursing bottle you may be sure he has "The Best," and that is easy to tell because there is only one. Called "The Best," *is* the best. It prevents wind-colic and bowel trouble—nipple cannot collapse—and there is 50 per cent profit in it. Suffer all the little ones to have one of these bottles.

READING NOTICE.

"You can't always tell by his looks how far a Frog can jump." He is a deceptive creature, his smile is so innocent looking. Concealed beneath that smile, however, is a great desire to make furious attack on the throats of the human family. At the present time he is in his element, and doing business at the old stand. We hear and see evidence of him everywhere. Yes, and feel it too.

"It's an ill wind that blows nobody good." The practical application of this old saw rests with Hance Brothers & White, of Philadelphia.

Awake to the requirements of the times, they several years ago introduced the popular lozenge now so universally known as "Frog in your Throat?" All predictions as to how far this Frog could jump would have been futile. He didn't look very important upon first acquaintance, but he has made a deep and lasting impression upon the trade in general and the public in particular.

The success attained by this little Frog-fighter has been unparalleled in the history of similar preparations.

That it deserves its distinguished popularity is due to its being an effective remedy, made in very acceptable form and put up in a style pleasing to consumers. The price, also, has the effect of enticing dealers to handle it, as it affords a good rate of profit. It is well advertised and will be continually hammered at until "Frog in your Throat?" becomes a truly household phrase and remedy the whole world over.

We want to direct your attention to the novel and effective window displays made by dealers throughout the country with advertising matter supplied by Hance Brothers & White. These goods are all made in Japan expressly for that firm and are specially adapted for advertising. Hance Brothers & White supply a generous quantity with all orders for "Frog in your Throat?" Some of these window displays should be classed among works of art, as they required much original thought, patience and expense. The impetus given to business by the use of such advertising is marvellous, many druggists claiming as direct result an increase in their receipts of 100 per cent and more.

It may seem rather presumptuous for Hance Brothers & White to sell you goods and then supply you with the rare knowledge of how you, in turn, are to sell them. But such is the fact. You will be much interested if you read their most recent publications, particularly "How to Dress Show Windows." In this book you will find ideas and pertinent suggestions far beyond your expectations, and unfortunately also, several years ahead of some localities we know of.

PRICES CURRENT.
DECEMBER, 1895.

Acetum cantharideslb	\$0 60	
" colchici cornlb	50	
" ipecaclb	40	
" opiilb	1 20	
" scillalb	12	
Acetanilidlb	90	oz. 15
Acid. acetic glaclb	45	demi 16 00 ea.
" " fort P.B.lb	15	carboy 11
" benzoic Germanoz	15	lb 1.00
" " " ozs. Hwds	25	Bulk 20
" boraciclb	12	25 lb 11
" " pulv.lb	14	25 lb 12
" butyric conc.oz	30	lb 3.75
" camphorisoz	50	
" carbolic cryst 1 lb bot lb	25	10 lbs 24
" " " 5 " tins lb	22	10 lb tin 21
" " Calvert's No.1 lb	2 25	
" " " " 2 lb	1 40	
" " " " 5 gal	1 50	
" " Crude " 5 gal	80	
" chromicoz	10	lb 1.00
" chrysophanicoz	30	
" citriclb	42	10 lb. 40
" " pulv.lb	50	
" gallicoz	10	lb 90
" hydro-bromic dillb	45	
" hydrochloriclb	5	carboy 2½
" " C.P. s.g. 1.20. lb	25	Wins. 20
" " dillb	15	
" hydrocyanic P. B. doz.	90	in 1 oz. 10c per oz.
" " Scheele's doz.	1 00	do 10c do
" hypophosphor.lb	1 10	
" hydrofluoric (in patent ceresine bottles)		¼ lb bottles .50 ea. 1 lb " 1.25
" lactic dilutumlb	1 00	
" " conc. pur.lb	1 75	
" nitriclb	15	Wins. 12 carb 8½
" " C.P. s.g. 1.42. lb	30	Wins. 25
" " dillb	15	
" oleic pale frozenlb	40	
" osmicgm	1 25	
" oxaliclb	12	50 lb 10
" perchloricoz	35	
" phos. dilut.lb	17	Whr. qt. 14
" " conc S.G. 1.5. lb	45	
" " glac. pur stick. lb	1 00	
" " syr s.g. 1.750 lb	50	Whr. 45
" picriclb	75	
" pyrogallic Schering's oz	30	8 oz. 28
" pyroligneouslb	10	gall 50
" salicyliclb	75	
" sulphuriclb	5	carboy 2½
" " babcock, s.g. 1.82 lb	5	carboy 3½
" " C.P. s.g. 1.84. lb	25	Wins. 20
" " pur Englb	20	Wins. 18
" " aromat.lb	65	
" sulphuroslb	12	
" tanniclb	70	5 lb 65
" tartaric pulvlb	35	10 lbs 33 keg 30
" trioh'or. acet. pureoz	40	
" valerianicoz	40	
Aconitina exot.gr	4	60 gn. 3
Adeps benzoatuslb	35	
" lance anhydrouslb	70	
Ather S. G. 735lb	40	Whr. qt. 35
" aceticlb	55	do 50
" butyricoz	15	lb 1.50
" chloriclb	65	Whr. qt. 60
" Anæsthetic tin 500 grms	1 50	each
" " 250 "	80	" Squibb's
" " 100 "	40	"
" "		"

DR. CHASE'S

THE ORIGINAL KIDNEY PILL

KIDNEY=LIVER

THE ONLY KIDNEY-LIVER PILLS

PILLS

T. Dawson, Manager Standard Bank, Bradford, Ont., says, Chase's Kidney-Liver Pills are a grand medicine for the Kidneys and Liver.

W. F. CARRIER, 115 McCaul St., Toronto, representing Montreal Star, says, Chase's Pills act like magic for the relief of headache, bilious attack and constipation. Sold everywhere, or by mail on receipt of price, to EDMANSON, BATES & CO. 45 LOMBARD ST. TORONTO, ONT.

TO BE HAD FROM WHOLESALE DRUGGISTS.

DR. WEBER'S ALPINE HERB TEA

Made in Germany.

TRADE MARK. An old fashioned honest German Household Remedy for Colds, Dyspepsia, Constipation, Indigestion, Piles, Female Disorders. An Active Blood Purifier.

DRUGGISTS, RETAIL AT 50 & 25 CTS,

DREXEL MEDICAL CO., Canadian Agents,
112 St. FRANCOIS-XAVIER ST., MONTREAL.

PETERMAN'S ROACH FOOD

FATAL TO COCKROACHES AND WATER BUGS.

"NOT A POISON"

It attracts Cockroaches and Water Bugs, as a food they devour it and are destroyed, dried up to shell leaving no offensive smell.

... Kept in stock by all Wholesale Druggists ...

EWING, HERRON & CO., MONTREAL
Sole Manufacturing Agents for the Dominion.

Ether Anas. L. S. & Co		$\left\{ \begin{array}{l} 1 \text{ lb tins } 1.00 \text{ each} \\ \frac{1}{2} \text{ lb tins } 0.55 \text{ " } \\ \frac{1}{4} \text{ lb tins } 0.30 \end{array} \right.$	
Alcohol brl.....	cash	4 25	$\left\{ \begin{array}{l} 10 \text{ gall } 4.55 \text{ 5 gall} \\ 4.30 \text{ 1 gall } 4.65 \end{array} \right.$
" absolut.....	lb	1 00	Wr. 90
" methylated.....	gal	2 00	5 gals 1.90 Brl. 1 70
Aloes Barb opt.....	lb	80	10 lb 25 cash
" " pulv.....	lb	35	do 32
" Cape.....	lb	15	10 lbs 13
" " pulv.....	lb	25	do 23
" Socotrina.....	lb	60	do 55
" " pulv.....	lb	70	do 65
Aloin.....	oz	25	
Alumen lump.....	lb	3	brl 1 1/2
" pulv.....	lb	4	brl 2 1/2
" chrom.....	lb	15	
" exsiccant.....	lb	20	
Alumol.....	25 gm	50	each
Ammonol.....	oz	1 35	10 ozs. 1 25
Ammonii acet. pure cryst.....	oz	15	
" benzoas, ex gum.....	oz	25	lb 3 00
" bichromate pure cryst.....	lb	1 00	
" bromid.....	lb	65	
" carb.....	lb	15	7 lb tins 16
" " kegs.....	lb	11	
" " pulv.....	lb	20	
" " resub.....	lb	50	c. b.
" chlorid.....	lb	12	100 lb 10 1/2
" " gran.....	lb	12	100 lb 11
" " pulv.....	lb	13	
" " pur.....	lb	25	
" hydrosulph sol.....	lb	40	
" hypophosp.....	oz	25	lb 3.00
" iodid.....	oz	45	lb 5.50
" molybdas.....	oz	25	
" monocarb.....	lb	35	
" nitras gran.....	lb	32	25 lb 30
" " cryst.....	lb	35	25 lb 30
" " pure cryst.....	lb	50	
" oxalas pur.....	lb	75	
" phosph.....	lb	25	
" salicylat.....	oz	40	lb 4.75
" sulphas com.....	lb	9	pur 25
" sulphocyanid.....	lb	75	
" valerian.....	oz	40	
Amygdala amara.....	lb	30	
Amyl nitras.....	oz	15	
" nitrite.....	oz	15	
" valerian.....	oz	35	
Amylum pulv.....	lb	9	
Annatto Hispan opt.....	lb	40	
" Fullwood 1/2 oz & 1 oz	lb	1 00	
Antim crocus pulv.....	lb	20	
" nigrum pulv.....	lb	10	
" oxid.....	lb	65	
" sulphurat precip.....	lb	50	
" tartarat pulv.....	lb	40	
Antikamnia.....	oz	1 30	
Antipyrin Knorr's.....	oz	1 10	5oz 1.05, 10 oz 1.00
" " Swiss.....	oz	85	10 oss. .30
" ".....	lb	12	50
Antitoxine, 7 c. c.....		1.50	nett.
" 25 c. c.....		3.00	"
Apiol green.....	oz	65	
Apomorph hydroch.....	gr	2	5 and 10 grain tubes
Aqua anethi.....	lb	10	
" anisi.....	lb	10	
" aurantii flor trip.....	lb	25	Win qt 20
" camp.....	lb	10	
" carui.....	lb	10	
" cassic.....	lb	10	
" cinnam.....	lb	20	
" destillata.....	gl	12	carboy 10
" florida.....	gl	5	00
" lauro-cerasi.....	lb	25	Whr qt 20

DO YOU CARRY

ODOROMA In Stock?

IF NOT, WHY NOT?

ODOROMA

The Perfect Tooth Powder.

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

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

REPORT OF EXPERT ANALYSIS.

"Having analyzed and tested 'Odorama,' I find it to be composed of ingredients well known to the dental and medical profession as being the best for cleansing; and preserving the teeth. It contains nothing that could in any way be deleterious in its action, and it has my unqualified approval."—W. T. TRUART M.D., C.M., Professor of Chemistry, Trinity Medical School; Professor of Chemistry, School of Dentistry.

Order from your Wholesale House.

AROMA CHEMICAL CO., - Toronto.

WE MAKE CLOSE ESTIMATES

On Preparing Private



preparations, and cordially invite correspondence on the subject.

ALL FORMULÆ submitted to us are considered strictly confidential, the private property of our Correspondents, and are guarded so with scrupulous care.

Our facilities for manufacturing and finishing special preparations are unequalled, for, in addition to our well equipped manufacturing and finishing departments, we possess complete and extensive printing, binding and paper box-making establishments, and are thus able to turn out first-class work at the lowest cost. We are in a position to prepare any private formulæ put up in the form of a Fluid Extract, Solid Extract, Elixir, Wine, Syrup, Glycerole Capsule, Cachet, Perle, Pill (sugar, gelatine pearl or silver coated), Lozenge (hand cut or compressed), Tablet Triturate, Compressed Tablet, Effervescing Granular Salt, etc., as well as preparations in the form of Sarasaparillas, Cough Syrups, Liniments, Veterinary Remedies, Toilet Preparations, etc. We charge nothing for making an estimate on any preparation, but are pleased to do so, and trust we may be favored with formulæ for the purpose.

ADDRESS

Frederick Stearns & Co.

Manuf'g Pharmacists,

WINDSOR, Ont.

PRIVATE FORMULÆ DEPARTMENT.

Aqua menthae pip.....lb	10	
" rosea trip.....lb	25	Whr qt 20
" sambuci flor.....lb	25	
Argenti chloridum.....oz	1 50	
" i- dide.....oz	2 50	
" nitras cryst. L. B. & Co.oz	85	9.00 lb cash
" " fus (4 to oz).....oz	90	
" oxidum.....oz	2 40	
" sulphate.....oz	1 50	
Aristol.....oz cartoons	1 85	
Arsenicum alb. pulv.....lb	10	
" rub ".....lb	15	
Arsenici bromid.....oz	40	
" iodid.....oz	60	
" tersulph pulv.....lb	25	
Asphaltum Egyptian.....lb	18	
Atropina pura.....oz	60 each	
Atropina sulphas.....oz	50 "	
" salicylas.....oz	80 "	
" hydrobromate.....gr	5	
Auri chloridum (15 gr).....doz	4.00, 3 doz 3.75, 6 doz 3.50	
" " L. B. & Co. doz	4.25	
Baccæ aurantii.....lb	25	
" capsici.....lb	25	pulv. 30
" cassiæ.....lb	35	pulv. 40
" cubebæ.....lb	35	
" " pulv.....lb	40	
" juniper.....lb	8	10 lb 7
" " pulv.....lb	12	10 lb 11
" pimentæ.....lb	10	
" " pulv.....lb	12	25 lb boxes 11
" xanthoxylon.....lb	40	
Balsam canad.....lb	40	Winch. 35
" copaibæ.....lb	60	Whr. qt. 55
" peruvian.....oz	30	lb 4.00
" tolut.....lb	70	
Barii carb pur.....lb	35	
" chlorid pur.....lb	25	
" hypophos.....oz	25	
" nitras exsic.....lb	20	
" nitrate C. P.....lb	35	
" perox anhyd.....lb	60	
" sulphate pur.....lb	50	
" sulphide ".....oz	10	
Bath Pipe.....lb	40	
Bay rum St. D.....gal	3 75	sec. 2.75
Beberingæ hydroch.....dr	50	
" sulphas.....oz	90	
Benzine refined.....gal	40	
Benzole pure.....lb	60	
Benzoyl Guaiacol.....oz	2 00	
Bismuthi Benzoas.....oz	40	
" Beta naphthol.....oz	1 00	incl.
" carb.....lb	1 90	
" citras.....oz	20	
" et ammon-cit.....oz	30	lb 4.25
" oxide.....oz	20	
" salicylas.....oz	20	lb 3.00
" subgallas.....oz	20	lb. 3.00
" subiodid.....oz	45	
" subnitras.....lb	1 60	
" valerian.....oz	50	
Bismuthum (metal).....lb	2 25	
Bole armen.....lb	6	
Borax.....lb	9	keg 7
" pulv.....lb	10	do 8
" calcined.....lb	50	
Bromine.....oz	20	
Bromoform.....oz	30	inc. bot.
Cadmium.....oz	15	lb 1.75
Cadmii bromid.....oz	20	lb 2.25
" iodid.....oz	50	
" nitrate.....oz	20	
" sulphas.....oz	20	

Caffeina pur.....oz	75	
" citras.....oz	65	
Calamina præparata.....lb	7	
Calcii bromid.....oz	15	lb 2.00
" carb. præcip.....lb		V. Creta præcip.
" chlorid. cryst.....lb	25	
" " fusum pure.....lb	30	
" chlorid fused crude.....lb	15	
" hypophosphis.....lb	1 40	
" iodid.....oz	50	
" lactophosph.....oz	15	lb 2.00
" nitras.....lb	75	
" phosphas præcip.....lb	20	
" sulphas.....lb	3	
" sulpho-carbolas.....lb	2 50	
" sulphid.....lb	50	
" sulphis.....lb	18	pulv. 20
Calx chlorinata.....lb	5	keg 3½ brl. 2½
" " in packets 1 lb	7, ½ 8, ¼ 9	
Camphora Ang. Hd's.....lb	75	
" " ozs.....lb	80	
" " flowers.....lb	80	
" Dutch.....lb	70	
" " ozs.....lb	75	
Camphor monobromid.....oz	20	
Cantharides Russian.....lb	1 40	pulv. 1 50
" Chinese.....lb	—	pulv. 65
Cantharidine.....grain	8	
Cap papav. alb.....100	1 00	
Carbo animalis pur. pulv.....lb	12	
" ligni.....lb	6	
" ligni pulv.....lb	10	brls 5.50 each
Carbon bisulphidum.....lb	16	Whr qt 13
" " C. P.....lb	50	
Carmine.....oz	46	lb 5.25
Caryophyllum, Zanzibar.....lb	12	13 Pulv.
" Amboyna.....lb	25	
" Penang.....lb	60	
Cassia fistula.....lb	30	
Castoreum.....oz	1 25	
Celloidine Schering's, chips.....oz	1 20	
Cera alba.....lb	65	sec 40
" " paraffin.....lb	18	50 lb 15
" flav opt.....lb	40	secs 35
" " lithographers.....lb	50	
Cerii nitras.....oz	25	
" oxalas.....oz	10	lb 1.10
Cetaceum.....lb	55	10 lb 50
Cetraria Iceland.....lb	16	
Chirata Incis.....lb	30	
Chloralamid.....oz	35	
Chloralose.....oz	2 50	½ or 1 oz. vials.
Chlorodyne Lyman's.....lb	2 00	
Chloral Hydrate recryst.....lb	1 20	
Chlorof pure Smiths 1 lb g.s. bs. lb	80	5 lb 75 Whr. qt 65
" D. F. & Co's pur.....lb	2 00	5 lb 1.90
" " meth.....lb	1 00	5 lb 90
" " blue label.....lb	1 00	5 lb 90
" German 1 s.....lb	65	5 lb bottle 58
" " 56-lb tins.....lb	50	23 lb tins 55
Chromium metal.....gm	60	
" oxid anhydric.....oz	10	
" sesquichloride.....oz	1 00	
" sulphate.....oz	20	
Cinchonidin.....oz	15	Hds. 20
Cinchoninæ murias Hds.....oz	18	
" sulphas ".....oz	18	
Civet.....dr	2 00	
Cobalt chlor.....oz	25	
" nitras.....oz	25	
Cocaine hydrochlor crys.....oz	6 00	½ oz 90 each
" phenate 5 grain tubes	07	grain.
Cocculus Indicus.....lb	10	pulv 20
Coccus cacti S. G.....lb	40	pulv 45
Codcina pure.....oz	65	ea. oz. 5.00
" phosphate.....oz	90	ea.

IN CONVENIENT PACKAGES...
FOR FAMILY USE

... LIST ON APPLICATION



ALWAYS READY
WITHOUT HEATING.

Chase's Mucilage.

**MANLEY'S
CELERY NERVE COMPOUND**

With Beef, Iron and Wine.

Contains no INJURIOUS DRUGS. Is based on GLYCERINE instead of ALCOHOL. For CONSTIPATION, DYSPEPSIA, NERVOUSNESS, DEBILITY, ALL WEAKNESSES, BLOOD and SKIN DISEASES it is a GUARANTEED CURE.

Sold by All Wholesale and Retail Druggists.
The Lion Medicine Co., Manuf'rs., Toronto.



Please observe Bottle and Label, to avoid errors.
For Sale at Drug Grocery and Wine Dealers.

FOR
Body and Brain.

Since 30 years all Eminent Physicians Recommend

VIN MARIANI

The original French Coca Wine; most popularly used tonic-stimulant in Hospitals, Public and Religious Institutions everywhere.

NOURISHES,
FORTIFIES,
REFRESHES.

Strengthens entire system; most agreeable, effective and Lasting renovator of the vital forces.

Every test strictly on its own merits, will prove its exceptional reputation.

PALATABLE AS
CHOICEST
OLD WINES

LAWRENCE A. WILSON & CO.,

Sole Agents. 28 & 30 Hospital St., MONTREAL

♦ **STANDARD PREPARATIONS.** ♦

Mrs. Winslow's Soothing Syrup

Has been used for over fifty years, by millions of mothers for their children who Teething, with perfect success. It soothes the child, softens the gums, allays all pain, cures all Wind Colic, and is the best remedy for Diarrhoea. Retail price 25cts a Bottle. THE ANGLO-AMERICAN DRUG CO., Proprietors, 217 Fulton Street N.W. YORK, N.Y.

Brown's Bronchial Troches

As a simple yet effective remedy for Coughs, Colds and Bronchial Affections, stand first in public favor and confidence. They are absolutely unrivalled for the alleviation of all throat irritations caused by cold and are everywhere known as an old and reliable article. Sold only in boxes. Retail price, 25 cents, 50 cents and \$1.00 JOHN I. BROWN & SONS, Proprietors, 185 Summer Street, BOSTON, MASS.

Brown's Vermifuge Comfits or Worm Lozenges.

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., Ld., Proprietors, 217 Fulton Street, NEW YORK, N.Y.

Brown's Household Panacea.

Unequaled for relieving pain—both internal and external. Stronger than any similar preparation and invaluable as a household remedy for speedily relieving aches and pains. Retail price, 25 cents a bottle. THE CURTIS & BROWN MFG. CO., Ld., Limited, 217 Fulton Street, NEW YORK, N.Y.

Brown's Camphorated Saponaceous Dentifrice.

A superior and most agreeable article for Cleansing and Preserving the Teeth and purifying the Breath. Used daily it prevents trouble from bad teeth and soft gums. Retail price, 25 cents a bottle. Prepared by JOHN I. BROWN & SONS, THE CURTIS & BROWN MFG. CO., Ld., Proprietors, 217 Fulton Street, NEW YORK, N.Y.

**CIBIL'S
FLUID BEEF.**

Has Taken Eighteen
First Medals : : :

It is a concentrated strength broth and only two tea-spoonfuls need be used to a cup of water. A small bottle will make ten platefuls. Invaluable for kitchen, sickroom and travellers.

GENERAL DEPOT:

W.M. F. SCHMOELE & CO.
ANTWERP, - - Belgium.

THE CANADIAN CAPSULE CO. TORONTO

For General Excellence

Crystal Capsules

TRADE MARK

MANUFACTURED BY THE CANADIAN CAPSULE CO. TORONTO

OUR CAPSULES ARE TRANSPARENT, ELONGATE, UNIFORM IN SIZE AND ARE MANUFACTURED OF THE FINEST & BEST MATERIALS AVAILABLE.

ANALYSES OF

Crystal Capsules

Empty Capsules

SIZES & QUANTITIES

17	1000	60'S	PRINTED	100	100'S	PRINTED
18	1000	60'S	PRINTED	100	100'S	PRINTED
19	1000	60'S	PRINTED	100	100'S	PRINTED
20	1000	60'S	PRINTED	100	100'S	PRINTED
21	1000	60'S	PRINTED	100	100'S	PRINTED
22	1000	60'S	PRINTED	100	100'S	PRINTED
23	1000	60'S	PRINTED	100	100'S	PRINTED
24	1000	60'S	PRINTED	100	100'S	PRINTED
25	1000	60'S	PRINTED	100	100'S	PRINTED
26	1000	60'S	PRINTED	100	100'S	PRINTED

For General Excellence

Manufactured by

Solubility

Perfect for

Uniform in

In cur and

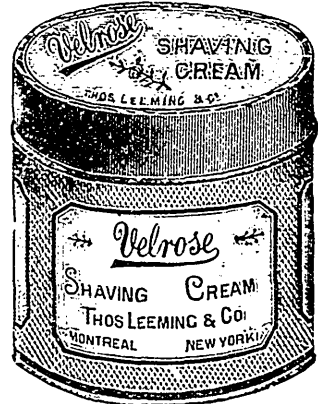
Foreign

SPECIFY WHEN ORDERING

Crystal Capsules

Codeina sulph	½ oz.	60	es. oz 4.50
Colchici corm	lb	30	
Collodium	lb	65	
“ vesicans, P. B	lb	2 25	
“ flexile	“	85	
Colocyntis Ture select	lb	60	pulv 85
Confectio rosæ Gallic	lb	50	
“ sennæ	lb	40	
Cortex aurantii Ang.	lb	70	
“ “ coml.	lb	15	
“ “ opt. ½	lb	20	
“ canellæ	lb	20	pulv 25
“ cascara sagrada	lb	25	
“ cascarillæ	lb	20	
“ cassiæ, opt.	lb	18	pulv 18, 25 lb box 16
“ cinchon flav.	lb	90	pulv. 1.00
“ “ coml.	lb	30	pulv. 35
“ “ rub quill	“	50	pulv. 60
“ granat fruct.	“	20	
“ “ radicis	“	40	
“ limonis ang opt	“	55	
“ “ com.	“	16	
“ mezerei	“	25	
“ myricæ (bayberry)	lb	20	
“ pruni virginianæ	“	15	20 lbs 12
“ quillaiæ	“	15	grd, 20 pulv. 25
“ sassafra	“	15	pulv. 22
“ ulmi	“	16	pulv. 16 grd 14
Creolin, Pearson's	“	70	litre bot. 1 25 each.
Creosot. Ang (Morson's)	oz	20	lb 2.00
“ (Beechwood) Merck's	lb	1 50	Whr. 1 25
“ (Beechwood) French	lb	2 75	
“ white, from coal tar	lb	75	
“ Carb	oz	80	lb 12 00
Creta gallic	lb	18	
“ “ pulv	lb	5	bgs 3½
“ præcip	lb	10	keg 8
“ præparata	lb	6	25 lbs 5
Crocus stigmat amer	lb	65	
“ “ Valent	oz.	75	Alicante 60c oz.
Croton chloral-hydrate	oz	45	
Cudbear	lb	20	
Cupri ammonio-sulphas	lb	1 00	
“ carbonas	lb	31	
“ chloridum pur	lb	60	
“ nitras pur	lb	60	
“ oxidum nigr. pur.	lb	1 75	
“ “ coml.	lb	50	
“ sulph	lb	7	keg 5 brl 4½
“ “ C P	lb	20	
Cuprum scales	lb	40	
Curare of tested efficacy	grain	5	
Currie powder	lb	35	
Curso	oz	10	
Damiaua	lb	40	
Daturine, pure xtls	gr	10	
“ sulph . . 1 grm. tube	“	1 15	each
Dextrine, white	lb	10	50 lb 8
“ yellow	lb	8	“ 7
Diapente	lb	30	
Diastase	oz	1 00	
Digitaline	½ oz	9	each
Diuretin " Knoll"	oz	1 75	
Dolichos pruriens pubes.	oz	60	
Duboisin, pure Amp 5 gr. tube	“	6	each
“ sulphate	gr	10	
Eikonogen	25 gm tins	40	each
Elaterine xtls P.B 15 gr vials	“	1 25	each
Elaterium	dr	35	
Ergota	lb	50	pulv. 60
Ergotinum Bonjean	oz	75	
Ergotine Bonjean Gen.	30 gm	2 00	each
Eserine sulph 5 or 10gr. tube	gr	9	
“ salicylate, 5 gr. tube	gr	10	each

3 GOOD SELLERS



VELROSE SHAVING CREAM SHAVING STICK BARBERS' SOAP.



Pay you well.

Please your Customers.

Attractive Counter Articles.

Order Sample ½ dozen from your Wholesale House to come with next order.

Samples for free distribution given with first orders.

THOS. LEEMING & CO.,
MONTREAL.

DUNCAN, FLOCKHART & CO'S ©

Blaud's Pill Capsules.

Are Soft and Flexible
Never Become Hard

Never Become Oxidized
Never Vary in Strength

THESE CAPSULES are put up in 1, 2, and 3-pill sizes, with or without Arsenic, and can be supplied in boxes of 2 dozen or 100 (each). They are prepared by a unique and original process, which entirely overcomes the tendency to **hardening** which is so common in the Blaud Pills.

For Sale By Druggists.

R. L. GIBSON,
General Agent

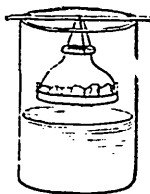
30 Wellington St., East, TORONTO.

Messrs. D. F. & Co. guarantee their 1, 2, and 3 pill capsules to be equal respectively in Ferrous Carbonate to 2 and 3 freshly prepared Blaud Pills. They have also this distinct advantage over pills, viz., that

THEY NEITHER OXIDISE NOR HARDEN.

= Chemical Apparatus =

Bohemian Glassware,
OF ALL KINDS AND OF BEST QUALITY.



Berlin Porcelain Crucibles,
Evaporating Dishes, &c.

AGENTS FOR THE DOMINION FOR THE MANUFACTURES OF

The Morgan Crucible Co.

OF BATTERSEA, LONDON.

Analytical Balances, Scales and Weights, Blow-Pipes, Blow Pipe Sets and Chemical Cabinets, and all other requisites for Experimental and Analytical Work, and Assaying.

CHEMICALLY PURE REAGENTS AND VOLUMETRIC SOLUTIONS.

An Illustrated Priced Catalogue on Application.

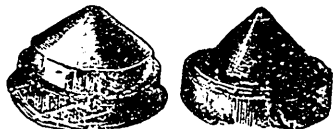
LYMAN, SONS & CO., St. Paul Street, MONTREAL

Ethyl, Benzoate.....oz	40	
" Bromide.....oz	25	
" Butyric.....oz	15	
" Chloride.....tubes	35	each
" Iodid.....oz	60	
" Oenanthylate.....oz	3	50
" Succinate.....oz	60	
" Valerian.....oz	50	
Eucalyptol.....oz	30	lb 3.20
Fugenol puro.....oz	35	
Europheon.....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.....oz	15	lb 1.75
" anthemides.....oz	20	lb 2.50
" " alcoh.....oz	25	lb 3.00
" belladon P. B.....oz	25	lb 3.00
" " pulv.....oz	30	lb 3.50
" " aqueos.....oz	15	lb 1.50
" calumb.....oz	25	lb 3.25
" cannabis indicæ.....oz	25	lb 3.00
" cascara sagrada.....oz	25	lb 3.00
" cinchonæ flav.....oz	25	lb 3.50
" colchici.....oz	20	lb 2.60
" " acet.....oz	15	lb 2.00
" colocynth co.....oz	25	lb 3.00
" colocynth co pulv.....oz	20	lb 2.50
" conii P B.....oz	20	lb 2.00
" " pulv.....oz	25	lb 3.50
" copaiabæ resin.....oz	15	lb 1.50
" damiana.....oz	40	
" digitalis.....oz	20	lb 2.50
" " pulv.....oz	30	lb 3.50
" ergotæ pulv.....oz	60	
" gentianæ.....lb	45	
" filicis maris ether.....oz	25	
" hamamelis dest.....gr	1	25
" glycyrrh mol.....lb	0	75
" " pulv.....lb	0	75
" hellebor nig.....oz	25	
" hæmatoxylin.....lb	80	
" hyoscyamine.....oz	20	lb 2.5, 0
" hyoscyam aquos.....oz	15	lb 1.25
" " pulv.....oz	25	
" " aug.....oz	25	lb 3.50
" ignatia amara.....oz	60	
" ipecac acetic.....oz	1	50
" jaborandi.....oz	60	
" jalapæ.....oz	25	lb 3.50
" " pulv.....oz	35	
" krameria.....oz	25	lb 3.50
" lactuca.....oz	20	lb 2.20
" logwood.....lb	11	(15 & 30 lb boxe.
" " 1 lb pkts.....lb	14	(30 lb boxes)
" " ½ lb pkts.....lb	15	"
" " ¼ lb pkts.....lb	17	"
" " asst. pkts.....lb	16	"
" lupuli.....oz	25	lb 3.00
" mezerei æther.....oz	60	
" nucis vomio.....oz	40	lb 5.40
" " pulv.....oz	40	
" opii.....oz	90	lb 13.50
" " pulv.....oz	1	10
" " liquid.....lb	1	00
" papaveris.....oz	15	lb 2.25
" physostigmatis.....oz	2	00
" podophylli.....oz	25	lb 3.00
" quassia.....oz	20	lb 2.40
" rhamni frang.....oz	50	lb 5.00
" ramni pulv.....oz	40	
" rhei E. I.....oz	2½	lb 3.50
" sarsæ jam.....oz	30	lb 4.00
" sarsæ co.....oz	20	lb 2.75
" stramonii fol.....oz	20	lb 2.50

Extract. stramonii pulv.....oz	25	lb 3.00
" taraxaci.....lb	50	
" valerian.....oz	15	lb 2.00
" veratri viride.....oz	45	
Fabæignatia amara.....lb	1	00
" physostigmatis.....lb	1	25
" tonca para.....lb	1	25
" " surinam.....lb	1	75
" " angostura.....lb	3	00
" vanillæ short.....lb	3	00
" " 5½ in.....lb	7	50
" " 6½ in.....lb	8	00
" " 7½ in.....lb	10	50
Fehling's solution.....lb	1	00
Fel bovinum purificat.....oz	20	2.00 lb
Ferratine.....oz	1	25
Ferri acetæ.....oz	15	
" a'bumen.....oz	25	
" ammon chlorid.....lb	60	
" " persulph(iron alum) lb	40	
" " protosulph.....lb	30	
" " tartras.....lb	75	
" arsenias.....oz	15	lb 1.60
" bromidum.....oz	20	lb 2.00
" carb. precip.....lb	15	
" carbonas sacch.....lb	30	
" chloride.....lb	50	
" citras soluble.....lb	65	
" et ammonii citras.....lb	65	
" et quin. cit., 4%.....oz	15	
" " 4 p.c.....lb	1	75
" " 10%.....oz	17	
" ".....lb	2	40
" " P. B.....oz	20	
" ".....lb	2	75
" " Hd's.....oz	25	
" " amorph.....oz	15	
" ".....lb	1	75
" " et strych. cit., oz	35	
" " Hd's, oz.	40	
" et strychn. citæ 1%.....oz	15	10 oz 13 lb 1.75
" hypophosphis.....oz	20	lb 2.50
" iodide.....oz	40	
" lactas.....lb	75	
" perchlorid.....lb	35	
" phosphas.....lb	85	
" pyrophosph.....lb	80	
" succinate.....oz	35	
" sulphas commercl.....lb	2	brl 90 gross
" " exsic.....lb	6	
" " pur.....lb	7	10 lb 6
" sulphid.....lb	12	
" valerian.....oz	25	
Ferrum dialyzatum.....lb	40	
" redactum.....lb	75	
" tartaratum.....lb	70	
Flor. anthem. opt, French.....lb	35	
" " Roman.....lb	30	
" " German.....lb	30	
" arnicæ.....lb	25	
" lavand.....lb	15	pulv. 25
" rosa gall rub.....lb	75	
" " white.....lb	40	
Folia aconiti.....lb	25	pulv. 35
" belladon.....lb	25	pulv. 35
" bchna.....lb	20	
" coca green.....lb	50	
" conii.....lb	20	pulv. 35
" digitalis.....lb	20	pulv. 35
" eucalypti glob.....lb	18	
" hyoscy. exot.....lb	20	powd. 40
" jaborandi.....lb	65	
" maticæ.....lb	40	
" pulegii.....lb	20	
" scennæ alex.....lb	60	

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 "
41c 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 acorn boxwood 3/6
114P. 2d " 14 " 111 1/ " " 5/-
107F. 3d " 1/10 doz. 112 6d Flat... 3/3
109 4d " 2/6 " 17 F 1/ " 5/6
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,
105 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.



CELEBRATED BRAND

COGNAC BRANDY

Faustin Freres

as shipped in all the markets of the world . . .

. . . The best value in Brandy supplied for the price.



The trade supplied with free samples and other advertising matter prepaid by addressing . . .

D. DENSMORE & CO.,

271 QUEEN ST., EAST,

TORONTO, Ont

Folia sennæ tenny.....lb	20	15, bale 16
“ “ “ pulv.....lb	25	
“ uvæ ursi.....lb	12	
Formaline.....lb	1 00	incl.
Fruct. anethi.....lb	30	
“ anisi Ger.lb	15	
“ “ pulv.....lb	20	
“ “ Star.....lb	45	
“ capsici.....lb	18	25 lbs 16
“ “ pulv.....lb	20	“ 18
“ carui.....lb	12	
“ “ canad.....lb	10	
“ “ pulv.....lb	18	
“ conii.....lb	30	
“ coriandri.....lb	16	
“ “ pulv.....lb	18	
“ fœniculi.....lb	15	pulv 20
Fuller's earth.....lb	4	100 lb 3
“ “ pulv.....lb	6	100 lb 6
Gadul.....oz	40	
Gallæ cornulæ.....lb	28	bag 25
“ “ pulv.....lb	30	grd 28
Gallanol.....oz	1 00	
Gallobromol.....oz	1 00	
Gasoline, 76°.....gal	60	
Gelatine, black label.....lb	35	10 lb 30
“ bronze label.....lb	40	“ 35
“ silver “.....lb	45	“ 40
“ gold “.....lb	60	“ 55
“ pink gold label.....lb	75	
Glue, black.....lb	12	
“ amber.....lb	15	
“ white.....lb	20	
“ cooper's.....lb	39	
Glycerine (double dist) 1260 deg. lb.	25	56 lb tin 22½
“ Price's.....lb	70	W. qt. 65
Grana paradisi.....lb	20	
“ “ pulv.....lb	30	
Guaiacol absolute.....oz	60	lb 7.00
“ benzoate.....oz	1 50	
“ carb.....oz	1 60	
Guarana pulv.....lb	2 00	oz 20
Gum acacia, No. 1.....lb	60	
“ “ 2.....lb	40	
“ “ 3.....lb	35	
“ “ 4.....lb	30	
“ “ 5.....lb	25	
“ “ pulv.....lb	65	
“ ammon guttæ.....lb	40	
“ asafœtid. opt.....lb	45	
“ “ pulv.....lb	50	
“ benzoin opt.....lb	75	
“ catechu nig.....lb	12	20 lb 11 pulv 25
“ catechu pallid cubes.....lb	16	10 lb 15
“ copal.....lb	35	
“ damar.....lb	30	
“ elemi.....lb	30	
“ euphorb. pulv.....lb	40	
“ galban opt.....lb	1 25	
“ gambogiæ.....lb	1 00	pulv 1 15
“ guaiaci.....lb	65	Sec. 40 pulv 50
“ juniper.....lb	85	
“ kino.....lb	4 50	pulv 4 65
“ mastiche select.....lb	90	
“ myrrh. turc opt.....lb	70	
“ “ “ sorta.....lb	45	pulv 65
“ olibani.....lb	25	
“ sang. draconis.....lb	50	reed 1 00
“ “ pulv.....lb	75	
“ scammon. aleppo.....lb	3 50	
“ “ opt. (pulv).....lb	3 50	
“ scammon resin.....lb	3 50	
“ seedlac.....lb	35	
“ shellac, orange.....lb	45	10 lb 40
“ “ bleached.....lb	40	



PENNYROYAL WAFERS

33 ¹/₃ % 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.

For Sale by all first-class Druggists and Wine Dealers

MONGENAI, BOIVIN & CO.,

SOLE AGENTS FOR CANADA,
MONTREAL.



Special Offers.

Roger & Gallet's Perfumes, Soaps, Powders, &c

Legrand's Perfumes, &c.

Pinaud's Perfumes, &c.

Piver's Perfumes, &c

Violet's Perfumes.

LAUTIER'S Triple Extracts.

LAUTIER'S Concentrated Extracts.

DONNET'S Triple Extracts.

Tavernier's Coquelicots,

3, 5 and 11 Kilo Glass Jars and 5 Kilo tins.

New lines KIRK'S SOAPS.

Cocoa Butter, College Line, White Castile.

Miner's Almond Meal.

Century Atomizers, No. 100 and 150.

Fould's Arsenic Soap.

Campbell's Arsenic Wafers.

LYMAN, SONS & CO.,

ESTABLISHED 1800.

MONTREAL.

Gum spruce.....	lb	30	10 lb 25
“ storax liquid.....		50	
“ “ dry.....	lb	50	
“ thus.....	lb	15	
“ tragacanth Ribbons..	lb	90	
“ “ Aleppo opt lb		65	
“ “ No.2 lb		50	
“ “ pulv. opt. lb		90	
Gun cotton.....		70	1 oz box
Hæmoggallol, 10 gm. vials....		50	each
Hæmol “ “ “		35	“ 25 gm. vials 80 ea
Homatropine, pure.....	gr	45	
“ hydrobrom. gr		35	
“ hydrochloric gr		35	
Humulus lupulus, case 15 ..	lb	18	assorted packages
Hydrarg. ammon chlor ..	lb	1	20
“ bisulphate.....	lb	90	
“ c. creta.....	lb	60	
“ cyanid.....	oz	30	
“ iodid rub.....	oz	35	lb 4.50
“ virid.....	oz	25	lb 3.50
“ nitrate pure.....	oz	15	lb 1.50
“ oleas 5%.....	lb	55	
“ “ 10%.....	lb	65	
“ “ 20%.....	lb	80	
“ “ 28.3%.....	lb	1	50
“ oxide flav.....	oz	15	lb 1.50
“ nig.....	oz	25	
“ rub.....	lb	1	10
“ “ liv.....	lb	1	20
“ perchlor.....	lb	90	
“ pu'v.....	lb	95	
“ pill mass.....	lb	70	
“ salicylate.....	oz	45	
“ subchlor.....	lb	1	00
“ a la vapeur lb		1	50
“ sulph.....	oz	15	lb 1.50
“ c. sulph.....	lb	1	00
“ tannas.....	oz	35	
Hydrargyrum.....	lb	75	10 lb 70
Hydrastine alkaloid C.P.....	dr	1	00
“ hydrochlor C.P. dr		1	00 oz. 6.00
Hydrastinine mur. Merck's			
15 grain tubes.....		90	oz. 22.00
Hydrochinone.....	oz	30	1 cz cartons
Hydrogen peroxid, Peuchot's.1	lb		doz. 3.00
“ “ “ ½lb			“ 6.00
“ “ “ ¼lb			“ 4.50
“ “ Coml.....	lb	35	
Hyoscine, hydrobrom, 5 gr. tub.1		75	each
Hyoscyamine “ .. gr		25	sulph gr 35
Hypnal.....	25 gms	1	25 each
Hypnon, pure.....	oz	1	50
Iatrol.....	oz	1	50
Ichthyol, Merck's.....	oz	45	½lb 5.75 lb
			½lb 5.80 lb
			1lb 5.50 lb
Indigo Madras opt.....	lb	75	
“ “ pulv.....	lb	90	
“ Paste.....	lb	20	
Insect powder Dalmatian.....	lb	35	25 lb 26 56 lb 25
“ “ Persian.....	lb	30	25 lb 21 56 lb 20
Iodoformum.....	oz	40	lb 5.90
“ præcip.....	oz	40	lb 5.90
Iodol.....	oz	1	40
Iodum crude.....	oz	30	lb 4.50
“ resub.....	oz	40	lb 5.25
Isinglass Brasil.....	lb	2	00
“ Gridley's oz.....	doz	1	80
“ Russian.....	lb	4	75
“ Cooper's.....	lb	90	
Jalapin ang.....	oz	1	00 lb 18.50

Kama'a.....	lb	60	
Kouso.....	oz	10	
Kava Kava.....	lb	90	
Lactopeptin ozs.....	doz	8	50
“ “ ½ lbs.....	lb	10	50
Lactophenine.....	oz	1	10
Lactucarium ang.....	oz	70	
Lanolin.....	lb	85	
Lapis calam. præp.....	lb	7	
“ pumicis select.....	lb	8	ordinary 6
“ “ pulv.....	lb	7	100 lb 5
Leptandrin.....	oz	45	Keiths 50
Lichen Hibern opt.....	lb	18	Sec 12
Licorice Corig.....	lb	35	
“ Solazzi.....	lb	50	
“ Zuvia.....	lb	30	
“ Windsor, 4,8 or 161.5 lb		35	25 lbs 30
“ Y & S. stick.....	lb	35	
“ Pellets Y. & S.....	lb	30	
“ “ M. & R.....	lb	30	
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. 85
“ belladon.....	lb	95	“ 90
“ camph.....	lb	55	
“ camph comp.....	lb	60	Whr. qt. 55
“ crotonis.....	lb	1	25
“ iodi.....	lb	1	50
“ opii.....	lb	90	
“ saponis co.....	lb	45	
“ c pot iod.....	lb	90	
“ sinapis co.....	lb	1	50
“ terebinth.....	lb	30	
Liquor ammon. acet conc.....	lb	35	
“ “ fort s. g. 880lb		12	case 10
“ antim. chlor.....	lb	20	W. qt. 13
“ arsenicallis.....	lb	10	pt., Whr. qt. 8
“ arsenii et hyd. iod. lb		25	W. qt. 20 (Donovans)
“ atropia sulph.....	oz	25	
“ bismuth et am cit.....	lb	45	Wich. 40
“ ferri Acet.....	lb	35	
“ “ Ft.....	lb	60	
“ “ perchlor fort.....	lb	12	Whr. qt. 11
“ “ pernit.....	lb	15	
“ “ persulph.....	lb	15	
“ plumbi subacet.....	lb	12	Whr. qt. 10
“ potassæ.....	lb	7	
“ santal flav comp.....	lb	1	50
“ sodii chlor.....	lb	16	
“ strychnine.....	lb	50	Whr. qt. 45
Lithii bromid.....	oz	25	
“ carbonas.....	oz	25	lb 3.00
“ citras.....	oz	20	lb 2.75
“ hippurate.....	oz	1	50
“ iodid.....	oz	50	
“ salicylat.....	oz	25	
Litmus.....	lb	60	
Losophan.....	oz	2	25
Lucilline.....	1 lb tins	20	each
“ .. 5 lb “		90	“
“ .. 10 lb “		1	60 “
“ .. 25 lb tubs		13	lb.
“ .. 50 lb tubs		12	“
Lupulinum.....	lb	60	
Lycetol Bayer, ½ ozs.....	oz	4	00
Lycopodium.....	lb	75	
Lysol.....	½ kilo bottles	1	00 each
Macis.....	lb	1	10 pulv 1 20
Madder compound.....	lb	10	carboy 9
“ Dutch.....	lb	12	bri 10
Magnes citr. gran. Bishop..	lb	75	7 lb 65

**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.

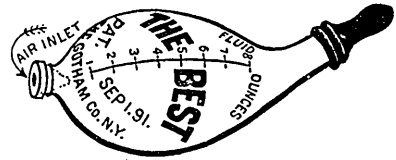
It is nothing more than fair that we should have the business which we have made. Give us "fair play." But at the same time we wish it distinctly understood that we shall protect our rights, and in this determination, we are quite sure every fair minded retail druggist will uphold us.

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.	

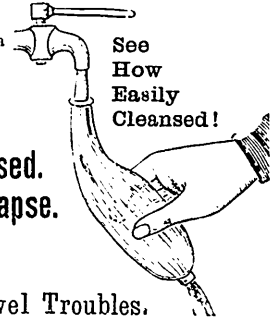
"THE BEST" Nurser.



"St. Louis, Mo.
"THE BEST" Nurser is a
God-send to babies.
L. A. Turnbull, M. D.

See
How
Easily
Cleansed!

**Easy Suction,
Easily Cleansed.
Nipple cannot Collapse.**



PREVENTS

Wind-olic and Bowel Troubles.

EXTRA VALVES (Air-Inlets) and "CLING-FAST" Nipples may be had of all wholesale Druggists @ 3c. per doz.

"THE BEST" NURSER \$2.10 per doz. (complete).

THE GOTHAM CO.,
82 Warren St. - NEW YORK.

NUTROLACTIS
The
Galactagogue

When the milk of a nursing mother is scanty, although the breasts be almost dry, this remedy will in a few days so increase the quantity that there will be enough to fully nourish any infant.

NUTROLACTIS acts chiefly by strengthening and building up the mother's system; it does not force mothers to yield good milk copiously, it enables them to do so.

MANUFACTURED BY

Nutrolactis Company,
Union Square - NEW YORK.

Magnes citr. gran. Lyman. lb	35	
“ calcined . . . 1 lb tins	50	bulk 40
“ carb levis 1 oz pkt. lb	20	10 lb 18
“ “ “ 2 “ .lb	18	“ 16
“ “ pulv. K. M. .lb	30	1 lb pkgs
“ chloridelb	80	
“ sulphaslb	3	Brl. 1.50
“ Hd'slb	5	“ 4
Magnesium, wire or ribbon oz	75	Powder 50
Maltopepsin 1/2 lb bots. . . . lb	5 85	
“ bots.doz	6 35	
Maltose xtlsoz	1 50	
Manganese chlorid.lb	50	
“ hyphosphiteoz	20	
Manganese oxyd. nigrlb	10	
“ sulph. pur.lb	60	
Manna flak select.lb	1 40	
Maranta Bermuda.lb	45	10 lb 42
“ St. Vincentlb	15	
Mel. canadensis.lb	13	10 lb 12
Mentholoz	50	lb 7.00
Morphine acetat.oz	1 80	10 ozs. 1 70
“ hydrochloras.oz	1 80	“ 1 70
“ sulphasoz	1 90	“ 1.80
Moschus, in grain, No 1 . . . dr	6 00	
“ “ No 2.dr	4 50	
“ “ No 3.dr	3 50	
Mollin, purelb	1 00	
Myrtol.oz	1 00	
Naphtha minerallb	50	
“ vegetablelb	60	
Naphtaline resublimed. . . .lb	30	
Naphthol Beta.oz	10	lb 1 20
“ “ Benzolateoz	35	
Nickel sulph cryst.lb	50	
“ ammon. sulph.lb	30	
Nux. areca select.lb	20	pulv 35
“ kola.lb	50	
“ myristice (limes). . . .lb	85	pulv 1 00
“ “ opt. (unlimes) lb	90	
“ vomicalb	12	pulv 22
Olio Resin Capsici.oz	75	
“ “ Copaibaoz	25	
“ “ Cubeboz	35	
“ “ Zingib.oz	90	
Ol. absinth.oz	40	
“ amygd. dulc.lb	45	Whr. qt. 40
“ essent. sine acid pruss.oz	50	
“ anethi Angoz	30	lb 4.00
“ anisi.lb	3 50	
“ anthem Ang.oz	1 20	
“ aurantii.lb	2 50	
“ bergam super.lb	3 25	
“ buchu.oz	1 60	
“ cadi.lb	30	Whr. qt. 25
“ cajeputi.oz	10	lb 1.00
“ carni.lb	2 25	
“ caryophlb	1 00	
“ cassia.lb	3 40	
“ cedri optlb	70	Whr. qt 65
“ “ comllb	50	“ 45
“ chaulmoogra.oz	20	lb 2.50
“ cinnamomi ver.oz	1 70	
“ citronelle.lb	80	bot. 65 lb
“ cocoanut.lb	15	
“ cognac.oz	2 40	
“ cologne.oz	60	
“ conii.spruce. . . .lb	70	Whr. qt. 65
“ copaiba.lb	1 25	
“ coriandri.oz	1 20	
“ crotonis.oz	12	bot. 1.50 lb
“ cubeba.oz	15	2.00 lb

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.

HARD

To Exaggerate

the importance of sterilizing the milk that is fed to little babies. Pure cow's milk is beyond all doubt the best bottle food for infants—competent nurses and leading physicians all agree on that. The only trouble about it is the difficulty of procuring pure milk. The utmost care of the cleanest dairy will not suffice. Put an

ARNOLD

Steam Sterilizer

between the dairy and the baby and the problem's solved. It isn't safe to use unsterilized milk because even if it came pure from the cow—which is not always certain—it has a dozen chances to become contaminated in its necessary handling. The Arnold Sterilizer is simple and convenient and its construction makes it absolutely effective for Pasteurizing (at 167°F) or Sterilizing (at 212°F.) It has the endorsements of leading colleges, hospitals and physicians.

Circulars and booklets sent on application to

Wilmot, Castle & Co., Rochester, N. Y.

Ol	cymini, ang.....oz	50	
"	erigerontis.....lb	3 25	
"	encalypti.....lb	1 40	"cygnet" brand.
"	foeniculæ dulc.....lb	1 50	
"	gaulther.....oz	20	lb 2.50
"	" synthetic.....lb	2 00	
"	geran. Turc.....oz	40	
"	geranii rosæ, Gal.....oz	75	
"	" " snper.....oz	1 00	
"	jasmin triple fort.....lb	2 40	
"	juniperi bacc.....oz	20	lb 2 75
"	" lig.....lb	60	Whr. qt. 55
"	lauri.....lb	40	
"	lauri essent Bay.....oz	40	lb 4.50
"	lavand ang.....oz	2 50	
"	" French.....lb	3 50	sec 2.50 1.50
"	limes.....lb	4 00	
"	limonis super.....lb	1 75	copper 1.50
"	lini, Raw.....gal	67	brl. 62
"	" boiled.....gal	70	brl. 65
"	macis.....oz	25	lb 3.50
"	menth. pip. Amer.....lb	3 00	Whr. qt. 2.75
"	" " English.....oz	1 00	lb 14.00
"	" " Japan.....lb	4 00	
"	" virid.....oz	25	lb 3.50
"	morrhuaNorweg.....gl	2 75	brl. 2.50
"	" Munn's Nfld. by) Norweg. process }	1 75	kegs 20 gals 1 65
"	myrbane.....lb	30	Whr. qt. 28
"	myristicæ.....oz	25	
"	neatsfoot, pale.....gl	1 00	
"	neroli, opt.....oz	3 60	
"	olive sublime salad 1 gal	original tins 2.25 each.	
"	" green.....gl	1 40	brl. 1.20
"	" " opt.....gl	1 50	brl. 1.35
"	" yellow.....gl	1 40	brl. 1.15
"	" " opt.....gl	1 50	brl. 1.25
"	" (Salad American)gl	85	brl. 75
"	origani.....lb	85	
"	" Sec.....lb	50	Winch 45
"	palmas select.....lb	15	
"	patchouli opt.....oz	1 25	sec 75
"	petit. gran.....oz	75	No 2, 50
"	picis.....lb	12	Whr. qt. 10
"	pimentæ.....oz	25	lb 3.20
"	pini silvestris.....lb	1 50	
"	pulegii hed.....lb	1 75	
"	rapii.....lb	15	
"	rhodii.....oz	80	
"	ricini E. I.....lb	10	case 6 tins 6½
"	" Gal water pale.....lb	10	brls 6½
"	" Virgin.....lb	13	tins 11
"	" Ital, 44 lb tins.....lb	15	10 lb tins 16
"	rosmarini exot.....lb	90	W. qt. 65
"	" opt.....lb	1 25	
"	rutæ.....oz	1 25	
"	sabinæ.....lb	1 30	
"	santali ang.....oz	50	lb 7.50
"	" W. I.....oz	40	lb 4.00
"	sassafras.....lb	60	Whr. qt. 55
"	sesame.....gl.	1 35	
"	sinapis essent.....oz	65	lb 8.50
"	sperm.....gl.	1 60	
"	spike.....lb	25	
"	succin. rect.....lb	65	Whr qt. 60
"	tanacetii opt.....oz	25	lb. 3.50
"	terebinthinæ.....lb	45	
"	" coml.....gl.	55	10 gals 50
"	theobromatis.....lb	60	
"	valerian.....oz	1 00	
"	verbena.....oz	12	
"	vini.....oz	25	lb 3.50
"	ylang-ylang.....oz	7 50	
Opium Turc.....lb	3 75		
"	" pulv.....oz	40	lb 4.75
ss sepiæ.....lb	25	select 30	



Scotch Whiskies.
J. & G. STEWART
EDINBURGH, Scotland.

Founded 1779.

Famous for More
than a Century.

Sold all over the World.

GOLD MEDAL,
Edinburgh 1886.

"PLAGNIOL" Olive Oil.
Absolutely Pure Olive Oil.
Grand Prix, Paris, 1889.

"VIOLETT."
Imperial Plums in bottles and boxes.
The finest Selected French Plums.

"YARRITU."
Spanish Castile Soap.
The perfection of Castile Soap and the
highest grade imported.

WM. G. MOEHRING & CO.,
Nos. 136 & 138 Cedar Street,
NEW YORK.
Sole Agents for Canada and United States.

A. McTAVISH WATT,
Room 429, BOARD OF TRADE,
MONTREAL.
Selling Agent for Canada.

Oss Scapiae pulv.....lb	30	
Otto rosea coml.....oz	6 50	
" virgin.....oz	9 00	shipkoff's 11.00
" Turkish ounces...dr	1 00	bottles of 9-11 drms
Pancreatine, Morson's....oz	1 00	
" Merck's, pure....oz	35	
" absolute oz	75	
Papoid.....oz	3 25	
Paraffinum durum.....lb	15	50 lb 13
Paradehyde.....oz	20	lb 2.00
Paris Green.....100 lb incms	.8	
" 25 lb "	19	
" 1 lb	20	
Pelleterine Tannate... gm	45	
Pepsin.....lb	225	
" pur.sol pulv. Merck's.lb	3 00	
" Merck's scales.....lb	5 00	
" ang. coml.....oz	30	lb 3.50
" Boudault's.....oz	1 20	
" medicinal Morson's.oz	85	
" porci Morson's.....oz	2 25	
" sacchar.....oz	25	lb 3.50
" Jensen's scales " oz	1 25	
" Armour's.....oz	90	lb 12.00
Petrol Barbadiens.....lb	15	
Petroleum. see Lucilline		
Phenacetine Bayer.....oz	30	lb 3.60
Phenetol pure.....oz	60	
Phenocol.....gm	25	
" Hydroch..... 25 gms	1 50	
Phenolphthalein.....oz	1 00	
Phenyl hydrasin hydroch.oz	60	
Phlorozglucin puriss. dr	75	
Phosphorous... 11 lb tins.lb	85	1 lb bots 1.00
" amorphous....oz	20	
Pil. hydrarg.....lb	70	
Pilocarpin hydrochlor....gr	32	5 or 10 gr. tubes
" nitras.....gr	32	5 or 10 gr tubes
Pimento.....lb	12	pulv. 14
Pipe clay.....lb	5	100 lb 4
Piperinge.....oz	1 00	
Piperazin Bayer, 1/2 oz bottle.oz	3 50	
" tablets... 10x16 gr	2 00	each
" Schering, 5 gm vials	75	each. oz. 3.50
Piper alba.....lb	16	pulv 18
" cayenne.....lb	25	10 lb 20
" nigrum.....lb	13	pulv 14, 25 lb 13
Pix Burgund bladders.....lb	10	20 lb 9
Platinum Bichlor.....oz	8 50	
" " 10% solut oz	1 35	
" Foil.....gm	65	
" Wire.....gm	50	
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 7 1/2 (litharge)
" rub.....lb	8	keg 6 (red lead)
Podophyl-in resin.....oz	35	
Potassa caustica sticks.....lb	50	
" sulphurata.....lb	35	
Potassii acetas.....lb	45	gran 50 bot. inc.
" bicarbonas.....lb	14	
" pulv.....lb	15	
" bichromas.... lb	15	keg 12 1/2
" binoxal'as.....lb	28	10 lb 22
" " pulv.... lb	25	10 lb 23
" bitart.....lb	32	keg 29 brl 28
" bromid.....lb	65	
" carbonas.....lb	14	10 lb 12
" carbonas pearl ashes lb	10	100 lb 9
" chloras.....lb	17	keg 15
" " pulv.....lb	18	keg 16
" chlorid. pur.....lb	30	
" chromas.....lb	45	

Potassii citras neutral.....lb	65	
" cyanid F. B. 96-100%lb	1 00	
" fused 30 p.c.lb	40	
" fused 60 p.c.lb	55	gold platers.
" hypophosph.....lb	1 50	
" iodid.....lb	4 00	5 lbs \$3 75
" nitras.....lb	10	112 lb keg 6 1/2
" gran.....lb	10	" " 6 1/2
" " C. P. Mercka... lb	30	
" nitrite pure stick... lb	1 20	
" oxal'as, neutral... lb	25	
" permangan pur....lb	30	
" pruss. flav.....lb	35	
" " rubr.... lb	65	
" silicas.....lb	30	
" " Liq.....lb	20	
" sulphas..... lb	12	pulv 13
" sulpho-cyanid.... oz	15	
" sulphocarb.....lb	1 60	
" sulphuret.....lb	35	
Potassii tartaras.....lb	80	
Potassium.....oz	2 00	dr. 40
Propylamine.....oz	50	
Pulv aloes c. canella.....lb	40	
" amygdal'ae co.....lb	1 35	
" antimoniales P. L.....lb	60	
" catechu comp.....lb	70	
" cinnam comp.....lb	75	
" cretæ aromat P. B.....lb	1 20	
" " c. opiid P B lb	1 50	
" " comp Ph. Ed.... lb	50	
" " c. opiid... lb	75	
" " c. camp.....lb	20	10 lb 18
" glycyrrh comp.....lb	30	
" ipecac comp.....lb	1 10	
" jalap comp.....lb	75	
" kino comp.....lb	2 25	
" rhei comp.....lb	75	
" sapo cast.....lb	25	
" " alb.....lb	30	
" scammon comp.....oz	30	
" seidlitz Howards.....lb	25	7 & 14 lb pkqs
Pyoktannin.....25gms	1 25	
Pyridin Puriss.....oz	25	
Quassine, 1/2 oz vials.....oz	4 00	
Quininae bisulph.....oz	65	
" bromid.....oz	90	
" citras.....oz	80	
" hydrobrom.....oz	90	
" hydrochlor.....oz	75	
" hypophos.....oz	1 25	
" iodid.....oz	90	
" phosphas.....oz	85	
" salicylas.....oz	75	
" sulph German.....oz	40	100oz tin 30,25 oz 32
" " " 5 oz tins	33	
" " Howards...oz	42	
" " " 4 oz bot	40	
" sulphocarbo'as.....oz	1 50	
" tannate.....oz	50	
" valerian.....oz	85	
Rad aconiti.....lb	22	
" contus.....lb	25	pulv 20
" anchusæ.....lb	20	
" angelicas.....lb	30	pulv 35
" arctii (burdock).....lb	16	
" belladon.....lb	18	pulv. 30
" calam. aromat.....lb	20	
" calumb.....lb	15	pulv. 20
" curcumæ Madras.... lb	10	" 12
" enula.....lb	20	
" galangal.....lb	12	
" " pulv.....lb	20	
" gentian, select.....lb	10	
" " ground.....lb	11	
" " pulv.....lb	15	

A word or two concerning : : :

Antitoxines

The New York Biological and Vaccinal Institute, which was the first institution in America to prepare and dispense to the medical profession the


Diphtheria = Antitoxine

begs to announce that the following Antitoxic or Immunized Serums can be obtained at its laboratory at the same rate :

TUBERCULOSIS,	Immunized Serum from the Mule.
SYPHILIS,	“ “ from the Horse.
TYPHOID FEVER,	“ “ “ “
PNEUMONIA,	“ “ “ “
TETANUS,	Antitoxic Serum [1 to 1,000,000.]
MALLEM,	“ “
STREPTOCOCCUS,	“ “

Immunizing dose, to be applied in
case of suspicious wound \$1.50
Vial containing 25 ccm., for treat-
ment, - - - - \$3.00



IMPORTANT.  Serum therapy does not interfere with the ordinary treatment.

Correspondence Solicited.

ERYSIPELAS and PRODIGIOSUS TOXINES.

For Injections in Sarcoma and other Cancerous Growths.

Lyman, Sons & Co.,

SOLE AGENTS FOR CANADA FOR

The New York Biological and Vaccinal Institute.

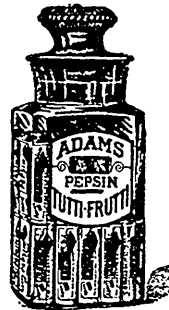
Rad. ginseng.....lb	4	50	
" glycyrrh decort....	lb	25	
" " incis.....	lb	15	
" " bundles.....	lb	12	
" " small bundles			
" " super.....lb	18		
" " grd.....	lb	12	brl. 11
" helleb alb.....	lb	12	
" " pulv.....	lb	16	keg 14 br. 13
" ipecac.....	lb	2	00
" " pulv.....	lb	2	20
" iridis Florentine.....	lb	40	
" " pulv.....	lb	56	
" " verona.....	lb	25	pulv. 30
" jalapa.....	lb	35	
" " pulv.....	lb	45	
" krameria opt.....	lb	30	
" pareira brava.....	lb	40	
" pyrethri.....	lb	85	
" 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	
" sanguinaria.....	lb	14	pulv 16
" sarsa Hond.....	lb	40	ircis 50
" " Jam.....	lb	60	" 70
" " Mexican.....	lb	18	20 lb 16
" scilla sicc.....	lb	12	
" " pulv.....	lb	30	
" senega.....	lb	60	
" spigelia.....	lb	45	pulv 60
" sumbul.....	lb	70	
" taraxac sicc.....	lb	18	10 lb 15
" tormentilla.....	lb	35	
" " pulv.....	lb	45	
" singib. Afric. u. b.....	lb	16	25 lb 15
" " " pulv.....	lb	18	25 lb 17
" " " Jam. u. b.....	lb	25	10 lbs 24
" " " bleached.....	lb	28	10 lb 27
" " " pulv opt.....	lb	30	10 lb 28
Resin flav.....	lb	4	
" " pulv.....	lb	5	50 lb 4
Resorcin xtls.....	oz	20	lb 2.75
" resublim.....	oz	50	
Rhizoma arnicæ.....	lb	30	contus 40
" cimicifuga.....	lb	15	
" podophylli.....	lb	14	
" serpentaria.....	lb	60	pulv. 85
" valeriana.....	lb	15	pulv. 22
Rouge—Jewellers.....	lb	65	
Rubidium chloride.....	gm	40	
Saccharine, 300°.....	oz	1	00
Sacch. lactis pulv.....	lb	25	
Sago per'at. parv.....	lb	5	
Sat prunella glob.....	lb	20	
Salicinum.....	oz	25	lb 3.50
Salipyrine.....	50 gms	2	50 each
Salol.....	oz	30	lb 3 00
Salophen Bayer.....	oz	1	50
Santoninum.....	oz	25	lb 3.00
Sapo Castile Alb Contis.....	lb	16	box 15
" " " Shell.....	lb	12	" 10
" " " Virgin.....	lb	12	" 10
" " " " cakes box.....	4	00	for 200 cakes
" " " 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

You Can . .

get a handsome Glass Jar free with ADAMS'

TUTTI=FRUTTI.

It's quite ornamental.
Order one today.
All the Wholesale Druggists have it.



Send for beautiful advertising matter to decorate your store window and draw trade.

ADAMS & SONS,
11 & 13 Jarvis Street,
TORONTO, ONT.

WAMPOLE'S BEEF, WINE AND IRON,

In Pint Bottles, . . . \$5.00 per doz.
Winchester [$\frac{1}{2}$ Imp. Gal.] 2.00 each.
Imp. Gal in 5 gal. lots, and over 3.50 per gal.

With handsome lithograph labels. Buyers name prominently printed on same, at following prices:

$\frac{1}{4}$ gross lots, and over, - \$60.00 per gross
Packed in $\frac{1}{4}$ Gross Cases.

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

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

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

Very truly yours

HENRY K. WAMPOLE & CO.

MANUFACTURING PHARMACISTS
CANADIAN BRANCH: MONTREAL, P.Q.
36 & 38 LONGARD STREET,
TORONTO, ONT.

Scoparii cacumin.....lb	25	
Secale Cornut.....lb	75	
Seidlitz Mixture hds.....lb	25	
Sem canary.....lb	5	bag 3½
" cardam.....lb	1 25	1.00 & 75
" " decort.....lb	1 00	
" " pulv.....lb	1 20	
" celery.....lb	20	
" chenopodii.....lb	20	
" colchici.....lb	30	pulv. 40
" cydonias.....lb	60	
" cymini.....lb	20	pulv. 25
" fenugraeci.....lb	5	
" " pulv.....lb	7	ground 6½ brl 6½
" hemp.....lb	5	bag 4
" hyoseyam.....lb	30	
" jambul.....oz	10	
" lini sifted.....lb	4	brl. 3½
" " crushed.....lb	5	brl. 4
" " " No. 2.....lb	4½	brl 3½
" " " No. 3.....lb	4	brl. 3½
" lobelia inflas.....lb	35	pulv 40
" maw.....lb	15	10 lb 14
" millet.....lb	5	bag 4
" pumpkin.....lb	25	
" rapii.....lb	6	
" sabadilla.....lb	40	
" sinapis alb.....lb	9	
" staphisagriae.....lb	45	
" stramonii.....lb	25	
Soda caustic, 25 & 50 lb. drums lb	4	
" " 100 lb.....lb	3½	
" " 750 lb.....lb	2¾	
" " C. P.....lb	90	
" " stick.....lb	50	
" " cake.....lb	40	
" crystals.....lb	2	brl 1.25 per 100 lbs
" tartarata.....lb	25	
Sodii acetas pura.....lb	25	
" arsenias.....oz	10	lb 1.20
" benzoas.....oz	15	lb 1 50
" bicarb. pulv Morson's lb	10	
" " " Hd's.....lb	16	14 lb 15
" " " coml.....lb	4	keg 2.75
" bisulphis.....lb	25	
" bisulphas pure.....lb	30	
" bromid.....lb	75	
" carb. recrust.....lb	15	
" carbo'as pur.....lb	3 50	
" chlorate xtls.....lb	50	
" chloride C. P. xtls.....lb	25	
" citr-s.....lb	90	
" hypophosphis.....lb	1 40	
" hyposulphis.....lb	5	keg 3
" iodid.....oz	40	lb 5.25
" nitras pur.....lb	25	coml. 8
" oxalas.....lb	50	
" phosph pur.....lb	12	
" " pulv.....lb	20	
" " C.P. xtls.....lb	20	
" potass tart pulv.....lb	28	
" salicylas.....lb	90	
" silicas xtls.....lb	15	
" " solut conc.....lb	10	
" sozoiodol.....oz	1 25	
" sulphas.....lb	3	brl. 1¼ Hds 5 (brl.
" " exsicc. pulv.....lb	15	
" " pur recrust.....lb	30	
" su'phid.....lb	30	
" sulphis.....lb	7	pulv. 8
" sulphite C.P.....lb	30	1 lb bottles.
" sulpho carbo'as.....lb	1 10	
" tungstas.....lb	40	
" valerian.....oz	50	
Sodium.....oz	30	
" molybdate.....oz	40	
" succinate.....oz	85	

DAMSCHINSKY'S Liquid Hair Dye

IS GUARANTEED HARMLESS, and does NOT CONTAIN ANY TRACE of SILVER or LEAD. ONE APPLICATION from ONE BOTTLE will dye GREY, RED, FADED HAIR or BEARD in a FEW MINUTES by MERELY COMBING IT. Made in three colors: BLONDE, BROWN, BLACK.

\$8.00 PER DOZEN - RETAILS \$1.00

PILOCRESKIN Damschinsky's Great Hair-Producer

(contains the active principles of PILOCARPUS PINNATUS, CINCHONA RUBRA, SEMINA SABADILLA, etc., mixed in proper proportion to INSURE EFFECT in CASE OF BALDNESS, for GROWING A BEARD, and to PREVENT THE HAIR FROM FALLING OUT.

\$8.00 PER DOZEN - RETAILS \$1.00

A very attractive Window Sign 15 x 20 inch, glassed and framed, showing the results of these goods, will be given to new customers on application.

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 of 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 exhibition 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 1880, 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 Farin Julich Place No. 4

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

Sol. acid osmic 1%.....oz	1 50	
" cocain 4%.....oz	60	
" nitro glycerin 1%.....lb	1 75	
Somatose—Bayer, 2 oz tins.oz	70	
Somnal.....25 gm vials	75 each	
Sparteïn sulph.....½ oz	30 ea. 1 oz. 2 00	
Spice pickling.....lb	35	
Spt. ætheris comp.....lb	60	
" nit S. G. 845.....lb	65 Whr. qt. 60	
" ammon. arom.....lb	60 " 55	
" fœtid.....lb	35 " 65	
" camphor.....lb	70 " 65	
" chlorof. S. G. 871.....lb	70 " 65	
" cinnam.....lb	2 00	
" mentha pip.....lb	1 00	
" myristics.....lb	90	
" rectificatus 65 o/p.....gl	4 65 5 gl. 4.60 in a/c. 4.55 10 gl	
" " " Brl	4 25 cash. 1 p.c. 10 days	
" vini gall.....gl	4 75 opt. 6.50	
Spongia usta.....lb	2 50	
Stanni chlorid. crist.....lb	40	
" oxid (putty-powder).lb	45	
Stannum gran.....lb	50	
Stearin.....lb	15	
Strontii bromid, merck's.....oz	20 lb 2.40	
" carb. pu.e.....lb	50	
" chlorid.....lb	30	
" iodid, merck's.....oz	60	
" lactas, merck's.....oz	25	
" nitras exsic.....lb	18	
" salicylate, merck's.....oz	25	
" sulphate precip.....oz	35	
Strophanthin pure.....gr	10	
Strychnina cryst.....oz	1 00 10 oz 85	} in ½ oz bots
" sulph.....oz	1 00 25 extra	
Styrax liquid.....lb	50	
Succus conii.....lb	75	
" limæ fruct W. I.....gl	90 brl. 80	
" rhamni.....lb	20	
" scoparii.....lb	70	
" taraxaci.....lb	65	
Sulphonal—Bayer.....oz	45 lb 6.00	
Sulphur Lac.....lb	12 10 lb 11	
" precip B. P.....lb	20 10 lb 18	
" rotund.....lb	8 brl 1 ¼	
" sublim.....lb	4 bag 110 lbs 2	
" vivum.....lb	6 10 lbs 5	
Sulphuris iodid.....oz	40	
Svapnia, ¼ oz bottles.....oz	5 00	
Tamarindus, W. I.....lb	12	
Tapioca flake.....lb	6	
" pearl.....lb	6	
Terabene.....lb	60	
Terabinth canadensis.....lb	45	
" chian.....oz	30	
" Venet.....lb	15	
Terpine hydrat.....oz	20	
Terpineol.....oz	50	
Terpinol.....oz	30	
Terra Japonica (Gambier).lb	10	
Thallin sulphate pure.....drm	40	
Trikesol, Schering's.....lb	1 20	
Theobromin.....oz	3 00	
Thiol liquid.....oz	60 100 gm. tins 1.25	
Thymol.....oz	35	
Toluol pure.....oz	60	
Trional-Bayer.....oz	1 20	
Tripoli.....doz.	90	
Triticum repens.....lb	20	
Troch. acid carbonic G's T. H. lb	75	
" " tannic " lb	1 25	
" aconite.....lb	90	
" bath pipe.....lb	45	

Troch. black currant, Gibsons lb	90	
" boracic acid . T. H. lb	90	
" rouchial P D & Co.	5 lb can 1.75 each	
" cachou dwf bouquet. lb	50	
" " floral gems. .lb	50	
" camphor.....lb	75	
" capsici Gibson's.....lb	65 Domestic 35	
" catechu ".....lb	80	
" chlorodyne.....lb	65 Gibson's 90	
" coltsfoot.....lb	40	
" cubeb T. H.....lb	90	
" gelatine.....lb	50	
" glycerin [jujubes]. lb	75	
" guaiaci T. H.....lb	1 10	
" ipecac.....lb	75	
" krameria T. H.....lb	1 25	
" lactasæ..... T. H.....lb	1 25	
" licorice (pipe).....lb	35	
" mentha pip. C.S Gibson's lb	65 11b bottles 75	
" " " [XXX]. lb	50	
" morphine.....lb	1 00	
" " et ipecac. lb	1 00	
" mosch Gibson's.....lb	80	
" opii.....lb	75	
" paregoric.....lb	70	
" pontefract.....lb	30	
" potass. chlor.....lb	50 Tablets 60	
" pyrethri T. H.....lb	90	
" rosæ Gibson.....lb	80	
" sedative T. H.....lb	90	
" tolu.....lb	70	
" tussi [cough].....bot	1 15 Gibson's	
" " ".....lb	50 [Preston's]	
" " " Watsons. tin	1 15 each	
" vermifuge.....lb	50 worm	
" voice [jujubes].....lb	85	
Turpentine, see Ol. terebinthinæ coml.		
Uranii acetat.....oz	60	
" nitras.....oz	60	
Urethane.....oz	60	
Veratrina pure.....oz	2 00	
Verdigris.....lb	35 powder 40	
Vinum rubrum [port].....gl	3 00 qr. cask 2.90	
" " opt ".....gl	3 75 " 3.50	
" xericum [cherry] gl	1 75 " 1.65	
" " opt.....gl	3 00 " 2.75	
" " " fino.....gl	3 50 " 3.25	
Witch Hazel extract.....gl	1 50 5gals 1.25	
Whiting.....lb	1 brl 60c per 100 b	
Xylol.....lb	60	
Zinci acetat P.B. pure.....lb	45	
" bromid.....oz	25	
" carb.....lb	35	
" chlorid. sticks.....oz	15lb 75, bt. free	
" " cake.....lb	65 bot. free	
" iodid.....oz	60	
" lactas.....oz	20	
" oleas.....lb	1 20	
" oxidum Howard's P.B lb	70	
" " Coml.....lb	15 10 lb 12	
" permanganate.....oz	75	
" phosphas pur.....lb	1 25	
" phosphid.....oz	40	
" sozoiodol.....oz	1 50	
" sulphas com.....lb	6 10 lbs 5	
" " pur Merck's.....lb	10 10 lbs 9c.	
" sulphocarb.....oz	10 lb 1.00	
" valerian.....oz	30 b 4.00	
Zincum granulatun.....lb	30	

In the Small of the Back.

You are standing before the door of 1896. If you enter rightly it means success. Don't expect the door to swing wide open for you. Doors don't open themselves. You and we must open them.

The men who went through the door of Success during the year of 1895 all say that the door was labelled PUSH.

That is the size of the problem exactly. You push—and the door does the rest.

"Push—what?"

Push your business: push old, slow methods to the wall: push the sale of the latest remedies: push them in the latest way: and so push your profits up to a good figure.

There are a dozen ways in which to push a business or a man. You can take it by the neck or the arms or the legs; but the best method is to plant your shoulder firmly in the small of its back, and then just trust in the Lord and the power of dynamics.

When you advertise and circularize, you are pushing your business by the first available means without much thought. You have caught hold of the collar or the coat-sleeve and are just shoving fitfully.

There is a better way than such old-time methods. There is a way by which you can plant your shoulder at a point in the small of the back, so that something must yield.

If you care to know the method, drop us a postal, and if you will try it on our "Frog in your Throat?" or any of our "Ten-Cent Family Medicines"* we will not only give you all the help we can, but we will practically pay the expenses, so that the experiment shall be made at our risk.

If we do not speak more openly here about the method, it is because it is comparatively new and a good enough idea to keep somewhat quiet about it.

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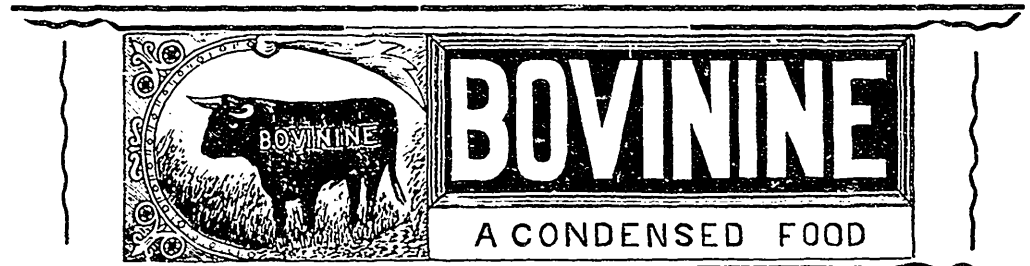
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